APPENDIX C
ENVIRONMENTAL AND CULTURAL RESOURCES

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C.1 EXISTING AND FUTURE WITHOUT PROJECT CONDITIONS

C.1.1 EXISTING CONDITIONS OF RESOURCES

The study area for the Central Everglades Planning Project (CEPP) encompasses the Northern Estuaries (St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary), Lake Okeechobee, a portion of the Everglades Agricultural Area (EAA), the Water Conservation Areas (WCAs), Everglades National Park (ENP), the Southern Estuaries (Florida Bay and Biscayne Bay), and the Lower East Coast (LEC). The following describes the existing physical, ecological, and socioeconomic conditions within this large study area. The existing conditions are presented in a regional or area specific content depending on the nature of the resource or the anticipated effect of that resource. Existing conditions are summarized in **Section 2.0** of the main report.

C.1.1.1 Vegetative Communities

C.1.1.1.1 Lake Okeechobee

The vegetation and cover types within the Lake Okeechobee region have been greatly altered during the last century. Historically, the natural vegetation was a mix of freshwater marshes, hardwood swamps, cypress swamps, pond apple forests, and pine flatwoods. The freshwater marshes were the predominant cover type throughout, especially along the southern portion of Lake Okeechobee where it flowed into the Everglades. These marshes were vegetated primarily with sawgrass (*Cladium jamaicense*) and scattered clumps of Carolina willow (*Salix caroliniana*), sweetbay (*Magnolia virginiana*) and cypress (*Taxodium* spp.). Hardwood swamps dominated by red maple (*Acer rubrum*), sweetbay, and sweet gum (*Liquidambar styraciflua*) occurred in riverine areas feeding Lake Okeechobee, while cypress swamps were found in depressional areas throughout the region. Pine flatwoods composed of slash pine (*Pinus elliottii*), cabbage palm (*Sabal palmetto*) and saw palmetto (*Serenoa repens*) were prevalent in upland areas, especially to the north.

The majority of the surface of Lake Okeechobee is not vegetated and provides open water (pelagic) habitat. Open water habitat within Lake Okeechobee covers about 75 % of the lake's surface area.

Lake Okeechobee currently has an extensive littoral zone that occupies approximately 150 square miles (about 25 percent) of the lake's surface (Milleson 1987). Littoral vegetation occurs along much of Lake Okeechobee's perimeter, but is most extensive along the southern and western borders (Milleson 1987). The littoral zone plant community is composed of a mosaic of emergent, submergent and native plant species. Emergent vegetation within the littoral zone is dominated by herbaceous species such as cattail (*Typha* spp.), spike rush (*Eleocharis cellulosa*), and the invasive exotic torpedo grass (*Panicum repens*). Other emergent vegetation includes bulrush (*Scirpus californicus*), sawgrass, pickerelweed (*Pontedaria cordata*), duck potato (*Sagittaria* spp.), beakrush (*Rhynochospora tracyi*), wild rice (*Zizania aquatic*), arrowhead (*Sagittaria latifolia*), buttonbush (*Cephalanthus occidentalis*), sand cordgrass (*Spartina bakeri*), fuirena (*Fuirena scirpoidea*), rush (*Scirpus cubensis*), southern cutgrass (*Leersia hexandra*), maidencane (*Panicum hemitomon*), white vine (*Sarcostemma clausum*), dogfennel (*Eupatorium capillifolium*), and mikania (*Mikania scandens*). Woody vegetation consists of primrose willow (*Ludwigia peruviana*), Carolina willow, and the invasive exotic melaleuca (*Melaleuca quiquenervia*). Over the years, there has been an on-going effort to eradicate melaleuca in the Lake Okeechobee region. The eradication effort has been extremely effective.

Submerged vegetation within Lake Okeechobee is composed almost entirely of hydrilla (*Hydrilla verticillata*), an invasive exotic species, pondweed (*Potoamogeton illinoensis*), bladderwort (*Utricularia foliosa*), Chara (*Chara* spp.) and tape grass (*Vallisneria americana*).

The floating, component of the littoral zone consists of lotus lily (*Nelumbo lutea*), fragrant water lily (*Nymphaea odorate* and *N. mexicana*), the invasive exotic water hyacinth (*Eichhornia crassipes*), water lettuce (*Pistia stratiotes*), duckweed (*Lemna* spp.), coinwort (*Hydrocotyle umbellate*), and ludwigia (*Ludwigia leptocarpa*).

C.1.1.1.2 Northern Estuaries

Submerged aquatic vegetation (SAV), which collectively includes seagrass and macroalgae, is one of the most important vegetation communities of the St. Lucie River, Indian River Lagoon, and the Caloosahatchee River and Estuary (IRL CCMP 1996). These communities are highly productive and provide food for fish, sea turtles, manatees, a myriad of invertebrates, and other species. Seagrass meadows improve water quality by removing nutrients, dissipating the effects of waves and currents, and by stabilizing bottom habitats thereby reducing suspended solids. Seagrass beds support some of the most abundant and diverse fish populations in the Indian River Lagoon. Many commercial and recreational fisheries (e.g. clams, shrimp, lobster, and fish) are associated with healthy seagrass beds (US Fish and Wildlife Service (USFWS 1999). Currently, many SAV beds are stressed and have been reduced or eliminated from their former areas by extreme salinity fluctuations, increased turbidity, sedimentation, dredging, damage from boats, and nutrient enrichment which causes algal blooms that, in turn, restrict light penetration.

C.1.1.1.2.1 Upper Caloosahatchee River and Estuary

In terms of distribution and abundance tape grass has been the dominant species in the upper Caloosahatchee River and Estuary, colonizing littoral zones in water of less than one meter (Chamberlain and Doering 1998a). In the early 1990s, tape grass covered approximately 1,000 acres and about 60% of the coverage occurred within an 8-kilometer (km) stretch between Beautiful Island and the Fort Myers Bridge (Hoffacker 1994). Total longitudinal cover ranged from 14 to 32 km upstream from Shell Point (Chamberlain and Doering 1998b). Tape grass can typically tolerate salinities of 3 to 5 practical salinity units (psu) with few long-term effects if light conditions are sufficient (Haller et al. 1974, French and Moore 2003, Jarvis and Moore 2008). Dramatic declines in tape grass were observed beginning in late 2006 as a result of salinities exceeding the species' tolerance (Bourn 1932, Haller et al. 1974, Doering et al. 1999, Kraemer et al. 1999, Doering et al. 2001). During this period, widgeon grass, (*Ruppia maritime*) was the dominant species although it never achieved even the minimum abundance recorded for tape grass (Burns et al. 2007).

The effects of hurricane water releases in 2005 resulted in decreased plant cover and density in the latter half of 2005. Compounding the high turbidity effects from freshwater releases in 2005, drought conditions caused precipitous increases in salinities beginning in October 2006 raising salinity levels to 10 to 25 psu from November 2006 through April 2008. During the December 2005 to April 2006 period, lower water clarity due to high turbidity was associated with lower shoot density and cover. The loss of plants was quite rapid with a significant end-of-year dieback in 2006 followed by no regrowth in spring 2007. Salinities finally declined between April and October 2008, but tape grass recovery has been slow. This may be related to a lack of propagules as nearly all the tape grass was lost during the late 2006 to 2008 high salinity period. It may also be related to herbivory or other impacts on the initial recolonization of recruits into the area as leaves were sometimes noted as missing their tips (RECOVER 2009).

C.1.1.1.2.2 Lower Caloosahatchee River Estuary

Historically, two species of SAV have been routinely reported during surveys in the lower Caloosahatchee River Estuary upstream of Shell Point. These include shoal weed *(Halodule beuadettei*) or shoal grass (*H. wrightii*) and turtle grass (*Thalassia testudinum*) (Chamberlain and Doering 1998a, Wilzbach et al. 2000, Burns et al. 2007). In more recent reports, manatee grass (*Syringodium filiforme*) has been reported in San Carlos and Tarpon Bays (Wilzbach et al. 2000, Burns et al. 2007). Shoal grass coverage, described as abundant, has been at 300 acres; about 75% of this occurred between two and eight kilometers (km) upstream of Shell Point (Chamberlain and Doering 1998b).

From 2004 to 2008, the lower estuary was dominated by shoal grass. Although widgeon grass was observed occasionally (Burns et al. 2007); only very low densities of widgeon grass were found in the lower estuary when surveys were searching specifically for it. High salinity fluctuations with tides and shading by shoal grass may limit its growth. Low salinities during higher rainfall periods and discharge events observed since 2004 likely prevented the survival of seagrass species such as turtle grass (Burns et al. 2007). Water clarity was poor in 2004 and 2005 preventing SAV growth in waters greater than 0.7 meter deep. Water clarity conditions improved in 2007 and were sufficient for growth down to 1.2 meters.

Hurricane effects lowering SAV abundance in 2005 and 2006 and subsequent shoal grass recovery in 2007 are evident with cover in 2007 exceeding 2004 levels. Salinities of one psu or less occurred each year from 2004 to 2006 due to high rainfall within the watershed.

C.1.1.1.2.3 St. Lucie Estuary

The St. Lucie Estuary and Southern Indian River Lagoon support six species of seagrass including shoal grass, manatee grass, turtle grass, paddle grass, star grass *(Halophila engelmannii*), and the threatened Johnson's seagrass (*Halophila johnsonii*). Johnson's seagrass was listed as threatened under the Endangered Species Act (ESA) in 1998, and critical habitat was designated in 2000. The species has a very limited distribution along the east coast of Florida from central Biscayne Bay to Sebastian Inlet. Major threats include propeller scarring, dredging, sedimentation, and degraded water quality. Shoal grass and manatee grass are the dominant canopy species in the lagoon (Thompson 1978, Dawes et al. 1995, Morris et al. 2000). While all of these species are most successful in salinities greater than 20 psu, *s*hoal grass can tolerate a wide range of salinity and salinity variations. However, manatee grass is not as tolerant of low salinities or widely varying salinities (Irlandi 2006).

The SAV distribution has been mapped in the St. Lucie Estuary and the Southern Indian River Lagoon every two to three years since 1986, including annual mapping from 2005 through 2007 to help assess hurricane impacts. Historic SAV maps show SAV extending throughout the estuary. In 2007, very sparse (< 10% cover in most areas) SAV was present in the lower and middle estuary. Three seagrass species occurred within the estuary: shoal grass, Johnson's seagrass, and paddle grass. The majority of the SAV occurred in small isolated patches. The dominant SAV species in 2007 was Johnson's seagrass. It also extended farther upstream than any other SAV species.

This region was impacted by hurricanes and associated freshwater discharges in 2004 and 2005. Following the hurricanes, observed impacts to southern Indian River Lagoon SAV communities included large coverage and density declines and smaller direct impacts due to burial by shifting bottom sediments. Lush manatee grass beds were documented through 2004, however, low

salinities and associated poor water quality following the 2004 and 2005 hurricanes greatly impacted manatee grass in the area. The hurricanes also altered bathymetry on the east and west edges of the estuary, covering seagrasses. The steepest decline in percent occurrence of manatee grass occurred in 2005 after Hurricane Wilma. Johnson's seagrass followed by shoal grass colonized the former manatee grass habitat and recruited throughout the site. Available data indicates a clear trend toward recovery of the manatee grass beds.

C.1.1.1.3 Everglades Agricultural Area

Currently, much of the native south Florida landscape has been destroyed or substantially reduced by development, hydrologic change, increased nutrients, and the invasion of exotic plants. South of Lake Okeechobee, the historic pond apple swamps and sawgrass marshes have been converted to agriculture. Habitat types within the EAA are divided into five general groups: aquatic, wetland, upland, disturbed (mostly agricultural), and urban/extractive.

The aquatic communities within the EAA include both natural and man-made areas of open water such as canals, ditches, and ponds. The primary canals include Bolles, Cross, Hillsboro, Miami, North New River, and West Palm Beach Canals. The storage and treatment management measures for CEPP south of Lake Okeechobee are recommended to be located on and maximize the usage of the previously purchased A-1 and A-2 Compartments of the EAA land south of Lake Okeechobee that are owned by the State of Florida (See **Section 3.0**). All of Compartment A of the Talisman Land Exchange property is considered to be atypical jurisdictional wetlands based on hydric soils and hydrology. Wetland vegetation is anticipated to return to the site should agricultural practices cease. Upland land cover classes include dry prairie, hardwood hammock and forests, pinelands, and mixed hardwood pine forests. Disturbed communities consist of mostly agricultural lands including pasture (improved and unimproved), row crops, sugarcane, citrus, and other agricultural lands. Most of the urban and extractive lands are concentrated around the Belle Glade area. Low impact urban areas consist of either vegetated or non-vegetated lands within areas such as lawns, golf courses, road shoulders, and grassy areas surrounding development. High impact urban areas are non vegetated sites such as buildings, roads, and parking lots. Extractive cover areas consist of surface mining operations such as limestone quarries, phosphate mines, and sand pits as well as the associated industrial complexes.

C.1.1.1.4 Greater Everglades

The Everglades landscape is dominated by a complex of freshwater wetland communities that includes open water sloughs and marshes, dense grass and sedge dominated marshes, forested islands, and wet marl prairies. The primary factors influencing the distribution of dominant freshwater wetland plant species of the Everglades are soil type, soil depth, and hydrological regime (USFWS 1999). These communities generally occur along a hydrological gradient with the slough/open water marsh communities occupying the wettest areas (flooded more than nine months per year), followed by sawgrass marshes (flooded six to nine months per year), and wet marl prairie communities (flooded less than six months per year) (USFWS 1999). The Everglades freshwater wetlands eventually grade into intertidal mangrove wetlands and sub tidal seagrass beds in the estuarine waters of Florida Bay.

Development and drainage over the last century have dramatically reduced the overall spatial extent of freshwater wetlands within the Everglades, with approximately half of the predrainage 2.96 million acres of wetlands being converted for development and agriculture (Davis and Ogden 1997). Alteration of the normal flow of freshwater through the Everglades has also contributed to

conversions between community types, invasion by exotic species, and a general loss of community diversity and heterogeneity.

Many areas of WCA 3A still contain relatively good wetland habitat consisting of a complex of tree islands, sawgrass marshes, wet prairies, and aquatic sloughs. Water lilies (*Nymphaea alba*) were originally widespread in sloughs throughout many areas of WCA 3A (McVoy et. al. 2011). Reduced freshwater inflow and drainage by the Miami Canal have overdrained the northern portion of WCA 3A, resulting in increased fire frequency and the associated loss of tree islands, wet prairie, and aquatic slough habitat. Northern WCA 3A is currently dominated largely by mono-specific sawgrass stands with large areas of shrubs and monotypic cattail. Northern WCA 3A lacks the diversity of communities that exists in southern WCA 3A. In southern WCA 3A, Woods and Tanner (1990) documented the trend toward deep water lily dominated sloughs due to impoundment. In approximately 1991, the hydrology of southern WCA 3A shifted to the deeper water and extended hydroperiods of the new, wet hydrologic era resulting in a northward shift in slough vegetation communities within the WCA 3A impoundment (Zweig and Kitchens 2008). Typical Everglades vegetation, including tree islands, wet prairies, sawgrass marshes, and aquatic sloughs also occur throughout WCA 3B. However, within WCA 3B, the ridge and slough landscape has been severely degraded by the virtual elimination of overland sheetflow due to the L-67 canal and levee system. WCA 3B experiences very little overland flow and has become primarily a rain-fed system predominated by shorter hydroperiod sawgrass marshes with relatively few sloughs or tree islands remaining. Water levels in WCA 3B are also too low and do not vary seasonally, contributing to poor ridge and slough patterning. Loss of sheetflow to WCA 3B has also accelerated soil loss reducing elevations of the remaining tree islands in WCA 3B and making them vulnerable to high water stages.

Vegetative trends in ENP have included a substantial shift from the longer hydroperiod slough/open water marsh communities to shorter hydroperiod sawgrass marshes (Davis and Ogden 1997, Armentano et al. 2006). Flows through Shark River Slough (SRS) under current system compartmentalization and water management practices are greatly reduced when compared with pre-drainage conditions. The result has been lower wet season depths and more frequent and severe dry downs in sloughs and reduction in extent of shallow water edges (McVoy et.al. 2011). Over-drainage in the peripheral wetlands along the eastern flank of Northeast Shark River Slough (NESRS) has resulted in shifts in community composition, invasion by exotic woody species and increased susceptibility to fire. Areas within the eastern marl prairies along the boundary of ENP suffer from over-drainage, reduced water flow, exotic tree invasion and frequent human-induced fires (Lockwood et al. 2003; Ross et al. 2006). In addition, invasion of sawgrass marshes and wet prairies by exotic woody species has led to the conversion of some marsh communities to forested wetlands (Gunderson et al. 1997).

The estuarine communities of Florida Bay have also been affected by upstream changes in freshwater flows through the Everglades. A reduction in freshwater inflows into Florida Bay and alterations of the normal salinity balance have affected mangrove community composition and may have contributed to a large-scale die-off of seagrass beds (USFWS 1999).

In contrast to the vast extent of wetland communities, upland communities comprise a relatively small component of the Everglades landscape and are largely restricted to Long Pine Key, the northern shores of Florida Bay, and the many tree islands scattered throughout the region. Vegetative communities of Long Pine Key include rockland pine forest and tropical hardwood forest.

In addition, substantial areas of tropical hardwood hammock occur along the northern shores of Florida Bay and on elevated portions of some forested islands.

C.1.1.1.4.1 Slough/Open Water Marsh

The slough/open water marsh community occurs in the lowest, wettest areas of the Everglades. This community is a complex of open water marshes containing emergent, floating aquatic, and submerged aquatic vegetation components. The emergent marsh vegetation is typically dominated by spikerushes (*Eleocharis cellulosa* and *E. elongata*), beakrushes, and maidencane. Common floating aquatic dominants include fragrant water lily, floating hearts (*Nymphoides aquatica*), and spatterdock (*Nuphar lutea*); and the submerged aquatic community is typically dominated by bladderwort (*Utricularia foliosa*) and periphyton. As shown by Davis et al. (1994), vegetative trends in ENP have included the conversion of slough/open-water marsh communities to shorter hydroperiod sawgrass marshes.

C.1.1.1.4.2 Sawgrass Marsh

Sawgrass marshes are dominated by dense to sparse stands of *Cladium jamaicense*. Sawgrass marshes occurring on deep organic soils (more than one meter) form tall, dense, nearly monospecific stands. Sawgrass marshes occurring on shallow organic soils (less than one meter) form sparse, short stands that contain additional herbaceous species such as spikerush, water hyssop (*Bacopa caroliniana*), and marsh mermaid weed (*Proserpinaca palustris*) (Gunderson et al. 1997). The adaptations of sawgrass to flooding, burning, and oligotrophic conditions contribute to its dominance of the Everglades vegetation. Sawgrass-dominated marshes once covered an estimated 300,000 acres of the Everglades. Approximately 70,000 acres of tall, monospecific sawgrass marshes have been converted to agriculture in the EAA. Urban encroachment from the east and development within other portions of the Everglades has consumed an additional 79,000 acres of sawgrass-dominated communities (Davis and Ogden 1997).

C.1.1.1.4.3 Wet Marl Prairies

Wet marl prairies occur on marl soils and exposed limestone and experience the shortest hydroperiods of the slough/marsh/prairie wetland complex. Marl prairie is a sparsely vegetated community that is typically dominated by muhly grass (*Muhlenbergia capillaris*) and short-stature sawgrass. Additional important constituents include black sedge (*Schoenus nigricans*), arrowfeather (*Aristida purpurascens*), Florida little bluestem (*Schizachyrium rhizomatum*), and Elliot's lovegrass (*Eragrostis elliottii*). Periphyton mats that grow loosely attached to the vegetation and exposed limestone also form an important component of this community. Marl prairies occur in the southern Everglades along the eastern and western periphery of SRS. Approximately 146,000 acres of the eastern marl prairie have been lost to urban and agricultural encroachment (Davis and Ogden 1997). Pollen data indicate that the marl prairies west of SRS are not a natural feature of the Everglades landscape but developed after twentieth century hydrologic modification of the system reduced flow to the region (Bernhardt and Willard 2006). Prior to the modifications, plant communities at the sites analyzed by Bernhardt and Willard (2006) in western SRS consisted of sawgrass marshes. Based on their analysis of pollen records, the authors concluded that “the current spatial distribution and community composition of marl prairies are a response to water management and land cover changes of the twentieth century; and further sampling of modern marl prairie communities and adjacent communities is necessary to document the pre- and post-drainage distribution of marl prairie” (Bernhardt and Willard 2006).

C.1.1.1.4.4 Tree Islands

Tree islands occur within the freshwater marshes in areas of slightly higher elevation relative to the surrounding marsh. The lower portions of tree islands are dominated by hydrophytic, evergreen, broad-leaved hardwoods such as red bay (*Persea palustris*), sweetbay, dahoon holly (*Ilex cassine*), and pond apple (*Annona glabra*). Tree islands typically have a dense shrub layer that is dominated by coco-plum (*Chrysobalanus icaco*). Additional constituents of the shrub layer commonly include buttonbush and large leather fern (*Acrostichum danaeifolium*). Elevated areas on the upstream side of some tree islands may contain an upland tropical hardwood hammock community dominated by species of West Indian origin (Gunderson et al. 1997), with species composition shifting toward the north toward more temperate hardwood hammock species. Extended periods of flooding may result in tree mortality and conversion to a non-forested community. In the over-drained areas of WCA 3A, historic wildfires have consumed tree island vegetation and soils. Overall, the spatial extent of tree islands in WCA 3 declined by 61% between 1940 and 1995 (Patterson and Finck 1999). Portions of the WCAs have been flooded to the extent that many forested islands have lost all tropical hardwood hammock trees. Tree islands are considered an extremely important contributor to habitat heterogeneity and overall species diversity within the Everglades ecosystem because they provide nesting habitat and refugia for birds and upland species and serve as hotspots of plant species diversity within the Greater Everglades (Sklar and van der Valk 2002, USFWS 1999). Tree islands also contain extraordinarily high levels of total phosphorpus (TP) in their soil suggesting that they may play a major role in the biogeochemical cycles of nutrients in the Everglades (Trexler and Childers 2010, Wetzel et al. 2009, 2011). Wetzel et al. (2011) found that soil TP levels within WCA 3A and WCA 3B tree islands were approximately 4 times higher than the surrounding marsh TP levels. Tree islands within WCA 3B may help to capture and focus nutrients, assisting to minimize potential effects on sawgrass and wet prairie communities within this region (Wetzel et al. 2011).

C.1.1.1.4.5 Mangroves

Mangrove communities are forested wetlands occurring in intertidal, low-wave-energy, estuarine and marine environments. Extensive mangrove communities occur in the intertidal zone of Florida Bay. Mangrove forests have a dense canopy dominated by four species: red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and buttonwood (*Conocarpus erectus*). Mangrove communities occur within a range of salinities from 0 to 40 psu. Florida Bay experiences salinities in excess of 40 psu on a seasonal basis. Declines in freshwater flow through the Everglades have altered the salinity balance and species composition of mangrove communities within Florida Bay, favoring more salt tolerant species. Changes in freshwater flow can lead to an invasion by exotic species such as Australian pine (*Casuarina equisetifoli*a) and Brazilian pepper (*Schinus terebinthifolius*).

C.1.1.1.4.6 Seagrass Beds

Seagrasses are submerged vascular plants that form dense rooted beds in shallow estuarine and marine environments. This community occurs in sub tidal areas that experience moderate wave energy. Within the action area, extensive seagrass beds occur in Florida Bay. The most abundant seagrasses in south Florida are turtle grass, manatee grass, and shoal grass. Additional species include star grass, paddle grass, and Johnson's seagrass. Widgeon grass may also occur in seagrass beds in areas of low salinity. Seagrasses have an optimum salinity range of 24 to 35 psu, but can tolerate considerable short-term salinity fluctuations. Large-scale seagrass die-off has occurred in Florida Bay since 1987, with over 18 percent of the total bay area affected. Suspected causes of seagrass mortality include high salinities and temperatures during the 1980s and long-term reductions of freshwater inflow to Florida Bay (RECOVER 2009).

C.1.1.1.4.7 Rockland Pine Forest

Pine rocklands within the action area occur on the Miami Rock Ridge and extend into the Everglades as Long Pine Key. Pine rocklands occur on relatively flat terrain with moderate to well-drained soils. Most sites are wet for only short periods following heavy rains (Florida Natural Areas Inventory 1990). Limestone bedrock is close to the surface and the soils are typically shallow accumulations of sand, marl, and organic material. Pine rockland is an open, savannah-like community with a canopy of scattered south Florida slash pine and an open, low-stature understory. This is a fire-maintained community that requires regular burns to maintain the open shrub/herbaceous stratum and to control hardwood encroachment (Gunderson et al. 1997). The overstory is comprised of scattered south Florida slash pines. The shrub layer is comprised of a diverse assemblage of tropical and temperate species. Common shrubs include cabbage palm, coco-plum (*Chrysobalanus icaco*), myrsine (*Rapanea punctata*), saw palmetto, southern sumac (*Rhus copallinum*), strangler fig (*Ficus aurea*), swamp bay (*Persea palustris*), wax myrtle (*Myrica cerifera*), white indigo berry (*Randia aculeata*), and willow-bustic (*Sideroxylon salicifolium*). The herbaceous stratum is comprised of a very diverse assemblage of grasses, sedges, and forbs. Common herbaceous species include crimson bluestem (*Schizachyrium sanguineum*), wire bluestem (*S. gracile*), hairy bluestem (*Andropogon longiberbis*), bushy bluestem (*A. glomeratus* var. *pumilis*), candyweed (*Polygala grandiflora*), creeping morning-glory (*Evolvulus sericeus*), pineland heliotrope (*Heliotropium polyphyllum*), rabbit bells (*Crotolaria rotundifolia*), and thistle (*Cirsium horridulum*) (USFWS 1999b). This community occurs on areas of relatively high elevation and consequently, has been subject to intense development pressure. In addition, fragmentation, fire suppression, invasion by exotic species, and a lowered water table have negatively affected the remaining tracts of pine rockland (USFWS 1999b).

C.1.1.1.4.8 Tropical Hardwood Hammock

Tropical hardwood hammocks occur on upland sites where limestone is near the surface. Tropical hardwood hammocks within the action area occur on the Miami Rock Ridge, along the northern shores of Florida Bay, and on elevated outcrops on the upstream side of tree islands. This community consists of a closed canopy forest dominated by a diverse assemblage of hardwood tree species, a relatively open shrub layer, and a sparse herbaceous stratum. This community is dominated by native south Florida species that represent the northern extension of the ranges of species that occur throughout the West Indies, but nowhere else in the continental United States. Common canopy species include gumbo limbo (*Bursera simaruba*), paradise tree (*Simarouba glauca*), pigeon-plum (*Coccoloba diversifolia*), strangler fig, wild mastic (*Sideroxylon foetidissimum*), willow-bustic, live oak (*Quercus virginiana*), short-leaf fig (*Ficus citrifolia*), and wild tamarind (*Lysiloma bahamense*). Common understory species include black ironwood (*Krugiodendron ferreum*), inkwood (*Exothea paniculata*), lancewood (*Ocotea coriacea*), marlberry (*Ardisia escallonoides*), poisonwood (*Metopium toxiferum*), satinleaf (*Chrysophyllum oliviforme*), and white stopper (*Eugenia axillaris*). Common species of the sparse shrub/herbaceous layer include shiny-leaf wild-coffee (*Psychotria nervosa*), rouge plant (*Rivinal humilis*), false mint (*Dicliptera sexangularis*), bamboo grass (*Lasciacis divaricata*), and woods grass (*Oplismenus hirtellus*). This community occurs on areas of relatively high elevation and consequently, has been subject to intense development pressure. Fragmentation of remaining tracts, invasion by exotic species, and alterations of water table elevations have also had negative impacts on this community. Tropical hardwood hammocks on the Miami Rock Ridge have been affected by a lowered water table associated with the reduction of freshwater flow through the Everglades. In contrast, tree islands in the WCAs have been flooded to the extent that many have lost all tropical hardwood hammock trees.

C.1.1.2 Fish and Wildlife Resources

Aquatic macroinvertebrates form a vital link between the algal and detrital food web base of freshwater wetlands and the fishes, amphibians, reptiles, and wading birds that feed upon them. Important macroinvertebrates of the freshwater aquatic community include crayfish (*Procambarus alleni*), riverine grass shrimp (*Palaemonetes paludosus*), amphipods (*Hyallela aztecus*), Florida apple snail (*Pomacea paludosa*), Seminole ramshorn (*Planorbella duryi*), and numerous species of aquatic insects (USACE 1999).

Small freshwater marsh fishes are also important processors of algae, plankton, macrophytes, and macroinvertebrates. Marsh fishes provide an important food source for wading birds, amphibians, and reptiles. Common small freshwater marsh species include the native and introduced golden topminnow (*Fundulus chrysotus*), least killifish (*Heterandria formosa*), Florida flagfish (*Jordenella floridae*), golden shiner (*Notemigonus crysoleucas*), sailfin molly (*Poecilia latipinna*), bluefin killifish (*Lucania goodei*), oscar (*Astronotus ocellatus*), eastern mosquitofish (*Gambusia holbrookii*), and small sunfishes (*Lepomis* spp.) (USACE 1999). The density and distribution of marsh fish populations fluctuate with seasonal changes in water levels. Populations of marsh fishes increase during extended periods of continuous flooding during the wet season. As marsh surface waters recede during the dry season, marsh fishes become concentrated in areas that hold water through the dry season. Concentrated dry season assemblages of marsh fishes are more susceptible to predation and provide an important food source for wading birds (USACE 1999).

Within the Greater Everglades, numerous sport and larger predatory fishes occur in deeper canals and sloughs. Common species include largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), redear sunfish (*Lepomis microlophus*), black crappie (*Pomoxis nigromaculatus*), Florida gar (*Lepisosteus platyrhincus*), threadfin shad (*Dorosoma petenense*), gizzard shad (*Dorosoma cepedianum*), yellow bullhead (*Ameiurus natilis*), white catfish (*Ameiurus catus*), bowfin (*Amia calva*), and tilapia (*Tilapia* spp.) (USACE 1999). Larger fishes are an important food source for wading birds, alligators, otters, raccoons, and mink.

The freshwater wetland complex supports a diverse assemblage of reptiles and amphibians. Common amphibians include the greater siren (*Siren lacertina*), Everglades dwarf siren (*Pseudobranchus striatus*), two-toed amphiuma (*Amphiuma means*), pig frog (*Rana grylio*), southern leopard frog (*Rana sphenocephala*), Florida cricket frog (*Acris gryllus*), southern chorus frog (*Pseudacris nigrita*), squirrel tree frog (*Hyla squirela*), and green tree frog (*Hyla cinerea*) (USACE 1999). Amphibians represent an important forage base for wading birds, alligators, and larger predatory fishes (USACE 1999).

Common reptiles of freshwater wetlands include the American alligator (*Alligator mississippiensis*), snapping turtle (*Chelydra serpentina*), striped mud turtle (*Kinosternon bauri*), mud turtle (*Kinosternon subrubrum*), cooter (*Chrysemys floridana*), Florida chicken turtle (*Deirochelys reticularia*), Florida softshell turtle (*Trionys ferox*), water snake (*Natrix sipidon*), green water snake (*Natrix cyclopion*), mud snake (*Francia abacura*), and Florida cottonmouth (*Agkistrodon piscivorus*) (USACE 1999).

The alligator was historically most abundant in the peripheral Everglades marshes and freshwater mangrove habitats, but is now most abundant in canals and the deeper slough habitats of the central Everglades. Drainage of peripheral wetlands and increasing salinity in mangrove wetlands as

a result of decreased freshwater flows has limited the occurrence of alligators in these habitats (Mazzotti and Brandt 1994).

The freshwater wetlands of the Everglades are noted for their abundance and diversity of colonial wading birds. Common wading birds include the white ibis (*Eudocimus albus*), glossy ibis (*Plegadus falcenellus*), great egret (*Casmerodius albus*), great blue heron (*Ardea herodius*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), snowy egret (*Egretta thula*), green-backed heron (*Butorides striatus*), cattle egret (*Bubulcus ibis*), black-crowned night heron (*Nycticorax nycticorax*), yellow-crowned night heron (*Nycticorax violacea*), roseate spoonbill (*Ajaia ajaja*), and wood stork (*Mycteria americana*) (USACE 1999). The number of wading birds nesting in the Everglades has decreased by approximately 90 percent, and the distribution of breeding birds has shifted away from ENP into the WCAs (Bancroft et al. 1994). The WCAs support fewer numbers of breeding pairs with relatively lower reproductive success (USACE 1999). Water management practices and wetland losses are believed to be the primary cause of the declines (Bancroft et al. 1994).

Mammals that are well-adapted to the aquatic and wetland conditions of the freshwater marsh complex include the rice rat (*Oryzomys palustris natator*), round-tailed muskrat (*Neofiber alleni*), and river otter (*Lutra canadensis*). Additional mammals that may utilize freshwater wetlands on a temporary basis include the white-tailed deer (*Odocoileus virginianus*), Florida panther (*Puma concolor coryi*), bobcat (*Lynx rufus*), and raccoon (*Procyon lotor*).

Many of the fish and wildlife resources that inhabit the freshwater aquatic community of the Everglades are also common to Lake Okeechobee, the Northern Estuaries, and the EAA. Native habitat for fish and wildlife does not comprise a significant amount of the EAA as the alteration of the landscape for agricultural uses has resulted in the removal of nearly all historically occurring native vegetation. Although abundant wetland habitat has been replaced by agriculture, the creation of ditches, canals, and the flooding of fallow agricultural fields provides some habitat for fish and wildlife, particularly during the rainy season.

The Northern Estuaries are also home to fish and wildlife species found in estuarine and marine habitats. Sea grasses and other submerged aquatic vegetation within the Northern Estuaries provide important habitat and nursery grounds for several fish species. Many fish species spend part or all of their life in the estuary. Common recreational and commercial fish species include mutton snapper (*Lutjanus analis*), yellowtail snapper (*Ocyurus chrysurus*), lane snapper (*Lutjanus synagris*), yellowtail parrot fish (*Sparisoma rubripinne*), gag grouper (*Mycteroperca microlepis*), pinfish (*Lagodon rhomboids*), tarpon (*Megalops atlanticus*), common snook (*Centropomus undecimalus*), crevalle jack (*Cranx hippos*), spotted sea trout (*Cynoscion nebulosus*), redfish (*Sciaenops ocellatus*), mullet (*Mugil spp*.), and sheepshead (*Archosargus probatocephalus*). In addition to finfish, the estuaries support a variety of shellfish. Blue crabs (*Callinectes sapidus*), stone crabs (*Menippe mercenaria*), hard clams (*Mercenaria mercenaria*), and oysters (*Crassostrea virginica*) are important estuarine commercial species. Submerged aquatic vegetation and algal communities are also common foraging areas for the green sea turtle (*Chelonia mydas*). The Northern Estuaries provides forage for sea birds (gulls, terns, pelicans, and others), in addition to a large number of wading birds. The Northern Estuaries are also home to marine mammals such as the Atlantic bottlenose dolphin (*Tursiops truncatus*).

C.1.1.3 Invasive and Exotic Species

Executive Order (E.O.) 13112, entitled *Invasive Species*, states an "invasive species means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health." Alien species (exotic) means, with respect to a particular ecosystem, any species, including its seeds, eggs, spores or other biological material capable of propagating that species and is not native to that ecosystem. Invasive species are broadly defined and can be a plant, animal, fungus, plant disease, livestock disease or other organism. A native species is defined as a species that historically occurred or currently occurs in a particular ecosystem and is not the result of an introduction.

Significant scientific evidence and research document that invasive non-native plants are degrading and damaging south Florida natural ecosystems (Doren and Ferriter 2001). Many species are causing significant ecological impacts by crowding out and displacing native plants, altering soil types and soil/water chemistry, altering ecosystem functions such as carbon sequestration, nutrient cycling and fire regimes, and reducing gene pools and genetic diversity. Non-native invasive animal distribution, extent and impacts are not well understood, however implications of invasive animals are apparent in south Florida. In addition to environmental impacts, invasive species impact human health, reduce agricultural production and property values, degrade aesthetic quality, decrease recreational opportunities and threaten the integrity of human infrastructure such as waterways/navigation channels, locks, levees, dams and water control structures.

Florida is particularly vulnerable to the introduction, invasion and naturalization of non-native species. This is due to several factors including a subtropical climate, dense human population centers, major ports of entry and the pet, aquarium and ornamental plant industries. Major disturbance to the landscape has also increased Florida's vulnerability to invasive species. Alteration of the landscape for urban development, flood control and agricultural uses has exacerbated non-native plant and animal invasions. On average, 10 new organisms per year are introduced into Florida that are capable of establishing and becoming invasive and causing environmental harm. Approximately 90% of the plants and animals that enter the continental United States enter through the port of Miami (Cuda 2009). Stein, Kutner & Adams (2000) estimated that over 32,000 exotic species (25,000 plants and 7,000 animals) have been introduced into Florida. There are approximately 4,000-5000 native species of plants and animals in Florida. The number of non-native species that have been introduced is eight times the total number of native species in the entire state. The Atlas of Florida Vascular Plants (Wunderlin and Hansen 2008) documented 4,289 plant species in Florida. Of the 4,289 plant species, 1,419 were considered non-native and were naturalized (freely reproducing) populations. The Florida Exotic Pest Plant Council (FLEPPC) identifies 76 of the 1,419 species of non-native plants as Category I species in the 2011 Invasive Plant List. Searches through existing data and resources indicate 156 non-native plant species have been documented to occur within the project area. Other non-native species are probably present; however, documented citations could not be located. Of the 156 species of plants documented to occur within the project area, there are 76 FLEPPC Category I species, 38 FLEPPC Category II species, and 28 Florida Noxious Weed species.

According to the 2013 South Florida Environmental Report, there are four species of non-native invasive plants infesting more than 144,770 acres within the Everglades Protection Area (EPA). These species include Australian pine (*Casuarina equisetifolia*), Old World climbing fern (*Lygodium microphyllum*), melaleuca, and Brazilian pepper (*Schinus terebinthifolius*). The acreage of these plants was estimated by the South Florida Water Management District (SFWMD) and the National

Park Service (NPS) through regional invasive plant surveys utilizing digital aerial sketch mapping (DASM). There were 224 surveys completed within the EPA, which is approximately 2.8 million acres in size, between March 2010 and February 2012. Management areas surveyed included Holeyland, Rotenberger and Southern Glades. Other areas surveyed included Seminole Tribe of Florida's Big Cypress Reservation, Loxahatchee National Wildlife Refuge (LNWR), Everglades Wildlife Management Area (WCAs 2 and 3), the Miccosukee Tribe of Indian's Alligator Alley Reservation, Big Cypress National Preserve (BCNP), ENP, East Coast Buffer Lands, South Dade Wetlands and several other areas (SFER 2013). Other non-native plant species of concern within the project area include torpedo grass, tropical American water grass (*Luziola subintegra*), roundleaf toothcup (*Rotala rotundifolia*), and cogon grass (*Imperata cylindrical*).

A primary native nuisance species within the project area is cattail. Many areas within the project area have been invaded by cattails. This is attributed to water with increased phosphorus being delivered to these areas beginning in the late 1950s. Areas where water control structures, conveyance features, and levees exist provide a suitable habitat for invasion and expansion of cattail. Examples of areas that have been impacted include WCA 2, WCA 3A, and ENP canal and levee banks.

Searches through existing data and resources indicate 89 non-native animal species have been documented to occur within the project area. Other non-native animal species are probably present however documented citations could not be located. Information regarding species presence and distribution is largely incomplete for most taxonomic groups of animals. Not all of the 89 non-native animal species identified and documented to occur in the CEPP area will have a significant impact on the ecosystem.

Key species of carnivorous reptiles, such as the Argentine black and white tegu (*Tupinambis merianae*), the Burmese python *(Python molurus bivittatus*) and Nile monitor *(Varanus niloticus*) are currently present within the project area and have potential to cause significant impacts to the ecosystem. These species are among south Florida's most threatening invasive animals and are considered top predators and increase pressures on native wildlife populations, particularly threatened and endangered species (SFER 2013). Other species of concern include the island apple snail (*Pomacea insularum*), purple swamphen (*Porphyrio porphyrio*), Asian swamp eel (*Monopterus albus*), monk parakeet (*Myiopsitta monachus*), feral pig (*Sus scrofa*), and redbay ambrosia beetle (*Xyleborus glabratus*) and associated fungus (*Raffaelea lauricola*). The redbay ambrosia beetle and fungus are of special concern since they are killing bay species on tree islands in ENP and the WCAs.

C.1.1.4 Threatened and Endangered Species

C.1.1.4.1 Federally Protected Species

USACE has coordinated the existence of federally listed species with the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), as appropriate. Federally listed threatened and endangered species are either known to exist or potentially exist within the project area and, subsequently, may be affected by the proposed project. Many of these species have been previously affected by habitat impacts resulting from wetland drainage, alteration of hydroperiods, wildfire, and water quality degradation. A number of candidate animal and plant species are also known to exist or potentially exist within the project area. For a complete list of federally threatened and endangered species, their critical habitat, and candidate species refer to

the Biological Assessment (BA) included in **Annex A**. The BA also includes descriptions for each species.

C.1.1.4.2 State Listed Species

The study area also provides habitat for several state listed species. For a complete list of state listed species and a description for each species refer to the BA (**Annex A**).

C.1.1.5 Essential Fish Habitat

Essential Fish Habitat (EFH) located within the area affected by CEPP occurs within both the Northern Estuaries (St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary) and the Southern Estuaries (Biscayne Bay and Florida Bay) (National Marine Fisheries Service [NMFS] 2000).

C.1.1.5.1 St. Lucie River and Indian River Lagoon

This portion of the study area is within the jurisdiction of the South Atlantic Fishery Management Council (SAFMC) and is located in areas designated as EFH for wormrock, live bottom habitat, for the American oyster, pink shrimp (*Penaeus duorarum*), white shrimp (*Penaeus* sp.), brown shrimp (*Penaeus aztecus*), redfish , grouper (*Epinephelus* spp.), gray snapper (*Lutjanus griseus*), white grunt (*Haemulon plumieri*), red porgy (*Pagrus pagrus*), spiny lobster (*Panulirus argus*), and the snapper-grouper complex. In addition, the nearshore hardbottom habitat outside of the St. Lucie Estuary is designated as Essential Fish Habitat-Habitat Areas of Special Concern (EFH-HAPC) for the snapper-grouper complex.

C.1.1.5.2 Caloosahatchee River and Estuary

This portion of the study area is within the jurisdiction of the Gulf of Mexico Fishery Management Council (GMFMC) and is located in areas designated as EFH for juvenile brown shrimp, juvenile gray snapper, juvenile pink shrimp, adult and juvenile redfish,, adult and juvenile Spanish mackerel (*Scomberomorus maculatus*), and juvenile stone crab. Downstream habitats include oyster reefs and seagrass.

C.1.1.5.3 Biscayne Bay and Florida Bay

This portion of the study area is within the jurisdiction of the SAFMC and is located in areas designated as EFH for corals, coral reef and live bottom habitat, red drum, penaeid shrimps, spiny lobster, and other coastal migratory pelagic species and the snapper-grouper complex. Species generally present in the southern estuaries region include brown shrimp, pink shrimp, white shrimp, spiny lobster, stone crab, gulf stone crab (*Menippe adina*), redfish, Spanish mackerel, and gray snapper. Essential fish habitat in the southern estuaries is comprised of seagrasses, estuarine mangroves, intertidal flats, the estuarine water column, live/hard bottoms, and coral reefs.

C.1.1.6 Climate

The subtropical climate of south Florida, with its distinct wet and dry seasons, high rate of evapotranspiration, and climatic extremes of floods, droughts, and hurricanes, represents a major physical driving force that sustains the Everglades while creating water supply and flood control issues in the agricultural and urban segments.

Seasonal rainfall patterns in south Florida resemble the wet and dry season patterns of the humid tropics more than the winter and summer patterns of temperate latitudes. Of the 53 inches of rain that south Florida receives on average annually, 75% falls during the wet season months of May

through October. During the wet season, thunderstorms that result from easterly tradewinds and land-sea convection patterns occur almost daily. Wet season rainfall follows a bimodal pattern with peaks during May through June and September through October. Tropical storms and hurricanes also provide major contributions to wet season rainfall with a high level of interannual variability and low level of predictability. During the dry season (November through April), rainfall is governed by large-scale winter weather fronts that pass through the region approximately weekly. However, due to the variability of climate patterns (La Niña and El Niño), dry periods may occur during the wet season and wet periods may occur during the dry season. Multi-year high and low rainfall periods often alternate on a time scale approximately on the order of decades (USACE 1999).

High evapotranspiration rates in south Florida roughly equal annual precipitation. Evapotranspiration removes between 70% and 90% of the rainfall in undisturbed south Florida wetlands (Duever et. al. 1994). Evaporation from open water surfaces peak annually in the late spring when temperatures and wind speeds are high and relative humidity is low. Evaporation is lowest during the winter when the temperatures and wind speeds are low (Duever et. al. 1994). Recorded annual rainfall averaging 53 inches in south Florida has varied from 37 to 106 inches, and interannual extremes in rainfall result in frequent years of flood and drought. Mean sea level is increasing an average of 2.2 mm/year or approximately nine inches over the last 100 years in Florida (NOAA 2001).

Mean annual temperature for the south Florida ecosystem ranges from 72 ° Fahrenheit (F) (22 ° Celsius (C)) in the northern Everglades to 76 ° F (24 °C) in the southern Everglades (Thomas 1974). Mean monthly temperatures range from a low of 63° F (17 °C) in January to a high of 85 ° F (29 ° C) in August (Thomas 1974). Infrequently, freezing temperatures and frost occur when arctic air masses follow winter cold fronts into the area.

C.1.1.7 Physical Landscape: Regional Soils and Geology

This section presents the subsurface data necessary to effect the most practicable and efficient construction of works within the area of investigation. Some geologic data has been obtained from previous core borings and probings along all levee alignments in the agricultural and conservation areas south and east of Lake Okeechobee. Specific areas of focus in this report are study areas north of the EAA, between the Red, Blue, and Yellow Line, and slightly south of the Blue Line. Levee L-28 will serve as the western boundary of the project features. Soil types and their locations within the project area were determined from laboratory tested samples. This data, along with descriptions and recommendations to the geologic feasibility of construction in these areas, are presented in this section. Geotechnical investigations in the vicinity of current features are sparse, with nothing more recent than information gained from the EAA A-1 Reservoir Area studies performed in 2006. The design values are tentative, and characterization of the subsurface materials is valid only for preliminary estimation and analysis purposes. A complete and thorough analysis of the subsurface conditions during the Pre-Construction Engineering and Design (PED) phase will be required based on the results of a new, design level, geotechnical exploration program.

C.1.1.7.1 Soil Types

The soils in the Everglades are primarily composed of peats and mucks. Deep, clean sands characterize the area east of the Everglades and to the south of Lake Okeechobee with wet, gray or grayish-brown, sandy soils underlain by sandy clay cover the area west of the Everglades. The peat and muck soils, which are dark brown to nearly black, cover approximately 90% of the area being

considered in the study area. They were formed in marshes or swamps by the partial decay of plant materials, with some mixture of mineral soil in the case of muck. Peat, by definition, consists of 65% or more organic material with relatively little mineral matter. Muck on the other hand, consists of 25 to 65% plant material mixed with sand, silt, and clay. The peat and muck soils may differ from each other in the kind of plant material that they contain, in the corresponding depths, and/or in the nature of the underlying material. The peat and muck may rest directly on limestone or on an intermediate layer of sand or marl.

The highly organic soils have been divided into four types: Okeechobee muck, Okeelanta peaty muck, Everglades peaty muck, and Everglades peat. Okeechobee muck is a nearly black mixture of organic material and fine mineral soil. The organic portion of the soil is formed from the remains of water plants, while the mineral content probably results from the deposition of fine sediment during overflows from Lake Okeechobee. Okeelanta peaty muck consists of finely fibrous, well-decomposed organic matter over a layer of black plastic muck; it usually overlies hard limestone. Everglades peaty muck contains somewhat less mineral matter than Okeelanta peaty muck. The surface layer rests on brown, fibrous peat, and it usually lacks the subsurface layer of black plastic muck. Everglades peat, the most extensive of the organic soils, is formed mostly from partially decayed sawgrass. The upper 12 inches is a nearly black, finely fibrous peat which contains approximately 10% mineral soil. The subsoil is brown, fibrous peat which rests on the underlying rock, sand, or marl. A fifth type of organic soil, which is not extensive in the area, is Loxahatchee peat. It is a brown, spongy peat, composed of the remains of water lilies, water grasses, and other aquatic plants. Ordinarily, the area occupied by Loxahatchee peat is covered by water most of the year.

Most of the characteristics, properties, and composition of the muck and peat soils depend on the fact that those types of soils are essentially mixtures of water and partly decomposed plant materials. When saturated, the soil is a little heavier than water. One of the outstanding characteristics of the peat soil is its light weight when dry. The oven-dry weight of peat is about 7 pounds per cubic foot, and the mineral content is about 10 to 15% by weight of the dry material. Another important property is the high shrinkage value. Peat soils will shrink as much as 75% of their original volume when dried, and will not expand to their original volume when water is added.

Another important property is their high propensity for water retention. Peats vary considerably in that respect, depending on their origin, degree of decomposition, and chemical composition. While a dry mineral soil will absorb and hold from one-fifth to two-fifths its weight of water, a peat soil will retain many times its dry weight of moisture, depending on conditions. On an oven-dry weight basis, some of the peats have as much as 1,200% water when saturated, with the average having about 750%.

Laboratory permeability tests and field pumping tests indicate that seepage through peat soil is much greater vertically than horizontally. That can reasonably be attributed to the fibrous nature of the soil and its characteristic vertical root channels. Peat and muck material presented in less recent geotechnical exploration reports provide a general idea of the thickness of organic surface materials in the region. However, there are selected areas where the organic soil has been reduced due to recent construction, development, fire, erosion, compression, or removal. In other areas, there may be accretion of organic materials.

Where peat is encountered in a borrow area within the project area, it would be removed and not used as construction material. The available geotechnical information indicate suitable materials for embankment construction and other fills, mainly interbedded sands and/or marls with limestone, are available throughout the project area. In some areas, in-situ materials may have to be processed to achieve feature performance requirements.

Seepage movement in the Everglades is largely through the porous rock and sands beneath the peat. The sands, in general, are fine-grained and poorly graded having intermediate coefficients of permeability. The marl soils are widely distributed under the organic soils, and in places are consolidated into a hard limestone just under the peat. Usually, however, the marl is a soft, grayish-white, calcareous silt of fresh-water origin. Other marls, with inclusions of sand, silt, clay, and shell, appear within the area. The marl is not uniformly distributed and it often pinches out into the peat and muck. Generally it is quite impermeable, acting as a seal that retards movement of water.

C.1.1.7.1.1 Field Explorations

Previous field explorations of soils in the vicinity of the study area consisted of undisturbed sample borings, drive sample borings, auger borings, disturbed sampling of blasted limestone, and general reconnaissance along levee alignments in the area of investigation. Field exploration core logs, field and laboratory test results and geotechnical information available at this time include:

1. EAA Reservoir A-1 Geotechnical Data Report of March 2006
2. C&SF Part I Agricultural and Conservation Areas
3. Supplement 1 – Geology and Soils, December, 1951
4. C&SF Part I Agricultural and Conservation Areas, Supplement 7 – Permeability Investigations by Well Pumping Tests, February, 1953
5. Report of Investigations No. 13 (RI-13), Water Resources of Palm Beach County, Florida, 1954,
6. USACE, WCA 3 DECOMP Status Report, Appendix A, February 2012
7. USACE, L-31N (L-30) Pilot Project Design Report, May 2009.
8. Wolf WPC, 2009, Draft Conceptual Geotechnical Data Report, Miami Canal Decompartmentalization, Contract W912EP-05-D-0009, Miami-Dade County, Florida.
9. Nodarse and Associates, 2000, Stormwater Treatment Area No. 3 and 4 East WCA-3A Hydropattern Restoration L-5 Canal, Boring Profiles.
10. U.S. Army Corps of Engineers, 2011b, Core Borings along L-5/L-4/L-23 Waterway
11. Water Conservation Area 3 Decompartmentalization (DECOMP) and Hydrologic Sheet Flow Enhancement Part 1Broward County, FL.

A geotechnical exploration specific to this project has not yet been initiated, but will be required and conducted during the PED phase. The data contained in previous reports, although dated, is useful for preliminary planning purposes.

C.1.1.7.1.2 Laboratory Investigations

Samples of typical materials, obtained during the field exploration program, were tested by the South Atlantic Division (SAD) laboratory, and private Architect/Engineer (A/E) laboratories for classification and determination of physical properties. Unit weight, specific gravity, ignition loss and mineral content, grain-size distribution, and maximum density and optimum moisture are available in C&SF Part I Supplement 1.

C.1.1.7.1.3 Office Analysis

Previous analyses of existing conditions are available in the C&SF Part I Agricultural and Conservation Areas, Supplement 1 – Geology and Soils, December, 1951. A seepage analysis for the Flow Easement Basin (FEB) is contained in this section.

C.1.1.7.1.3.1 Everglades Agricultural Area

The subsurface soil conditions at the FEB and nearby areas are most closely approximated by the subsurface conditions in the adjacent EAA Reservoir A-1. The EAA Reservoir A-1 Project site has been investigated in a progressive sequence of borings spaced throughout the site area. One hundred forty-five borings were completed for the SFWMD around the reservoir perimeter in 2003 and early 2004. Twenty borings to a depth from 50 to 100 ft below ground surface (bgs) were completed at the EAA Reservoir A-1 Project Test Cell site for the Test Cell Project design in December 2004, and an additional eight borings were completed during the Test Cell construction in early 2005. The borings generally penetrated through about 1/2 to 2 feet of surficial peat/muck and marl, then through 22 to 26 feet of primarily carbonate sand and limestone, and then into primarily shelly quartz sand with sparse limestone to their completed depths. The upper carbonate sand and limestone constitutes the Fort Thompson Formation at the site. Below this, the shelly sand and sparse limestone constitutes the Caloosahatchee Formation and possibly part of the Tamiami formation. The top of the Fort Thompson Formation consists of a limestone layer about 4.5 to 5 ft thick, which is locally called caprock. The caprock is generally white, light gray, tan or yellowish brown with variable amounts of weathering; it is occasionally fractured and contains voids and inconsistencies. The caprock is underlain by a silty carbonate sand extending to about 23.5 to 24.5 ft deep, where another hard limestone layer 1.5 to 3 ft thick is encountered. A thinner, hard limestone layer about 1/2 to 1 foot thick is often encountered at around 16 to 17 feet deep. The sand and lower limestone layers are generally white to very pale brown. Laboratory testing of the sand sampled in the borings averaged 84.2% calcium carbonate content with an average of 22% passing the #200 sieve in gradation tests. Visual inspection of the sand samples from the borings reveals that they include shell fragments, and tend to be angular and platy. The sands of the Fort Thompson Formation exposed in the seepage collection canals and dewatering sumps is abundantly fossiliferous with gastropods, pelecypods, corals, and echinoderms.

The top of the Caloosahatchee Formation is composed of fine grained, subrounded, shelly quartz sand that is mixed with shelly carbonate sand similar to that in the Fort Thompson Formation. The Caloosahatchee Formation at the site is 30 to 60 ft thick; however, the interface between this formation and the underlying Tamiami Formation is difficult to define. The proportions of carbonate to quartz sand vary. Laboratory testing on the sampled sand indicated an average calcium carbonate content of 30.1%, and an average 12.1% of material passing the #200 sieve. The primary color of the geologic material in the Caloosahatchee Formation is light greenish gray.

Preliminary estimates of soils engineering properties of materials in the EAA/FEB area and features north of the red line are derived from previously referenced documents and are summarized in **Table C.1-1**.

Table C.1-1. Preliminary Soil Properties for the CEPP

Region: EAA, FEB Areas – North of Red Line									
Location	Organic Materials					Sands**			
	Specific Gravity	Unit Weight (lb/ft^3)	Natural Moisture (%)	Organic Matter (%)	Mineral Content (%)	Moist Weight (lb/ft^3)	Buoyant Weight (lb/ft^3)	Effective Friction Angle (degrees)	Cohesion (lb/ft^2)
Levees L-4 and L-5	1.54	58	779	89	11	109.5	62.9	35	0
Levees Southeast of Lake Okeechobee (near Levee L-8)	1.46	60	436	91	9	-	-	-	-
Levees L-6 and L-7	1.5	61	920	93	7	-	-	-	-
Region: DECOMP – L-67A/C, L-5 Areas - Areas South of the Red Line and North of the Blue Line.									
Areas Below the Red Line to the Blue Line-Levees L-28 and L-29	1.94	62	479	52	48	109.5	62.9	35	0
Area of Levee L-30- Along the Yellow Line	1.5	60	686	75	25	110	62.8	38	-
Areas Near Levees L-33 and L-37	1.58	62	430	85	15	110	62.8	38	-
Limestone tested in the vicinity of L-30 and L-37**	-	-	-	-	-	122.3	-	38	980

*Values are averages from results of Laboratory Tests from the 1951 Supplement 1 Report

**All material properties are for sands except for limestone as noted

C.1.1.7.1.3.2 L-67A/C, L-5 Areas

All of the recent and previous geotechnical investigations concentrated on the levee areas of WCA 3 which includes WCA 3A and WCA 3B, and not in the undisturbed areas of WCA 3 where the soils are situated. Within WCA 3, the majority of the soils are histosols which includes Everglades peats and Loxahatchee peats. Everglades peats are typically brown to black with minimal mineral content. Loxahatchee peats are found in topographic low areas and are composed of the remains of the roots and rhizomes of Nymphea, a white water lily. The western margin of WCA 3A is mixed marl peats that are derived from the underlying limestone Based on the information provided by standard penetration test borings, continuous core boring, and test pit excavations, the subsurface stratigraphy at WCA 3A is summarized below based on the 2000 geotechnical investigation by Nodarse (Nodarse, 2000) the March 2011 geotechnical investigation conducted by USACE personnel (USACE, 2011b), and Wolf personnel (Wolf WPC, 2009):

1. Layer 1 - Fill: This layer consists of localized areas of fill adjacent to existing canals at the time of the construction of these canals. The material is predominately sandy fill with some gravel, trace clay, some gravel and some shell in the northern hydropattern restoration area (L-4 and L-5). By the Miami Canal (L-23) in Broward County the fill is predominately limestone (crushed rock) fill. Both materials vary in thickness from 0.5 ft to 6 ft. The fill has standard penetration N-values between 8 and 84 blows per foot in the hydropattern restoration area, depending upon the degree of material compaction. If groundwater is present in the fill, it normally occurs between 2 and 4.5 ft below grade.
2. Layer 2 - Interbeds of Organic Sand and Clay Including "Peaty" Clay: This layer consists of alternating beds of organic sand and clay. The sand unit is predominately well-graded (poorly sorted) with some shell fragments and trace clay. Thickness ranges from 0.1 to 9 ft. In the northern hydropattern restoration area, standard penetration test N-values vary between 2 and 68 blows per foot. The clay unit has trace gravel, sand and some shell fragments. In some places, the clay unit is carbonaceous or "peaty" (fibrous) and in some places, "fat" clay is present. Thickness ranges from 0.2 to 4.5 ft for the clay unit. Standard

penetration N-values range from 0 to 11 blows per foot in the northern hydropattern restoration area. In Broward County this clay unit appears to be laterally continuous. If groundwater is present, it occurs between 6.6 and 8.5 ft below grade within these units.

3. Layer 3 - Limestone: Underlying the unconsolidated material of fill/organic sand and clay is limestone that is fossiliferous, vuggy, and moderately to intensely weathered that is also slightly to highly fractured. Clay infilling of the voids is apparent in some areas. No unconfined compressive strength tests were conducted. Rock quality designations ranged from 0 to 77% with an average value of 25 percent. In some places, the limestone is interbedded between the organic sand/clay units.

Previous geotechnical data compiled by Nodarse and Associates in 2000 are summarized below for the L-5 area for comparison with the WCA 3 data above:

1. Layer 1 fill parameters: Standard penetration test N-value – 18 to 67 blows per foot.
2. Layer 2 Sand/Clay/Peat parameters: Peat-N values ranged from 1 to 10 blows per foot, clay N values ranged from 1 to 6 blows per foot, and sand N values ranged from 10 to 40 blows per foot.
3. Layer 3 Limestone Parameters: Standard penetration test N –values of 50 blows per 0" to 50 blows per 8"and rock quality designations (RQD): 0 to 17 percent.

Preliminary estimates of soils engineering properties of materials in the DECOMP WCA 3 and L-5 Areas, as well as features south of the EAA and north of Tamiami Trail, are derived from previously referenced documents and summarized in **Table C.1-1**.

C.1.1.7.1.3.3 L-31N Area

The high transmissivity of the Biscayne Aquifer allows for rapid recharge of the Lower East Coast (LEC) well fields, while promoting significant hydro-geologic interaction between the Everglades and Biscayne Bay. The LEC area is located to the east of the L-31N, L-31W, and C-111 canals. The end result is the need for seepage management. The LEC on the Atlantic Coastal Ridge is mostly underlain by thin sand and Miami Limestone that are highly permeable and are moderately to well drained. To the west of the coastal ridge, soils of the LEC contain fine and loamy material, and have poor natural drainage. Rockland areas on the coastal ridge in Miami-Dade County are characterized by weathered limestone surfaces and karst features such as solution holes and sinkholes. Higher elevation marshes of the southern Everglades, on either side of Shark River Slough, are characterized by calcitic marl soils deposited by calcareous algal mats and exposed limerock surfaces with karst features, such as solution pits and sinkholes. In agricultural areas of Miami-Dade County, it is common to encounter mixed soils called "rock plowed" soil, such as Chekika and Krome. This soil is a manmade material created by farmers excavating and crushing the soft underlying Miami Limestone, and mixing/tilling it along with the natural overburden soils.

Consequently, the overburden thickness is somewhat higher in these areas. In most cases, the underlying Miami Limestone controls the infiltration of rain or introduced stormwater due to the high permeability of the rock-plowed soils. These rock-plowed soils have very gravelly textures (34-76% limestone fragments, 2 mm or larger in diameter), and their organic content is usually less than 2%. West of L-31N, muck and marl predominate. The muck and marl soils have been classified as hydric soils. A hydric soil refers to "a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile that favor the growth and regeneration of hydrophytic vegetation." In addition, there are areas where rock outcrops or weathered rock surfaces occur. Rock outcrops are characterized by karst features such

as solution pits, caves, and sinkholes, leaving a rock surface that is extremely rugged and pitted. Pits in the rock surface range from several inches to several ft in diameter and depth. Where soil development has occurred on these surfaces, soils are primarily entisols, but may also include alfisols and histosols. The Miami Limestone is a thin, wedge-shaped limestone layer 20 ft in thickness near the Florida Turnpike, and 12 ft thick along the L-31N Levee This very porous limestone is marked by numerous vugs that is soft to moderately hard, moderately to highly weathered, thick bedded with occasional cross bedding, white to yellow, and riddled with solution cavities. The solution cavities are typically filled with loose sands and peat. Below the Miami Limestone and the Fort Thompson Formation consist of alternating layers of shallow marine, brackish, and fresh water limestones comprised of thick units of soft to hard, moderately weathered, light gray, sandy, clayey limestone, and calcareous sandstone with a few thin beds of fresh water limestone. Underlying the Fort Thompson Formation is the Tamiami Formation, which is composed of two members in the area: (1) the Pinecrest Sands, and (2) the Ochopee Limestone. The Pinecrest Member lies below the Fort Thompson Formation and is comprised of quartz sand, reefal fragments, and sandstone that is moderately hard and creamy white to greenish gray with occasional soft layers of silty, clayey, shelly sands. The Ochopee Limestone is moderately to well-indurated, slightly phosphatic, occasionally sandy and fossiliferous (Scott, 1997).

Preliminary estimates of soils engineering properties of materials in the L-31N Area, and features south of Tamiami Trail and along the East Coast Protection Levee, are derived from previously referenced documents and summarized in **Table C.1-1**.

C.1.1.7.2 Geology

Surficial geology of the CEPP area of investigation consists of fossiliferous limestones interlayered with siliciclastic sediments that were deposited and reworked during Quaternary sea level fluctuations. Rocks formed in a shallow marine depositional environment under tropical and subtropical environmental conditions. Three geological formations comprise this sedimentary package: (1) the Pamlico Sand, (2) the Miami (Oolite) Limestone, (3) the Fort Thompson Formation, and (4) the Caloosahatchee Marl. This sedimentary package rests unconformably on quartz sands of the Pliocene Tamiami Formation, which serves as basement for this study. The areal distribution of geological formations that comprise this sediment package is shown in **Figure C.1-1**. The thickness of the sediment package increases north to south from approximately 40 ft at the boundary between the EAA and WCA 3A to approximately 100 ft at Tamiami Trail. This unit also forms an eastward thickening wedge toward the Atlantic Coast (Reese and Cunningham, 2000; Reese and Wacker, 2009). The Pamlico Sand forms a linear geomorphic feature called the Atlantic Coastal Ridge that extends from Palm Beach County to southern Miami-Dade County. However, the western margin of this feature generally follows the Florida Turnpike, and is not within the CEPP area of investigation.

The character of the marginal marine sediments changes from north to south. Near the boundary between the EAA and WCA 3A, the sediment thickness consists of poorly consolidated marine limestone, quartz sandstone, and sandy limestone with abundant mollusk fossils (Reese and Wacker, 2009), and is known as the Fort Thompson Formation. South of central Broward County to Tamiami Trail, the composition of the Fort Thompson Formation changes to predominantly marine limestones that were deposited in marine platform margin and open marine tropical conditions similar to those observed in the present-day southern Florida Keys. The oolitic Miami Limestone often outcrops at the surface near Tamiami Trail and forms approximately 10 to 15 ft of caprock overlying the Fort Thompson Formation. The Fort Thompson Formation is a karstic limestone in

southern Broward and Miami-Dade Counties, and has been characterized by Cunningham et al. (2006) into 16 distinct lithofacies representing freshwater, platform margin, ramp, and open marine carbonate depositional environments. Subsequent dissolution of these limestones during low sea levels resulted in the development of karst, with extensive vugs and conduits throughout the vertical sequence of rock. The gradation of lithologies, from mixed clastic-carbonate near the boundary between the EAA and WCA 3A to karstic marine carbonates at Tamiami Trail, affects the porosity and permeability of the sedimentary package.

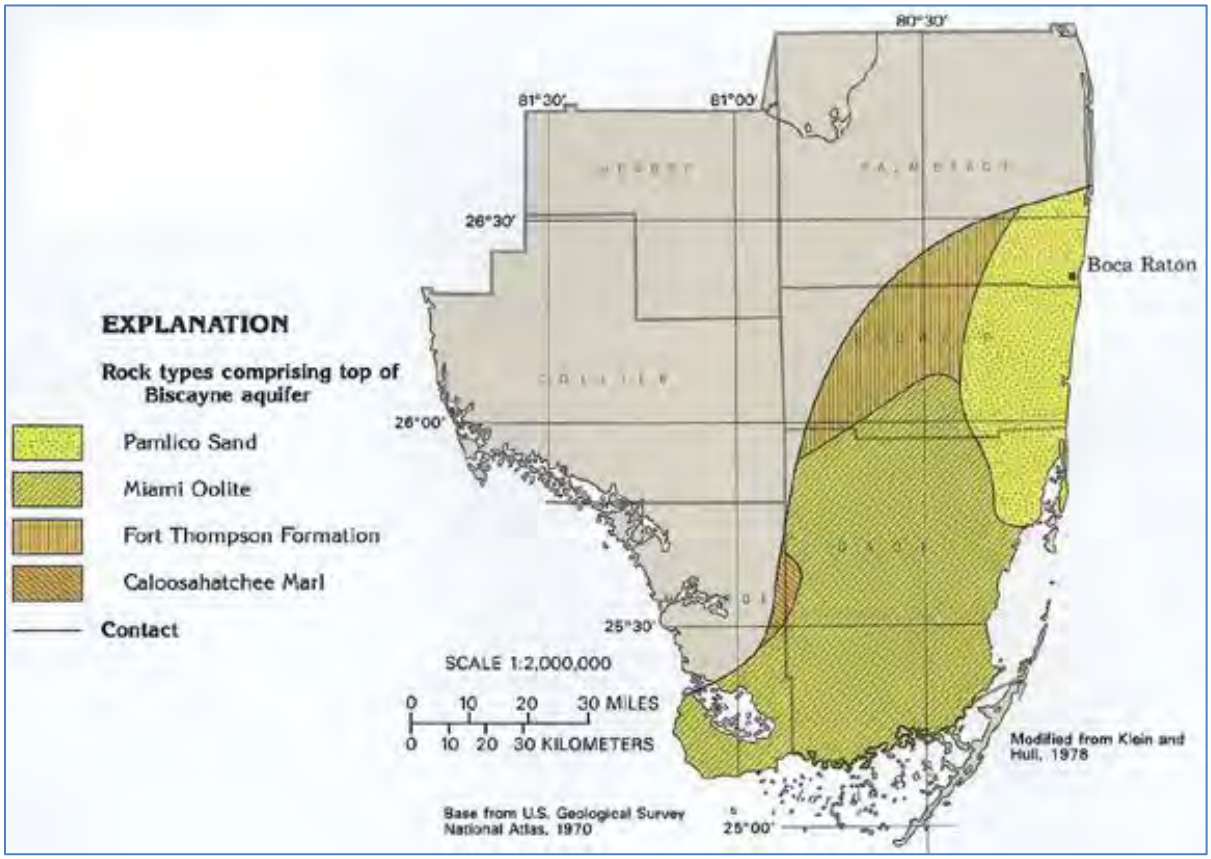


Figure C.1-1. Map Showing Surficial Geology of Project Area (Source Miller 1990)

C.1.1.7.3 Hydrogeologic Setting

The Fort Thompson Formation changes in texture and composition from north to south, with quartz sand and sandy carbonate more abundant in the area of the boundary between the EAA and WCA 3A, and marine carbonates dominating toward Tamiami Trail. The transition from sands to carbonate affects the permeability characteristics of the surficial aquifer system that is included within these sediments.

Near the boundary between the EAA and WCA 3A, Reese and Wacker (2009) recognize a major permeable zone within the Fort Thompson Formation (permeable zone 2), at depths less than 80 ft below land surface. This permeable zone is the upper portion of the surficial aquifer system of south Florida. Very large pore spaces are common, characterized by interconnected vugs or cavities. Estimated transmissivity from aquifer performance tests conducted in southwest Palm Beach County varies widely, between 30,000 and 60,000 ft^2/day (Reese and Wacker, 2009). Hydrologic data (estimates of transmissivity, storage coefficient and leakance) are sparse near the boundary

between the EAA and WCA 3A. Permeable zones in this area are not typically defined as the Biscayne Aquifer.

The Biscayne Aquifer is recognized as "the contiguous, highly permeable section of the Pliocene (Tamiami Formation) and Pleistocene age from land surface downward, where at least 10 ft of the section has a hydraulic conductivity of 1,000 ft/day or more" (Fish and Stewart, 1991). This aquifer underlies most of the CEPP area of investigation south of northern Broward County (**Figure C.1-1**). The Biscayne Aquifer is interpreted as a dual-porosity pore system, with matrix porosity providing water storage, and "touching vug" porosity forming preferential flow zones (**Figure C.1-2**; Cunningham et al., 2006; Renken et al., 2008). Measured permeability values from rock samples vary over 13 orders of magnitude (Sukop and Cunningham, 2011). The heterogeneous nature of permeability in the Biscayne Aquifer makes characterization of aquifer parameters difficult. Site-specific test borings and aquifer characterization are required to evaluate hydrologic characteristics.

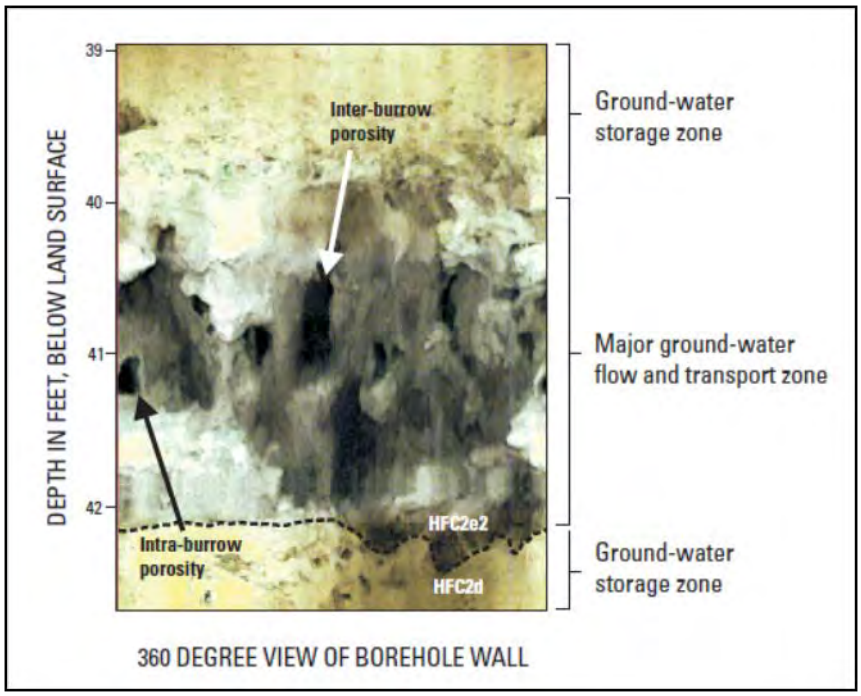


Figure C.1-2. Direct Image of Borehole in the Fort Thompson showing Dual Porosity of Biscayne Bay Aquifer (Well G-1386) (Source Cunningham et.al. 2006)

C.1.1.8 Hydrology

The major characteristics of south Florida's hydrology are: (1) local rainfall, (2) evapotranspiration, (3) canals and water control structures, (4) flat topography, and (5) the highly permeable surficial aquifer along a thirty to forty mile-wide coastal strip. Local rainfall is the source of all of south Florida's fresh water. The surface water that is not removed from the land by evapotranspiration and seepage to the underlying aquifer is drained to the Atlantic Ocean, Florida Bay, or the Gulf of Mexico by very slow, shallow sheetflow through wetlands or relatively quickly through man-made canals.

Levees and canals constructed during the last 60 years under the Central and Southern Florida (C&SF) Project have divided the former Everglades into areas designated for development and areas for fish and wildlife benefits, natural system preservation, and water storage. The natural areas

consist of the three WCAs located north of Tamiami Trail ENP to the south. The WCAs provide detention storage for water from Lake Okeechobee, the EAA, and parts of the east coast region. Detention of water helps prevent floodwaters from inundating the east coast urban areas; provides water supply and detention for east coast urban and agricultural areas and ENP; improves the water supply for east coast communities by recharging underground freshwater reservoirs; reduces seepage; and provides control for saltwater intrusion in coastal aquifers. While the WCAs may reduce the severity of the drainage of the Everglades caused by the major canal systems, thus reducing impacts to fish and wildlife caused by the major drainage systems, the levees surrounding the WCAs still function to impound the Everglades, precluding the historic flow patterns. The C&SF Project infrastructure makes it difficult to provide natural timing, volume and distribution. In wet periods, water is impounded in the WCAs and then discharged to ENP or coastal canals for eventual release to tide. During dry periods, water can flow through the canals to coastal areas and bypass the ENP wetlands.

Throughout CEPP formulation, C&SF infrastructure modifications to achieve CEPP project objectives have been primarily focused within WCA 3, and the hydrology of this area is discussed in greater detail than other areas more peripheral to CEPP formulation efforts.

C.1.1.8.1 Lake Okeechobee and the Northern Estuaries

Lake Okeechobee is a subtropical lake in south central Florida with a surface area of 730 square miles and an average depth of nine feet (ft). Lake Okeechobee is a major feature of the Kissimmee-Okeechobee-Everglades system, which is a continuous hydrologic system extending from central Florida south to Florida Bay. Lake Okeechobee provides a number of values to society and nature including water supply for agriculture, urban areas and the environment, flood protection, a multi-million dollar sport fishery, and habitat for many birds and animals, including endangered and threatened species.

Lake Okeechobee is managed as part of the C&SF Project for water supply and flood protection. The Herbert Hoover Dike (HHD) and several water control structures allow management of Lake Okeechobee to meet project purposes which include flood control, water supply, navigation, recreation, and environmental enhancement. Inflows to Lake Okeechobee average 2.1 million acre-feet per year. Nearly half the inflow to Lake Okeechobee is through the Kissimmee River. The Upper and Lower Kissimmee River watersheds cover more than 2,300 square miles of central Florida. The remaining inflow to Lake Okeechobee is received from Lake Istokpoga, Fisheating Creek, the Taylor Creek-Nubbin Slough Basin, and reverse flows from the Caloosahatchee River, the St. Lucie Canal, and the EAA.

The primary outflows from Lake Okeechobee are east to the St. Lucie Canal and west to the Caloosahatchee River. The main outflows south are through the Miami Canal, North New River Canal, Hillsborough Canal, and the West Palm Beach Canal. Inflows to Lake Okeechobee frequently exceed total outflow capacity. The approximately 35-mile St. Lucie Canal, part of the Okeechobee Waterway, is the main eastern flood control outlet for Lake Okeechobee. The St. Lucie Estuary is located within portions of both Martin and St. Lucie counties on the southeast coast of Florida. The two forks of the St. Lucie Estuary, the North Fork and South Fork, flow together near the Roosevelt Bridge at the City of Stuart, and then flow eastward approximately six miles to the Indian River Lagoon and Atlantic Ocean at the St. Lucie Inlet. The Caloosahatchee River, part of the Okeechobee Waterway, is the only flood control outlet leading west from Lake Okeechobee. Combined with the St. Lucie Canal and Lake Okeechobee, the Caloosahatchee River completes the only navigable

passage between the Gulf of Mexico and the Atlantic Ocean. The river extends approximately 70 miles from Lake Okeechobee, through the Caloosahatchee Estuary, to the lower Charlotte Harbor Basin at San Carlos Bay. The Caloosahatchee River passes through parts of Glades, Hendry, and Lee counties.

Water management decisions regarding Lake Okeechobee are highly dependent upon the HHD. The HHD is an approximately 70-year-old earthen levee that was constructed around the southern portion of Lake Okeechobee for flood control purposes. Heightened concern with the structural integrity of the HHD was emphasized after several hurricanes passed through south Florida during 2004 and 2005, as well as consideration of the levee damage around New Orleans caused by Hurricane Katrina in 2005. Prior to these devastating hurricanes, the USACE conducted a lengthy study of the HHD condition which resulted in a 1999 report titled "Major Rehabilitation Evaluation Report" (MRR). This report documented the condition of the dike, and identified needed repairs. In response to the findings in the MRR and associated Reach 1 EIS (USACE 2005), a Major Rehabilitation Project was approved, and HHD rehabilitation is currently underway. In April 2008, the 2008 Lake Okeechobee Regulation Schedule (2008 LORS) was implemented in response to high lake levels that resulted in integrity issues and concerns with the HHD, high volume releases to the estuaries, and impacts to Lake Okeechobee littoral zones. The 2008 LORS attempts to manage Lake Okeechobee water levels between 12.5 and 15.5 ft National Geodetic Vertical Datum 1929 (NGVD) throughout the year in an effort to balance competing objectives including flood control, water supply, navigation, and enhancement of fish and wildlife resources. LORS 2008 was determined to represent the best operational compromise at the time to improve the environmental health of certain major ecosystems, while providing for public health and safety as it pertains to the HHD. The USACE expects to operate under the interim 2008 LORS schedule until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate the Comprehensive Everglades Restoration Plan (CERP Band 1 projects) and the State of Florida's fast track Acceler8 projects, or (2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2 and 3.

C.1.1.8.2 Everglades Agricultural Area

The EAA is located south of Lake Okeechobee primarily in western Palm Beach County, extending south to WCA 3A. It is bounded on the east by the WCA 1, WCA 2A, the Western C-51 Basin, the L-8 Basin, and on the west by the C-139 Basin. Historically, the EAA was swampland before it was drained and put into agricultural production. The former swampland produced the rich organic peat and muck soils that today make it a highly productive agricultural area, with approximately 620,000 acres of agricultural land. The agricultural area designation was formally established in the 1950s and associated water management infrastructure had been substantially completed in 1962.

Water in the EAA is managed to provide flood protection, irrigation, and fresh water for the EAA and surrounding environmentally sensitive areas through a series of canals, levees, culverts, gates, and pumps. The larger primary canals within the EAA are managed by the SFWMD and convey water from Lake Okeechobee and the EAA to the WCAs and other downstream areas/users and/or to nearby coastal waters. Primary canals in the project area include the L-1, L-2, and L-3 Canals that form the west boundary of the EAA; the Hillsboro Canal; the North New River Canal; the West Palm Beach Canal; the Miami Canal, and the L-8 Canal that forms the eastern boundary of the EAA. Smaller secondary canals are also managed by the SFWMD and connect the primary canals. The connections may be open or may have water control structures. Secondary canals in the project area include the Bolles (L-21), Cross (L-16), Ocean (L-13), and L-1 East Canals. Small, numerous

agricultural canals (usually unnamed) are the responsibility of the individual landowners and are used to provide water management of adjacent individual farming operations.

Stormwater runoff from the EAA, which contains relatively high levels of nutrients (mainly phosphorus and nitrogen from particulate matter and fertilizers), drain from the agricultural canals, to the secondary canals, into the six main primary canals, and are eventually discharged into the EPA or to tide. In addition to flood protection for and water supply to the EAA, the canals and water control structures convey regulatory releases from Lake Okeechobee to the WCAs; water supply releases to the EAA and eastern Palm Beach, Broward, and Dade Counties for municipal water supply and to prevent saltwater intrusion; and water supply releases to ENP. There are eight existing Stormwater Treatment Areas (STA 1E, STA 1W, STA 2, STA 3/4, STA 5, STA 6, Compartment B, and Compartment C) that capture the majority of water in the primary canals for biological water quality treatment prior to discharge into the WCAs. For additional information regarding the hydrology of the STAs, refer to the USACE January 2009 Final EIS to Construct Stormwater Treatment Areas on Compartments B and C of the Everglades Agricultural Area.

C.1.1.8.3 Water Conservation Area 1

WCA 1, also known as the Arthur B. Marshall Loxahatchee National Wildlife Refuge (LNWR), is approximately 21 miles long from north to south and comprises an area of approximately 221 square miles. The West Palm Beach Canal lies at the extreme northern boundary, and on the south, the Hillsboro Canal separates WCA 1 from WCA 2A. Ground elevations slope approximately five feet in ten miles, both to the north and to the south from the west center of the area, varying from over 16 feet in the northwest to less than 12 feet NGVD in the south. The area, which is enclosed by approximately 58 miles of levee, approximately 13 miles of which are common to WCA 2A, provides storage for excess rainfall runoff from areas that drain to EAA canals, the West Palm Beach Canal (230 square miles) and the Hillsboro Canal (146 square miles). In addition, WCA 1 may receive water from Lake Okeechobee under certain conditions. Discharges from WCA 1 to meet water supply demands can occur to the West Palm Beach Canal, Hillsboro Canal, and the canal infrastructure east of WCA 1, in accordance with the WCA 1 Regulation Schedule (USACE 1996). The WCA 1 Regulation Schedule also defines when excess water in WCA 1 can be discharged to WCA 2A and to tide via the Hillsboro Canal. Due to its limited discharge capacity and its relatively small size compared to the watershed from which it receives water, consecutive rainfall events have the potential to quickly utilize storage within WCA 1, resulting in discharges from WCA 1 to WCA 2A via the S-10 structures.

C.1.1.8.4 Water Conservation Areas 2A and 2B

Covering an area of 210 square miles, WCA 2 is comprised of two areas, 2A and 2B, and measures approximately 25 miles from north to south. WCA 2A is separated from the other WCAs by the Hillsboro Canal to the north and the North New River Canal to the south. Ground elevations slope southward approximately two to three feet in ten miles, ranging from over 13 feet NGVD in northwest WCA 3A to less than 7 feet NGVD in southeast WCA 3B. The area is enclosed by approximately 61 miles of levees, of which approximately 13 miles are common to WCA 1 and 15 miles to WCA 3.

The upper pool, WCA 2A, provides an area of approximately 173 square miles for storage of excess water from WCA 1 and a portion of the EAA (125 square miles) which drains to the North New River Canal. Water supply to the east coast urban areas of Broward County is provided by WCA 2A, in accordance with the WCA 2A Regulation Schedule (USACE 1996). Due to its limited discharge capacity and its relatively small size compared to the watershed from which it receives water,

consecutive rainfall events have the potential to quickly utilize storage within WCA 2, resulting in discharges from WCA 2A to WCA 3A via the S-11 structures.

Ground elevations in WCA 2B range from 9.5 feet NGVD in the northern portions to seven feet NGVD in the southern portions of the area. The area experiences a high seepage rate, which does not allow for the long-term storage of water, and as a result, water is not typically released from WCA2 B.

C.1.1.8.5 L-28 Triangle

The L-28 Triangle (Triangle) area is located entirely within the boundaries of the Miccosukee Tribe of Indians of Florida's Alligator Alley Reservation and encompasses 7,830 acres of Tribal lands and approximately 230 acres of Big Cypress National Preserve (BCNP). The L-28 Triangle area is confined on north by Interstate 75, the west by L-28 Interceptor Canal (L-28I) and the BCNP, and the east by the L-28 Canal.

The L-28 Interceptor Canal is bound by levees on both sides and maintains no direct connection to wetlands in the Triangle. Within the L-28 Triangle Area, the L-28 Canal is bound on the east side by a confining levee separating the wetlands of the L-28 Triangle from WCA 3A. Wetlands interior to the L-28 Triangle do maintain a connection to the L-28 canal along the west side of the L-28 canal. The L-28 canal terminates at the southern tip and is not connected to the L-28 canal. Historically the S-140 pump station maintained flood protection within the Triangle. A weir was installed in 2009 within the L-28 Canal and immediately south of Interstate 75 to restrict regional pumping and maintain water levels within the Triangle.

C.1.1.8.6 Big Cypress National Preserve

The BCNP spans approximately 1,205 square miles from southwest of Lake Okeechobee to the Ten Thousand Islands in the Gulf of Mexico. The 1,125 square miles of the BCNP was originally created in 1974 by Public Law (PL) 93-440 and subsequently expanded in 1988 by the Big Cypress National Preserve Addition Act. BCNP was established to protect natural and recreational values of the Big Cypress watershed to allow for continued traditional uses, such as hunting, fishing, and oil and gas production, and to provide an ecological buffer zone and protect the water supply to ENP. BCNP is a large, flat area with maximum elevations of 22 feet NGVD in the northern region which gradually slope south to sea level in the BCNP coastal region along the Gulf of Mexico.

The L-28 Levee presently separates WCA 3A and the BCNP. Surface water flows from BCNP are introduced to WCA 3A from Mullet Slough; WCA 3A is also hydrologically connected to BCNP through three degraded gaps along the northern tie-back of the L-28 Levee and seasonally through water management operations of S-343A, S-343B, and S-344 along the southern L-28 Levee. Surface water flows introduced to the L-28 Canal from these three structures and upstream inflows to BCNP from the L-28 gaps may additionally contribute to deeper water depths and prolonged hydroperiods within the western portion of the CSSS-A habitat, as this water is directed south to the Tamiami Trail section between the Forty-mile bend (located west of S-12A) and Fifty-mile bend. Tamiami Trail and Loop Road, which include bridges and culvert connections to allow southerly flow west of Forty-mile bend, also affect hydropatterns within southern BCNP.

C.1.1.8.7 Water Conservation Areas 3A and 3B

The largest WCA is WCA 3, which is divided into two parts, 3A and 3B. It is approximately 40 miles long from north to south and covers approximately 915 square miles. Ground elevations slope

southeasterly one to three feet in ten miles ranging from 13 feet NGVD in northwest WCA 3A to six feet NGVD in southeast WCA 3B. The area is enclosed by approximately 111 miles of levees, of which 15 miles are common to WCA 2. An interior levee system across the southeastern corner of the area reduces seepage into an extremely pervious aquifer.

The upper pool, WCA 3A, provides an area of approximately 752 square miles for storage of excess water from WCA 2A; rainfall excess from approximately 750 square miles in Collier and Hendry counties (through Mullet Slough), and from 71 square miles of the former Davie agricultural area lying east of Pump Station S-9 in Broward County; and excess water from a 208 square mile agricultural drainage area of the Miami Canal and other adjacent areas to the north. WCA 3A provides water supply to the Lower East Coast (LEC) as well as the South Dade Conveyance System (SDCS) in accordance with the WCA 3A Regulation Schedule and provides water supply to ENP in accordance with the Rainfall Plan and the WCA 3A Regulation Schedule (USACE 2006). Due to its limited discharge capacity compared to the watershed from which it receives water, consecutive rainfall events have the potential to quickly utilize potential storage within WCA 3A resulting in discharges from WCA 3A to SRS and/or the South Dade Conveyance System (SDCS) via the S-12 structures and/or S-333 and S-334.

The outer perimeter levees of WCA 3 are the L-4, L-5, L-38 (separating WCA 3 from WCA 2A and WCA 2B), L-37, L-33, L-30, L-29 and L-28 (southern L-28, south of Mullet Slough, contains three gaps to allow for natural drainage from Collier County to the west). Interior parallel levees, L-67A and L-67C, along with their associated borrow canals subdivide WCA 3 into two parts: WCA 3A and WCA 3B. The L-67A and L-67C levees were originally constructed (completed in 1962 and 1966, respectively) for several reasons, including as a step-down system to reduce seepage to the east to allow for urban and agricultural developments in Miami-Dade County, and to increase storage of water in WCA 3A to provide water supply to an expanding urban population to the east. The construction of Tamiami Trail and WCA 3 impounded and altered the historic SRS, effectively creating a barrier through the Everglades, between the northern Everglades (i.e. WCAs) and ENP. The Miami Canal extends from Lake Okeechobee to the Atlantic Ocean and crosses WCA 3 from northwest to southeast. To remedy excessive drainage caused by the Miami Canal, two structures, S-339 and S-340, were built across the C-123 Canal to block water from flowing directly down the canal, except at times of extreme high water or when increased conveyance capacity is needed to deliver water for the ENP and/or the LEC. Upstream from each structure, water was expected to flow laterally from the canal into the marsh through 100 foot gaps that had been left at 500 foot intervals in the canal's spoil piles. South of WCA-3 and within ENP, the northern portion of SRS is also partially divided by the remaining 5.5 miles of the L-67 Extension Levee, which extends south from the southern terminus of L-67A at Tamiami Trail. Outflows from WCA 3A to ENP are regulated according to the WCA 3A Regulation Schedule, with some additional WCA 3A outflows to ENP from groundwater seepage across Tamiami Trail and seasonal surface water flows through the L-28 gaps, which then continue south along the L-28 borrow canal.

Stage variability within WCA 3 typically follows an annual cycle; the levels vary from high stages in the late fall and early winter to low stages at the beginning of the wet season (typically late May or early June). The cycle is primarily driven by rainfall, though it is also heavily influenced by water management operations designed to maintain congressionally authorized project purposes, including water supply to the LEC and ENP and flood protection to the adjacent EAA and LEC, as well as protection for tropical cyclone events and other extreme storm events. The annual cycle permits the storage of runoff during the wet season and the release of stored water to ENP during the dry

season and maintains elements of the habitat essential to fish and wildlife. The distribution of water for flood control and water supply varies seasonally. The regulation schedules for the WCAs include a minimum water level, below which water releases are not permitted unless water is supplied from another source.

Overall, water stage decreases from northwest to southeast within WCA 3, consistent with the general direction of surface water flow and prevailing topography within WCA 3. Water depth is typically between one to two and a half feet, with the shallower waters in the higher elevation northwestern portion of WCA 3. Water stages and depths in WCA 3B are typically much lower than water stages and depths in WCA 3A, due to limited surface water inflows into WCA 3B and the reduction of seepage from WCA 3A to WCA 3B due to the design of L-67A and L-67C levees. Water levels in WCA 3B are affected by seepage losses to the east towards the L-30 borrow canal and to the south towards the L-29 Canal.

Water supply deliveries from the C&SF Project (also known as the Regional system) to coastal canals are utilized to recharge coastal well fields. When canal levels drop below adequate recharge levels due to a combination of wellfield drawdowns, evaporation, and lack of rainfall, water supply deliveries are typically made from the Regional system. When canal levels drop in Miami-Dade County, regional water supply is delivered from WCA 3A through one of two delivery routes. Depending on system conditions, both routes may be utilized concurrently. For the northern delivery route from WCA 3A, water supply deliveries are either released from S-151 to the Miami Canal within WCA 3B (C-304), followed by downstream releases to either Miami-Dade County's SDCS by utilizing S-337 and/or by utilizing S-31 to release into the C-6 Canal. For the southern delivery route from WCA 3A, water supply deliveries are released from S-333 (from the upstream L-67A Canal), pass through the L-29 Canal, and are released to the SDCS by utilizing S-334.

If WCA 3A levels are at or below the 7.5 feet NGVD minimum, or WCA 3A floor level, then water supply releases from WCA 3A must be offset by equivalent inflows to WCA 3A from another source, typically Lake Okeechobee (USACE 2006a). The L-67 Borrow Canal is specified in the WCA 3A Regulation Schedule, though the WCA 3A floor elevation is traditionally measured at the S-333 headwater gauge; there is no requirement to maintain the L-67A Borrow Canal at or above the WCA 3A floor elevation during water supply deliveries. The SFWMD has indicated that drought year water supply deliveries from Lake Okeechobee can be problematic or extremely difficult if the lake stages are below the level at which pumping, rather than gravity, is needed to pass the water supply releases (typically at a lake stage of approximately 10.5 feet NGVD). If Lake Okeechobee is at levels where water cannot physically be delivered south, then no deliveries will be made from Lake Okeechobee, and no water supply releases from WCA 3A below the floor elevation will be made. If water is available from Lake Okeechobee, then water may be delivered to WCA 3A using one of two routes (both routes may be utilized concurrently, depending on conditions within the system): (1) the western route through the S-3 Structure, along the Miami Canal (within the EAA), and utilizing the S-8 Pump Station into WCA 3A to provide replacement water for the water supply delivery volume that will be delivered to C-6 and/or the SDCS once the replacement water at the north end of WCA 3A is provided; or (2) the eastern route through the S-2 Structure and along the North New River Canal (within the EAA), followed by utilizing either (a) the S-150 gated culvert structure to pass water into WCA 3A (into the L-38W Canal) or (b) utilizing the S-7 Pump Station to release into the L-38E Canal (within WCA 2A) for downstream release through the S-11 structures into WCA 3A (into a more southerly portion of the L-38W Canal than the S-150 outlet). The eastern water supply deliveries route is directly connected to the S-151 structure in the Miami Canal by the L-38W Canal

and the L-68A Borrow Canal, with the L-68 Borrow Canal tying into the L-67A Canal (slightly west of the S-9 Pump Station). These deliveries offset saltwater intrusion into the Biscayne aquifer system.

The most important component of the groundwater system within the study area is the Biscayne aquifer, an unconfined aquifer unit underlying an area of approximately 3,000 square miles in southeast Florida, from southern Palm Beach County southward through Broward County to South Dade County. This huge, freshwater, underground water body is highly productive along the coastal ridge and for a considerable distance to the west. Groundwater in WCA 3 generally flows from the northwest to the southeast, with extensive seepage across the eastern and southern levees, L-30 (southeast corner of WCA 3B) in particular. However, the direction of flow may be influenced by rainfall, drainage canals, or well fields. Fluctuations in groundwater levels are seasonal. Groundwater levels within WCA 3 are influenced by water levels in adjacent canals. Where there is no impermeable formation above the aquifer, surface water recharges the system and the groundwater level can rise freely. In times of heavy rainfall the aquifer fills and the water table rises above the land surface, contributing to seasonal inundation patterns throughout the area. Over much of its extent, the aquifer is covered by only a few inches of soil. The permeable limestone of the aquifer is shielded against upward intrusion of saline water from the Floridan aquifer by relatively impermeable beds of clay and marl.

The timing and distribution of water within WCA 3A, WCA 3B, and ENP is affected by direct rainfall, evapotranspiration, and regional water management operations. Specifics relating to the effects of inflows/releases on WCA 3A water level can be found in **Table C.1-2** below.

Table C.1-2. Effects of Inflows/Releases on WCA 3A Water Level

Inflow/Outflow WCA 3A (average daily cfs)	Duration (days)	Effect on WCA 3A (feet)*	Duration (days)	Effect on WCA 3A (feet)*
200	1	0.001	20	0.018
300	1	0.001	20	0.027
400	1	0.002	20	0.036
500	1	0.002	20	0.044
600	1	0.003	20	0.053
700	1	0.003	20	0.062
800	1	0.004	20	0.071
900	1	0.004	20	0.080
1000	1	0.004	20	0.089
1100	1	0.005	20	0.098
1200	1	0.005	20	0.107
1300	1	0.006	20	0.116
1400	1	0.006	20	0.125
1500	1	0.007	20	0.133
1600	1	0.007	20	0.142
1700	1	0.008	20	0.151
1800	1	0.008	20	0.160
1900	1	0.008	20	0.169
2000	1	0.009	20	0.178
2100	1	0.009	20	0.187
2200	1	0.010	20	0.196
2300	1	0.010	20	0.205
2400	1	0.011	20	0.214
2500	1	0.011	20	0.222
2600	1	0.012	20	0.231
2700	1	0.012	20	0.240
2800	1	0.012	20	0.249

Other specific areas within the CEPP project boundaries have distinct hydrologic conditions that could be affected by changes contemplated with CEPP for C&SF infrastructure and/or water management operations. These areas are addressed in the ensuing text.

C.1.1.8.8 Northeast Shark River Slough

NESRS is a complex area located in the northeast corner of ENP. It is currently the northern terminus of SRS, which is aligned from the northeast to southwest across ENP. Tamiami Trail is the northern boundary, the L-31N Canal the eastern boundary, and the L-67 Extension Canal the western boundary of the area. Historically, the area would be characterized as wet most of the year, but regional developments have impacted historic freshwater routes into the area. In addition, if historic levels are not maintained through the end of the wet season, significant reductions in surface water can occur during the dry season below historic dry season levels.

Water enters NESRS primarily from WCA 3A, via S-333, and then to the L-29 borrow canal and subsequent passage through culverts under Tamiami Trail. In addition, pending approval of an operational permit, S-355A and S-355B may also be used to deliver water from WCA 3B to the L-29 Canal for subsequent passage through the culverts to NESRS. The discharges made from WCA 3A

through the S-12 structures and S-333 are target flows determined from the Rainfall Plan (USACE 2006a). Under the Rainfall Plan, water deliveries would be computed and operations adjusted weekly, if necessary based on the sum of two components: a rainfall response component and a WCA 3A regulatory component. The normal operational target flow distribution is 55 percent through the S-333 into NESRS and 45 percent through the S-12 structures into ENP west of the L-67 Extension. Eastern portions of the ENP are also influenced by the system of canals and structures that provide flood control and water supply for the LEC urban and agricultural areas.

C.1.1.8.9 Western Shark River Slough

Western SRS, located to the west of L-67 Extension Levee and bounded on the north by Tamiami Trail, is primarily influenced by rainfall and water management operations at the S-12 structures (A, B, C and D). Under IOP[1], the utilization of the S-12 structures and the seasonal sequential closure periods beginning from the west at S-12A (November 1 – July 15), S-12B (January 1 – July 15), and S-12C (February 1 – July 15), respectively, is meant to move water from WCA 3A into SRS while providing conditions for Cape Sable seaside sparrow Subpopulation-A (CSSS-A) nesting and breeding. Although not required in water management operations, there is a rule-of-thumb that is often utilized that includes delivering the Rainfall Plan S-12 structure target flows from east to west with 40 percent, 30 percent, 20 percent, and 10 percent being discharged at S-12D, S-12C, S-12B, and S-12A, respectively. Releases from WCA 3A are part of a regulation schedule for WCA 3A and are typically dependent on a Rainfall Based Management Plan. This Rainfall Based Management Plan consists of a rainfall-based delivery formula that specifies the amount of water to be delivered to ENP in weekly volumes through the S-333 and S-12 structures. Under IOP, the normal operational target flow distribution is 55 percent through S-333 into NESRS and 45 percent through the S-12 structures into ENP west of the L-67 Extension.

C.1.1.8.10 Taylor Slough

Taylor Slough is in the southeast quadrant of ENP. The area through the Rocky Glades and Taylor Slough is higher in elevation compared to ground levels north, south, or west. Because of this characteristic, the area is normally drier than other areas in the ENP. The Rocky Glades and Taylor Slough are somewhat like an island or a peninsula extending from the canals into the ENP. Under IOP 2006, specified C-111 basin canal water levels/ranges and S-332D pump station operations resulted in Taylor Slough being provided water from C-111 mainly during the wet season. During the dry season, under IOP 2006, water deliveries to Taylor Slough were limited to provide conditions conducive to CSSS nesting (325 cfs from December 1 – January 31; 165 cfs from February 1 – July 15).

C.1.1.8.11 Lower East Coast Area

The LEC area is located to the east of the L-31N, L-31W, and C-111 canals. Under IOP 2006, specified canal water levels/ranges are meant to provide flood protection, water supply, and prevention of saltwater intrusion for the LEC. The LEC can be provided water supply from WCA 3A and Lake Okeechobee according to their respective regulation schedules. In wet conditions, the excess water from the LEC is discharged to tide.

[1] IOP was the governing regulation schedule for the project area at the start of the CEPP planning process. In addition, existing hydrologic conditions within the project area are a result of IOP operations from 2002-2012. ERTP was approved and implemented for operations beginning in October 2012, and ERTP operational assumptions are used in the FWO project analysis.

C.1.1.8.12 8.5 Square Mile Area

The 8.5 Square Mile Area (8.5 SMA) is a primarily residential area adjacent to, but west of, the L-31N Canal. The 8.5 SMA, which is also known as the Las Palmas community, is bordered on both the west and north by NESRS. The community has water management infrastructure consisting of a perimeter levee, a seepage collection canal, a pump station (S-357), and a southern detention cell meant to collectively provide flood mitigation as part of the MWD Project (USACE 2000).

C.1.1.8.13 Biscayne Bay

Biscayne Bay is a shallow, tidal sound located near the extreme southeastern part of Florida. Biscayne Bay, its tributaries, and Card Sound are designated by the State of Florida as aquatic preserves, while Card and Barnes Sounds are part of the Florida Keys National Marine Sanctuary. A significant portion of the central and southern portions of Biscayne Bay comprise Biscayne National Park. Under IOP 2006, specified canal water levels/ranges are meant to provide flood protection for the portions of the LEC and Miami-Dade County, which may result in discharges to Biscayne Bay.

C.1.1.8.14 Florida Bay

Florida Bay and the Ten Thousand Islands comprise approximately 1,500 square miles of ENP. The bay is shallow, with an average depth of less than three feet. To the north is the Florida mainland and to the south lie the Florida Keys. Sheet flow across the marl prairies of the southern Everglades and 20 creek systems fed by Taylor Slough and the C-111 Canal provide direct inflow of freshwater to the bay. Surface water from SRS flows into Whitewater Bay and may also provide essential recharge for central and western Florida Bay. Exchange with Florida Bay occurs when this lower salinity water mass flows around Cape Sable into the western sub-region of the bay.

C.1.1.9 Regional Water Management (Operations)

C.1.1.9.1 Lake Okeechobee

The USACE is responsible for management of the water resources contained within HHD and for the development of regulations for operation of Lake Okeechobee's outlet structures. Water management operations at Lake Okeechobee are performed to ensure that Congressionally-authorized project purposes are met. The Congressionally-authorized project purposes for Lake Okeechobee include: flood control; navigation; water supply for ENP, salinity control, regional groundwater control, agricultural irrigation, municipalities and industry; enhancement of fish and wildlife; and recreation. Since April 2008, Lake Okeechobee has been operated in accordance with the 2008 Lake Okeechobee Regulation Schedule (2008 LORS; refer to **Figure C.1-3** through **Figure C.1-7**); for additional details and complete documentation, refer to the USACE November 2007 Lake Okeechobee Final Supplemental EIS. Changes to the Lake Okeechobee Regulation Schedule with the 2008 LORS are included in the revised March 2008 USACE Lake Okeechobee and Everglades Agricultural Area Water Control Plan (WCP). The WCP, which codifies the water management operational guidance included in the November 2007 Final Supplemental EIS, defines allowable releases to the Water Conservation Areas (WCAs) and to tide (estuaries). Prior to the 2008 LORS, Lake Okeechobee operations were managed under the "Water Supply and Environment (WSE) Regulation Schedule" since July 2000.

The regulation schedule is a tool used by water managers to meet Congressionally-authorized project purposes. A regulation schedule attempts to meet all functional objectives of the particular project, acting separately or in combination with other projects in a system. The regulation schedule has been, and will continue to be, designed to balance multiple, and often competing,

project purposes and objectives. Managing for better performance of one objective often lessens the effectiveness of performance of competing objectives. For example, higher regulation schedules tend to benefit water supply, but may increase the risk to public health and safety, and can harm the ecology of the lake. Lower lake schedules may produce lake levels more desirable for the lake ecology and improved flood protection, but reduce water supply potential. Lower lake schedules may also harm the ecology of the lake during extended dry periods and downstream estuaries during extended wet periods. Therefore, the 2008 LORS was not developed to optimize performance of any single project purpose, but rather balances the performance of the multiple project purposes. The regulation schedule contains bands which vary with the time of year. Releases are outlined by flowcharts that define the allowable releases by structure within each band.

Though water supply is a project purpose, water supply release volumes are not prescribed by this regulation schedule. However, water supply releases are made to meet downstream demands that can include agricultural irrigation, municipal and industrial needs, estuary, and other environmental water supply needs.

The 2008 LORS operational study was initiated to address high lake levels, high estuarine discharges, estuary ecosystem conditions, and lake ecology conditions that occurred during the 2003 to 2005 time period. The study considered the back-to-back historically significant 2004 and 2005 hurricane seasons' effects on the recognized structural integrity issues of HHD along with effects to other project purposes. The 2008 LORS was identified to be effective at decreasing the risk to public health and safety, reducing the number of high-volume discharges to the estuaries, and providing critical flexibility to perform water management operations (November 2007 Final Supplemental EIS).

Under the 2008 LORS, management of Lake Okeechobee water levels and determination of Lake Okeechobee releases to the WCAs and to tide (estuaries) is based on seasonally varying lake elevations divided into three bands as shown on the proposed 2007 Lake Okeechobee Interim Regulation Schedule Part A. These bands include "High Lake Management", "Operational", and "Water Shortage Management". The High Lake Management Band is meant to address public health and safety, especially related to the structural integrity of HHD by providing the ability to make releases up to the maximum capacity lake outlets will allow; Lake Okeechobee outlet canals may be maintained above their optimum water management elevations. The Operational Band is meant to facilitate authorized project purposes by providing the ability to make releases of various volumes, including no release; Lake Okeechobee outlet canals should be maintained within their optimum water management elevations. The Water Shortage Management Band pertains to low lake levels which necessitate rationing water supplies; Lake Okeechobee outlet canals may be maintained below their optimum water management elevations. The water supply releases made within this band are made according to the SFWMD's Lake Okeechobee Water Shortage Management Plan (LOWSM). The 2008 Lake Okeechobee Interim Regulation Schedule Part B further defines the bands of the regulation schedule. In Part B, the Operational Band is further subdivided into sub-bands that are directly related to defining allowable Lake Okeechobee releases to the WCAs and to tide (estuaries). In general as lake levels rise through the higher sub-bands, the allowable release rates increase.

The 2008 LORS EIS analysis demonstrated that the then-proposed regulation schedule releases to the WCAs and to the estuaries would reduce the likelihood of lake levels that both increase the

probability of a breach of the HHD and also contribute to poor ecological conditions within Lake Okeechobee. For Lake Okeechobee, a high lake level can lead to the decline of emergent and submerged vegetation which is essential habitat for the lake's fish and wildlife populations. The 2008 LORS provides the ability to make long-term, low-volume releases to the Caloosahatchee Estuary, St. Lucie Estuary, and WCAs. These releases include low-volume pulse releases and base flow releases to the Caloosahatchee and St. Lucie estuaries that allow Lake Okeechobee to be maintained at more desirable levels throughout the year. A pulse release attempts to simulate a natural rainstorm event within the basins. The receiving body would respond to the pulse release in a similar fashion as if a rainstorm had occurred in the upstream watershed. Although an average flow rate is targeted for the duration of the pulse release, daily releases vary. The pulse releases and base flow releases are intended to regulate lake levels and reduce the potential for future prolonged high-volume releases to the estuaries. The base flow releases also provide a benefit of maintaining desirable salinity levels in the estuaries. By regulating lake levels, these low volume releases improve public health and safety performance by reducing risk to the HHD and provide improved benefits for the health of Lake Okeechobee and the estuaries.

C.1.1.9.2 Greater Everglades

The C&SF Project has numerous water management structures consisting of culverts, spillways, and pump stations that have specified operating criteria for managing or regulating water levels for Congressionally-authorized project purposes. The C&SF Project contains multiple water bodies created by the existing C&SF levee infrastructure and implementation of the water management operating criteria, including WCA 1, WCA 2, and WCA 3. Associated with the inflow to and discharge from the water bodies is an infrastructure of structures and canals that are managed by the implementation of water management operating criteria that can include specified water levels or ranges. The WCA 3A Interim Regulation Schedule is a compilation of water management operating criteria, guidelines, rule curves, and specifications that govern storage and release functions. Typically, a regulation schedule has water level thresholds which vary with the time of year and result in discharges. The threshold lines of regulation schedules define the discharge zones and are traditionally displayed graphically. Additionally, a corresponding table is typically used to identify the structure discharge rules for the zones. As with most regulation schedules, the WCA 1, WCA 2, and WCA 3A regulation schedules must take into account various, and often conflicting, project purposes.

The WCAs are regulated for the Congressionally-authorized C&SF Project purposes to provide: flood control; water supply for agricultural irrigation, municipalities and industry, and ENP; regional groundwater control and prevention of saltwater intrusion; enhancement of fish and wildlife; and recreation. An important component of flood control is the maintenance of marsh vegetation in the WCAs, which provide a dampening effect on hurricane-induced wind tides that have the potential to affect residential areas to the east of the WCAs. The marsh vegetation, along with the east coast protection levee, also prevents floodwaters that historically flowed eastward from the Everglades from flowing into the developed areas along the southeast coast of Florida. Modifications to the WCA 1 and WCA 2 Regulation Schedules are not under consideration with the CEPP, and the following description of existing water management operations will only include WCA 3A, WCA 3B, and ENP.

Besides releases from WCA 2A via the S-11 structures, WCA 3A receives inflow from pumping stations S-8, S-9, and S-140. The S-9 pump station removes runoff in the area west of Ft. Lauderdale known as Western C-11. The S-9A pump station, located adjacent to the S-9 pump station, returns

seepage water from WCA 3A and WCA-3B collected in the L-37, L-33 and the US 27 borrow canals. The S-140 pump station serves the 110 square mile area north and east of the interceptor canal and west of L-28. This station is used to maintain canal levels below 10.5 feet, NGVD unless gravity flow into WCA 3A is possible at an adequate rate. Water also enters northeastern WCA 3A by gravity through S-150. Discharges at S-142 are made from WCA 3A into the North New River Canal. The SFWMD can pump runoff from the North New River Canal and C-13 into WCA 3A through S-142 by operating their pump station, G-123.

Water levels in WCA 3A are managed primarily by five gated spillways: the S-12 structures (S-12A, S-12B, S-12C, and S-12D) and S-333. Additionally, S-151, S-343A, S-343B and S-344 can also be utilized to discharge from WCA 3A. The S-12 structures and S-333 are utilized to provide water deliveries to ENP, in accordance with the WCA 3A Regulation Schedule. From July 2002 through October 2012, WCA 3A was regulated according to a seasonally varying 8.75 to 10.75 feet, NGVD regulation schedule and the Rainfall Plan (initiated in 1985), as per IOP (2006 IOP Supplemental Environmental Impact Statement [EIS]; refer to Figure C.1-8). The CEPP ECB assumptions represent the system-wide infrastructure and operations that were in place at the time CEPP plan formulation was initiated, approximately January 2012. The primary objective in implementing IOP was to reduce damaging high water levels within CSSS habitat west of SRS (i.e. CSSS-A). IOP was designed to protect the CSSS to the maximum extent possible through water management operations. The purpose of IOP was to provide an improved opportunity for CSSS nesting by maintaining water levels below ground level for a minimum of 60 consecutive days between March 1 and July 15, corresponding to the CSSS breeding season. In addition, a secondary purpose of IOP was to allow CSSS habitat to recover from prolonged flooding during the mid-1990s. The IOP WCA 3A Interim Regulation Schedule utilizes a 3-gauge average elevation of Sites 63, 64, and 65 in the management of WCA 3A water levels (also known as 3A-3, 3A-4 and 3A-28, respectively). The discharges made from WCA 3A through the S-12 structures and S-333 are target flows determined from the Rainfall Plan; when WCA 3A is in Zone A, these target flows are the maximum flow possible. Under the Rainfall Plan, water deliveries are computed and operations adjusted, weekly, if necessary based on the sum of two components: a rainfall response component and a WCA 3A regulatory component. The Rainfall Plan provides for the rainfall response component within all zones of the WCA 3A Regulation Schedule, with the additional regulatory release requirement added when the WCA 3A water levels fall within the higher regulation schedule zones above Zone E, including Zone E1. Under IOP, the goal of the rainfall and regulatory components is to split the flows between the S-12 structures and S-333, with 45 percent of the total flow from WCA 3A passing through the S-12 structures to Western SRS and the remaining 55 percent to discharge through S-333 to NESRS, establishing the target flows for both the S-12 structures and S-333. IOP specifies seasonal closure of the S-12 structures, with the following rigid closure periods: November 1 – July 15 for S-12A; January 1 – July 15 for S-12B; and February 1 – July 15 for S-12C.

Water deliveries to eastern ENP are controlled by the stage in L-29 Canal, as pressure from the water within the canal (hydraulic head), is required to force water through the Tamiami Trail culverts and into ENP. As canal stage increases, more water is forced beneath the road through 19 sets of culverts (55 total culverts, three culverts per set in most locations). The L-29 Canal stage is currently limited due to concerns regarding potential flooding and seepage effects within residential or agricultural areas of Miami-Dade County and potential damage to the Tamiami Trail roadway sub-base. The water management operating criteria for the L-29 borrow canal between S-333 and S-334 is meant to limit the L-29 borrow canal stage to no more than 7.5 feet NGVD in response to roadway sub-base concerns identified by the Florida Department of Transportation (FDOT), although short-

term deviations have been previously implemented in response to specific hydrologic conditions. Higher water levels within the canal may erode the roadway sub-base and create a potential safety hazard, until completion of the Modified Water Deliveries (MWD) Tamiami Trail Modifications project in 2013. In addition, the L-29 borrow canal water level has an additional constraint related to potential flooding and seepage effects within residential and/or agricultural areas of Miami-Dade County. When the G-3273 water level within NESRS reaches 6.8 feet NGVD, S-333 discharges to NESRS will be discontinued until G-3273 falls below 6.8 feet NGVD. Tamiami Trail roadway modifications, to accommodate potential maximum L-29 borrow canal water levels up to 8.5 feet NGVD are currently in progress with the ongoing MWD project. Additionally, a one-year field test to incrementally relax the G-3273 operational constraint is under consideration for 2013-2014.

When WCA 3A water levels are in Zone A of the WCA 3A Regulation Schedule (USACE 2006a), S-343A, S-343B, and S-344 can be utilized to discharge from WCA 3A into BCNP. Discharges can also be made through S-343A, S-343B and S-344 when agreed to by SFWMD, USACE, and National Park Service (NPS) to extend hydroperiods within BCNP. The S-151 gated culvert structure, which is located along the Miami Canal and operated according to the WCA 3A Regulation Schedule (USACE 2006a), is the only existing surface water connection between WCA 3A and WCA 3B. S-151 discharges into C-304 in WCA 3B for flood diversion and for the purpose of providing water supply to LEC canals and the ENP SDCS. Under existing conditions, water does not flow directly from WCA 3B into the L-29 Canal. There are two discharge structures, S-355A and S-355B, along L-29 south of WCA 3B that are designed to move water from WCA 3B into the canal, although the operation of these structures has not been previously authorized for more than short-term, temporary operations. The S-355 structures are completed components of the MWD Project, intended to function in concert with the proposed MWD S-345 structures along L-67A/L-67C to address the MWD Project objective of restoring WCA 3B as a functioning component of the Everglades hydrologic system and restoration of water deliveries to NESRS.

There are three distinct modes of water management operations for IOP: Column 1, Column 2, and water supply (USACE 2006a). Water management operating criteria within Column 1 occurs when WCA 3A discharges can be achieved by discharges from the S-12 structures, S-333, S-151, S-343A, S-343B, and/or S-344. Water management operating criteria within Column 2 occurs when WCA 3A discharges are made via S-333 to the L-29 Canal and L-31N Canal, and the ENP SDCS; Column 2 generally requires the use of pump stations S-331, S-332B, S-332C, and S-332D. Column 2 is used to offset or mitigate for adverse effects on WCA 3A related to closure periods at water management structures to protect CSSS-A. Column 2 generally occurs when any S-12 structure is closed in order to protect the CSSS (November 1 through July 15, under IOP), although Column 1 may continue until the capacity of the S-12 structures that remain open is insufficient to handle the discharge from WCA 3A. If necessary, Column 2 may continue past re-opening of the S-12 structures (July 16) to mitigate for adverse effects on WCA 3A resulting from the IOP closures of S-12A, S-12B, S-12C, S-343A, S-343B, and S-344. Water supply discharges from WCA 3A occur when water levels in the ENP SDCS fall to a level that indicates additional water is required. During droughts, a minimum elevation in the borrow canals of 7.5 feet NGVD is established in the WCA 3A Interim Regulation Schedule (USACE 2006a). Below this elevation no further releases will be permitted from WCA 3A unless an equal supply of water from another storage area is transferred to WCA 3A.

Additional information on the effects of water management within the Greater Everglades environment may be found within the South Florida Environmental Reports which are published annually by the SFWMD:

(http://my.sfwmd.gov/portal/page/portal/xweb%20about%20us/agency%20reports#previous_reports).

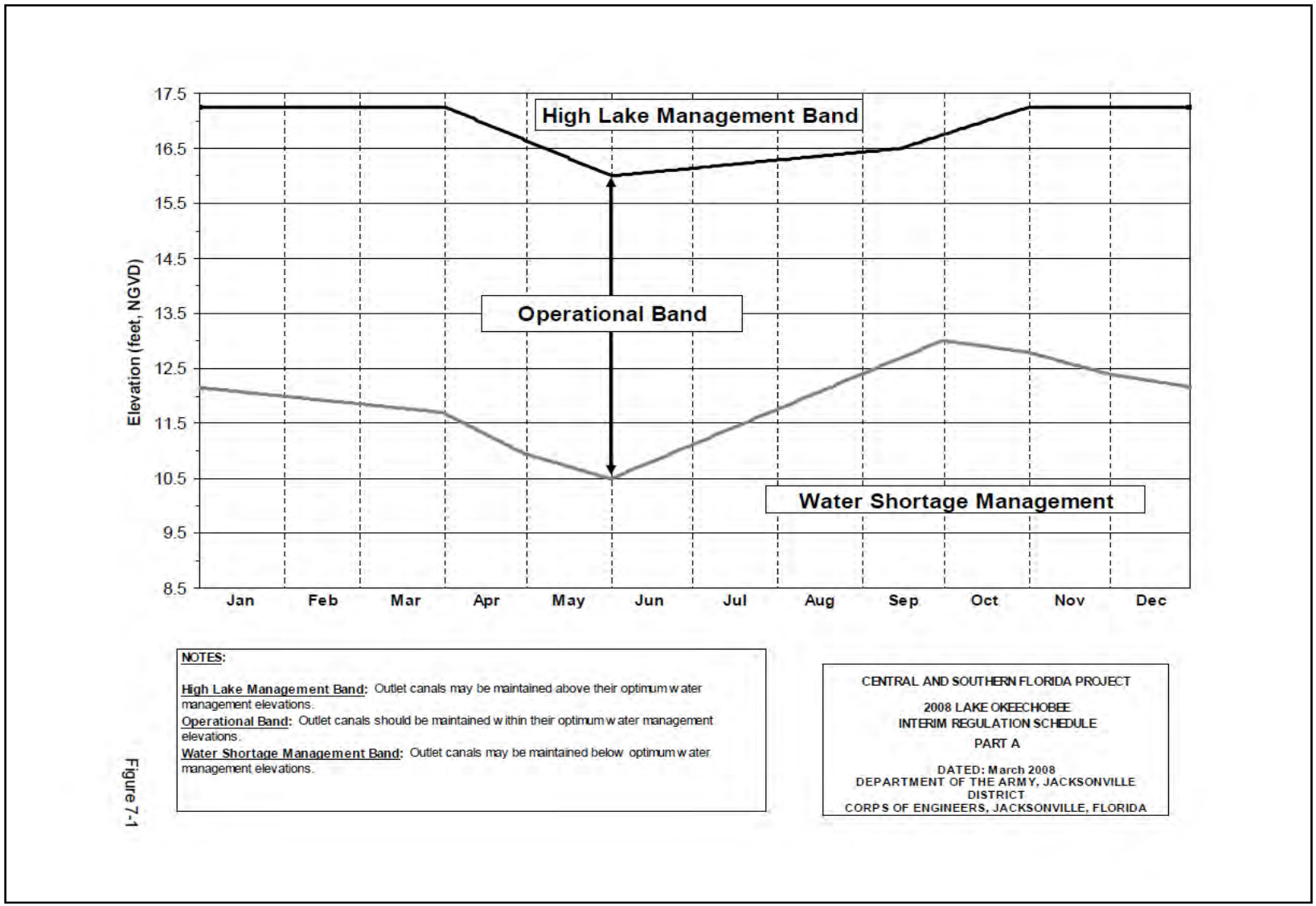


Figure C.1-3. 2008 Lake Okeechobee Regulation Schedule Part A

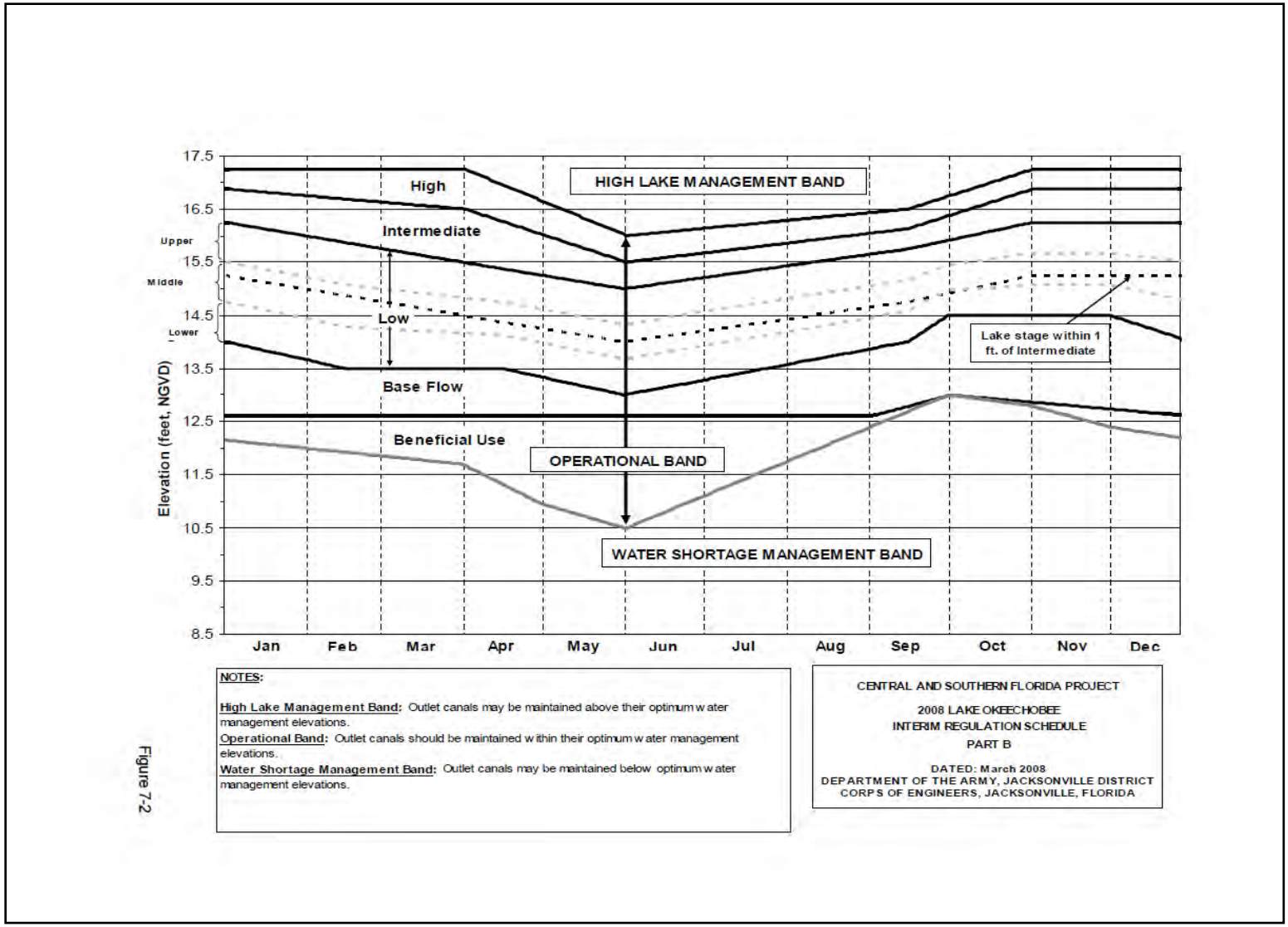


Figure C.1-4. 2008 Lake Okeechobee Regulation Schedule Part B

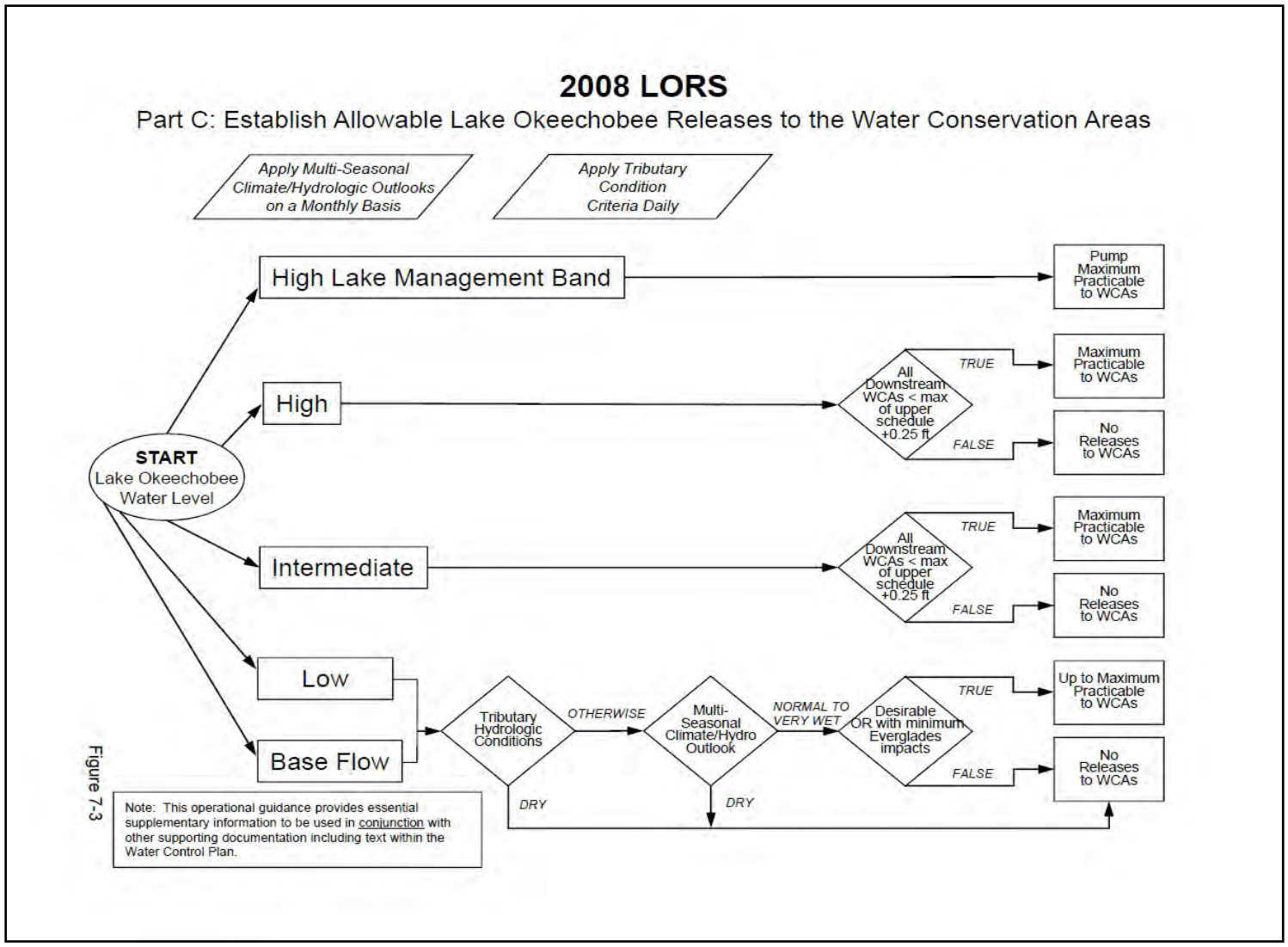


Figure C.1-5. 2008 Lake Okeechobee Regulation Schedule Part C

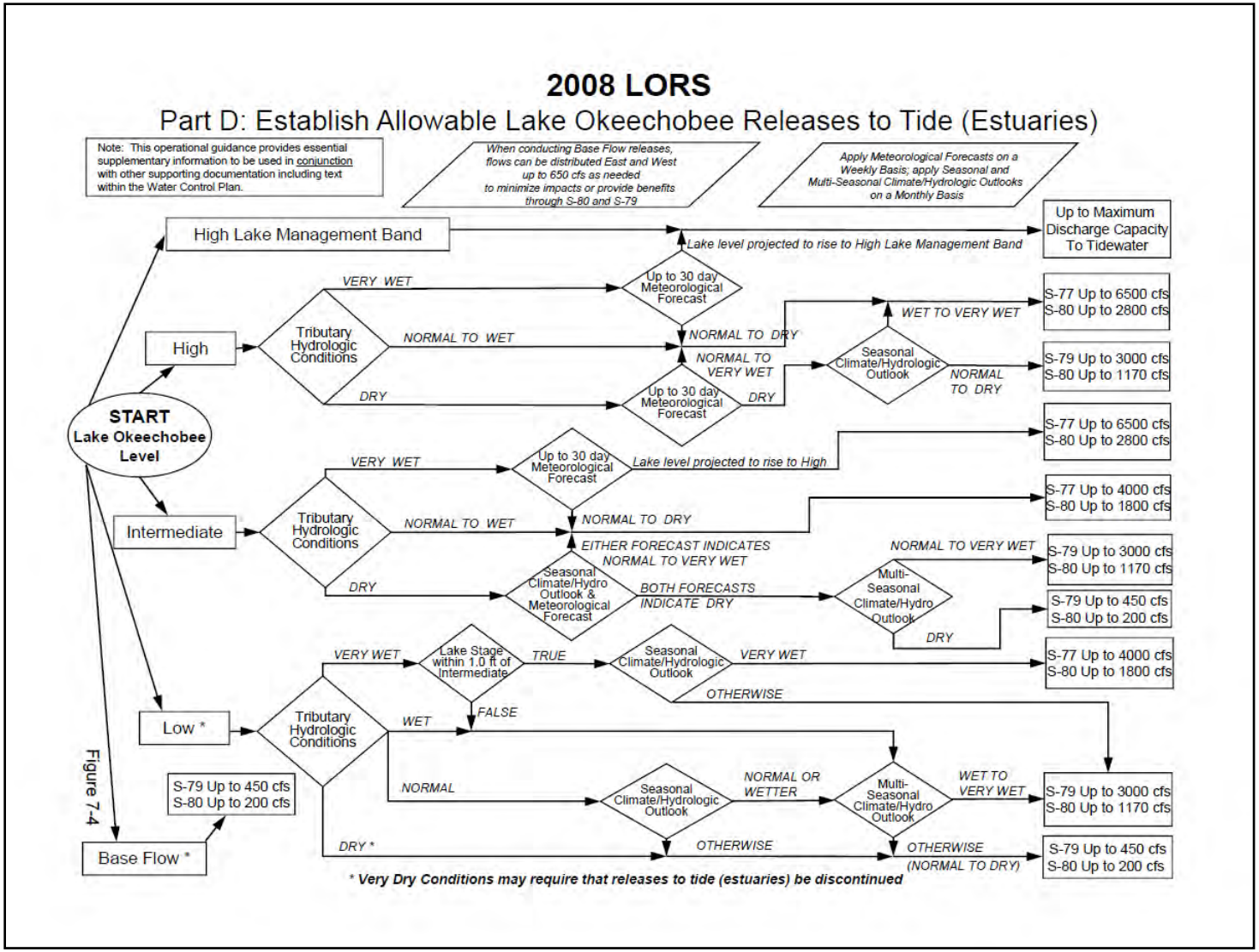
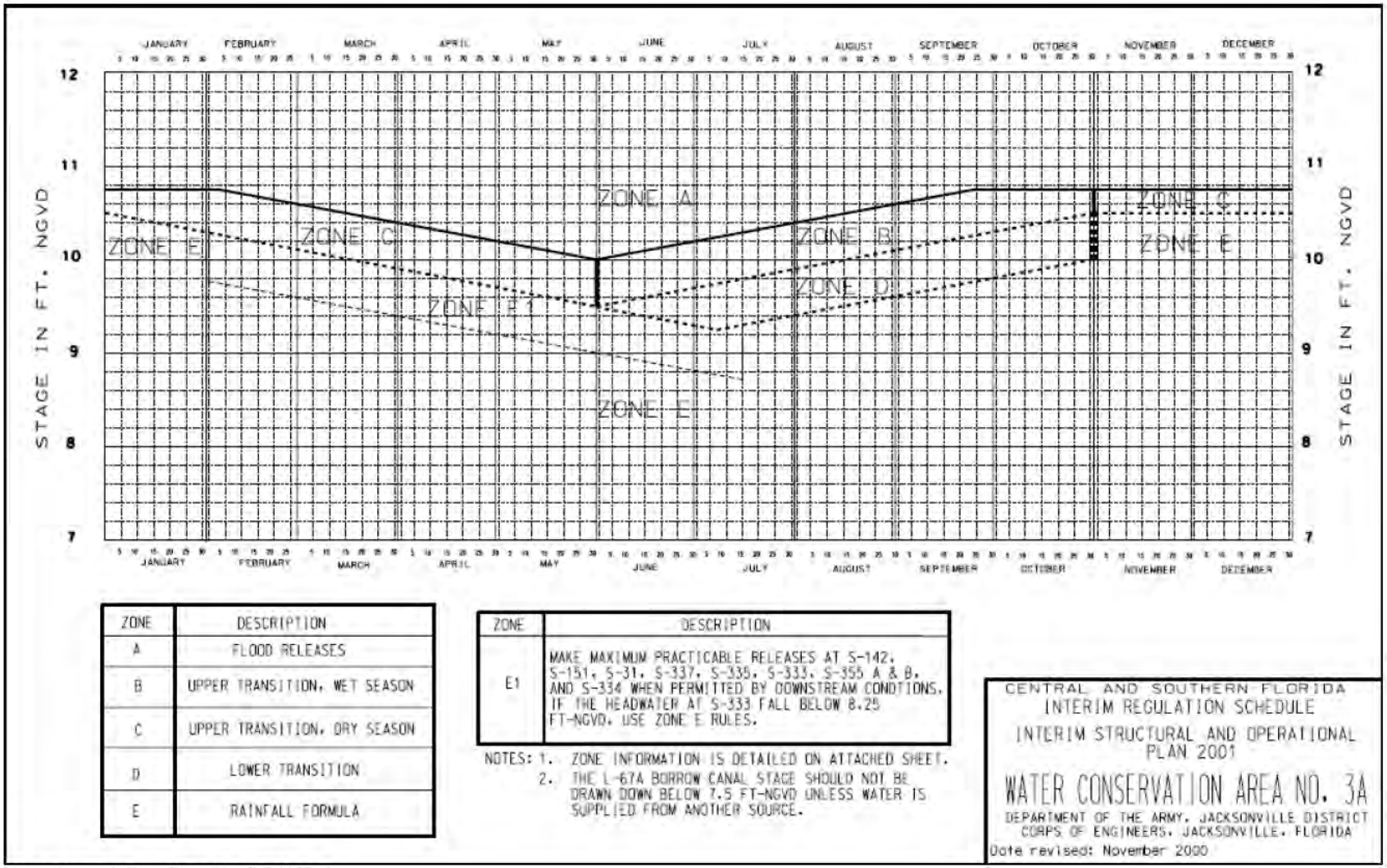


Figure C.1-6. 2008 Lake Okeechobee Regulation Schedule Part D



Note: Figure 9 from 2002 IOP Final SEIS.

Figure C.1-7. IOP Water Conservation Area 3A Interim Regulation Schedule Part A

C.1.1.10 Flood Control

Water management and flood control is achieved in south Florida through a variety of canals, levees, pumping stations, and control structures within the WCAs, ENP, and SDCS. The WCAs provide a detention reservoir for excess water from the EAA and parts of the east coast region, and for flood discharge from Lake Okeechobee to tide. The WCAs provide levees to prevent the Everglades floodwaters from inundating the east coast urban areas; provide a water supply for the east coast areas and ENP; improve water supply for east coast communities by recharging underground freshwater reservoirs; reduce seepage; ameliorate salt-water intrusion in coastal well fields; and provide mixed quality habitat for fish and wildlife in the Everglades.

The regulation schedules for the WCAs contain instructions and guidance on how project spillways are to be operated to maintain water levels in the WCAs. The regulation schedules represent the seasonal and monthly limits of storage which guides project regulation for the authorized purposes. In general, the schedules vary from high stages in the late fall and winter to low stages at the beginning of the wet season. These regulation schedules must take into account various, and often conflicting, project purposes.

The East Coast Canals are flood control and outlet works that extend from St. Lucie County southward through Martin, Palm Beach, and Broward Counties to Dade County. The East Coast Canal watersheds encompass the primary canals and water control structures located along the LEC and their hydrologic basins. The main design functions of the project canals and structures in the East Coast Canal area are to protect the adjacent coastal areas against flooding; store water in conservation areas west of the levees; control water elevations in adjacent areas; prevent salt-water intrusion and over-drainage; provide freshwater to Biscayne Bay; and provide for water conservation and public consumption. The East Coast Canals consist of 40 independently operated canals, one levee, and 50 operating structures, consisting of 35 spillways, 14 culverts, and one pump station. The project operates to prevent major flood damage; however, due to urbanization, the existing surface water management system now has to handle greater peak flows than in the past. The ENP SDCS provides a way to deliver water to areas of south Dade County. This canal system was overlaid on the existing flood control system. Many of these canals are used to remove water from interior areas to tide in times of excess water.

C.1.1.11 Water Supply

C.1.1.11.1 Lake Okeechobee

As one of the federally authorized project purposes, Lake Okeechobee supplies water for agricultural irrigation, municipalities, industry, and ENP, and for regional groundwater and salinity control. The primary water supply uses of Lake Okeechobee are to provide water supply for adjacent agricultural lands and to serve as a backup water supply for the Lower East Coast Service Area (LECSA) and west coast Florida counties when rainfall is insufficient and during dry periods (**Figure C.1-8**).

Lake Okeechobee and its connected conveyance system are the most significant surface water sources for the Lake Okeechobee Service Area (LOSA), which includes the EAA (**Figure C.1-8**). Surface water from the lake and runoff from the EAA supply water to the regional system via canals and provide recharge to the Surficial Aquifer System. Agriculture in the LOSA covered approximately 255,500 acres outside of the EAA and the 460,000 acres within EAA in 2010 (most recent data available) and is the predominate user of lake water. Agricultural water supply demands equate to approximately 480,000 acre-feet per year for LOSA, which includes 303,000 acre-feet per year for just the EAA.

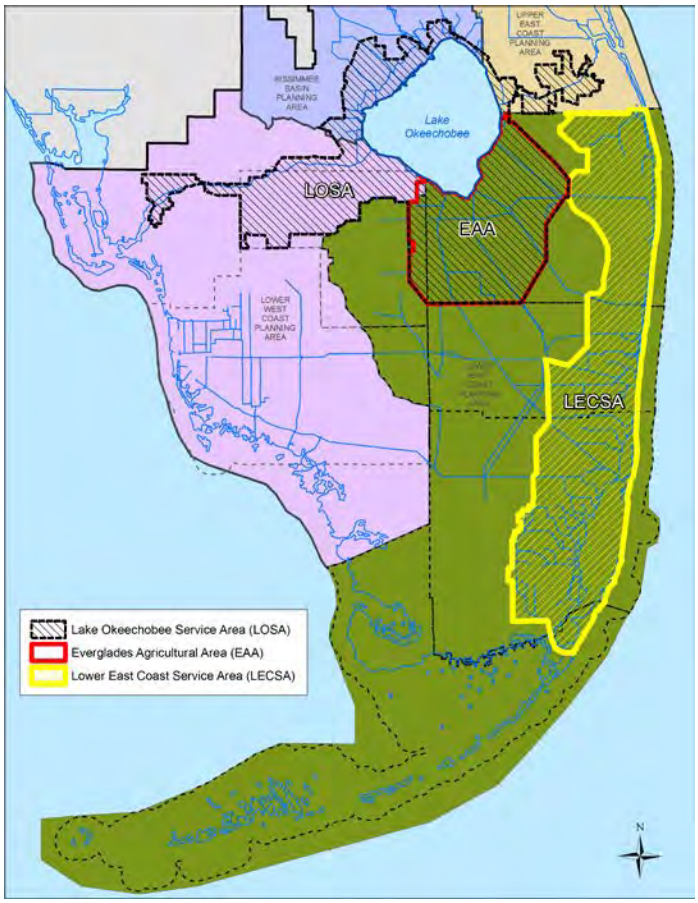


Figure C.1-8. Map of Lake Okeechobee Service Area, Everglades Agricultural Area and Lower East Coast Service Area

In 2008, the USACE implemented the 2008 Lake Okeechobee Regulation Schedule (2008 LORS). The 2008 LORS provides operational flexibility to make Lake Okeechobee releases to meet project purposes as specified in the Water Control Plan. SFWMD also provides recommendations for USACE consideration regarding releases to the Everglades or the Northern Estuaries for Lake Okeechobee regulatory releases within the low, base-flow or beneficial use sub-bands of the 2008 LORS schedule.

The right to use water within the CEPP project area is authorized by a permit issued by the SFWMD. The conditions of permit issuance are more specifically enumerated in Chapters 40E-2 and 40E-20 of the Florida Administrative Code (F.A.C.), which also incorporate by reference the current SFWMD Basis of Review for Water Use Permit Applications (SFWMD 2012a). In order to provide reasonable assurances that the conditions of permit issuance are met, applicants must meet consumptive use permitting criteria. The technical criteria used to evaluate the purpose, quantity, and source of proposed water to be used include the following: (1) saltwater intrusion, (2) wetland and other surface water body impacts, (3) pollution, (4) impacts to off-site land uses, (5) interference with existing legal users, and (6) minimum flows and levels.

Water supplies allocated from Lake Okeechobee and its connected conveyance systems are primarily for supplemental irrigation to the LOSA agricultural areas. In the LOSA, the Okeechobee Utility Authority is the only remaining Public Water Supply (PWS) utility using water directly from Lake Okeechobee.

Clewiston, South Bay, Belle Glade, and Pahokee have discontinued the use of Lake Okeechobee as their supply source and now use Floridan aquifer water treated by reverse osmosis for all of their PWS demand since 2005.

Water shortages are declared by the SFWMD Governing Board when available groundwater or surface water is not sufficient to meet users' needs or when conditions require temporary reduction in total use within the area to protect water resources from serious harm. The SFWMD's Water Shortage Plans are contained in Chapters 40E-21 and 40E-22, F.A.C. The purposes of the plans are to protect the water resources of the SFWMD from serious harm; assure equitable distribution of available water resources among all water users during times of shortage, consistent with the goals of minimizing adverse economic, social, and health related impacts; provide advance knowledge of the means by which water apportionments and reductions will be made during times of shortage; and promote greater security for consumptive use permittees. The current SFWMD water shortage management plan for Lake Okeechobee, known as the Lake Okeechobee Water Shortage Management (LOWSM) Plan (implemented in November 2007), requires various actions to be taken according to the severity of the actual and projected lake water levels. The basis of this plan is an allocation scheme that parcels out lake water based on a percentage of the 1-in-10 water demand. If the lake level continues to fall, the percentage of water restrictions increases. If the water level at the beginning of the dry season is low, then the likelihood of water restrictions is greater.

In October 2008, the SFWMD adopted Restricted Allocation Area criteria for the Lake Okeechobee Service Area as part of the Minimum Flow and Level (MFL) recovery strategy for Lake Okeechobee following an extended drought and USACE implementation of the 2008 LORS, which generally lowered the water levels in Lake Okeechobee. According to the SFWMD, without modification to the current LOWSM, the frequency of water shortage restrictions is expected to increase from 1-in-10 years to experiencing restrictions 1-in-6 years while the lake is being operated under the 2008 LORS. As a result of the potential impacts to water supply, the SFWMD enacted rules to limit future additional withdrawals from Lake Okeechobee in order to prevent further degradation of the level of certainty for existing legal users and to avoid exceeding the MFL criteria. The SFWMD rules also ensures that water necessary for Everglades restoration is not allocated for consumptive use. The regulatory criteria limit allocations from Lake Okeechobee and connected surface waters, including the Caloosahatchee River and St. Lucie River, to base condition water uses as defined within the SFWMD Basis of Review for Water Use Permit Applications for the period from April 1, 2001 to January 1, 2008 (SFWMD 2012a).

C.1.1.11.2 Seminole Tribe of Florida

The Seminole Tribe of Florida has six reservations located in Florida. The reservations include Brighton, Tampa, Fort Pierce, Immokalee, Hollywood, and Big Cypress. Hollywood is the headquarters location for the Seminole Tribe of Florida.

Two reservations of the Seminole Tribe of Florida rely on Lake Okeechobee as a secondary supplemental irrigation supply source for their surface water, with specific volumes of water identified for this purpose for the Seminole Tribe of Florida's Big Cypress Reservation and an operational plan addressing drought-water shortage operations for the Brighton Reservation.

The Seminole Tribe of Florida has surface water entitlement rights pursuant to the 1987 Water Rights Compact between the Seminole Tribe of Florida, the State of Florida, and the SFWMD. (Public Law No. 100-228, 101 Stat. 1566 and Chapter 87-292 Laws of Florida as codified in section 285.165, Florida Statutes). Additional documents addressing the Water Rights Compact entitlement provisions have since

been executed. These documents include Agreements between the Tribe and SFWMD and a SFWMD Final Order. Of particular interest in this regard is the 1996 Agreement which commits the SFWMD to mitigate impacts to the Tribe's ability to obtain surface water supplies at both the Brighton and Big Cypress Reservations, which may be diminished as a result of various activities.

For the Big Cypress Reservation, SFWMD has installed forward pumps to deliver water from Lake Okeechobee at lower stages to the Miami Canal. This option remains a part of drought management alternatives. Also, real-time operational decisions made during a declared drought event include recognition of the Tribe's water rights. These decisions remain a part of the SFWMD drought management operations.

For the Brighton Reservation, various options of securing both short and long-term water supply deliveries to agricultural operations in the Southern Indian Prairie Basin are being evaluated extensively and implemented where possible. For example, other water source and conveyance options, including deviations to the Lake Istokpoga Regulation Schedule (USACE 1994) to provide for additional water supply and modifications to the C-40 canal to augment the pump station G-208 capability, continue to be explored. Preliminary discussions remain ongoing with the USACE and the USFWS in respect to deviations of the Lake Istokpoga Regulation Schedule.

C.1.1.11.3 Lower East Coast Service Areas

Fresh groundwater is the primary source of supply for potable water consumption, landscape irrigation, and industrial and commercial uses in the LECSA. The LECSA includes Northern Palm Beach County, LECSA 1 (Palm Beach), LECSA 2 (Broward County/Fort Lauderdale), and LECSA 3 (Miami-Dade) (**Figure C.1-9**). Irrigated agricultural acreage for the LECSA is shown in **Table C.1-3.** In the urban areas, PWS relies heavily on the Surficial Aquifer System (SAS), including the Biscayne aquifer. The SAS produces good quality, fresh water from relatively shallow wells. In many cases, the ambient water quality meets primary and secondary drinking water quality standards. These aquifers are recharged by local rainfall, groundwater seepage from the WCAs and Everglades National Park, and surface water deliveries from the WCAs. When sufficient water is available, surface water from Lake Okeechobee can also be routed to the WCAs, then to regional canals to maintain water levels and recharge the aquifer.

Table C.1-3. Irrigated Agricultural Acreage for LECSA (Source 2013 LECSA Draft Water Supply Plan)

Category	Acreage			
	Broward	Miami-Dade	Palm Beach	Total
Irrigated Lands				
Urban Irrigated	128,167	151,362	122,506	**403,282**
Transportation, Communication, & Utilities	3,136	7,039	2,937	**13,112**
Golf Course	7,113	3,720	13,776	**24,767**
Mixed Crops	0	23	0	**23**
Row Crops	819	28,000	10,920	**40,673**
Field Crops	40	1,974	0	**2,014**
Sugar Cane	0	0	1,104	**1,143**
Citrus	2	717	2,464	**5,165**
Other Fruit & Nuts	80	8,000	102	**8,182**
Greenhouse/Nursery	250	9,000	3,798	**13,187**
Sod	9	114	1,953	**2,076**
Specialty Farms	442	216	5,758	**6,423**
Cattle Feeding Operations	0	0	0	**51**
Irrigated Lands Total	**140,058**	**210,165**	**165,318**	**520,098**
Wastewater Reuse				
Urban	1,491	0	4,500	**5,999**
Golf Course	1,047	0	6,506	**8,002**
Transportation, Communication, & Utilities	29	0	61	**91**
Wastewater Reuse Total	**2,568**	**0**	**11,067**	**14,092**
Floridan Aquifer				
Golf Course	0	0	335	**335**
Floridan Aquifer Total	**0**	**0**	**335**	**335**
Non-Irrigated Lands				
Urban Non-Irrigated	57,990	59,437	90,873	**208,932**
Urban Under Construction	3,000	3,259	5,731	**12,258**
Transportation, Communication, & Utilities	17,953	21,526	14,758	**54,566**
Pasture	1,585	1,178	5,255	**9,239**
Abandoned Groves	460	96	2,193	**2,907**
Fallow Crop Land	1,585	12,219	7,195	**21,490**
Upland Non-Forested	1,286	3,458	7,198	**14,035**
Upland Forested	3,775	4,376	50,055	**65,779**
Open Water	31,120	34,480	38,537	**106,243**
Wetlands	25,479	120,168	102,601	**254,966**
Barren Land	738	4,053	2,701	**7,494**
Non-Irrigated Lands Total	**144,971**	**264,251**	**327,097**	**757,910**
Grand Total	**287,597**	**474,415**	**503,816**	**1,292,434**

During the wet season, well fields are recharged by local rainfall and by the regional system that provides continuous seepage from the WCAs to the regional aquifer and the canals. During the wet season, "excess" storm water is also passed through the canals and out to tide due to the limited storage capability within the LEC coastal canal system. Without sufficient storage, it has been difficult to have water available during the dry season without causing flooding during the wet season. Another concern is that, at present, the flow of water along the eastern protective levee is from the Everglades' wetlands to the coast; keeping the water levels high west of the Atlantic Coastal Ridge, and managing levels low to the east of it, results in large groundwater losses from the remnant Everglades throughout the year. This situation has reduced the coastal groundwater flows into estuaries like Biscayne Bay and has made it necessary to import regional water to the Lower East Coast to maintain adequate coastal groundwater levels to prevent saltwater intrusion.

The pattern described above occurs during wet seasons and during normal rainfall years. During extremely dry years, no water reaches the coast and the urban well fields depend heavily on deliveries from the WCAs (including the ongoing seepage from these areas) and Lake Okeechobee via the primary canals for water supplies. During droughts, lower regional groundwater levels may cause inland movement of saline water at the interface of the aquifer with seawater. Minimum stages are maintained in LEC canals principally to protect the Biscayne Aquifer from saltwater intrusion, a major threat to this water resource. Maintaining canal stages during dry conditions serves to raise local and regional groundwater levels to recharge the aquifer, which, in turn, supplies the urban well fields. Even during normal dry seasons when flood releases are minimal, the high demands on the system from urban water supply may be withdrawing water from the natural environment that could alternatively be kept in the system for late winter and spring biological rejuvenation. In addition, during drought years, the urban and agricultural areas create additional demands on the regional water supply as the need for irrigation increases, with a significant percentage of this irrigation water consumed for landscape maintenance (sourced primarily from shallow wells and surface waters). Under drought conditions, water shortage restrictions within the LEC Service Areas may be declared by the SFWMD Governing Board to conserve freshwater supplies.

Due to efficiency in application, the amount of water needed to recharge urban well fields is small compared to the tremendous volumes needed to prevent saltwater intrusion. Preventing saltwater intrusion is important to maintain the long-term viability of the primary ground water supply for the LECSA. For example, if significant saltwater intrusion occurred even once, the easternmost well fields would be contaminated indefinitely and would be replaced with wells further west. This situation has already occurred in eastern Miami-Dade County, and Broward and Palm Beach Counties.

Figure C.1-10 shows the distribution of SFWMD-permitted SAS wells for PWS utilities producing over 0.1 million gallons per day (MGD). The map reveals that well capacities generally increase from Palm Beach County to the south towards Miami-Dade County as a result of the presence of the Biscayne aquifer within SAS. The transmissivity of the Biscayne aquifer increases from north to south. In 2010 (latest information available), PWS utilities utilized 788 MGD of fresh groundwater to supply 94 percent of their total potable water demand. In addition to PWS, agriculture in Broward and Miami-Dade Counties is primarily dependent upon withdrawals from the Biscayne aquifer to supply supplemental irrigation for crops, livestock, and other purposes.

The SAS, including the Biscayne aquifer, is a source of limited availability to the extent that withdrawals result in induced seepage from the C&SF Project, except when stormwater discharge or wet season discharge occurs, as defined by Section 1.7.2.2.B of the Basis of Review for Water Use Permit

Applications within the South Florida Water Management District, commonly referred as the SFWMD Basis of Review (2012a). The SFWMD adopted the Everglades and Loxahatchee River Watershed Restricted Allocation Area criteria (Section 3.2.1.E, Basis of Review) in 2007. If a utility pursues increased withdrawals from the SAS, this source is generally limited due to potential impacts on wetlands and existing legal water users including Domestic Self-Supply and the potential for saltwater intrusion. New or increased allocations are evaluated by the SFWMD on an application-by-application basis to determine if the project meets consumptive use permitting criteria.

In addition to the regulatory limitation on water availability, there is also physical limit of water available due to regulation schedules for the WCA's. Water supply deliveries from the WCAs to coastal canals are utilized to maintain coastal canals and to recharge coastal well fields during dry hydrologic conditions. When canal levels drop below adequate recharge levels due to a combination of wellfield drawdowns, evaporation, and lack of rainfall, water supply deliveries are typically made from the regional C&SF system. When canal levels drop in Miami-Dade County, regional water supply is delivered from WCA 3A through one of two delivery routes, as previously described.

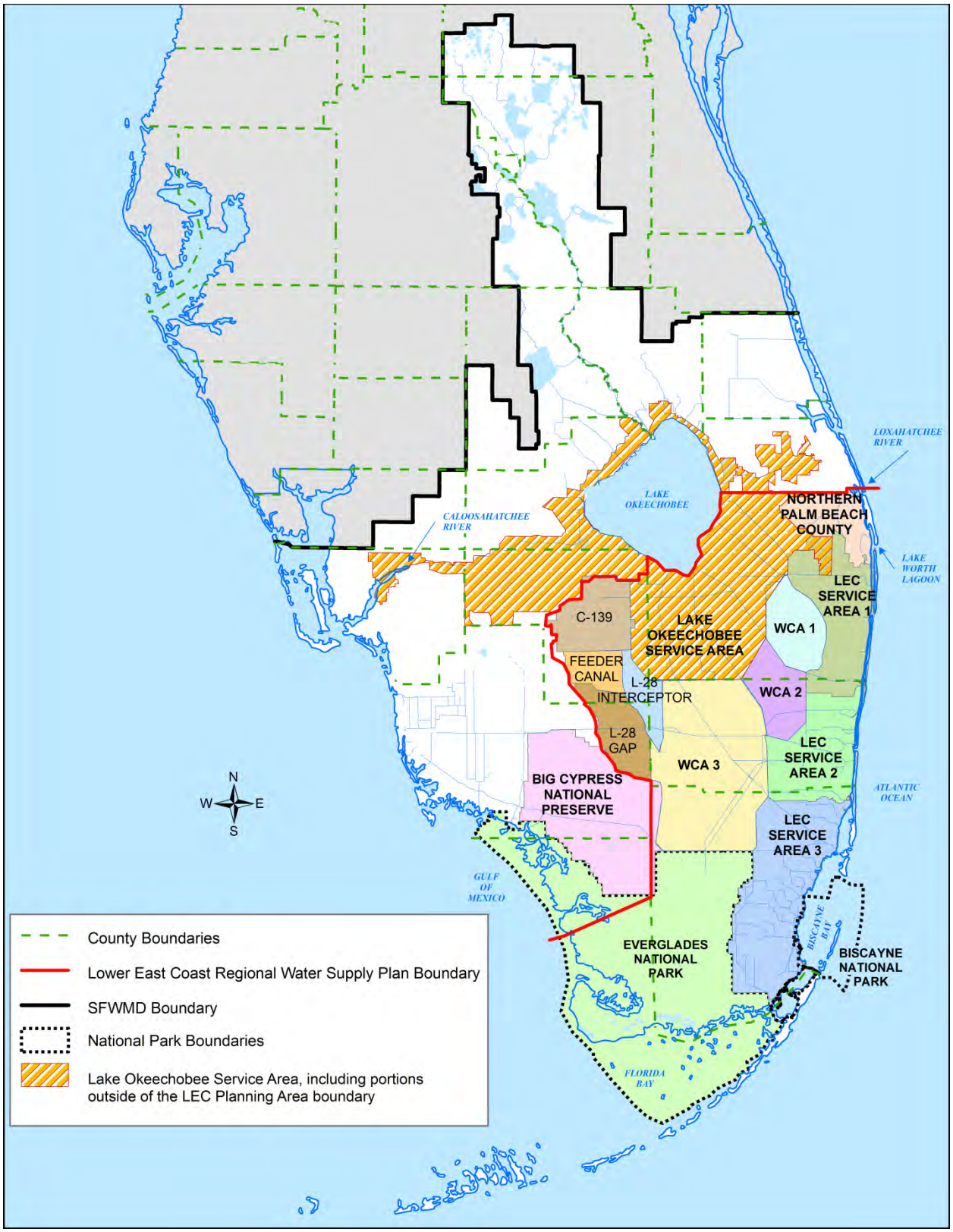


Figure C.1-9. Map of South Florida Water Management Lower East Coast Service Area

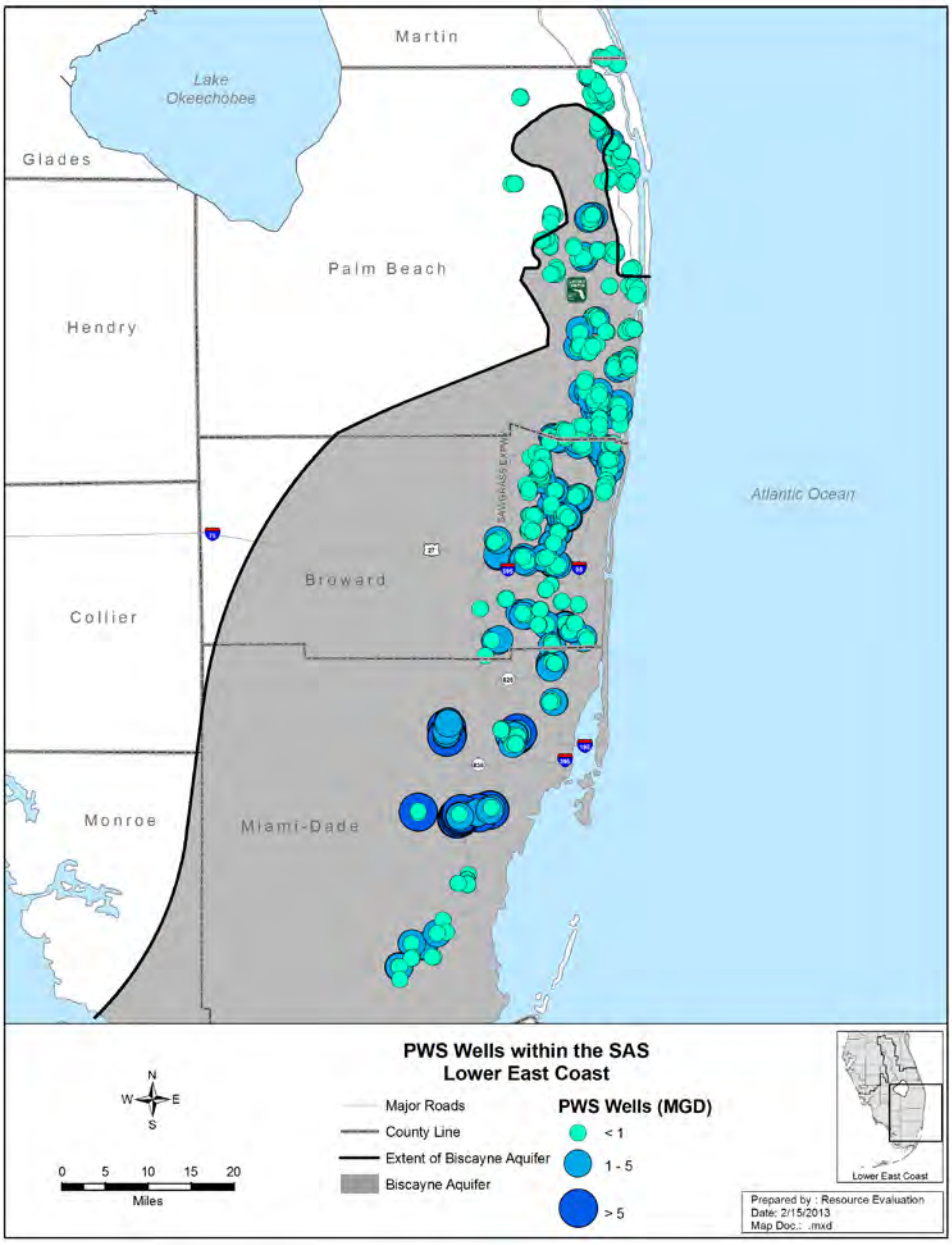


Figure C.1-10. Production from Lower East Coast Public Water Supply Wells

C.1.1.12 Water Quality

Water quality in the study area is significantly influenced by development. The C&SF Project led to significant changes in the landscape by opening large land tracts for urban development and agricultural uses, and by the construction of extensive drainage networks. Natural drainage patterns in the region have been disrupted by the extensive array of levees and canals which has resulted in further water quality degradation. The water quality of the study area is largely controlled by Lake Okeechobee and the EAA. Lake Okeechobee feeds downstream sub-basins such as the St. Lucie and Caloosahatchee River Estuaries, including Indian River Lagoon and Charlotte Harbor. The northern WCAs are fed from the lake as well as runoff from the EAA. Water quality impairment within the study area can generally be attributed to nutrients and bioavailable forms of mercury. A short discussion of each of these water

pollutants is provided below followed by a geographically referenced review of water quality within the study area.

C.1.1.12.1 Nutrients

Nutrients such as phosphorous and nitrogen compounds are a concern in the estuaries, WCAs, ENP, and Lake Okeechobee since they result in an imbalance of flora and fauna. To address nutrient discharges the Florida Department of Environmental Protection (FDEP) has recently established surface water quality numeric nutrient criteria for all Florida water bodies and developed National Pollution Discharge Elimination (NPDES) Total Daily Maximum Loads (TMDLs) for many watersheds with excessive nutrient pollution. TMDLs for phosphorus and/or nitrogen currently exist for Lake Okeechobee, the St. Lucie Estuary, and the Caloosahatchee Estuary. Within the Everglades Protection Area, phosphorus concentrations are regulated by the "Phosphorus Rule" 62-302.540 F.A.C. as well as addressed through legal agreements such as the 1991 Consent Decree and the 2012 Consent Order. (Additional detail on these two legal agreements is included in **Annex F**. Additional information on the status and implementation of TMDLs within the study area can be found at http://www.dep.state.fl.us/water/tmdl/.)

Excess nutrients come primarily from agricultural fertilizers; the decomposition of the peat soils in the area also contributes to excess phosphorus in the system. Phosphorus is the limiting nutrient for Lake Okeechobee, the WCAs, and ENP; nitrogen is generally considered to be the limiting nutrient for the marine waters of south Florida. Prior to 1970, the background TP concentration in Lake Okeechobee was less than 0.040 milligrams per liter (mg/l) while at present it exceeds 0.090 mg/l. Within the remnant Everglades, the background phosphorus concentration in surface waters is between 0.004 mg/l and 0.006 mg/l TP. At the northern end of WCA 3, inflow TP concentrations exceed 0.020 mg/l resulting in undesirable changes to soil composition and vegetation coverage. Soil phosphorus concentrations in pristine areas of ENP are on the order of 100 to 200 milligrams per kilogram (mg/kg) while in impacted areas of the WCAs near canals, soil phosphorus concentrations exceed 500 mg/kg (Craft 2007). The discharge of elevated concentrations of TP into the WCAs has resulted in sufficient soil phosphorus concentrations (< 650 mg/kg) to support cattail invasion into formerly sawgrass and bulrush dominated areas. An example of the impact of nutrient discharges is evident from the expansion of cattails south of the S-10 inflow gates to WCA 2A.

Nitrogen is generally not considered to be a problem within the Everglades landscape. The concentration of total nitrogen (TN) varies from about 2.2 mg/l in WCA 1 to around 0.85 mg/L in pristine areas of ENP. Lake Okeechobee TN concentration is presently around 1.7 mg/l. In the Caloosahatchee and St. Lucie estuaries and portions of Florida Bay, excess nutrients cause algal blooms and depressed oxygen conditions. The Caloosahatchee and St. Lucie Estuaries are generally considered to be nitrogen limited with inorganic forms of nitrogen such as nitrate causing the most harm. The concentration of nitrogen in the discharges from the C-43 and C-44 canals into the northern estuaries is approximately 1.5 mg/l with approximately 0.5 mg/l provided by the highly bioavailable inorganic forms such as nitrate and nitrite. The average concentration of total nitrogen into Florida Bay is around 1.0 mg/l with very little provided as nitrate and nitrite.

C.1.1.12.2 Mercury

Mercury (Hg) is widely distributed in the environment and originates primarily from volcanoes and human-induced (anthropogenic) sources such as combustion (Krabbenhoft and Sunderland, 2013). Hg is deposited from the atmosphere primarily as inorganic Hg. Approximately 55 percent of atmospheric Hg in the USA is sourced internationally with the balance coming from local anthropogenic sources.

Significant local sources include coal-burning power plants, cement kilns, and incinerators (FDEP, 2013). In the Everglades, the conversion of inorganic Hg to organic methylmercury (MeHg) is facilitated by naturally occurring reducing bacteria. This conversion of inorganic Hg to MeHg is one of the important steps in the bioaccumulation of Hg as it greatly increases toxicity and potential for accumulation in aquatic biota. Nearly all of the Hg found in fish and shellfish tissue is MeHg (Grieb et al., 1990; Bloom, 1992).

Human exposure to Hg is primarily through the consumption of fish and shellfish containing MeHg. Exposure to Hg causes neurodevelopmental delays in children. Wildlife exposure to MeHg through the consumption of fish results in reproductive, neurological, and immune system problems (Fleming et al. 1995; Tchounwou et al. 2003). However, contaminated fish is not the only pathway for bioaccumulation of Hg.

The United States Environmental Protection Agency (USEPA) has established that a concentration of Hg in fish tissue in excess of 0.3 mg/Kg is detrimental to human health. Water quality impairment for Hg is also measured by the incidence of gamefish tissue with Hg in excess of 0.3 mg/Kg. Twenty species of Florida freshwater fish and over 60 species of marine fish are under consumptive advisory (FDOH 2012). These advisories apply to the Everglades Protection Area (EPA), including all of the CEPP study area—WCAs and ENP (see **Figure C.1-11**, SFWMD 2008). In the WCAs, largemouth bass Total Mercury (THg) concentrations declined sharply in the 1990's, but have changed little since 2000. Significantly, in ENP, largemouth bass THg concentrations have not changed in the last 23 years, from 1989 to 2011. For the 2000-2011 period, about 70 percent of largemouth bass sampled from 49 locations within the EPA exceeded 0.3 mg/Kg and 75 percent of sunfish (several species) sampled from 25 locations in the EPA exceeded the USEPA trophic level 3 (TL3) MeHg wildlife protection guidance target of 0.077 mg/kg. The frequent exceedance of USEPA THg guidance levels LMB is evident in **Figure C.1-12.**

Methylmercury also poses a threat to fish-eating wildlife and species that prey on them such as wading birds, ospreys, eagles, otters and panthers. The elevated concentrations of MeHg in fish have been correlated with elevated concentrations in wildlife, including state and federally listed endangered species. Total Mercury concentrations in panther hair ranged from 0.092–67 mg/Kg; in wood stork chicks ranged from 5.2 to 10.8 mg/kg, at coastal ENP colonies; in great egrets ranged from 2.5 to 20 mg/Kg, from several colonies in the EPA (2013 and 2014 SFER, SFWMD).

In 2013, Florida adopted a statewide TMDL for Hg to protect public health with respect to fish consumption. This state program proposes achieving Hg target levels in fish tissue by reducing atmospheric Hg emissions by 86%, which may encompass reduction in emissions from sources in south Florida, statewide, other U.S. states, and other countries.

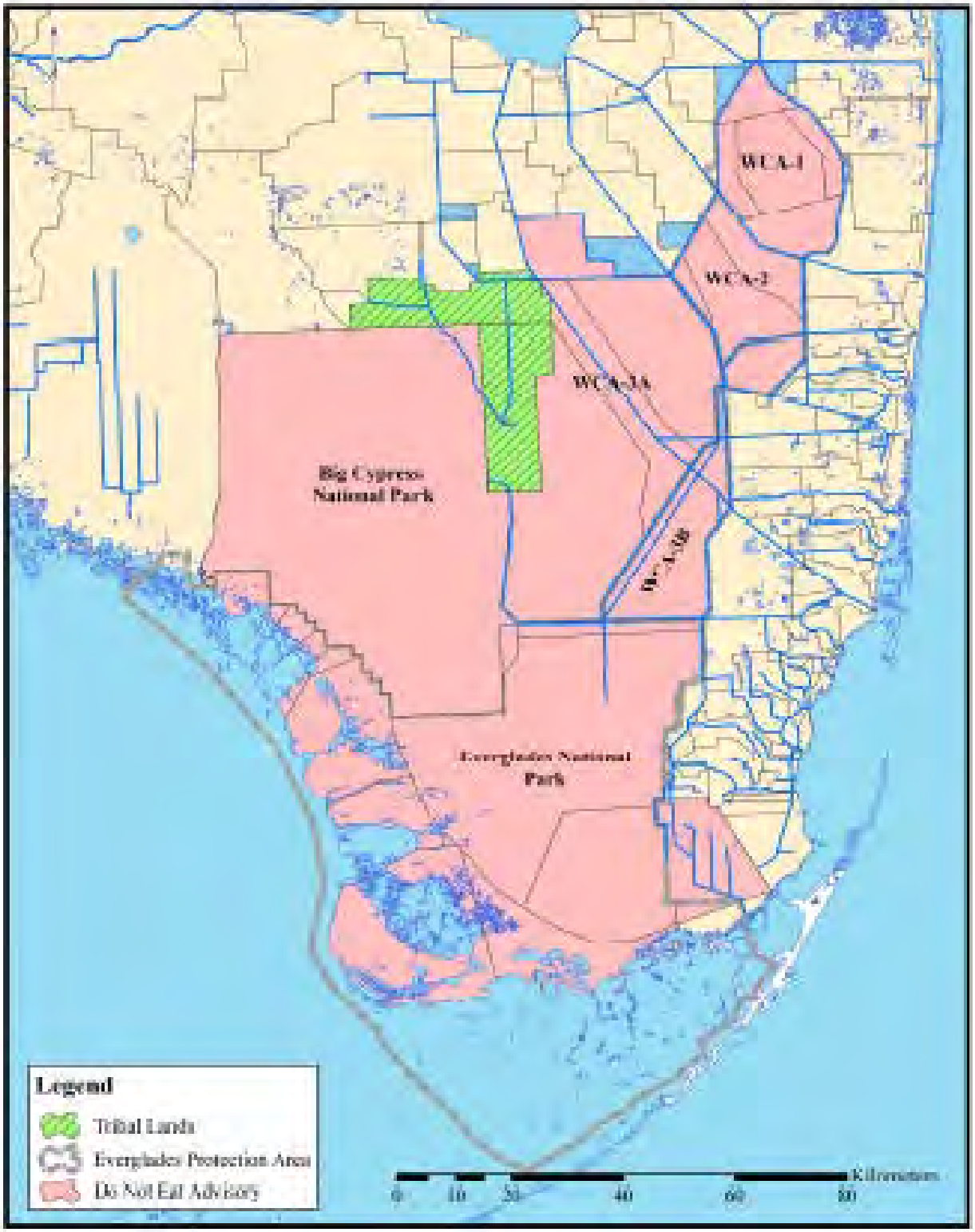


Figure C.1-11. Areas of the Everglades Protection Area Where the Florida Department of Health has issued "Do Not Eat" Advisories for Largemouth Bass (Source 2009 South Florida Environmental Report).

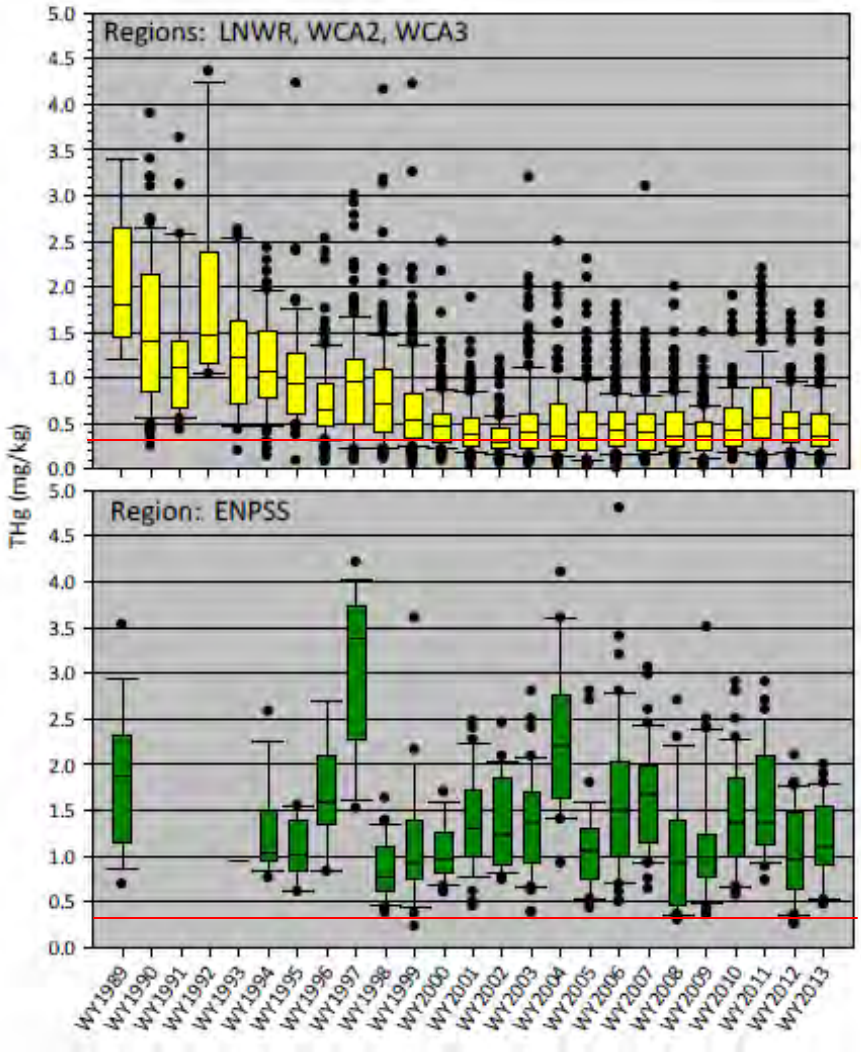


Figure C.1-12. Total Mercury (THg) Concentrations in Largemouth Bass from the Everglades Protection Area, Water Year 1989-2013. The top figure shows the WCAs and bottom figure ENP. Redlines (0.3 mg/kg) are USEPA recommended MeHg levels for the protection of human health. Modified from the 2014 South Florida Environmental Report.

Over the past 15+ years, several agencies, educational institutions and organizations have conducted research to identify key chemical characteristics that play major roles in Hg methylation and have investigated trends in MeHg bioaccumulation within the Everglades freshwater ecosystems as well. Sulfur, Hg and dissolved organic carbon, have been identified as significant drivers of Hg methylation (Ekstrom et al., 2003; Gilmour et al., 2004b). It has been suggested that sulfate-reducing bacteria (SRB) are the dominant producer of MeHg in the Everglades aquatic ecosystems, however other groups of bacteria such as iron-reducing bacteria and methanogens also have the ability to methylate mercury (Gilmour 2012).

Previous studies on mercury methylation have indicated that sulfate-reducing bacteria may produce MeHg within a range of sulfate levels. Some research and field observations in the Everglades marshes suggested that at 1 mg/L sulfate, microbial sulfate reduction and MeHg production rates would be low

due to sulfate limitation (Gilmour et al., 2007a, and b). By contrast, above 2 mg/L sulfate, the ecological risk to the ecosystem increases because at intermediate levels of sulfate the Hg methylation is optimized. Some recent studies further suggest that mercury methylation rates are optimum (higher) at sulfate concentrations ranging from 10–20 mg/L in the WCAs and 2–4 mg/L in ENP; these methylation rates, however, become depressed when sulfide levels increase (300 µg/L) above the normal range (5–150 µg/L; Gilmour et al., 1998; Benoit et al., 2003; Gilmour et al., 2007a).

However, there is evidence that high MeHg concentrations in surface water or fish could occur at very low sulfate levels. For example, a mesocosm study conducted in a north-central Minnesota peatland showed that MeHg production increased by over two-fold when the porewater sulfate level was raised from 0.06 mg/L to 1.3 mg/L (Mitchell et al. 2008a). A field investigation on the same study area revealed that MeHg hotspots typically formed at the median SO_4 concentrations between 0.1 and 3.0 mg/L (Mitchell et al. 2008b). Similar results can also be found in the Florida's Everglades. A recent Hg and sulfate enrichment incubation with slurry collected from WCA 3A showed significantly elevated MeHg production at the sulfate level below 1 mg/L (DBE 2013). In addition, consistently high THg levels in fish and low surface water sulfate levels (at or below 1 mg/L) were observed in a long-term mercury monitoring site (3A15) within the WCA-3A (Julian et al. 2014). By contrast, high MeHg concentrations in the surface water or fish are also found at sulfate level well above the "optimal" range (i.e., 20 mg/L) in south Florida wetlands. Rumbold and Fink (2008) reported extremely high MeHg concentration (20 ng/L) in the surface water of Cell 1 of STA-2 after a period of dryout. During this time period (CY2002), sulfate concentration at inflow varied from 40.5 to 95.2 mg/L (SFWMD DBHYDRO Database). Another example of long-term Hg hotspot in largemouth bass which consistently exceeded USEPA trophic level 4 fish criterion (0.346 mg/kg) is found at U3 of WCA 2A where annual average sulfate concentration remained at or above 20 mg/L except WY2007 and 2008 (Julian et al. 2014). These findings suggest that mercury methylation and bioaccumulation in Everglades fish involve complex biogeochemical and ecological processes that are affected by factors other than sulfur. Additional research and monitoring are needed to provide a better understanding of the mechanisms influencing mercury methylation under the varying biogeochemical and ecological conditions found in the Everglades.

The historic background sulfate level in the Everglades may be lower than 1 mg/L in some locations (≤0.1 mg/L; Scheidt and Kalla, 2007; Weaver et al., 2007). At present time, major sources of sulfate to the EPA include EAA runoff and Lake Okeechobee discharge. Sulfate concentrations within Lake Okeechobee, the EAA, and portions of the WCAs and ENP are well above the natural background levels (Julian et. al 2014). On the basis of recently developed sulfur budgets, Lake Okeechobee contributes from 16 to 30% of the sulfur loading to the EAA (Corrales et. al., 2011; James and McCormick, 2012) and farmers' applications and soil oxidation contribute an additional 11% and 45%, respectively (Corrales et. al., 2011). Other discharges that contribute to the EPA sulfate loading come from basins to the east as well as agricultural lands to the west. In the early 1990s, the lake average sulfate level was estimated at around 60 mg/L; estimates of current lake sulfate levels range from 41–50 mg/L James and McCormick (2012). By comparison, Julian et al. (2014) reported that sulfate in discharges into WCA 1 was 51 mg/L, 34 mg/L in WCA 2, 22 mg/L in WCA-3, and 4 mg/L in ENP during the WY2013. Other sources of sulfate to the EPA include atmospheric deposition, groundwater, connate seawater and soil oxidation. Atmospheric deposition alone accounts for about 1 mg/L sulfate load to the surface water of EPA. Another factor that may lead to increased sulfate concentration in the EPA marshes without additional loading is surface water evaporation and evapotranspiration by aquatic plants. The evaporation process contributes to the outflow sulfate concentration from Lake Okeechobee being higher than the inflow concentration (James and McCormick, 2012). The contributions of evaporation/evapotranspiration, connate seawater, soil oxidation and groundwater to the Everglades' sulfur budget need further

quantification. These sources of sulfate, which are largely uncontrollable, could contribute to enhanced mercury methylation in portions of the Everglades.

There are no numeric state water quality criteria for sulfur that are applicable to the Everglades. The USEPA has a nationally recommended surface water quality criterion for sulfide (2 µg/L) but not for sulfate, and the state of Florida has neither a sulfate nor a sulfide numeric water quality. Both sulfate and sulfide are relevant forms of sulfur because they can act as agents stimulating and inhibiting, respectively, Hg methylation in some locations of the Everglades ecosystem.

Several studies have focused on a hypothetical S-MeHg unimodal relationship between surface water sulfate and biota MeHg in the Everglades. The relationship, originally developed based on sediment MeHg and surface water sulfate concentrations, indicates that methyl mercury production strikes a balance between sulfate limiting and sulfide inhibiting the methylation of mercury (Gilmour and Henry 1991). Although some Everglades data support this relationship (Axelrad, et al., 2013), ambient data from the Everglades ecosystem also cover wide variations and do not follow this relationship in a predictable manner (Julian, et al., 2014).

Water quality conditions across the EPA vary greatly, primarily due to differences in water quality conditions of surface water inflow (Julian et al., 2013; Scheidt and Kalla, 2007). Areas within WCA 3 and ENP with low to moderate sulfate concentrations can have a highly variable concentrations of fish tissue mercury within the three indicator fish species (i.e. mosquitofish, sunfish, largemouth bass; Julian et al., 2014). This trend is consistent with trends present within the USEPA R-EMAP dataset associated with mosquitofish Hg concentrations as presented by Julian (2013). Sulfur is one of many factors that can affect mercury methylation and bioaccumulation in the Everglades.

C.1.1.12.3 Lake Okeechobee

Lake Okeechobee is considered to be the hydrologic heart of south Florida. Water quality in the lake has been greatly impacted over the long-term by agricultural operations in the Kissimmee Basin to the north and the EAA to the south. Hurricane events adversely affect the lake water quality. After the hurricanes of 2004 and 2005 which passed directly over the lake, the average TP concentration increased to more than 200 parts per billion (ppb). This was due to re-suspension of some of the 30,000 tons of TP stored in the lake sediments. Current phosphorus loading to the lake is approximately 377 tons per year and the average TP concentration for the lake is currently around 92 ppb which is the lowest average concentration since 1993 (SFWMD 2013). The average total nitrogen concentration in the lake is approximately 1.4 mg/l. The FDEP has determined that the lake is impaired for nutrients and mercury in fish tissue. To date, the FDEP has established a TP loading TMDL for Lake Okeechobee with a target annual load of 140 tons per year and a target in-lake total phosphorus concentration of 40 ppb. The 40 ppb TP target was established as the level of phosphorus necessary to reduce algal blooms to less than 10 percent of the time (Havens, K.E. & Walker, W.W. 2002). Control of nitrogen inputs has not been the focus in the Lake Okeechobee basin to date. The SFWMD, in concert with FDEP and FDAC, have put together the Lake Okeechobee Protection Plan (LOPP) which describes the State's plan to achieve the TP loading TMDL for the lake (SFWMD 2011). Since the Lake Okeechobee Protection Act was enacted in 2000, over $1 billion of state and Federal contributions have been invested in the Lake Okeechobee watershed to implement nutrient removal, water storage/retention, and restoration activities in the Lake Okeechobee Watershed including, but not limited to:

- Land owners enrolled approximately 1.6 million acres (77 percent of agricultural land in the Lake Okeechobee watershed) in the FDACS adopted agricultural best management

practices (BMP) program. Agricultural BMPS are practical, cost-effective actions that agricultural businesses can use to reduce pesticides, fertilizers, animal waste and other pollutants entering our water resources.

- FDEP adopted amendments to Chapter 62-640, Florida Administrative Code (F.A.C.), to improve statewide application site accountability and management of Class B biosolids. The rule changes included requirements for site permitting, nutrient management plans, and the biosolids provisions of the 2007 legislation for Sec. 373.4595, F.S., which have resulted in a shift away from biosolids land application in the Okeechobee watershed. Since 2007, the number of active biosolids sites has decreased from 22 to 0. There are currently no permitted biosolids sites in the northern Everglades.
- Extensive data collection and technical analyses are near completion for the development of performance measures for the watershed's Pollutant Source Control Programs. This was a necessary first step in support of technical amendments to the District's regulatory program. The next step includes adoption of schedules, strategies and technical methodologies for fully implementing source controls and BMP programs (for non-FDACS participants) and quantitatively measuring the combined source control programs progress toward achieving water quality goals.
- Construction of three regional STAs designed to reduce phosphorus loading to Lake Okeechobee. These STAs are also expected to remove total nitrogen from the system.
- Implementation of six Hybrid Wetland Treatment Technology (HWTT) projects. HWTT combines the strength of both wetland and chemical treatments to maximize nutrient removal while minimizing chemical use. Based on monitoring results of the six operational HWTT projects in the northern Everglades, this effort is proving to be a promising technology. During the entire study period, results showed flow-weighted mean total phosphorus (TP) concentrations reductions of approximately 70-90 percent and total nitrogen reductions of approximately 20 to 60 percent (SFWMD, 2011).
- Approximately 138,000 acre-feet of water storage/retention has been achieved in the northern Everglades and connected watersheds since 2005 through partnerships that have provided water management alternatives and regional and sub-regional projects. Of that, approximately 91,700 acre-feet is located within the Lake Okeechobee Watershed. Additional water storage sites are currently being developed as part of the Dispersed Water Management program.
- The Northern Everglades-Payment for Environmental Services (NE-PES) program is part of the Dispersed Water Management program. The goal of the NE-PES is to establish creative collaborations via contracts with private landowners to obtain the water management services of water and nutrient retention which will reduce excess flows and nutrient loads to Lake Okeechobee and the estuaries. Payment for documented services is an innovative approach to achieve water resource improvements while providing a business opportunity for landowners to participate.
- Construction of more than 30 phosphorus reduction projects including isolated wetland restorations, Dairy Best Available Technology projects, former dairy remediation projects, evaluation of new technologies, and public-private partnership projects.
- Removal of approximately 1.9 million cubic yards of muck from Lake Okeechobee, in conjunction with the Florida Fish and Wildlife Conservation Commission (FWC), exposing thousands of acres of natural lake bottom sand and promoting the return of native plant

species. These efforts were estimated to remove approximately 142 metric tons of phosphorus from the lake.

- Acquisition of more than 100,000 acres of land needed for Kissimmee River Restoration and Headwaters Revitalization is substantially complete. Three phases of the Kissimmee River Restoration Project have been completed. The remaining phases are scheduled to be complete in 2015. Once restoration construction is complete, 40 square miles of Kissimmee River and floodplain ecosystem will be restored including almost 25,000 acres of wetlands and 40 miles of historic river channel.

The State of Florida's current plan (2011 to 2013) includes source control efforts, sub-regional and regional treatment works, and storage implementation projects which will reduce TP loads to the lake by approximately 57 metric tons (mTons)/year. The long-term plan (post 2013) outlined in the 2011 LOPP includes projects that are expected to remove an additional 132 mTons/year of TP (excluding the CERP Lake Okeechobee Watershed Project). The removal of the remaining 116 m Tons/year necessary to achieve the TMDL is expected to be achieved by implementing features included in the CERP Lake Okeechobee Watershed Project as well as undertaking additional measures associated with expanding the ongoing efforts as well as implementing new treatment technologies.

Like many of Florida's freshwater lakes, Lake Okeechobee is impaired for mercury due to elevated levels of mercury found in fish. The FDOH advises limiting the consumption of fish caught from the lake.

C.1.1.12.4 Caloosahatchee River and Estuary

Water quality conditions are degraded in the upper and lower areas of the Caloosahatchee River basin due to agricultural and urban runoff, respectively. The channelized section of the river also shows degraded water quality conditions, due to agricultural inputs, as compared to tributaries lying in less developed areas of the basin. Problems associated with the degraded areas of the basin are typified by low dissolved oxygen levels, elevated conductivity, decreased biodiversity, and mercury methylation / bioaccumulation. Conditions in the urbanized sections of the basin are influenced by non-point stormwater flows, and are manifested in the river by elevated chlorophyll levels, algal blooms, periodic fish kills, and low dissolved oxygen levels. Although wastewater discharges remain a problem, the estuary is presently more seriously affected by high nutrient waters from the river and tributaries, and stormwater runoff from cities. Nutrient and chlorophyll levels are high, and small algal blooms occur regularly.

Lake Okeechobee provides approximately 60 percent of the freshwater discharged at the S-79 structure which is the upstream end of the Caloosahatchee Estuary. The remaining volume of freshwater comes from Caloosahatchee River basin runoff. FDEP has identified mercury in fish tissue, nutrients, and dissolved oxygen as verified impairments to the main stem of the Caloosahatchee Estuary. Approximately two-thirds of the nutrient load to the Caloosahatchee Estuary is contributed from sources within the basin with the remaining fraction coming from Lake Okeechobee. Given that the estuary is nitrogen limited, FDEP has focused on controlling nitrogen loads to improve water quality. FDEP has developed a TMDL for TN in the estuary that requires a reduction in load of 23% relative to the current average annual load of 5,900 tons per year. FDOH has a fish mercury consumption advisory for the Caloosahatchee River and Estuary.

C.1.1.12.5 St Lucie River and Estuary

Water quality conditions along the St. Lucie River are rated as good in less developed areas of the basin. However, conditions are degraded in urbanized areas and along the extensive network of canals that drain this area. The worst water quality conditions in Martin and St. Lucie Counties are reported in the St. Lucie River and the canals leading from the EAA. Approximately 33 percent of total freshwater flow to the St. Lucie Estuary is provided by discharges from Lake Okeechobee through the C-44 Canal. Given its similarity to the Caloosahatchee Basin, it is reasonable to assume that at least 50% of the nutrient load comes from the St. Lucie Basin with the remainder provided by Lake Okeechobee flows. FDEP has determined that the St. Lucie River is impaired for Biochemical Oxygen Demand (BOD), TP, and TN. For the C-44 canal, FDEP established TMDL's for BOD, TP, and TN that require a reduction in load of 70, 55, and 51 percent, respectively from current conditions. Upstream portions of the St. Lucie River are impaired for mercury; however, the main portion of the St. Lucie Estuary is not included in the FDOH list of fish consumption advisories for mercury.

C.1.1.12.6 Everglades Agricultural Area

Sugar cane is grown on approximately 85 percent of the 700,000-acre EAA with the balance planted in turf grass, rice, citrus, and truck crops. The L-8, West Palm Beach, Hillsboro, North New River, and Miami Canals from Lake Okeechobee to the L-4, 5, 6, and 7 Canals, which roughly define the EAA, have poor water quality with extremely high nutrient and low dissolved oxygen levels. Other problems include pesticides, biological oxygen demand, bacteria, suspended solids, and mercury bioaccumulation. FDEP has defined most of the primary and secondary canals within the EAA (Miami, Hillsboro, North New River, West Palm Beach, Bolles, and Cross Canals) as Class III Waters with a designated use of "recreation propagation and maintenance of healthy, well-balanced population of fish and wildlife. FDEP has identified fecal coliform, ammonia, and nutrients as impaired within portions of the EAA". No draft or final TMDLs have been established for the EAA; however, as a result of extensive litigation between the State of Florida and Federal Agencies (DOI, USEPA) and other parties over the last 20 years, the State has been compelled to establish numeric criteria for total phosphorus, implement agricultural BMPs to control phosphorus discharges and build stormwater treatment systems to ensure that water leaving the EAA and entering the WCAs meets the criteria. Over the past 12 years, SFWMD has constructed approximately 60,000 acres of stormwater treatment areas to reduce total phosphorus concentration in water entering the WCAs. While the construction and operation of the STAs have significantly improved the quality of water discharged to the WCAs, the Federal Parties (DOI, USEPA) filed a brief with the Court for additional relief given continued exceedances of the original 1991 Settlement Agreement water quality limits. In 2011, the presiding judge ordered the parties to come to terms or have a settlement imposed upon them. The September 2012 Consent Order issued to the SFWMD by FDEP is the result of extensive negotiations between the state and Federal parties. The Order requires that the maximum annual flow weighted mean TP concentration be no higher than 19 ppb on an annual basis and a long-term limit of no higher than 13 ppb in three out of five years. To date, the TP concentration in the best performing STA has averaged 17 ppb which exceeds the long-term limit of 13 ppb (SFWMD, 2012b). As part of the 2012 Consent Order, the SFWMD has agreed to construct 6,500 acres of additional STA capacity and 110,000 acre-feet of FEB storage. In addition, the SFWMD has to implement measures to improve the performance of the existing STA facilities. The SFWMD's plan for complying with the 2012 Consent Order is outlined in their "Restoration Strategies" plan (SFWMD 2012c).

SFWMD maintains a water quality monitoring network for surface waters within and at the boundaries of the EAA. These water quality data are compiled in SFWMD's database DBHYDRO and available through Internet search (http://www.sfwmd.gov/org/ema/dbhydro/). The SFWMD and FDEP jointly publish the South Florida Environmental Report (SFER) which includes a summary of water quality

conditions in south Florida (http://my.sfwmd.gov/portal/page/portal/xweb%20about%20us/agency%20reports). Additional data sources include: USEPA, USGS, FDEP, and numerous public and private research and monitoring efforts.

C.1.1.12.7 Greater Everglades

Water from Lake Okeechobee and the EAA flows through the WCAs to ENP and eventually into the coastal bays and estuaries. The 2011 SFWMD South Florida Environmental Report (SFER) reported water quality exceedances for ammonia, dissolved oxygen, alkalinity, pH, and specific conductance in WY2010 (SFWMD 2011b). Ten pesticides were detected in samples; however, only atrazine was detected at a concentration exceeding its toxicity based guideline at locations within WCA 1 and WCA 2. Mercury in fish tissue is a concern for all of the WCAs. Fish tissue levels of methylmercury in the WCAs have been above the USEPA human health criterion of 0.3 mg/kg for 50 percent of bass collected since 1998. Mercury levels in fish have fallen significantly over the past 15 to 20 years in the WCAs (58% relative to 1991) and ENP (43% relative to 1997) (SFWMD 2012b). The FDOH has published a "no consumption" advisory for portions of the Greater Everglades due to elevated fish tissue mercury concentrations.

Nutrient loading to the WCAs and ENP have resulted in significant degradation of the Everglades landscape by converting thousands of acres of sawgrass prairie into lesser quality habitat such as cattail marsh. The 1991 Everglades Settlement Agreement (SA) ended a 1988 Everglades lawsuit (Case No. 88-1886-CIV-Hoeveler) that was brought forward by the Federal government against the State of Florida (SFWMD and FDEP 1988) for failing to regulate discharges into ENP and the Arthur B. Marshall Loxahatchee National Wildlife Refuge. The subsequent 1992 Consent Decree, as modified in 1995, specified interim and long-term phosphorus concentration levels for the Arthur R. Marshall Loxahatchee National Wildlife Refuge, SRS, Taylor Slough and coastal basins in ENP. The SFWMD collects the required water quality data and publishes a Settlement Agreement Report on a quarterly basis as part of complying with the terms of the 1992 Consent Decree. For the last several years, discharges into the EPA have mostly complied with the requirements of the settlement agreement with the following exceptions: (1) exceedance of the June 2009 limit for Loxahatchee, and (2) exceedance of the allowable annual percentage of TP measurements exceeding 10 ppb at SRS for WY2010. In addition, the SRS Settlement Agreement calculations for WY2009 and WY2010 show that the annual flow-weighted mean TP concentration for these years was at the limits (8.2 ppb and 8.9 ppb, respectively for WY2009 and WY2010).

Compliance with the SA criteria at SRS is one of the most contentious issues for the state, Federal and Tribal parties. Recent water quality trends in WCA 3A indicate that flow-weighted mean (FWM) TP concentrations and SRS loads are decreasing (Walker 2010). **Figure C.1-13** shows that over the past 20 years, the annual FWM TP concentrations entering WCA 3A have fallen from approximately 0.050 mg/l to 0.030 mg/l while the annual FWM TP concentration measured at SRS has fallen from approximately 0.011 mg/l to approximately 0.009 mg/l. The reduction in inflow FWM and outflow FWM for WCA 3A is likely the result of the construction and operation of the STAs in the EAA. This is a slow trend and there may be periodic reversals due to weather conditions (e.g. droughts resulting in WCA dry downs, followed by wet periods flushing the mobilized nutrients). In portions of the WCAs that have historically received direct untreated discharges from the EAA, there is a large internal phosphorus load contained in the sediments. This large internal load may become a source of water column TP as inflow TP concentrations from the STAs are reduced below the 13 ppb and the sediment/pore water TP equilibrates with the water column TP.

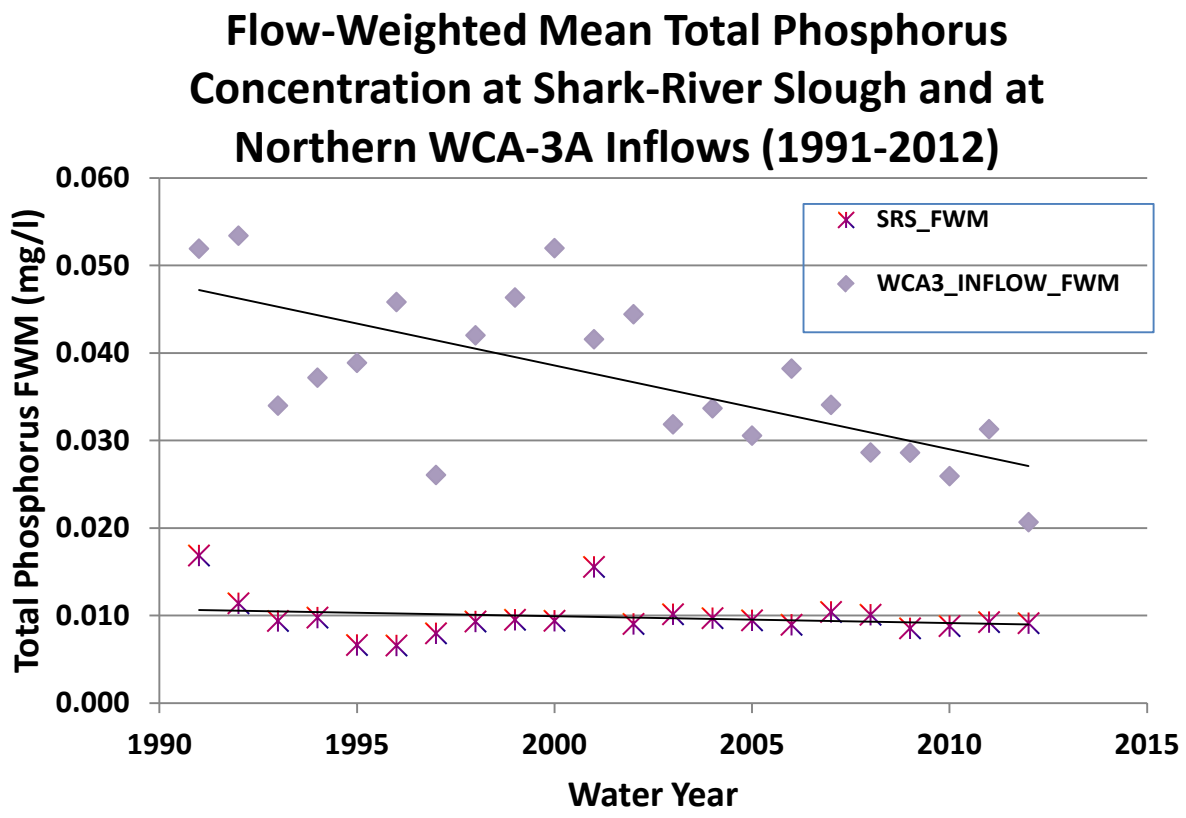


Figure C.1-13. Flow-Weighted Mean Total Phosphorous Concentration at Shark River Slough and Northern WCA 3A Inflows

C.1.1.13 Groundwater Resources

Groundwater in south Florida consists of the surficial Biscayne aquifer and the Floridan aquifer. Both are critical to the ecology and economy of south Florida. The Biscayne aquifer is highly permeable and is at or near the land surface in many locations and therefore readily susceptible to groundwater contamination. The Biscayne aquifer has been classified as a Sole Source Aquifer for Broward and Miami-Dade Counties under the Federal Safe Drinking Water Act based on the aquifer's susceptibility to contamination and the fact that it is a principal source of drinking water. The Floridan aquifer system is one of the most productive aquifers in the world and is a multi-use aquifer system. North of Moore Haven and Port Mayaca, where it contains freshwater, the Floridan is the principal source of groundwater supply. South of Lake Okeechobee, the Floridan aquifer is generally brackish and historically has not been used as a primary source of drinking water though this may change in the future as water supplies become more scarce.

C.1.1.14 Air Quality

Legal limitations on pollutant concentration levels allowed to occur in the ambient air, or air quality standards, have been established by the USEPA and the FDEP for six criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particle pollution (10 microns or less in diameter (PM_{10}), and 2.5 microns or less in diameter ($PM_{2.5}$), and sulfur dioxide (SO_2). Primary sources of air pollution in south Florida are related to transportation, stationary fuel combustion sources, and solid waste disposal. The existing air quality within south Florida is considered good, as outlined within

the FDEP 2010 Air Monitoring Report (FDEP 2010). Air monitoring reports are prepared annually by FDEP to inform the public of the air pollutant levels throughout the State of Florida. The report summarizes the results of monitoring that has been conducted to measure outdoor concentrations of those pollutants for which the USEPA and the State of Florida's Environmental Protection program have established ambient air quality standards. All areas within the state are designated with respect to each of the six pollutants as attainment (i.e., in compliance with the standards); non-attainment (i.e., not in compliance with the standards); or unclassifiable (i.e., insufficient data to classify). Attainment areas can be further classified as maintenance areas. Maintenance areas are areas previously classified as non-attainment which have successfully reduced air pollutant concentrations to below the standard. Maintenance areas must maintain some of the non-attainment area plans to stay in compliance with the standards.

Southeast Florida including Miami-Dade, Broward, and Palm Beach Counties continue to be classified by the USEPA as attainment/maintenance areas for ozone. Florida remains designated as unclassifiable for PM_{10}. Although sufficient data have been collected for attainment determinations, USEPA has not considered PM_{10} for attainment determinations in Florida yet.

C.1.1.15 Hazardous, Toxic or Radioactive Wastes

Engineering Regulation (ER) 1165-2-132 states that "construction of civil works projects in HTRW contaminated areas should be avoided where practicable." Compliance with the requirements of ER 1165-2-132 for the planning phase is demonstrated in this report. The USACE and SFWMD will continue to document HTRW conditions on the project lands such that the project will be in compliance with the ER and other applicable HTRW policies. In order to comply with the requirements of ER 1165-2-132, human health risks are typically evaluated by comparing chemical concentrations in all media (e.g., soil, groundwater, surface water, sediment) to human health-based cleanup target levels (CTLs) promulgated by FDEP in Chapter 62-777, F.A.C. Ecological risks are typically evaluated by comparing chemical concentrations to the Sediment Quality Assessment Guidelines (SQAGs) developed by FDEP for inland waters and to ecological restoration targets established by the USFWS. If warranted, lands within the project boundary are investigated in accordance with the jointly developed (FDEP, USFWS, and SFWMD) protocol, entitled "Protocol for Assessment, Remediation and Post-remediation Monitoring for Environmental Contaminants on Everglades Restoration Projects" (SFWMD 2008). The protocol, which is commonly referred to as the Ecological Risk Assessment (ERA) Protocol, is intended to provide guidance on conducting environmental site assessments on agricultural lands proposed for use in projects to be inundated with water, such as for conversion to storm water treatment areas, wetlands, reservoirs, and other aquatic features.

The ERA Protocol requires that relevant data collected during the Phase II ESA initially be compared to the human health Soil Cleanup Target Levels (SCTLs) from 62-777 F.A.C. and the ecological risk SQAG thresholds. While the SCTL's are promulgated standards under Florida law, the SQAG guidelines are not standards as defined in Section 403.803, F.S. where the results exceed the SCTLs, a risk-based approach is used by the regulator to determine if corrective action is required or if an alternative target level is appropriate based on projected exposure. Where the results exceed the SQAG screening criteria, a Screening Level Ecological Risk Assessment (SLERA) is performed as part of the Phase II ESA. The purpose of the SLERA is to evaluate potential ecological risks to benthic invertebrates and higher trophic species, particularly USFWS trust species protected under the Endangered Species Act or the Migratory Bird Treaty Act, associated with exposure to the chemicals present in the soils, after the project is constructed and the property is inundated.

A summary of the HTRW conditions in the four major areas of the project footprint are provided below.

C.1.1.15.1 A-2 Flow Equalization Basin Lands

The land for the proposed A-2 Flow Equalization Basin is located along the west side of US 27 South in unincorporated Palm Beach County and encompasses approximately 14,408 acres. The project lands consist of eight separate parcels currently owned by the State of Florida. The tract numbers, prior ownership, and acreage are shown in the **Table C.1-4** below.

Table C.1-4. Prior Ownership for A-2 Flowage Equalization Basin

A-2 Flow Equalization Basin		
Tract No.	**Former Owner**	**Acreage**
D7100-044	TALISMAN SUGAR CORPORATION	2
D7100-047	TALISMAN SUGAR CORPORATION	10
D7100-066	TALISMAN SUGAR CORPORATION	12
D7100-067	TALISMAN SUGAR CORPORATION	1
D7100-104	TALISMAN SUGAR CORPORATION	14,371.53[2]
D7100-139	TALISMAN SUGAR CORPORATION	1
D7100-141	WEINLEIN, JOAN	10
D7200-005	TALISMAN SUGAR CORPORATION	1
A-2 Total		**14,408.53**

The primary parcel (Tract D7100-104) was acquired from Talisman Sugar Company in 1999 by the SFWMD. Several of the smaller parcels listed above were also owned and operated by Talisman Sugar Corporation, but these parcels were deferred from transfer during the original transaction until environmental concerns on these small areas could be addressed. The Weinlan parcel (Tract D7100-141) was leased to Talisman Sugar at the time of the 1999 acquisition and was evaluated with the remainder of Tract D7100-104. Most of the project area has been historically cultivated in sugar cane, with occasional rotational crops of rice or corn. The property is currently under lease to New Hope Sugar Corporation for sugar cane cultivation. **Figure C.1-14** shows the site location and the parcel numbers.

The September 2012 Summary Environmental Report (PSI, 2012), the March 2013 Phase II Environmental Assessment Report (PSI, 2013a), and the May 2013 Phase II Environmental Site Assessment Report-Addendum #1 (PSI, 2013b) provide a review of the past audits and closure reports as well as the results of the cultivated soil sampling that was conducted in January of 2013. The reports cited above is the source for all of the tables and figures included within this section. Copies of these reports as well as related correspondence are found in **Annex H** (**Hazardous Toxic and Radioactive Wastes**).

[2] Acreages shown include only the portion of the tract that is within the proposed limits of construction for the A-2 FEB project. The total acreage of Tract D7100-104 is 20,525 acres, and includes lands outside the current project footprint.

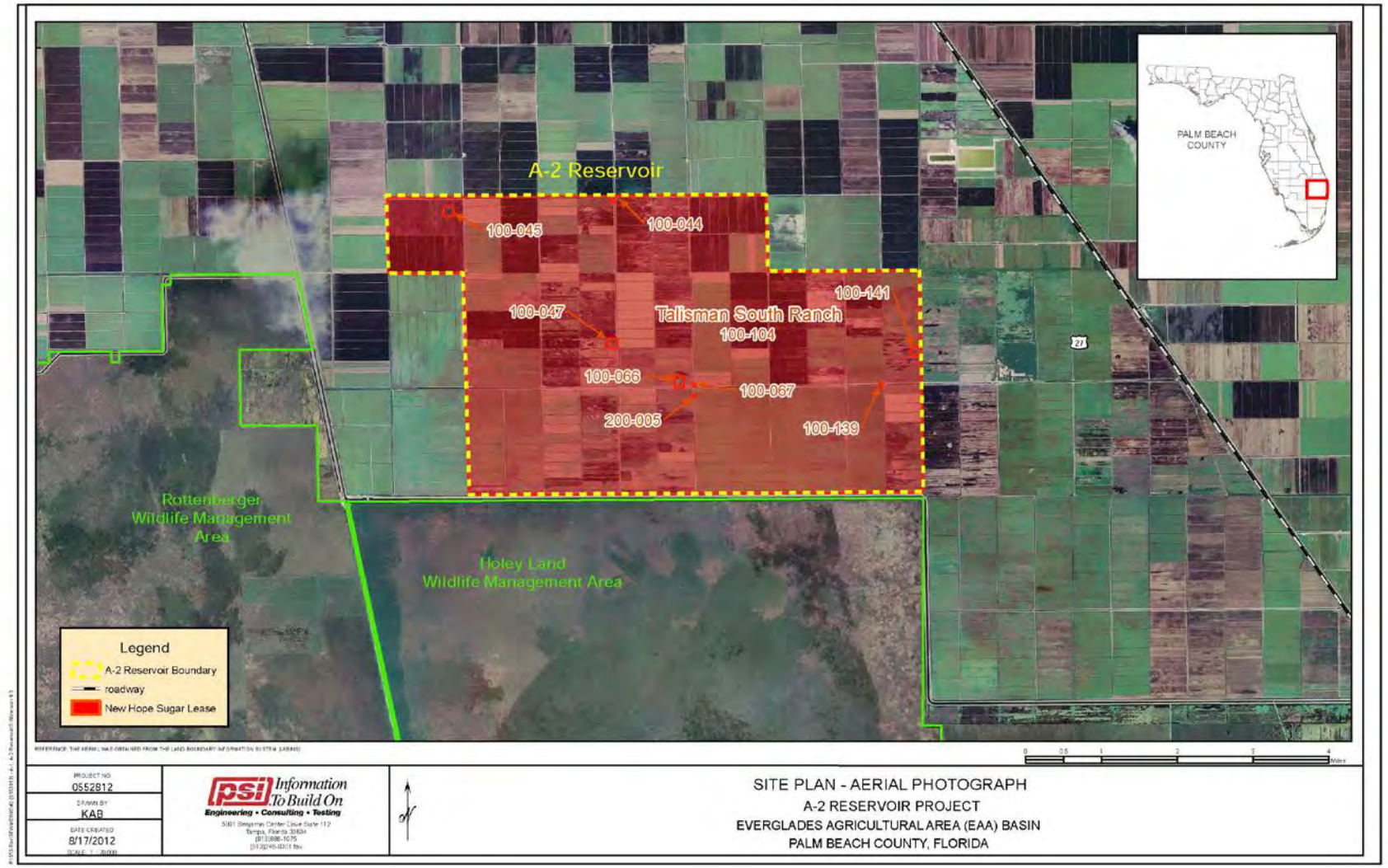


Figure C.1-14. A-2 Reservoir Tracts (PSI INC. 2012)

Table C.1-5 includes a list of the HTRW sites found on the subject property and the disposition of the remedial actions taken at each of these sites since 1999. **Figure C.1-15** shows the locations of each of these sites within the A-2 footprint. The borrow pit was used in the past for disposal of solid wastes. Arsenic, lead, phenols, and petroleum hydrocarbons were found at the borrow pit. Approximately 8,100 tons of solid waste and contaminated soil was removed from this site. A groundwater treatment system was installed to remove lead but it was not fully successful. The FDEP issued a Conditional Site Remediation Closure Order (CSRCO) in July of 2012. This Order included a Non-residential Deed Restriction. **Figure C.1-16** shows the location of this deed restriction. The borrow pit is designated as T-2 on this figure.

Arsenic, petroleum hydrocarbons, and pesticides were found at the labor camp which included a pesticide mix/load site. Approximately 3,600 tons of soil was removed from the labor camp. Petroleum contamination of the groundwater was naturally attenuated and pesticide impacts to groundwater were addressed through soil removal. The FDEP issued CSRCO in July of 2006 that includes a non-residential deed restriction. **Figure C.1-16** shows the location of this deed restriction. The labor camp is designated as T-3 on the figure.

Four of the identified HTRW sites are former pump station locations. Approximately 7 tons of petroleum contaminated soils were removed from these sites. Soil samples collected at two of these pump stations were tested for the presence of organo-chlorine pesticides and no exceedances were found. The FDEP issued Site Remediation Closure Orders (SRCO) at these pump stations in December of 1999.

A pesticide mix/load area was investigated and arsenic contamination was detected in the soils. Approximately 700 tons of arsenic impacted soils were removed from the site and a groundwater pump/treat system was operated for three months at which point the groundwater arsenic concentration was below the applicable groundwater concentration target level (GCTL). The FDEP issued a CSRCO in July of 2006 and included a non-residential deed restriction. The location of the site is shown in **Figure C.1-16**. The pesticide mix/load area is designated as T-21 on the figure.

Table C.1-5. Summary of Assessment and Corrective Actions, A-2 Flowage Equalization Basin Lands, Palm Beach County (Adapted from PSI Inc. 2012).

Tract Nos.	Point Source RECs Identified in Phase I	Soil / GW Exceedances Identified in Phase II	Corrective Action Summary	Regulatory Concurrence
D7100-104, -044, -047, -066, -067, -139, -141, -005	Borrow Pit (T-2)	Arsenic and petroleum hydrocarbons detected above SCTLs, phenols and m & p cresol detected above GCTLs	Excavated: 1,009 tons of steel, 473 tons of tires, 3,895 tons of C & D debris, 3,735 tons of soil. Also installed GW treatment system (operation was abandoned due to inability to filter out lead)	CSRCO, 7-21-06, Soil above SCTL, with Non-residential Deed Restriction
	Labor Camp (T-3)	Arsenic and petroleum hydrocarbons detected above SCTLs at burn pit area and drum storage area within labor camp. Petroleum hydrocarbons / solvents and atrazine detected in GW above GCTLs at pesticide mix / load area and refueling area / runway within labor camp.	Excavated approximately 3,590 tons of soil from 5 areas within labor camp. Petroleum impacts in GW naturally attenuated below GCTLs. Source removal reduced atrazine GW concentrations below GCTL.	CSRCO, 7-21-06, Soil above SCTL, with Non-residential Deed Restriction
	Pump Station (T-6)	OCPs detected above SQAGs	20 soil samples collected around pump station; no OCPs detected above SQAGs of SCTLs	SRCO, 12-21-99
	Pump Station (T-7)	No soil or groundwater samples collected; Visual evidence of soil staining	14 surficial soil samples collected around pump station; no exceedances above SQAGs or SCTLs	SRCO, 12-21-99

Tract Nos.	Point Source RECs Identified in Phase I	Soil / GW Exceedances Identified in Phase II	Corrective Action Summary	Regulatory Concurrence
	Pump Station (T-8)	No soil or groundwater samples collected; No visual evidence of soil staining; Still included as Exclusion Area	Excavated approximately 6.36 tons of petroleum impacted soil	SRCO, 12-21-99
	Pump Station (T-24)	No soil or groundwater samples collected; No visual evidence of soil staining; Still included as Exclusion Area	Excavated approximately 0.68 tons of soil	SRCO, 12-29-99
	Pesticide Mix/Load Area (T-21)	Arsenic detected above SCTL and GCTL	Excavated approximately 692 tons of arsenic impacted soil. Installed GW pump and treat system, operated for 3 months, effectively lowered the arsenic concentrations below the GCTL	CSRCO, 7-21-06, Soil above SCTL, with Non-residential Deed Restriction

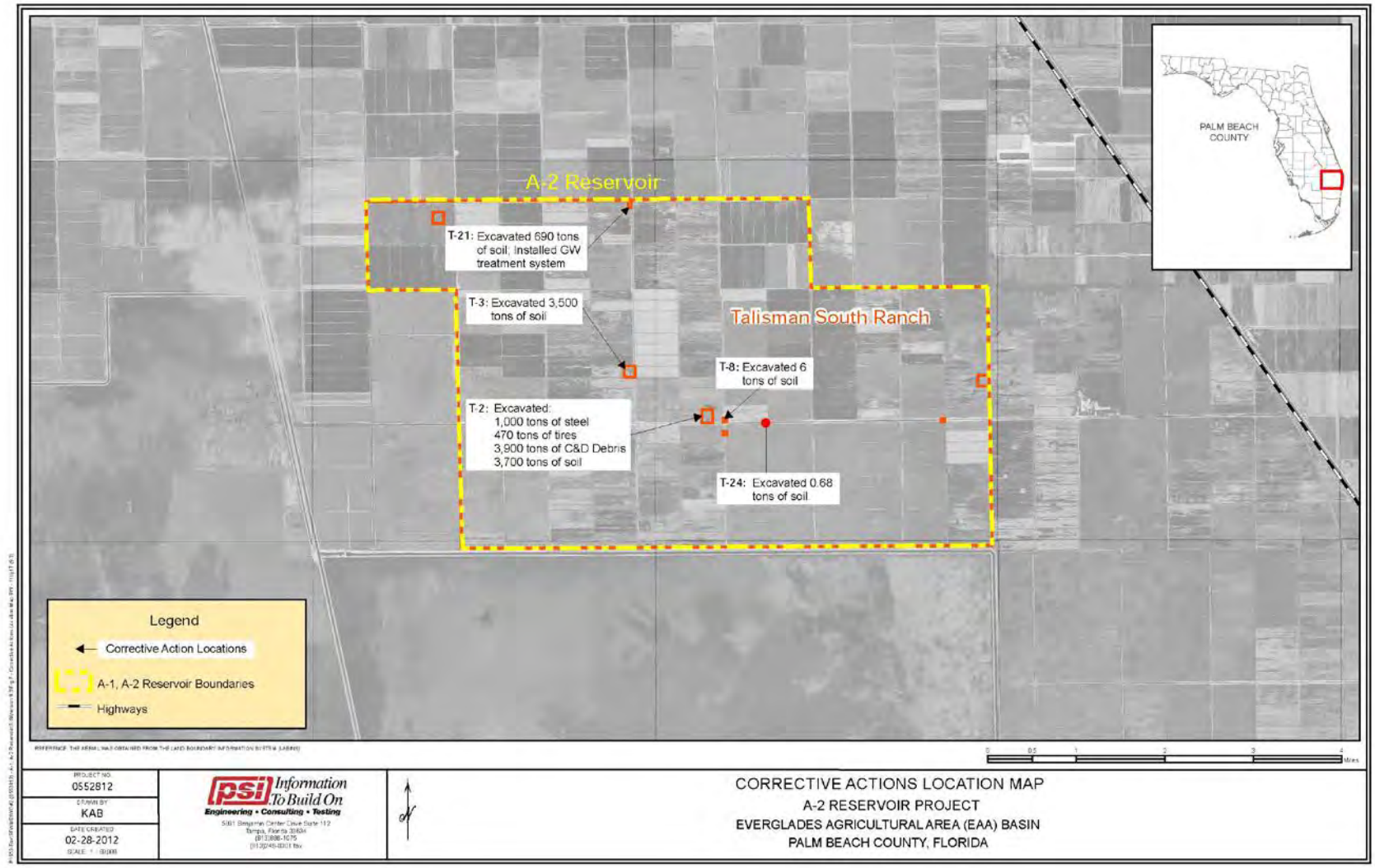


Figure C.1-15. Corrective Actions Map, A-2 Footprint (PSI INC. 2012)

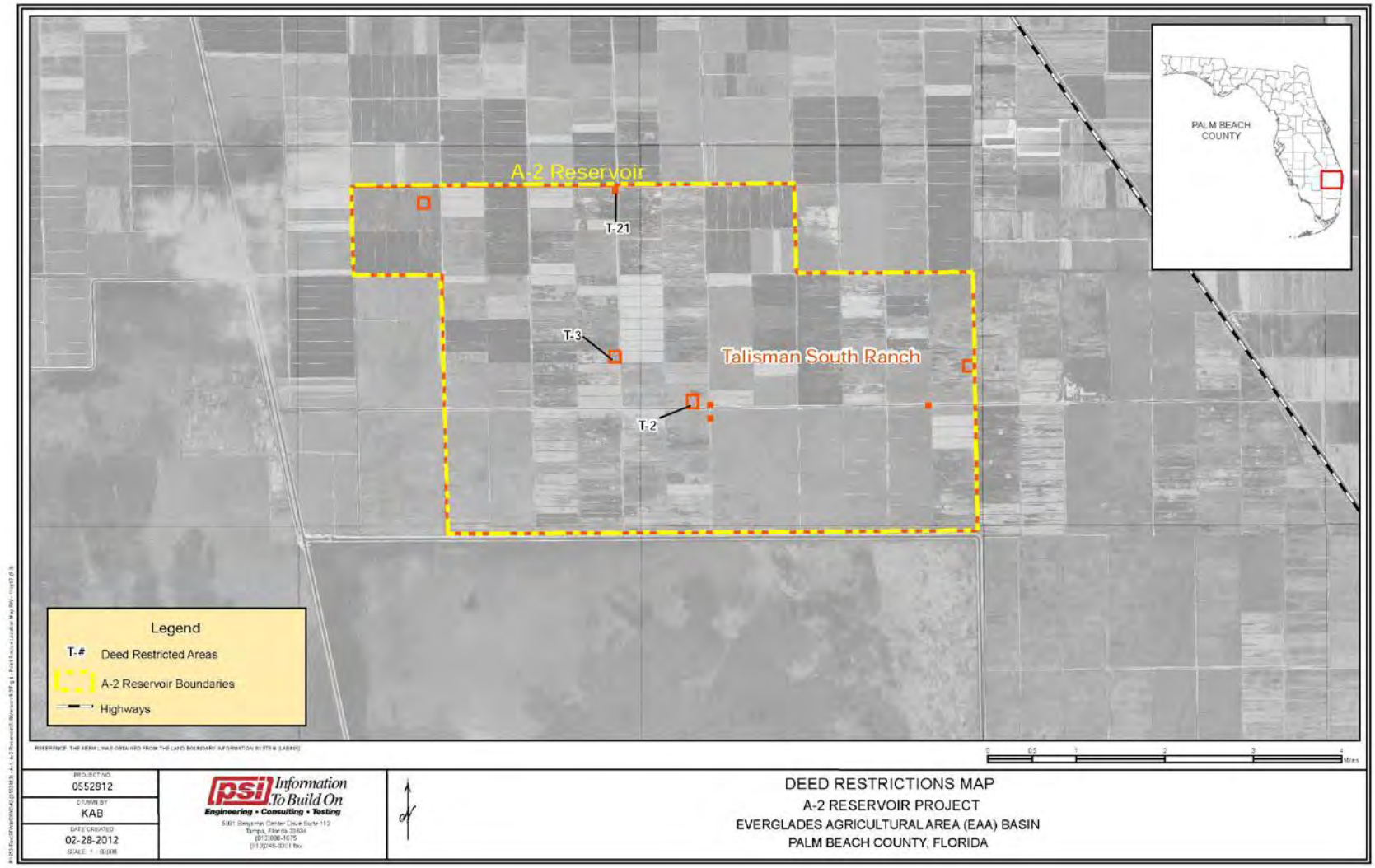


Figure C.1-16. Deed Restrictions Map A-2 Footprint (PSI INC. 2012)

Table C.1-6 shows a list of environmental audits conducted since 1998 on the A-2 lands. The environmental audits and correspondence between the SFWMD and the FDEP show that several HTRW sites have been found and remediated on the subject property. Four of the sites have SRCOs which means that no further action, monitoring, or prohibitions on future use are necessary. In August of 2012, the SFWMD prepared a draft summary report of the investigations and HTRW site remediation efforts on the property. This report recommended that soil samples be collected in the cultivated areas on the subject property to see if residual agricultural chemical concentrations exceeded any human health or environmental criteria applicable to the planned future land use (shallow reservoir). The Phase II Environmental Site Assessment Report and its addendum (PSI, 2013) found in **Annex H** (**Hazardous, Toxic and Radioactive Wastes**) is summarized below.

Table C.1-6. Summary of Environmental Reports, A-2 Flow Equalization Basin

Consultant	Report Type	Report Title	Report Date	Tract Nos.
URS/Dames & Moore	Phase I / II	Talisman Sugar Corp.- Vol. 1 - Acquisition Properties	November-98	100-104*
PSI	SRCR	Talisman Sugar Corp. - T-2 Borrow Pit	February-02	100-104*
PSI	Tank Closure Report	Talisman Sugar Corp. - Labor Camp (Abel's Flying Service	April-01	100-104*
PSI	SRCR	Talisman Sugar Corp. - T-3 (Labor Camp	March-03	100-104*
PSI	LCAR / NFA Request	Talisman Sugar Corp. - T-6 (Electric Pump Station)	August-99	100-104*
PSI	LCAR / NFA Request	Talisman Sugar Corp. - T-7 (Pump Station)	September-99	100-104*
PSI	SRCR	Talisman Sugar Corp. - T-8 (Pump Station)	September-99	100-104*
PSI	SRCR	Talisman Sugar Corp. - T-24 (Pump Station)	October-99	100-104*
PSI	SRCR	Talisman Sugar Corp. - T-21 Pesticide Mix/Load Area	May-02	100-104*
URS	Site Inspections/Environmental Assessment	Deferred Parcels - Former Talisman Property	July-07	100-104*
URS	Final Site Inspections/Environmental	Eight Deferred Parcels - Former Talisman Ranch Property	January-09	100-104*

Consultant	Report Type	Report Title	Report Date	Tract Nos.
	Assessment			
URS	Environmental Assessment Summary Document	Everglades Agricultural Area Basin Reservoir Project	March-03	--
PSI	Summary Environmental Report	Central Everglades Study, A-2 Reservoir, Palm Beach County FL	August 23, 2012	100-104*
PSI	Phase II Environmental Site Assessment	A-2 Flow Equalization Basin, Palm Beach County, FL	March 25, 2013	100-104*
PSI	Phase II Environmental Site Assessment, Addendum	A-2 Flow Equalization Basin, Palm Beach County, FL	May 3, 2013	100-104*
SRCR = Site Rehabilitation Completion Report				
LCAR = Limited Contamination Assessment Report				
* = Tract Nos. 100-149, 100-044, 100-047, 100-066, 100-067, 100-139, 100-141, 200-005, 100-143				

In January of 2013, the SFWMD's contractor, PSI, Inc., collected 30 samples from randomly selected 50 acre grids located on the A-2 FEB lands. The samples were analyzed for a comprehensive list of pesticides and the results of the analysis were compared against human health and ecological screening criteria.

Copper was detected in approximately 27% of the composite samples at concentrations exceeding the USFWS Interim Screening Level (ISL) of 85 mg/kg for the protection of the endangered snail kite. The detected copper concentrations ranged as high as 110 mg/kg and exhibited a normal data distribution with a mean concentration of 77.2 mg/kg and a 95% upper confidence limit (UCL) of 81.3 mg/kg. Spatially, the data present a random pattern, and no discernible areas of higher concentrations could be interpreted from the maps. PSI determined that based upon the relatively low level of exceeding 85 mg/kg copper and the high organic content of the soils which would tend to reduce the bioavailability of copper, that the risk to the endangered snail kite is minimal and that no remedial action to address copper was warranted.

PSI determined that arsenic concentrations across the majority of the A-2 FEB footprint are likely to exceed the FDEP Soil Cleanup Target Level for Residential Direct exposure, but the detected concentrations are all below the SQAG-TEC criterion. Arsenic concentrations are not likely to represent a human health or ecological risk, as long as the soil is managed on-site and is not disposed off-site at an uncontrolled site. The FDEP reviewed the arsenic data and recommended that a soil management plan be prepared as part of the construction plans to track the fate of arsenic impacted soils.

PSI detected a number of chemicals, including 2,4-D, atrazine, metribuzin, phorate, dieldrin, chromium, mercury, selenium, and silver in one of more of the composite soil samples at concentrations exceeding the soil cleanup target levels for leaching to surface water (SCTL-LSW). Follow up SPLP (Synthetic Precipitation Leachate Procedure) testing was performed to determine the potential for exceeding surface and groundwater quality criteria. An evaluation of the chemical data indicated that exceedances of the Class III surface water at the discharge of the A-2 FEB are very unlikely due to the following factors:

- A number of the chemicals such as 2, 4-D, atrazine, metribuzin, and phorate are relatively short-lived in the environment and were recently applied during active crop management. These chemicals are not likely to be present in the soil at significant concentrations once agricultural operations cease and the reservoir is constructed.
- Dieldrin is biologically persistent, but was only detected sporadically in the A-2 FEB footprint. The effect of dilution from incoming surface water and water overlying clean areas of the FEB are likely to dilute any leaching of these chemicals within these limited areas.
- Chromium, mercury, and selenium were consistently detected and silver was detected at a few locations at concentrations exceeding the SCTLLSW criteria. However, these metals all absorb strongly to organic matter in the soil and are not likely to leach to a significant degree from the highly organic soils in the A-2 FEB. Default SCTL-LSW criteria are based on soils with a much lower organic content than the soils on the subject property.

Overall, no evidence of elevated agrochemical contamination within the soils was found that would cause concern related to the construction of the A-2 FEB based on risk to the future aquatic community or to USFWS trust species that may utilize the future habitat provided by its construction. The USFWS and FDEP reviewed the PSI report, effectively concurred that no remedial action was warranted at this time, and recommended monitoring of copper and other contaminants during start up of the FEB. The Agricultural-Chemical section of the PIR (**Annex H**) addresses the findings of the cultivated soil sampling and how the USACE September 2011 Agricultural Chemical Policy for CERP projects applies.

C.1.1.15.2 Water Conservation Area 3A and 3B

The WCAs were created in 1945 by C&SF Flood Control District (predecessor to the SFWMD). These lands have been operated since 1945 for water supply, flood protection, and recreation and generally are inaccessible by terrestrial vehicles. Along the boundary of WCA 3A/B there are levees and canals constructed in the 1950s and 1960s that further limit vehicle access to the interior. Activity within the WCA is generally limited to fishing, hunting, and birding though there may be some illegal dumping of solid wastes along the perimeter. No soil testing for residual contaminants has been conducted within the WCA 3A/B as part of this project since the lands have no history of prior agricultural or industrial use that would cause such contamination.

There are 75 private hunting camps that are accessed primarily by boat. The Miccosukee Tribe of Indians of Florida uses leased land within the area for hunting and cultural activities. None of these activities are likely to result in significant HTRW contamination. Alligator Alley (Interstate 75) runs across the northern portion of WCA 3A. An abandoned crude oil pipeline runs east-to-west across WCA 3A from Immokalee to Port Everglades in Fort Lauderdale. The pipeline was installed in the 1960s. In 1986, a spill of approximately 6,000 gallons of crude oil occurred. This spill was cleaned up by collecting

free product and burning contaminated vegetation. The pipeline has not operated since 1986 and is considered to be abandoned.

During the 2nd World War, portions of WCA 3A and 3B were used as bombing ranges. Two bombing range sites are located within WCA 3A. Fort Lauderdale Bombing Target #1 is located on the L-68A canal approximately two miles south of Interstate 75. Evidence of bombing debris was found at this site during a phase I survey in 2005. Further investigation has not occurred to date because of the low probability that this site presents a human health risk given the isolated location. Fort Lauderdale Bombing Target #5 is located at the confluence of the L-68A and L-37 borrow canals. This site was investigated as part of the Formerly Used Defense Site (FUDS) program in 2005. No evidence of contamination was found during this survey and the site was closed for further investigation.

Table C.1-7 includes 14 sites within or in the vicinity of WCA 3A/B as identified from a database search of the FDEP Waste Cleanup record system performed in January 2013. Ten of the sites are listed as having petroleum contamination, while the remaining sites are listed as having other contaminants. Four of the sites are listed as pending and the remaining are listed as active. Six of the sites are roadway spills of petroleum product that occurred on Highway 27 or Interstate 75. Project features within these two highway right-of-ways are not contemplated as part of CEPP. Several of the identified locations are potentially adjacent to CEPP project features. Specifically, the petroleum cleanup site identified as "Everglades Safari" is located just south of Highway 41 (Tamiami Trail) very near the Blue Shanty Canal. The two HTRW sites identified as "Hadley Farms" are located at the northern boundary of WCA 3A and may be adjacent to CEPP hydrologic features yet to be sited and designed. Appropriate HTRW testing would be completed during the PED phase.

Canals and levees on the perimeter and interior of the WCAs have generally been constructed by excavating native soils that have not previously been used for agriculture. Given this history, sampling spoil mounds is not necessary during the planning phase of the project since the results would reflect concentrations that are at or near background conditions. It is possible that localized contamination might exist at locations where project features such as pump stations, levees, canals, and culverts will be built. Testing would be completed during the PED phase and remediation or resiting of features would occur as required.

Table C.1-7. Identified HTRW Sites within or Near WCA 3A and 3B per FDEP Waste Cleanup Database

SITE ID	CLEANUP CATEGORY	STATUS	BUSINESS NAME, ADDRESS	LATITUDE			LONGITUDE		
26368543	PETRO	ACTIVE	ABC TRANSPORT USA INC BER 10-2I-43871Z 6138 CLEAVLAND ST, MIAMI	26	19	24.7	80	31	45.7
26364823	OTHCU	PENDING	BIRD DRIVE TR 308-347 BRID DRIVE, MIAMI	25	43	8.584	80	28	13.563
26368154	PETRO	ACTIVE	EVERGLADES SAFARI 26700 SW 8TH ST, MIAMI	25	45	38.1924	80	37	33.0888
26364266	OTHCU	PENDING	FL CRYSTALS HADLEY FARMS PS H 1-1 SOUTH BAY	26	20	3.3481	80	36	43.9144
26364269	OTHCU	PENDING	FL CRYSTALS HADLEY FARMS PS H 1-2 SOUTH BAY	26	20	3.7139	80	35	45.6307
26376747	PETRO	PENDING	FL DEPT OF TRANSPORTATION US HWY 27, SOUTH BAY	26	20	16.74	80	32	27.06
26377945	PETRO	PENDING	FL DEPT OF TRANSPORTATION ROW US HWY 27, SOUTH BAY	26	20	10.22	80	32	21.17
26364107	OTHCU	PENDING	FLORIDA CRYSTALS FARM 21 & HADLEY FARM US HWY 27, SOUTH BAY	26	20	9.1597	80	37	43.2883
26377457	PETRO	PENDING	GENERAL PORTLAND-DADE CNTY PLT 5800 N KROME AVE, MIAMI	25	42	29.429	80	29	11.3536
26377413	PETRO	PENDING	PEMBROKE PINES CITY-HOLLY LAKE PUMP ST 21800 N 7TH MANOR, PEMBROKE PINES	26	0	51.8846	80	26	20.9125
26374606	PETRO	PENDING	SOUTH FL WATER MGMT DIST S-140 57005 ALLIGATOR ALLY, FORT LAUDERDALE	26	10	15.35	80	49	38.72
26378516	PETRO	PENDING	SOUTH FLORIDA TRUCK LINES SPILL-ALLIGATOR ALLEY I-75 150 YDS W OF E TOLL PLAZA, WESTON	26	8	45.4812	80	28	5.3904

SITE ID	CLEANUP CATEGORY	STATUS	BUSINESS NAME, ADDRESS	LATITUDE			LONGITUDE		
26367061	PETRO	ACTIVE	SSL CARGO EXPRESS 04-2I-0248 I-595 @ US 27 OFFRAMP, WESTON	26	8	35.2434	80	26	20.4174
26369543	PETRO	ACTIVE	T STOP SERVICES INC 4690 US HWY 27, FT LAUDERDALE	26	3	47.5347	80	25	58.4817

C.1.1.15.3 Northern Everglades National Park

The CEPP project alternatives under consideration in this PIR include construction of project features along the L-29 and the L-31N canal/levee corridors as well as along the L-67 extension levee. Highway 41 (Tamiami Trail) runs just south of the L-29 Levee/Canal and the northern ENP boundary is south of the highway. The L-29 levee was constructed in 1928 using native soils and limerock excavated from the adjacent borrow canal. The "Everglades Safari" petroleum spill site, the Bird Drive Basin HTRW site, and the General Portland site listed in **Table C.1-7** are adjacent to the northeastern boundary of ENP.

Given that the road and levee were constructed across an area that was undeveloped in 1928, the levee spoil material is considered to be free of anthropogenic contamination with the exception of isolated undiscovered spill sites. However, during construction of the first Tamiami Bridge just south of the eastern portion of WCA 3B, some of the topsoil within the highway right-of-way was determined to have elevated arsenic concentrations that are likely representative of background concentrations.

C.1.1.16 Cultural Resources

A review of the Florida State archives indicate that there are 23,499 recorded cultural resource sites and resource groups within the CEPP study area that have a survey determination and/or State of Florida Historic Preservation Office (SHPO) evaluation of other than ineligible for listing with the National Register of Historic Places, or significant under the National Environmental Policy Act (NEPA). The area of potential effect (APE) on cultural resources for the project is markedly smaller than the CEPP study area. The APE is approximately 1.5 million acres being comprised of the EAA A-2 footprint, portions of the L-6 levee and associated canal, the L-5 levee and associated canal, the L-4 levee and associated canal, the S-8 Pump Station Complex, the L-28 Triangle, portions of the Seminole Tribe of Florida's Big Cypress Reservation immediately west of L-28 and north of I-75, portions of the Miami Canal, WCA 3A and 3B, L-67A and L-67C levee and associated canal, portions of the L-29 levee, the L-67 Ext levee and associated canal, portions of the Old Tamiami Trail, and portions of the L-31N levee, and Everglades National Park. For more information on existing project conditions for cultural resources, refer to **Section 2**.

All lands within WCA 3 and EAA A-2 are state owned and/or managed, therefore land management responsibilities including cultural resources within those lands should be conducted as described in F.S. 267.061(2) and management plans developed in consultation with the Florida Division of Historic Resources. See Appendix G in "A Conceptual Management Plan for The Everglades Complex of Wildlife Management Areas" at http://myfwc.com/conservation/terrestrial/management-plans/online-mps/. Cultural Resources within National Park Service Lands will be managed in accordance to Federal laws and pre-established management plans for resources under National Park Service jurisdiction.

A total of 43 cultural resources surveys and/or assessments have been conducted within the CEPP APE, 14 of which included structural surveys. **Table C.1-8** below lists all currently known cultural resources within the CEPP APE that are or have the potential to be significant under NEPA.

Table C.1-8. Significant Cultural Resources within the CEPP Area of Potential Effect

	Significant	Unknown Significance*	Date Range	Notes
Archeological Sites	47	296	2500 B.C – A.D. 1950	73 remote sensing sites**
Structures	1	5	A.D. 1947–1958	
Historical Districts	5	0	2500 B.C – A.D. 1950	All NRHP Listed
Linear Resources***	12	13	A.D. 1880 – 1950	1 HRHP Listed
Traditional Cultural Properties	2	0	A.D. 1950 –present	Associated with the Modern Gladesman
World Heritage Site	1	0	-	Everglades National Park
Culturally Significant Sites	34			

*SHPO determination listed as: Not Evaluated by SHPO or Insufficient Information.
** Sites recorded using aerial photography. Presence or absence of material has not been field verified.
***Canals, roadways, or linear earthworks.

The earliest known habitation sites within the CEPP APE date to the Late Archaic period (2,500 B.C.) when the Everglades were much drier. However, within the larger area of south Florida, evidence of Paleo-Indian (12,000 to 7500 B.C.) habitation has also been recorded (i.e. Warm Mineral Springs (8SO18) and Little Salt Spring (8SO79). Some of the Late Archaic habitation sites have only recently been rediscovered as the result of managed drainage programs in south Florida.

As the climate warmed and sea level rose, many Native Americans abandoned the lowest of the tree islands as they became submerged. This process continued through what is known as the Middle Archaic, until climate conditions stabilized around 300 B.C. at the start of the Late Archaic. Today many sites from both the Early and Middle Archaic periods are no longer submerged and may have more modern Native American use (Milanich 1994).

After the Archaic period, the region became incorporated into what is known as the Glades region and remained inhabited until European contact, when Old World diseases and slave raiding heavily reduced the Native populations during the late 1500s-1700s. Many of the tree islands through this portion of the CEPP APE have sites associated to the Glades period. This period has been broken down into successive stages starting with Glades I, which dates from 500 B.C .to 750 A.D., Glades Period II dating from 750 to 1200 A.D., and Glades Period III dating from 1200 A.D. to European contact in the 1500s. Typical habitation sites through this region are commonly referred to as middens, which are the accumulation of daily life activities on these tree islands. Material remains can stretch from the surface to well over one meter below the surface on certain islands. Native American burials can also be found among these habitation sites (Milanich 1994).

After European contact, Native American populations in the region continuously declined and remained at low levels until groups relocated into southern Florida while fleeing the U.S. Army and U.S. Governments' forced relocation program. Today, many sites associated with the Miccosukee Tribe of Indians of Florida and Seminole Tribe of Florida are known to exist throughout the region. Refer to **Section 2.6** and **Appendix C.1.2** for more information.

C.1.1.17 Socioeconomics

Florida's economy is characterized by strong wholesale and retail trade, government, and service sectors. The 2010 population estimates for each of the LEC Planning Area counties are as follows: Palm Beach County (1,340,134 residents), Broward County (1,748,066 residents), and Miami-Dade County (2,496,435 residents). The economy of south Florida is based on services, agriculture, and tourism. Florida's warm weather and extensive coastline attract vacationers and other visitors and help make the state a significant retirement destination. The three counties that comprise the LEC (Palm Beach, Broward, and Dade) are heavily populated, and it is estimated that over 6.9 million people will reside in this region by the year 2050. A complete socioeconomic description of the C&SF Project area was completed in the Comprehensive Review Study (USACE 1999) and is incorporated into this document by reference. The Okeechobee Intercoastal Waterway (OIWW) provides economically and politically important commerce between the eastern and western coasts of Florida. The waterway connects the Atlantic Intracoastal Waterway to the Gulf Intracoastal Waterway and is a congressionally authorized project, with depths and operations required for efficient navigation on the system. The authorized C&SF project depths for Lake Okeechobee navigation are based on 12.56 feet NGVD.

C.1.1.18 Study Area Land Use

The existing land use within the study area varies widely from agricultural to high-density multi-family and industrial urban uses. Much of the land use/cover change occurring in south Florida over the past several years can be categorized as either the creation of new developments in previously natural or agricultural areas, or the change in the types of agriculture practiced. Much of the land used for agriculture is likely categorized as unique farmland based upon its location, growing season, and high value crops.

An estimated 742,668 acres of irrigated agricultural lands are located in the Lake Okeechobee Service Area (LOSA). Agricultural lands adjacent to the St. Lucie River and Indian River Lagoon and Caloosahatchee River and Estuary are cultivated for citrus, sugarcane, vegetables, sod, and greenhouse/nursery. Growth in citrus acreage is usually on land that was formerly pastureland. Vegetable crops include cucumbers, peppers, tomatoes, squash, eggplant, watermelons, snap beans, and potatoes. Wetlands, uplands, and urban uses comprise the remaining land area within LOSA and Northern Estuaries.

An estimated 447,000 acres of agricultural lands are located in the EAA. Currently, land in the EAA is primarily in agricultural production, with sugarcane being the primary crop. There are six sugar mills and one refinery (South Bay) currently operating in the EAA, with an additional mill and refinery in Clewiston also serving the area. The combined capacity of these mills is over 17 million tons. Three major entities - U.S. Sugar Corporation, Florida Crystals Corporation, and Sugarcane Growers Cooperative - provide the majority of the sugarcane production in the EAA. Secondary agricultural uses include vegetables, rice, sod, and improved pasture. Wetlands, uplands, urban and extractive uses comprise the remaining land area within the EAA.

Generally, urban development is concentrated along the LEC from Palm Beach County to Dade County (**Figure C.1-17**). The LEC extends approximately 100 miles through the coastal portions of Palm Beach, Broward, and Dade Counties. As the most densely populated sub-region in the state, the LEC is home to one-third of the state's population, more than 4.5 million people. The sub-region is primarily an urban megalopolis, but it also contains substantial agricultural acreage, particularly in southwestern Dade County (90,000 acres). Rapid population growth and land development practices have resulted in notable western urban sprawl; the predominant land use is single-family residential. The once

significant rural population in the western areas of Broward County has practically disappeared, resulting in an urbanized makeup in population.

A large portion of south Florida remains natural, although much of it is disturbed land. The dominant natural features within the study area include two major management areas located south of Lake Okeechobee. These include the Everglades Complex of Wildlife Management Areas (ECWMA) and ENP. The ECWMA includes three adjacent Wildlife Management Areas (WMAs). These include the: (1) Rotenberger WMA, (2) Holey Land WMA, and (3) Everglades (WCA 3A) and Francis S. Taylor (WCA 3B) WMAs. The ECWMA is described in the next section. The Rotenberger and Holey Land WMAs are located north of WCA 3A and south of Lake Okeechobee between the Miami and North New River Canals.

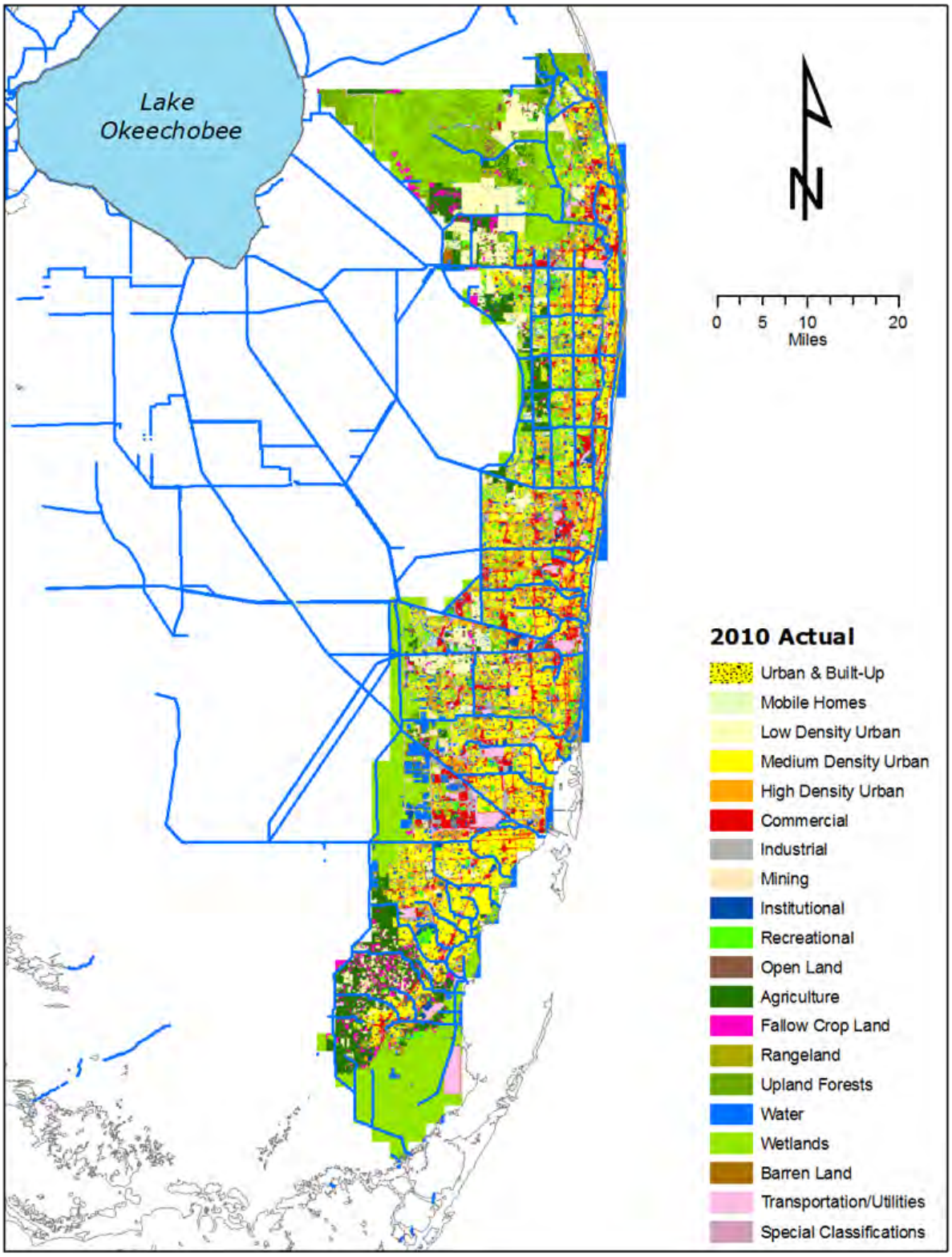


Figure C.1-17. Study Area Land Use (2010)

C.1.1.19 Public Land Management

Lands in the ECWMA are managed by the FWC under 2 leases from the State of Florida and through a 1952 cooperative management agreement with the SFWMD. An agreement was also formed among the State of Florida, the FWC, the SFWMD, and the Miccosukee Tribe of Indians of Florida in 1982 granting a perpetual lease to the Miccosukee Tribe of Indians of Florida for approximately 189,000 acres of WCA 3A.

The FWC has outlined a conceptual management plan for the ECWMA (FWC 2007) providing general information on resource management goals and objectives. Management activities within the ECWMA include the maintenance and restoration of plant and animal communities, public education, recreation, and habitat protection. Management emphases by the FWC consists of the development and recommendation of water regulation schedules to address hydrological restoration, improvement of the quality of existing habitats to benefit native fish and wildlife species through prescribed burns, control of exotic species, and plantings of native trees and shrubs. Recreational hunting is used as the primary management tool to maintain resident game populations in the ECWMA. The FWC also manages the sport fishery within the ECWMA by providing regulations pertaining to size and possession limits. The FWC also coordinates with cooperating agencies to maintain access to the canal system and public use areas to maximize boat and bank fishing opportunities.

ENP spans nearly 1.5 million acres of wetlands, uplands, and submerged lands at the southern end of the Florida peninsula. ENP, authorized by Congress in 1934 and established in 1947, was established to protect the unique tropical biological resources of the southern Everglades system. It was the first national park to be established to preserve purely biological (versus geological) resources. The Park's authorizing legislation mandated that it be managed as "wilderness, [where] no development … or plan for the entertainment of visitors shall be undertaken which will interfere with the preservation intact of the unique flora and fauna and the essential primitive natural condition now prevailing in this area." This mandate to preserve wilderness is one of the strongest in the legislative history of the National Park System. ENP has been designated a World Heritage Site, an International Biosphere Reserve, and a Wetland of National Significance. In addition, 86 % of ENP is designated wilderness under the Wilderness Act of 1964. ENP is managed by the NPS.

C.1.1.20 Recreation

There are many recreational opportunities throughout south Florida; however, with the dense urban surroundings demand often exceeds availability. Recreational resources in the Lake Okeechobee region are primarily water based. Lake Okeechobee and the Okeechobee Waterway provide approximately 154 miles of navigable waterway for commercial navigation and many more for recreational boating. Lake Okeechobee is recognized as supporting one of the best recreational fisheries in the nation. Several major sport fishing tournaments are held on the lake annually, bringing significant revenues to the surrounding area. Recreational areas are located around Lake Okeechobee offering day-use facilities, campgrounds, hiking and biking trails, and boat ramps. The Lake Okeechobee Scenic Trail (LOST) is designated as a segment of the Florida National Scenic Trail, encompassing 110 miles of the lake atop Herbert Hoover Dike (HHD). Heavy seasonal waterfowl utilization of Lake Okeechobee attracts hunters and recreational enthusiasts, as well. Lake Okeechobee has also been a popular destination for airboat rides.

Recreation opportunities in the Northern Estuaries include easy access to fresh, estuarine, and marine resources for fishing, boating, swimming, diving, camping, and sightseeing. Numerous recreation areas,

such as the Ortona Lock Recreation Area, Caloosahatchee Regional Park, and W.P. Franklin Lock Recreational Area are extensively used.
STAs provide recreational opportunities within and adjacent to the EAA. Passive recreational use includes bicycling, hiking, nature photography, wildlife viewing, and fishing. Waterfowl and alligator hunting are also permitted in some STAs.

Recreational opportunities are also present within the Greater Everglades. Rotenberger and Holey Land WMAs are open to public access year round. Primary recreational opportunities include hunting, fishing, camping, hiking, and bicycling. Game species occurring in the WMAs include white-tailed deer, common snipe (*Gallinago gallinago*), feral hog (*Sus scrofa*), marsh rabbit (*Sylvilagus palustris*), blue-winged teal (*Anas discors*), mottled ducks (*Anas fulvigula*), and other game. Alligator hunting is also currently administered on Holey Land WMA. The Everglades (WCA 3A) and Francis S. Taylor (WCA 3B) WMA lands have been used for recreational activities including hunting, fishing, frogging, boating, camping, and off-road vehicle use. Fishing is a popular recreational activity and also holds numerous tournaments each year. The majority of fishing activity occurs in the canals along Interstate75, Highway 41 (Tamiami Trail), and in the Miami, L-67 A, and L-67 C canals. These canals support many species of game fish. Private camps are located throughout WCA 3. These permitted camps are primarily used as weekend retreats and hunting camps. A variety of other nature-based recreational opportunities are also provided to the public within WCA 3A and WCA 3B. These activities include wildlife viewing and nature photography. Hiking and bicycling are also permitted on existing levees within the project area where appropriate. Though hiking and bicycling opportunities are available they lack sufficient facilities and markers. There are also several recreation areas at locations along the boundary of WCA 3 including the Sawgrass Recreation Area, Everglades Holiday Park, Thompson Park and Mac's Fish Camp. These facilities, along with several on Highway 41 (Tamiami Trail), provide boat ramps, camping facilities, boat rentals, airboat tours, fishing guides, bait and tackle supplies, and food. Some of these areas are privately owned, while others are public properties leased to private providers of services.

Similar recreational opportunities are provided in ENP. ENP provides high-quality fishing, boating, camping, wildlife viewing, hiking, bicycling, and nature interpretation activities. One third of ENP is covered by water, creating excellent boating and fishing opportunities. Saltwater fishing includes Florida Bay, Ten Thousand Islands, and elsewhere in the park's coastal zone. Marinas and boat ramps are located throughout the park. Day use and camping (front and back country) facilities are also available. There are also a number of elevated camping platforms (chickees) available in various locations throughout the Park. Regularly scheduled concession or ranger guided tours are also available.

The State Comprehensive Outdoor Recreation Plan (SCORP) is the best source of information on recreation demand and supply at the state and regional scales. It divides the state into 11 planning regions, each with clusters of counties. As indicated in **Table C.1-9**, Treasure Coast and south Florida are the planning regions that encompass the study area.

Table C.1-9. Counties within SCORP Planning Regions

Region	Counties
Treasure Coast	Brevard, St. Lucie, Martin, Palm Beach
South Florida	Broward, Miami-Dade, Monroe

The SCORP organizes outdoor recreation in Florida into 47 categories that encompass a variety of recreation activities including team sports (e.g., basketball and baseball), individual sports (e.g., golf

and tennis), hunting, fishing, swimming and boating. **Table C.1-10** presents descriptive information on the recreation facilities in SCORP Regions for study area specific recreation categories. These resource-based categories were selected as those that could potentially be affected by the hydrologic changes or ecological changes associated with the alternative restoration plans. This table includes percentages of the statewide totals for the recreation categories.

Table C.1-10. Regional Outdoor Recreation Facilities 2007

Resource / Facility	Treasure Coast	South Florida	State Total
Outdoor Recreation Areas	1,314	2,054	13,235
Outdoor Recreation Acres	748,130	3,146,974	13,352,957
Land Acres	665,617	1,796,151	9,671,238
Water Acres	76,339	1,350,609	3,673,955
Hunting Acres	343,366	698,451	5,290,496
Camping			
RV / Trailer Camp Sites	7,071	12,207	162,041
Tent Camp Sites	804	1,290	20,044
Trails			
Hiking Trails (miles)	392	420	5,424
Horseback Riding Trails (miles)	163	139	2,361
Nature Trails (miles)	117	254	2,475
Freshwater Catwalks	33	45	834
Boating			
Canoe Trails (miles)	65	292	2,295
Freshwater Boat Ramp Lanes	80	110	1,739
Freshwater Marinas	22	7	457
Freshwater Slips / Moorings	937	325	11,762

C.1.1.21 Noise

Noise levels are associated with surrounding land use. Within the major natural areas of south Florida, external sources of noise are limited and of low occurrence. There is no significant noise generating land users within these areas. Existing sources of noise are limited to the vehicular traffic travelling on roads adjacent to and cutting through the project area. Other sources of noise which may occur within these natural areas include air boats, off road vehicles, swamp buggies, motor boats, and occasional air traffic. Sound levels are typically in the range of 85 to 105 decibels (dB) for motorboats and air boats, respectively. Wilderness ambient sound levels are typically in the range of 35 dB and should not be an issue for wildlife.

Rural areas have typical noise levels in the range of 35 to 55 dB. Sources of noise in rural, areas include noise associated with agricultural production such as the processing and transportation of agricultural produce. The use of farm equipment such as tractors, plows, and the use of irrigation facilities would be expected to be the dominant background noise.

Within the rural municipalities and urban areas, sound levels would be expected to be of greater intensity, frequency, and duration. Noise associated with transportation arteries, such as highways, railroads, primary and secondary roads, airports etc., inherent in areas of higher population would be significant and probably override those sounds associated with natural emissions. Other sources of noise might be expected to include noise from everyday social and human communication and activity, operations of construction and landscaping equipment, and operations at commercial and industrial facilities. In general, urban emissions would not be expected to exceed 60 dB, but may attain 90 dB or greater in busier urban areas or near to frequently used high volume transportation arteries.

C.1.1.22 Aesthetics

The visual characteristics of south Florida can be described according to the three dominant land use categories: natural areas, agricultural lands, and urban areas. The natural areas consist of a variety of upland and wetland ecosystems, including lakes, ponds, vast expanses of marsh and wet prairie, with varying vegetative components. Uplands are often dominated by pine, although other sub-tropical and tropical hardwoods such as fig, gumbo limbo, and cypress do occur. These areas are more fully described in **Section C.1.1.1**. Overall, the land is extremely flat, with few natural topographic features such as hills or other undulations. Much of the visible topographic features within the natural areas are man-made, including canals and levees. Additional man-made features include pump stations, navigation locks, secondary and primary roads, highways, electrical wires, communication towers, occasional buildings, borrow pits and other features which may or may not detract from the regional aesthetic. Visual aesthetics when possible from a high perspective such atop a levee, offer pleasant and unspoiled perspectives of Everglades marsh with numerous birds and other wildlife. Agricultural lands are cultivated for citrus, sugarcane, vegetables, sod, and greenhouse/nursery. Generally, urban development is concentrated along the LEC from Palm Beach County to Dade County. Major cities are visually congested with residential communities, major transportation arteries (i.e. heavily used roads and highways), and intensively developed commercial and industrial facilities. Visual aesthetics are marginal. Development is typically immediately adjacent to or nearby protected natural areas. These areas are more fully described in **Section C.1.1.18** .

C.1.2 EXISTING CONDITIONS OF NATIVE AMERICANS

Unless otherwise referenced, the information below is a summary compiled from the Seminole Tribe of Florida website http://www.semtribe.com/History/ and from the Ah-Tah-Thi-Ki website http://www.ahtahthiki.com/History-Seminole-Tribe-FL-Ah-Tah-Thi-Ki-Museum.html

Refer to Section 2.6 for additional information. The tribes known today as the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida are both descendents of the Muscogee Creek people, a diverse confederation that encompassed people speaking seven languages and spread over much of the southeast. Between 1740 and 1812, early Creek villages were established in northern Florida in the mission provinces of Apalachee and Timucua, around Tallahassee and Gainesville, and along the Apalachicola and Lower Suwannee rivers. Other Indian groups also migrated into Florida, including the Yuchi and Tamasee Indians, as well as Hitchity, Mikasuki, Choctaw, and Oconee. From 1812-1820, pressures in Alabama and Georgia encouraged Upper and Lower Creeks to migrate to Florida (Covington 1993:5 and Milanich et. al, 2011). These Seminoles, as they all came to be known, (possibly a derivation of the Spanish cimarron, meaning runaway) were primarily seeking a solitary place to subsistence farm and raise cattle.

Beginning with the War of 1812 and ending with the Third Seminole War in 1858, the native people in Florida were subjected to an intensive effort by the U. S. Government to eradicate or remove them from

the region. The U.S. Government reportedly spent more than $20 million on this effort and sent more than 52,000 troops to fight fewer than 2,000 Seminoles in Florida. At the end of these efforts, most of the southeastern tribes were removed west to Indian Territory and fewer than 300 Seminoles survived in the Everglades. Their descendants make up the populations of both tribes today.

The remaining native people lived a subsistence existence in the Florida Everglades for the next century. Again encroachment from white settlers by the early 1900s forced them approach the Secretary of the Interior to request reservation lands. This request for Federal reservations and other services led to the split between the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida. The Miccosukee Tribe of Indians of Florida, who spoke Hitchiti and lived primarily along Tamiami Trail, objected to the acceptance of Federal monies and services in exchange for land. Despite their objections, they were removed from ENP and confined to the Reserved Area, a narrow strip of land along Tamiami Trail. Although additional lands were designated and compensation money was paid to the tribe by the U.S., the money remains unclaimed by the tribe to this day.

In the 1950s when many tribes were facing the Indian Termination Act, the Seminole Tribe of Florida again had to fight the government for Federal recognition and services to continue their existence. The Miccosukee Tribe of Indians of Florida instead sought and received recognition as a sovereign nation from Fidel Castro and Cuba, forcing the U.S. Government to recognize them.

During this time, both tribes lived in relative poverty, continuing their subsistence lifestyle in the Everglades, and relying on the tourist trade to supplement their incomes. In 1979, the Seminole Tribe of Florida established the first high stakes bingo operation in the nation. The passage of the Indian Gaming Rights Act in 1988 allowed them to expand into other high stakes gambling, and both tribes have financially prospered as a result.

Today most Tribal members live within the confines of their reservations located in south Florida (**Figure C.1-18**). Red coloration depicts reservation and leased lands by the Miccosukee Tribe of Indians of Florida. Yellow coloration depicts reservation and leased lands by the Seminole Tribe of Florida.

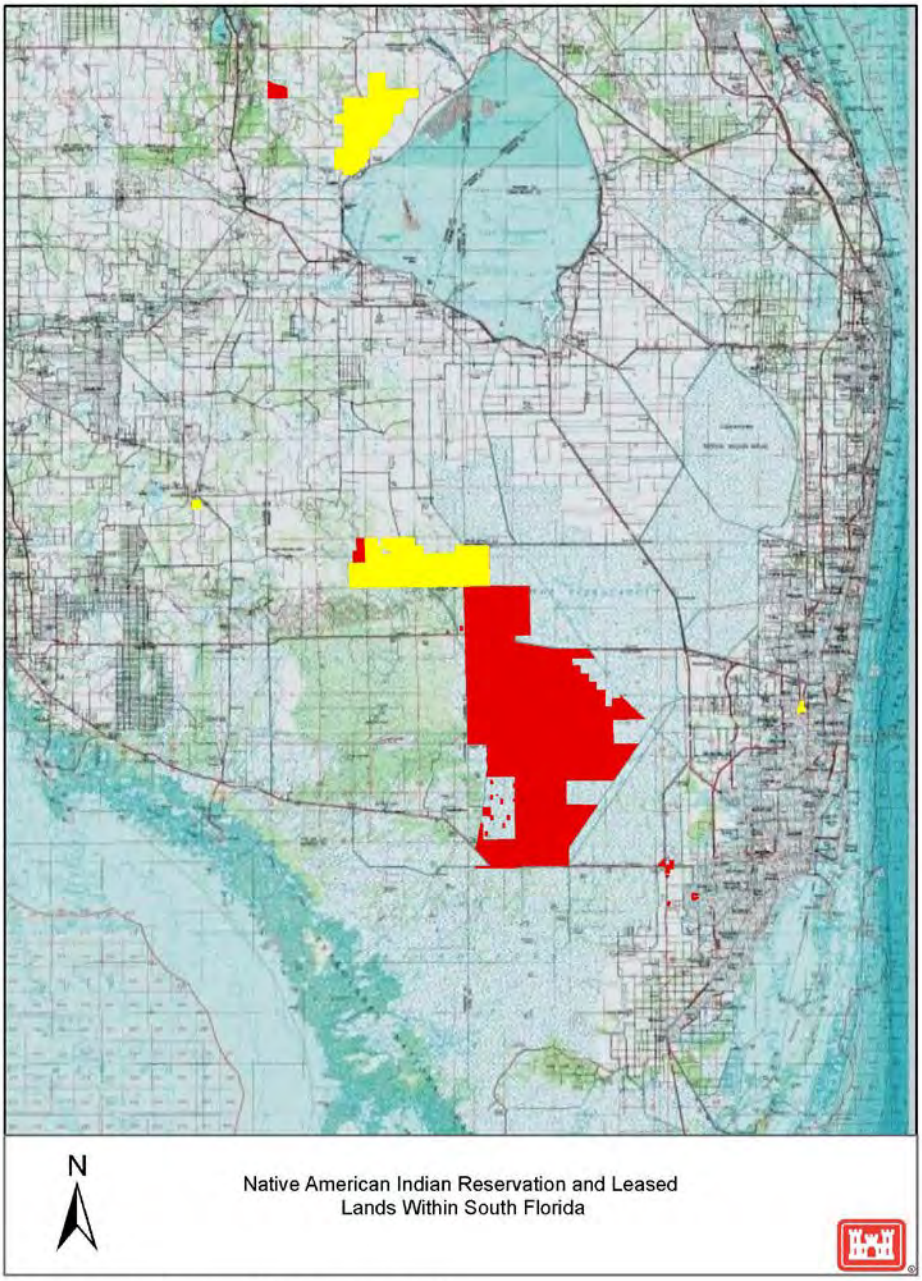


Figure C.1-18. Map Outlining the Location of the Tribal Reservations and Leased Lands

C.1.3 FUTURE WITHOUT PROJECT CONDITIONS OF RESOURCES

The future without project (FWO) condition is the projection and forecast of what is "most likely" to occur in the study area over the planning horizon. The FWO project condition for CEPP assumes the construction and implementation of authorized CERP and non-CERP projects, and other Federal, state or

local projects constructed or approved under existing governmental authorities that occur in the CEPP study area. Under NEPA the **No Action Alternative** needs to be evaluated, and for consistency of the report the **No Action Alternative** is referred to as the **Future Without [FWO]** for the remainder of the report. Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Indian River Lagoon (IRL-S) Project (USACE 2004a), the Picayune Strand Restoration Project (USACE 2004b), and the Site 1 Impoundment Project (USACE 2006b). Second generation of CERP projects, authorized in WRRDA 2014, includes the Biscayne Bay Coastal Wetlands (BBCW) Project (USACE 2012b), Broward County Water Preserve Areas (WPA) Project (USACE 2012c), the Caloosahatchee River (C-43) West Basin Storage Reservoir (USACE 2010), and the C-111 Spreader Canal Western Project (USACE 2011). Non-CERP projects included within the FWO project assumptions consist of the SFWMD Restoration Strategies (SFWMD 2012c), C&SF Canal-51 West End Flood Control Project (USACE 1998), the C-111 South Dade Project, the Kissimmee River Restoration Project (USACE 1991), Modified Water Deliveries (MWD) to ENP Project (USACE 2000), and the DOI Tamiami Trail Modifications Next Steps (TTNS) Project (DOI 2010). **Table C.1-1** summarizes the status of non-CERP projects, CERP projects and operational plans assumed to differ between the existing conditions or FWO project assumptions and are incorporated below by reference unless otherwise noted. The following describes the projected physical, ecological, and socioeconomic conditions within the study area in the year 2072. The FWO project conditions are also summarized in **Section 2.0** of the main report. Refer to **Sections 2.5.1** through **2.5.15** for further information on how project features in **Table C.1-11** were represented in the hydrologic model simulation of the CEPP FWO baseline, where applicable.

Table C.1-11. Status of Non-CERP Projects, CERP Projects, and Operating Plan for Existing and Future Without Project Assumptions

CATEGORY	EXISTING CONDITION	FUTURE WITHOUT PROJECT CONDITION
Status of Non-CERP Projects	Modified Water Deliveries to ENP Project (MWD) features, including the S-355A and S-355B gated spillways, 4-mile degrade of L-67 Extension Levee, 8.5 Square Mile Area Flood Mitigation Project have been constructed and are operational.	Construction completed and features operated: C-111 South Dade (Contracts 8 and 9); C&SF C-51 West End Flood Control Project; Kissimmee River Restoration; SFWMD Restoration Strategies (Central Flow Path features); DOI TTNS Project (5.5 miles of additional bridges); Seepage Barrier Near the L-31 N Levee (Miami-Dade Limestone Products Association) MWD Project features including existing condition components plus Tamiami Trail Modifications (1-mile eastern bridge) are constructed. However no operational changes for the L-29 Canal stage, G-3273 constraint, or the S-356 pump station were represented in the CEPP FWO project condition.
Status of CERP Projects	No completed projects. Construction in progress.	Construction completed and features operated: IRL-S Project; Picayune Strand Restoration Project; Site 1 Impoundment Project; BBCW Project; Broward County WPA Project; Caloosahatchee River (C-43) West Basin Storage Reservoir; C-111 Spreader Canal Western Project.
Operations Plan for WCA 3A, ENP and the SDCS	Interim Operational Plan (IOP) (2002, 2006); L-29 Canal maximum operational stage limit: 7.5 ft National Geodetic Vertical Datum (NGVD); G-3273 constraint: 6.8 ft NGVD	ERTP (2012); L-29 Canal maximum operational stage limit: 7.5 ft NGVD; G-3273 constraint: 6.8 ft NGVD

C.1.3.1 Vegetative Communities

C.1.3.1.1 Lake Okeechobee

The majority of the surface of Lake Okeechobee is not vegetated and currently provides open (pelagic) habitat. Littoral vegetation occurs along much of Lake Okeechobee's perimeter, but is most extensive along the southern and western borders. The continued use of Lake Okeechobee to store water for agricultural and flood control needs would continue to result in high water levels within the lake. High water levels within the lake would continue to adversely affect shallow littoral zone habitat, and deeper littoral zones would remain without vegetation. In addition, even with state BMP's and other projects to improve water quality within the watershed, due to legacy effects, it is anticipated that the continued storage of nutrient-rich waters would maintain reduced water clarity that in turn adversely affects SAV areas. Vegetative communities in Lake Okeechobee are not expected to change significantly from existing conditions unless the regulation schedule is updated.

C.1.3.1.2 Everglades Agricultural Area

Habitat types within the EAA are divided into five general groups: aquatic, wetland, upland, disturbed (mostly agricultural), and urban/extractive. Changes to the remnant natural communities on lands within the EAA are dependent upon the overall agricultural use of the region and resultant water management. The aquatic communities within the EAA include both natural and man-made areas of open water. With continued use of the EAA region for agriculture during the period between the present and 2072, with the exception of land utilized for the SFWMD Restoration Strategies water quality treatment implementation plan (SFWMD 2012b), no significant net increase or decrease in aquatic areas within the EAA should occur. For remnant wetlands, continued subsidence of lands surrounding existing, small isolated wetlands could slightly increase the extent of wetlands into formerly cultivated lands. Larger scale changes in wetland cover could occur if agriculture is abandoned in some portions of the EAA. Cessation of active drainage of the agricultural fields would likely cause the fallow lands to revert to wetlands. Similarly, upland community margins could change to transitional wetlands if the surrounding landscape becomes wetter. Disturbed communities consist of mostly agricultural lands. Shifts between specific agricultural cover types may occur during the period between the present and 2072. Most of the urban / extractive lands are concentrated around the Belle Glade area; increases in urban and extractive cover types may occur near existing population centers due to increased urbanization. Vegetative communities in the EAA are not expected to change significantly from existing conditions.

All of Compartment A of the Talisman Land Exchange property is considered to be atypical jurisdictional wetlands based on hydric soils and hydrology. The SFWMD Restoration Strategies water quality treatment implementation plan will be fully in place by 2072 (SFWMD 2012b). Compartment A would be converted to a FEB, known as the A-1 FEB. Wetland vegetation would be expected to become established within the A-1 FEB. Vegetative communities currently existing in the A-2 area would remain. A-2 would remain in State ownership and would continue in agricultural and open space uses.

C.1.3.1.3 Northern Estuaries

The SAV is one of the most important vegetation communities of the Caloosahatchee River and Estuary and St. Lucie River and Estuary (including the Indian River Lagoon). Currently, SAV beds have been reduced or eliminated from their former areas by extreme salinity fluctuations, increased turbidity, sedimentation, dredging, damage from boats, and nutrient enrichment which causes algal blooms that, in turn, restrict light penetration. Continued flood control regulatory freshwater releases from Lake Okeechobee to the Northern Estuaries would continue to cause salinities to drop below preferred

ranges for estuarine biota. High-level freshwater discharges during the wet-season would continue to result in increases in nutrient inflows and turbidity to the estuaries, thereby adversely affecting sea grasses. Some level of improvement is expected to occur during the period between the present and 2072 as a result of implementation of projects within the study area with the capability of improving the timing, quantity, and quality of freshwater flow to the Northern Estuaries. Improvements in water quality and salinity levels within the estuaries as a result of the C-43 West Basin Storage Reservoir Project (USACE 2010) and Indian River Lagoon South Project (USACE 2004a) would reduce stress to SAV and aid in long term health of estuarine habitat and biota.

C.1.3.1.4 Greater Everglades

The Everglades landscape is dominated by a complex mosaic of freshwater wetland communities that includes open water sloughs and marshes, dense grass and sedge dominated marshes, forested islands, and wet marl prairies. The Everglades freshwater wetlands eventually grade into intertidal mangrove wetlands and sub tidal sea grass beds in the estuarine waters of Florida Bay. Changes in the availability and distribution of freshwater and further disruption of natural sheetflow from discontinuities in hydrology due to levees, roads, and canals would further exacerbate changes occurring in the vegetative communities in the Greater Everglades. Continuation of altered hydroperiods would have adverse effects on vegetative communities such as degradation due to over drying within northern WCA 3A, WCA 3B, and ENP, and ponding and prolonged high water levels within southern WCA 3A. Sub tidal sea grass beds within Florida Bay would continue to suffer from loss of freshwater flows and high salinities. Some level of improvement to vegetative communities is expected to occur as a result of implementation of projects within the study area with the capability of improving the timing, quantity, and quality of flow to the WCAs, ENP, and Florida Bay (i.e. Broward County Water Preserve Areas Project (USACE 2012c), Biscayne Bay Coastal Wetlands Project (USACE 2012b), C-111 Spreader Canal Western Project (USACE 2011, Everglades Restoration Transition Plan (USACE 2012a), Modified Water Deliveries Project (USACE 2000), Tamiami Trail Modifications: Next Steps Project (DOI 2010)). More natural hydroperiods produced by the implementation of these projects would assist in restoring natural plant communities within the WCAs, ENP, and Florida Bay. Better-timed and greater quantities of water to regions that are now too dry would result in a more natural mosaic of plant communities. Reduction in nutrients would aid in reducing cattail and non-native vegetation that compete with native plants in the system.

C.1.3.2 Fish and Wildlife Resources

The project area supports a variety of fish and wildlife resources. Disruption of the natural hydrology has resulted in aquatic vegetation community changes and a resultant disruption of aquatic productivity and function that has had repercussions through the food chain, including effects on wading birds, larger predatory fishes, reptiles, and mammals. During the period between the present and 2072, a further reduction in habitat function is likely to result in a decrease in the abundance and diversity of fish and wildlife resources.

Desired restoration of historic water fluctuations within Lake Okeechobee would not be accomplished during the period between the present and 2072. Continued artificially high water levels within the lake reduces the availability of bedding habitat for fishes and changes the extent and composition of the emergent and submergent vegetation communities. Lower water levels would provide opportunities for foraging for wading birds and other birds dependent upon aquatic prey species by concentrating prey and exposing additional shallow water habitat.

Altered native habitats dominate the EAA; however remaining wetlands offer some native habitat for fish and wildlife species. Some displacement of wildlife could result from expansion of urban or extractive land cover types within the EAA.

Fish and wildlife resources inhabiting the Northern Estuaries would continue to be impacted by flood control regulatory freshwater releases from Lake Okeechobee. Annual variability in flow would lead to salinity extremes outside the tolerance ranges of many fish and wildlife resources resulting in decreased species diversity. Further declines in estuarine habitat (SAV and oysters) would continue to result in additional declines in the species that utilize these habitats. Seagrass communities within the Northern Estuaries provide critical refugia for juvenile fish. The long term loss of nursery habitat will result in population declines for many species of estuarine and marine fishes and macroinvertebrates, including those whose young of the year use fresher habitats. Waterfowl and wading birds are also expected to decrease by the year 2072 as estuarine habitat quality continues to decline. Some level of improvement is expected to occur as a result of implementation of projects within the study area with the capability of improving the timing, quantity, and quality of freshwater flow to estuarine systems and coastal areas (i.e. C-43 West Basin Storage Reservoir Project (USACE 2010) and Indian River Lagoon South Project (USACE 2004a)).

Throughout the pre-drainage Everglades, the depth, distribution and duration of surface flooding largely determined the distribution, abundance, seasonal movements, and reproductive dynamics of all aquatic and many of the terrestrial animals of the Everglades. Within the Greater Everglades, productivity of native fish species, many important as prey species for wading birds, has been and would continue to be depressed due to water management practices. Nest numbers and success of wading birds have decreased dramatically across south Florida over the past 100 years. Continually decreasing hydroperiods in presently over-drained areas is likely to worsen during the period between the present and 2072. Wading birds will be directly affected by the decreased foraging opportunities provided by shorter and less-frequent hydroperiods. Populations of several terrestrial mammals that are dependent on higher quality habitat or that require large areas of contiguous habitat to survive are also projected to decrease by 2072.

Some level of improvement to fish and wildlife resources is expected to occur as a result of implementation of projects within the study with the capability of improving the timing, quantity, and quality of freshwater flow to the study area (i.e. Broward County Water Preserve Areas Project (USACE 2012c), Biscayne Bay Coastal Wetlands Project (USACE 2012b), C-111 Spreader Canal Western Project (USACE 2011), Everglades Restoration Transition Plan (USACE 2012a), Modified Water Deliveries Project (USACE 2000), Tamiami Trail Modifications: Next Steps Project (DOI 2010)). Water that is retained in the natural system helps maintain proper hydroperiods and stages within the WCAs, ENP, and Florida Bay, thereby increasing usage by fish and wildlife resources.

C.1.3.3 Invasive and Exotic Species

Currently, many non-native invasive species are thriving and negatively affecting the ecology throughout the project area. During the period between present and 2072, it is expected that anthropogenic effects will continue to negatively impact the project area; therefore it is expected new invasions and expansion of current invasive species will continue in the future. Many factors affect future increases and decreases of populations and ranges of invasive species currently present within the project area. Each species has a complex biological heritage which influences its ability to thrive in areas outside of its native range. In addition, there are numerous factors that affect new introductions of invasive species. This constrains the ability to predict new introductions, populations, and ranges of invasive species.

Factors that affect invasive species introductions are presented below. The subtropical climate of south Florida presents a hospitable environment for non-native species from warm parts of the world to establish and become invasive.

Canals within the project area provide deep water refugia for species of tropical fish and serve as pathways for invasive species to travel, spread, and expand into previously uninhabited areas. Drier conditions experienced currently due to compartmentalization and diversion of water will continue due to a lack of restoration projects within this region. The historically wetter areas that are now experiencing drier conditions will continue to shift in vegetation composition. Woody shrubs such as willow and non-native invasive species such as melaleuca will continue to expand in these areas. Continued deliveries of nutrient rich water to the project area will further promote the expansion of cattail.

Environmental manipulation and construction activities, urban development, and agriculture will continue to promote disturbance regimes within south Florida ecosystems that facilitate biological invasions. Disturbance from natural weather events, such as floods, droughts, and hurricanes can provide avenues for invasive species introduction and expansion.

Management of invasive species within the project area is conducted by numerous Federal, state, local, and tribal agencies. However, all control programs within the project area are limited by the level of available funding and staffing. Portions of allocated funding for these programs have been and potentially will be redirected to other programs in the future. While there has been documented success in managing some invasive species (e.g. melaleuca), numerous highly invasive species continue to expand within the study area. Management activities vary in effectiveness which also influences species control and spread within the project area. Management components would be incorporated into CERP projects thereby reducing the presence of some species within those projects. This would also reduce sources for invasions into other areas. Little is known about control and management measures for some species already present, therefore these species will propagate and spread to other areas.

The large aquarium, pet, and ornamental plant industries import new non-native species into Florida on a regular basis. New, imported non-native species introductions will occur through intentional and unintentional releases. On average, 10 new non-native organisms that are capable of establishing, becoming invasive and causing environmental harm are introduced into Florida each year (Cuda 2009). Educational efforts may slightly reduce the number of intentional releases.

The deeper navigation channels and expansion of ports in Florida, such as the Port of Miami and Port Everglades, will provide new trade opportunities for the state. Deeper channels will allow larger container cargo vessels to enter the ports. As a result, it is expected the Port of Miami will double its cargo traffic over the next several years with ships coming from all over the world. Many destructive species have entered the U.S. as stowaways on cargo ships and additional cargo traffic will likely increase this problem.

C.1.3.4 Threatened and Endangered Species

Federally listed threatened and endangered species are either known to exist or potentially exist within the project area. Continued increases in urbanization, water management practices, direct habitat loss, and other land requirements, as well as the degradation of existing habitat function, are likely to result in the continuance of negative population trends of threatened, endangered, and state-listed species of

special concern. Future Federal actions unrelated to the proposed action but located in the study area, will require separate consultations pursuant to Section 7 of the ESA. For further information pertaining to potential impacts to federally listed threatened and endangered species as a result of changes that occur between the present and the future without project condition please see the BA included in **Annex A.**

C.1.3.5 Essential Fish Habitat

Estuarine systems and coastal areas within the project area support fishery resources of recreational and commercial importance. At least 70 percent of Florida's recreationally or commercially sought fishes depend on estuaries for at least part of their life histories. Current disruptions caused by flood control regulatory freshwater releases would continue to cause harm to estuarine systems and coastal areas during the period between the present and 2072. The absence of freshwater flow into estuarine systems and coastal areas would continue to promote conditions that are likely to result in a decrease in the abundance and diversity of species within those habitats. High level freshwater discharges during the wet season would continue to negatively impact species utilizing essential fish habitat. Some level of improvement is expected to occur as a result of implementation of projects within the study area with the capability of improving the timing, quantity, and quality of freshwater flow to estuarine systems and coastal areas (i.e. C-43 West Basin Storage Reservoir Project (USACE 2010), Indian River Lagoon South Project (USACE 2004a), Biscayne Bay Coastal Wetlands Project (USACE 2012b), Broward County WPA Project (USACE 2012c), and C-111 Spreader Canal Western Project (USACE 2011)).

C.1.3.6 Climate

During the period between the present and 2072, south Florida should experience a full multi-decadal cycle of Atlantic hurricane activity. Currently the area is in an active phase of this cycle that started in 1995. This active phase followed a 25-year period of low hurricane activity. This suggests that between the present and year 2072, the area would complete this active phase, pass through another low activity period and begin another active phase. There is now evidence of anthropogenic changes to global climate patterns that will likely have an impact on south Florida in terms of rainfall, evapotranspiration, and temperature (Intergovernmental Panel on Climate change 2007). Climatologists predict air temperatures will increase, with projections of summer temperatures being up to 3°F to 7°F warmer by 2100 (Twilley et.al. 2001, Union of Concerned Scientists 2008). Increases in air temperature, solar radiation, and water vapor deficit due to climate change are expected to increase evapotranspiration. Models used by Calanca et al. (2006) predict a 20 percent increase in evapotranspiration if summer temperatures increase from 4°F to 7°F.

Other sources of climate modeling predict a 1.5°C increase of temperatures in the Everglades and +/- 10% change in precipitation by 2060 (Obeysekera et al. 2011). The temperature change equates to a 7% increase in evapotranspiration. Unless precipitation increases similarly (+7% to +10%), then drought frequency is expected to increase in the Everglades. As a peat soil ecosystem, increasing drought would reduce available water to keep the soils wet, resulting in higher peat oxidation and loss of soil elevations in the freshwater wetlands (FAU 2013). Hydrological modeling indicates that surface water duration may decrease by 10-50% in the Everglades by 2060 (FAU 2013). In parts of northern WCA 3A, peat depths are less than 10 cm above bedrock (Johnson 2012), so loss of peat may produce bedrock protrusions in these areas within this time frame.

Regional surface water storage systems (lakes, rivers, canals, reservoirs, water conservation areas) will most likely experience more rapid water loss when compared to current levels, ultimately impacting availability of water supplies. Increased evapotranspiration may increase water demand for irrigation

and natural wetlands areas. In addition, accelerated evaporation losses from stormwater treatment areas could impact their phosphorus removal performance, increasing the need for supplemental water for these facilities.

The Florida Oceans Council (2009) predicts more frequent intense rainfall events will occur coupled with longer dry periods in between. SFWMD data indicate that there has been an increase in heavy downpours in many parts of the region, while the percentage of the region experiencing moderate to severe drought increased over the past three decades. While periodic heavy downpours may increase overall precipitation totals, much of the water may be runoff that is eventually lost to the Atlantic Ocean and Gulf of Mexico. The environmental impact of changes to floods and droughts depends on the relationship between the climate extremes. If flooding and drought frequency increase together, the Everglades may return to a more natural slough-ridge-island landscape because the floods would redistribute soils and sediments onto ridges and the droughts would allow recruitment of trees on islands. More droughts, without an increase in flooding conditions, pose a threat to the entire South Florida system. They would likely cause large shifts in community structure due to saltwater intrusion into freshwater habitats, drying of inland wetlands, disappearance of ridge and slough microtopography, and an increase in frequency of fires (both terrestrial and wetland). Without the ability to maintain minimum flows and water levels in South Florida, agriculture and public water supply well fields may not be able to function as designed. In addition, well fields may be contaminated by saltwater intrusion and higher salt levels in coastal waters may limit the usefulness of currently installed desalinization plants. More flooding may be good for the Everglades ecosystem because it would stimulate ridge-slough development and restore historic salinity regimes in Biscayne Bay and Florida Bay. However, increasing flooding alone may also create more frequent water level reversals during critical wading bird foraging periods, thus causing further declines in nesting success for wading birds.

Current research indicates overall storm frequency may decrease, while the number of strong hurricanes (due to warmer temperatures) is expected to increase. Tropical storms and hurricanes provide huge amounts of rain for the area. The loss of storm-associated rainfall could have significant implications for the SFWMD regional water supplies. If a decrease in the number of storms does occur, there may be significant changes to the distribution of rainfall, which will affect the water supply and natural ecology of South Florida. Less rainfall may mean the region is under drought conditions more often. If tropical storms and hurricanes become more intense, the potential damage to levees, canals, and other water control structures may also increase – resulting in an increased likelihood of flooding on a local and regional scale. Water supply and water quality may also be adversely affected by this extreme.

Sea level change is one of the more certain consequences of climate change, and because it affects the land/ocean interface, it has the potential for environmental impacts on coastal areas. Various sites along the east coast of Florida indicate that the sea level is rising at a rate above the global average (Maul and Martin 1983). USACE sea level change projections for the period from 2015 to 2065 for Key West, Florida and the broader south Florida area for historic, intermediate and high rates of future sea level rise are +4 inches, +10 inches and +26 inches, respectively http://publications.usace.army.mil/publications/eng-circulars/EC_1165-2-212.pdf. The regional hydrologic models used to simulate with and without project conditions require climatic and tidal data as boundary conditions. Given the uncertainty in future climatic conditions, the historic climate conditions used in the period of record are assumed to represent conditions that are expected to occur in the study area in the future. The model tidal boundary used in the regional hydrologic model was developed using historic tidal data from two primary (Naples and Virginia Key) and five secondary NOAA

stations (Flamingo, Everglades, Palm Beach, Delray Beach, and Hollywood Beach). Simulation model tidal boundary conditions that reflect future sea level change were not available for the range of potential sea level change expected. However, the impact of sea level change on project benefits is assessed for the FWO and with project conditions per USACE guidance EC 1165-2-212. Future rates of sea level change are expected to result in significant impacts on coastal canals and communities, with loss of flood protection and increased saltwater intrusion being the primary effects. Additionally, coastal ecosystems and estuaries are expected to be adversely affected and require additional deliveries of freshwater to maintain desirable salinity patterns and healthy ecosystems. Sea level change is discussed in more detail within **Section C.1.3.10** and **Annex I** .

C.1.3.7 Physical Landscape: Regional Soils and Geology

During the period between the present and 2072, lands within the project area would be disposed and developed consistent with surrounding land use patterns. Within the Greater Everglades, continued loss of organic soils would continue as a result of oxidation. It has been observed throughout the Greater Everglades that peat loss is associated with changes in water deliveries that reduce water depths and hydroperiods. Canal construction and drainage have lead to increased drought intensity and a resultant loss of peat soils. As soil subsides, a minor lowering of topography would be expected. Characteristics of the physical landscape are not expected to change significantly from existing conditions.

C.1.3.8 Hydrology

Hydrologic modeling simulations of the existing condition baseline (ECB) and the CEPP future without project condition (FWO) were developed with the RSM-BN and RSM-GL sub-regional modeling tools, to provide baseline conditions for plan formulation, the assessment of CEPP project benefits (comparisons against FWO), and the assessment of CEPP alternative performance for the level-of-service for flood protection and water supply (comparisons against ECB). The ECB was developed to represent the system-wide infrastructure and operations that were in place at the time CEPP plan formulation was initiated, approximately January 2012. The FWO for CEPP assumes the construction and implementation of currently authorized CERP and non-CERP projects, and other Federal, state or local projects constructed or approved under existing governmental authorities that occur in the CEPP study area; the CEPP FWO therefore included first generation CERP projects already authorized and under construction (Indian River Lagoon South Project, Picayune Strand Restoration Project, Site 1 Impoundment Project), second generation CERP projects authorized by Congress in WRRDA 2014 (Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, Caloosahatchee River (C-43) West Basin Storage Reservoir, C-111 Spreader Canal Western Project), and non-CERP projects currently in progress (SFWMD Restoration Strategies, C&SF C-51 West End Flood Control Project, the C-111 South Dade Project, the Kissimmee River Restoration Project, Modified Water Deliveries, and the DOI Tamiami Trail Modifications Next Steps Project). The CEPP FWO also includes implementation of the Everglades Restoration Transition Strategy (ERTP) WCA 3A Regulation Schedule, which replaced the IOP in October 2012.

Operations protocols for the first and second generation CERP projects were modeled consistent with the draft Project Operating Manuals, as documented in the respective PIRs. The completed Kissimmee River Restoration project included the Headwaters Revitalization Schedule for the Kissimmee Chain of Lakes as defined for the Upper Kissimmee Chain of Lakes Routing (UKISS) modeling conducted by the Kissimmee River project team. The CEPP FWO representation of the C-111 South Dade and Modified Water Deliveries project features do not change operations from the ECB, which includes the L-29 Canal stage constraint at 7.5 feet NGVD, the G-3273 constraint at 6.8 feet NGVD, and the 2011 Interim Operating Criteria for the 8.5 SMA.

The extensive list of first and second generation CERP projects and non-CERP projects that are included in the CEPP FWO will result in hydrologic interactions between the projects. Due to the CERP PIR sequencing and the project-specific assumptions for related projects that were defined in each CERP PIR, the hydrologic interactions observed for the CEPP FWO are likely unique to the CEPP PIR. Based on these considerations, the summary of regional hydrology for the CEPP FWO includes quantitative comparisons with the CEPP ECB based on the RSM-BN and RSM-GL CEPP modeling representations of these baselines.

The portion of the Greater Everglades within the CEPP project area includes WCA 1, WCA 2A, WCA 2B, WCA 3A, WCA 3B, and ENP. This overview of FWO hydrological conditions is intended to provide a general overview of regional hydrological changes compared to the CEPP ECB. For a more detailed assessment, the reader should refer to the complete suite of RSM-GL modeling results. A map depicting the RSM-GL gage locations is provided as **Figure C.1-19**.

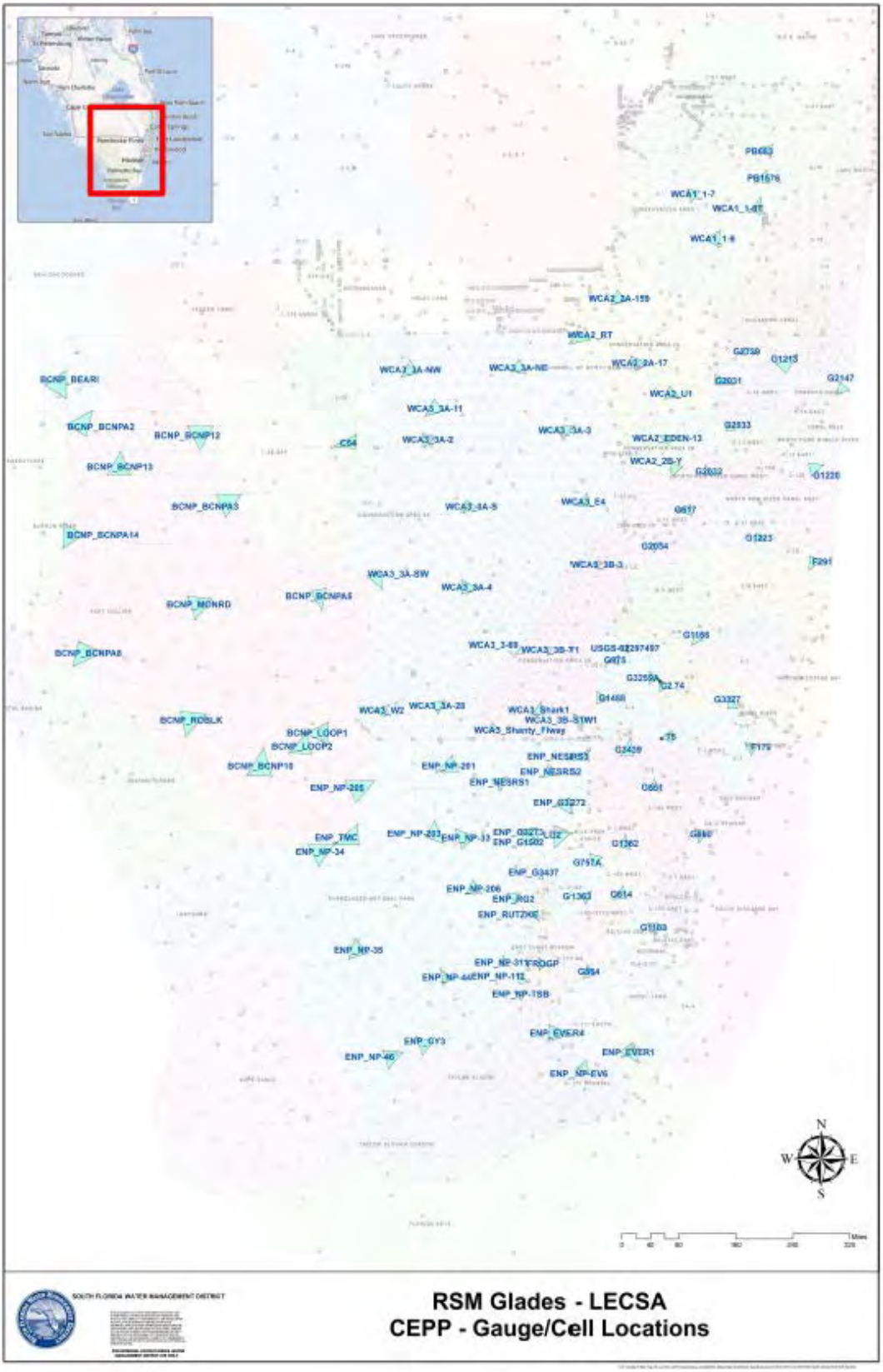


Figure C.1-19. Map of RSM-GL Monitoring Gage Locations

C.1.3.8.1 Lake Okeechobee and the Northern Estuaries

The FWO assumption for the operation of Lake Okeechobee is the Lake Okeechobee Regulation Schedule (LORS) 2008. Compared to the ECB, significant stage reduction of 0.1-0.5 feet for is observed for the upper 75% of the stage duration curve (**Figure C.1-20**), with no modifications to LORS 2008 and assumed implementation of future Kissimmee, C-43, and C-44 restoration projects. The number of days with stages above 16 feet NGVD is reduced from 870 to 696 during the 1965-2005 period of simulation.

For the Caloosahatchee Estuary, compared to the ECB, mean monthly flows above 2800 cfs and 4500 cfs are reduced by 13 and 10 months, respectively (14% and 23% reductions, respectively; **Figure C.1-21**. Mean monthly flows less than 450 cfs are reduced by 89 months (77%) with operation of the C-43 Reservoir (**Figure C.1-22**). For the St. Lucie Estuary, compared to the ECB, mean monthly flows above 2000 cfs and 3000 cfs are reduced by 10 and 12 months, respectively (11% and 28% reductions, respectively; **Figure C.1-23**). Mean monthly flows less than 350 cfs are increased by 3 months (3%) with operation of the C-44 Reservoir (**Figure C.1-24**). Note that the St. Lucie performance measures for the ECB and FWO base conditions were subsequently updated during development of the final array of alternatives, due to an identified error that the performance measure was not accounting for local groundwater flow contributions to the estuary. The correct St. Lucie estuary performance measures are shown in **Figure C.1-23** and **Figure C.1-24**, although these graphics also include display of the subsequent CEPP alternatives.

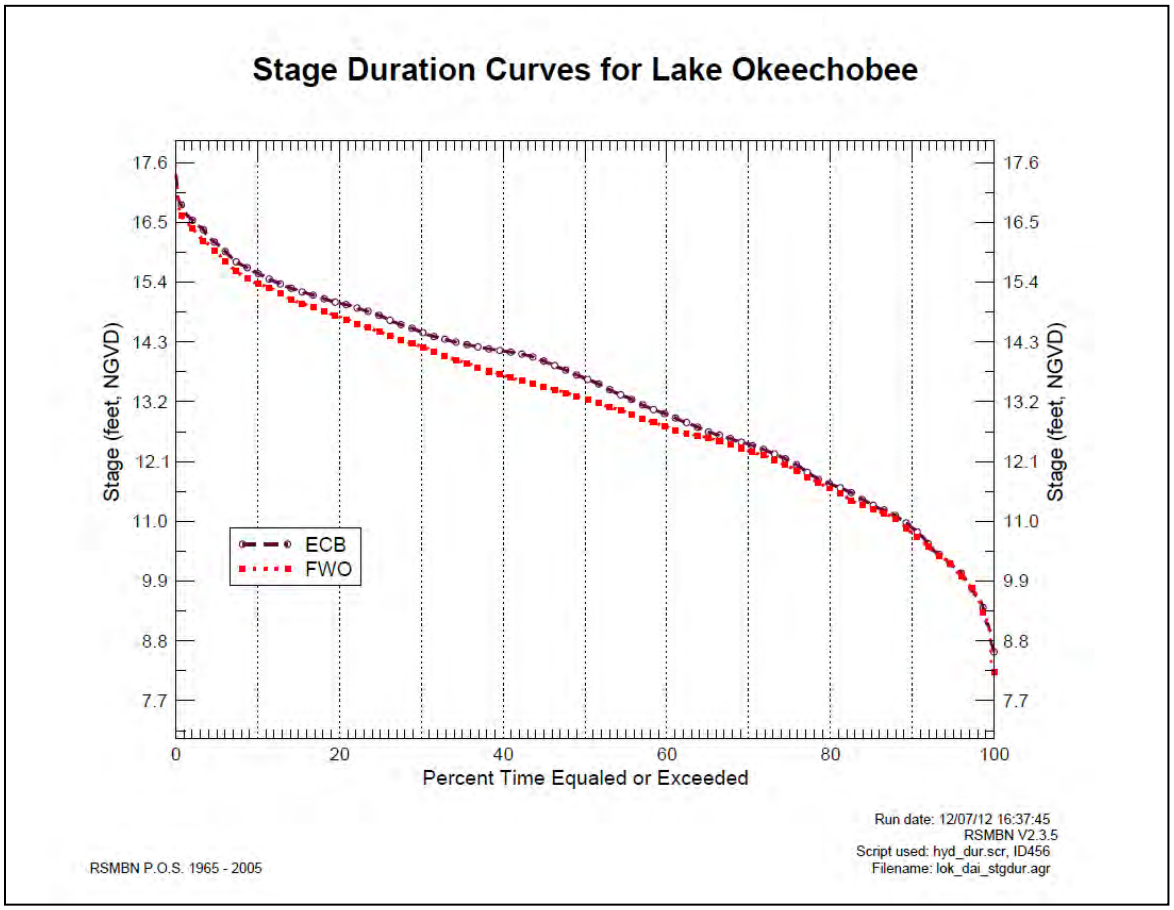


Figure C.1-20. Lake Okeechobee Stage Duration Curve for CEPP Baselines

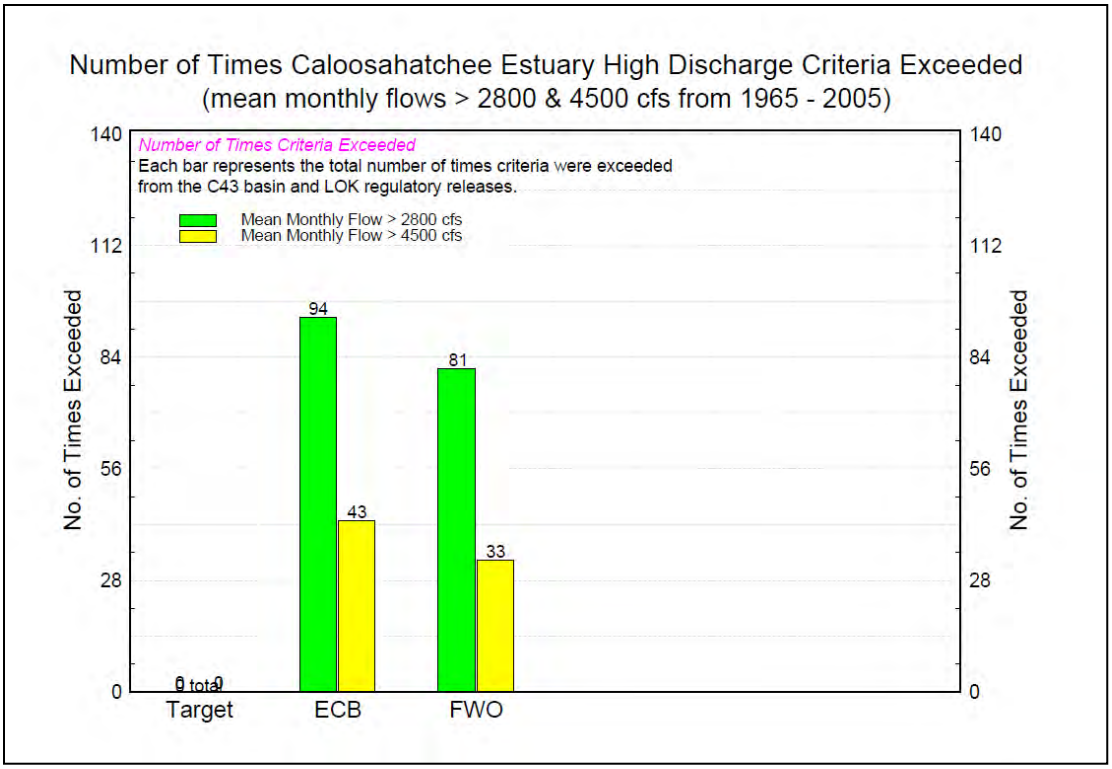


Figure C.1-21. Caloosahatchee Estuary High Discharge Frequency for CEPP Baselines

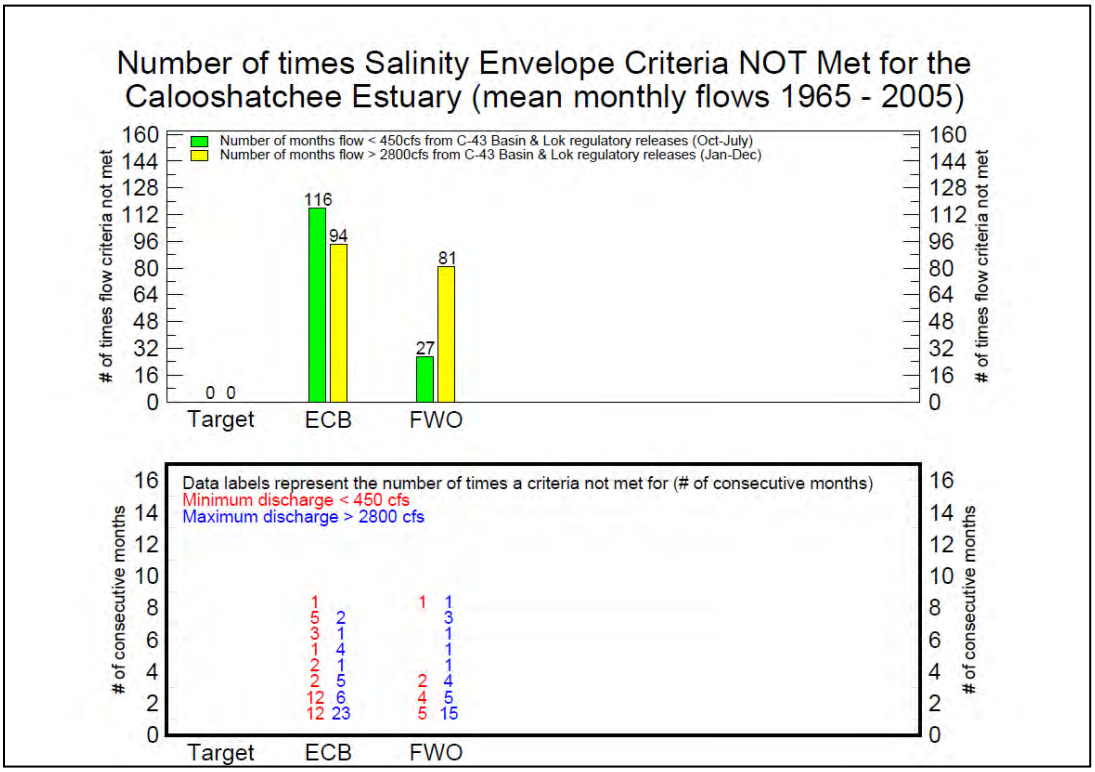


Figure C.1-22. Caloosahatchee Estuary Low Discharge Frequency for CEPP Baselines

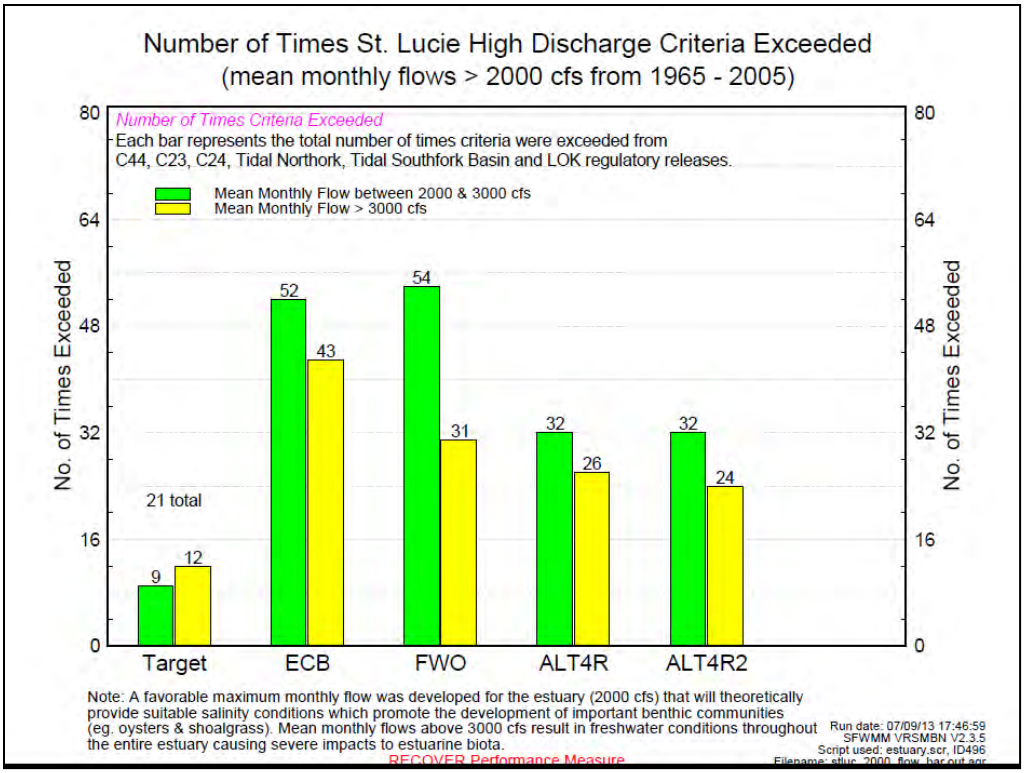


Figure C.1-23. St. Lucie Estuary High Discharge Frequency for CEPP Baselines

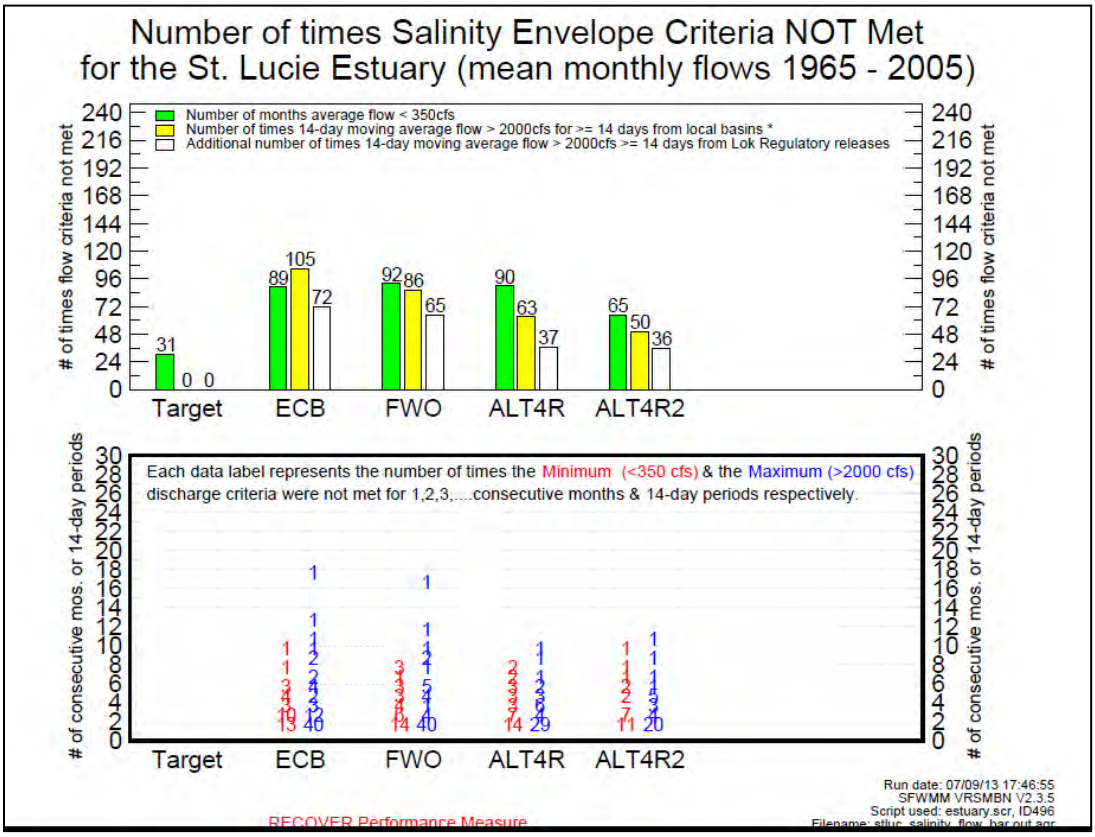


Figure C.1-24. St. Lucie Estuary Low Discharge Frequency for CEPP Baselines

C.1.3.8.2 Everglades Agricultural Area

Minor changes to groundwater levels are expected adjacent to the SFWMD A-1 FEB (15,500 acres), compared to the ECB due to increased seepage from the A-1 FEB. The A-1 FEB design includes perimeter seepage collection canals and associated seepage pumps to limit potential impacts. Detailed CEPP assessments within the EAA are not available because the RSM-BN does not simulate groundwater within the EAA.

C.1.3.8.3 Water Conservation Area 1

Compared to the ECB, no significant changes to WCA 1 stages are indicated. Average annual regulatory releases from WCA 1 to WCA 2A via the S10 structures are moderately reduced from 282,000 acre-feet (282 kAF) to 268 kAF.

C.1.3.8.4 Water Conservation Area 2A and 2B

Compared to the ECB, stages within WCA 2A are generally increased by 0.1-0.2 feet under all hydrologic conditions (**Figure C.1-25**). Average annual inflows from STA 2 (including Compartment B) to WCA-2A are increased from 230 kAF to 381 kAF (a 66% increase) following assumed implementation of the SFWMD Restoration Strategies Project, including the A-1 FEB. The S-7 pump station also contributes inflows to WCA 2A; S-7 inflows are increased from 25 kAF in the ECB to 77 kAF in the FWO. Average annual regulatory releases from WCA-2A to WCA 3A via the S11s are increased from 382 kAF to 460 kAF. Compared to the ECB, stages within WCA 2B are significantly increased by 0.25-0.50 feet under nearly all hydrologic conditions, excluding extreme wet conditions (**Figure C.1-26**). Changes within WCA 2B are directly related to the increased stages within WCA 2A and increased inflows from S-144, S-145, S-146, and seepage.

C.1.3.8.5 L-28 Triangle

Stages within the L-28 Triangle do not change significantly between the CEPP ECB and the FWO.

C.1.3.8.6 Big Cypress National Preserve

Stages within the BCNP, west of WCA 3A, do not change significantly between the CEPP ECB and the FWO.

C.1.3.8.7 Water Conservation Area 3A and 3B

The CEPP FWO includes the combined effects from implementation of the SFWMD A-1 FEB, the ERTP WCA 3A Regulation Schedule (the CEPP ECB assumed the IOP WCA 3A Regulation Schedule), and the CERP Broward WPA Project, in addition to downstream affects associated with the stage reductions in Lake Okeechobee and reduced regulatory discharges south. Compared to the ECB, average annual combined structural inflows to WCA 3A from STA 3/4, STA 5/STA 6 (including Compartment C), and WCA 2A are reduced from 1,073 kAF to 1,028 kAF (a 4% reduction) following assumed implementation of the SFWMD A-1 FEB. Average annual combined structural outflows from WCA 3A through the S-151 (to WCA-3B), S-333 (to ENP NESRS), the S-12 structures (to ENP WSS), and the S343/S344 culverts are also slightly reduced from 1,205 kAF to 1,190 kAF, consistent with the reduced inflows to WCA 3A.

Since WCA 3A covers approximately 752 square miles, hydrologic differences between the CEPP ECB and FWO are characterized at representative gages throughout WCA 3A. Within northwest WCA 3A, no significant differences are observed compared to the ECB, although stages are slightly increased during the wettest 20% of conditions (**Figure C.1-27**). By comparison, stages within northeast WCA 3A are generally decreased by 0.1-0.2 feet, with no significant change during extreme wet or extreme dry conditions (**Figure C.1-28**). Within east-central WCA 3A (3A-3), stages are generally decreased by 0.1-0.2

feet, with no significant change during extreme wet or extreme dry conditions (**Figure C.1-29**. Proceeding south within central WCA 3A (3A-4), stages are similarly generally decreased by 0.1-0.2 feet, with no significant change during extreme wet or extreme dry conditions (**Figure C.1-30**). Southern WCA 3A (3A-28) stages are generally more notably decreased by 0.2-0.3 feet, also with no significant change during extreme wet or extreme dry conditions (**Figure C.1-31**).

Stages in WCA 3B (Site 71) are generally decreased by 0.1-0.2 feet during normal to dry conditions (**Figure C.1-32**), due to the reduced structure inflows from S-151 and reduced seepage inflows resultant from the slight reduction in WCA 3A stages.

C.1.3.8.8 Northeast Shark River Slough

The normal operational target flow distribution is 55 percent through the S-333 into NESRS and 45 percent through the S-12 structures into ENP west of the L-67 Extension, although the ERTP additionally includes provisions for dry season conditions or unseasonably dry conditions when ENP recommends that the percent distribution is not limited to 55 percent to NESRS.

Compared to the ECB, stages within NESRS (NESRS-2) are slightly reduced during normal to dry conditions (**Figure C.1-33**). Similar trends are also observed further south at the NESRS-1 monitoring gage. This stage reduction within NESRS is comparable to upstream water level trends observed within WCA-3A. Inclusion of ERTP operations, in isolation, within the CEPP FWO would be expected to slightly increase WCA 3A Rainfall Plan deliveries to NESRS during dry conditions, and the FWO modeling does indicate a moderate increase in S-333 average annual discharges from 130 kAF to 137 kAF (a 5% increase). The potential increased hydrologic connectivity between WCA-3B and NESRS with the FWO-assumed completed 1-mile eastern MWD Tamiami Trail bridge and the 2.6-mile western DOI Tamiami Trail Next Steps bridge (both bridges and the associated Tamiami Trail roadway raising are included in the FWO and are not included in the ECB) is not realized in the CEPP FWO because the L-29 Canal maximum operational limit (7.5 feet NGVD) and the G-3273 stage constraint (6.8 feet NGVD) remain unchanged from the CEPP ECB, in the absence of an assumed future operational plan that integrates these features. Additional detail can be found in the ERTP EIS (USACE 2012a).

C.1.3.8.9 Western Shark River Slough

Western SRS, located to the west of L-67 Extension Levee and bounded on the north by Tamiami Trail, is primarily influenced by rainfall and water management operations at the S-12 structures (A, B, C and D). Under ERTP, the utilization of the S-12 structures and the seasonal sequential closure periods beginning from the west at S-12A (November 1 – July 14) and S-12B (January 1 – July 14), respectively, is meant to move water from WCA 3A into SRS while providing conditions for Cape Sable seaside sparrow Subpopulation-A (CSSS-A) nesting and breeding. Compared to IOP 2006, the operational plan included in the CEPP ECB, ERTP removed the seasonal closure for S-12C (February 1- July 15). Although not required in water management operations, there is a rule-of-thumb that is often utilized (although not a constraint under ERTP) that includes delivering the Rainfall Plan S-12 structure target flows from east to west with 40 percent, 30 percent, 20 percent, and 10 percent being discharged at S-12D, S-12C, S-12B, and S-12A, respectively. Releases from WCA-3A are part of a regulation schedule for WCA 3A and are typically dependent on a Rainfall Based Management Plan (USACE 2006a). This Rainfall Based Management Plan consists of a rainfall-based delivery formula that specifies the amount of water to be delivered to ENP in weekly volumes through the S-333 and S-12 structures. Under ERTP, the normal operational target flow distribution is 55 percent through S-333 into NESRS and 45 percent through the S-12 structures into ENP west of the L-67 Extension, although the ERTP additionally includes provisions

for dry season conditions or unseasonably dry conditions when ENP recommends that the percent distribution is not limited to 55 percent to NESRS.

Compared to the ECB, stages within northwest ENP (NP-201) are generally increased by 0.1-0.2 feet during normal to dry conditions (**Figure C.1-34**) due to the increased utilization of S-12C with ERTP. NP-201 stage responses are highly correlated to the increased utilization of S-12C associated with the ERTP operations. Stages further south within Central Shark River Slough (P-33) demonstrate no significant change between the ECB and FWO (**Figure C.1-35**). Compared to the ECB, no significant stage differences are noted at NP-205, aside from a slight reduction in stage during wet to normal (not extreme) hydrologic conditions.

C.1.3.8.10 Taylor Slough

Under the ECB, which includes IOP 2006 operations for the SDCS, specified C-111 basin canal water levels/ranges and S-332D pump station operations resulted in Taylor Slough being provided water from C-111 mainly during the wet season. During the dry season, under IOP 2006, water deliveries to Taylor Slough were limited to provide conditions conducive to CSSS nesting (325 cfs from December 1 – January 31; 165 cfs from February 1 – July 15). ERTP operations, as part of the CEPP FWO, slightly modify the S-332D operations by increasing the CSSS operational constraint up to 250 cfs during the period from February 1 – July 14.

Compared to the ECB, ENP stages along Taylor Slough (NP-TSB) are generally increased by 0.1-0.3 feet during nearly all hydrologic conditions (**Figure C.1-36**). Increased stages for Taylor Slough are resultant from the combined hydrologic effects of the ERTP S-332D operations, the CERP C-111 Spreader Canal Western Project, and the non-CERP C-111 South Dade L-31W Canal plug constructions, as assumed completed for the FWO condition.

C.1.3.8.11 Lower East Coast Area

The LEC area is located to the east of the L-31N, L-31W, and C-111 canals. Under IOP 2006 and ERTP, specified canal water levels/ranges are meant to provide flood protection, water supply, and prevention of saltwater intrusion for the LEC. The ERTP operations for the SDCS are unchanged from the IOP operations for the SDCS, resulting in no changes to the operational protocols between the CEPP ECB and FWO.

Observed stage changes within the LEC are separately discussed with the FWO summary of flood control and water supply performance.

C.1.3.8.12 8.5 Square Mile Area

Stages within the 8.5 SMA, located along the eastern boundary of ENP, do not change significantly between the CEPP ECB and the FWO as ERTP did not change the operations of the 8.5 SMA S-357 pump station or the adjacent SDCS structure operations. The 8.5 SMA project components and operations are unchanged between the ECB and FWO modeling assumptions.

C.1.3.8.13 Biscayne Bay

No significant changes to combined total surface water canal discharges to central and southern Biscayne Bay (S-336, S-338, S-194, S-196, and S-197) or regional groundwater stages are observed between the CEPP ECB and FWO. Average annual surface water canal discharges to northern Biscayne Bay (S-29, S-28, S-27), which are affected by the assumed operations of the CERP BCWPA project, are increased by 66 kAF in the FWO, compared to the ECB.

C.1.3.8.14 Florida Bay

Average annual surface water transect flows from southeastern ENP towards Florida Bay are unchanged for Craighead Basin (RSM-GL Transect 23-A), increased by 8 kAF (12%) from Taylor Slough (Transect 23-B), and decreased by 22 kAF (13%) for the Eastern Panhandle of ENP (Transect 23-C), resulting in a net decrease of approximately 14 kAF for the FWO, compared to the ECB. Changes in surface water transect flows towards eastern Florida Bay are resultant from the combined hydrologic effects of the ERTP S-332D operations, the CERP C-111 Spreader Canal Western Project, and the non-CERP C-111 South Dade L-31W Canal plug constructions, as assumed completed for the FWO condition. The salinity effects within Florida Bay from this overall reduction and changed spatial distribution of flows were not specifically evaluated by the CEPP ecological sub-team (with additional RECOVER support), but limited additional information for the FWO changes compared to the ECB are also shown in **Appendix G** (**Benefit Model**).

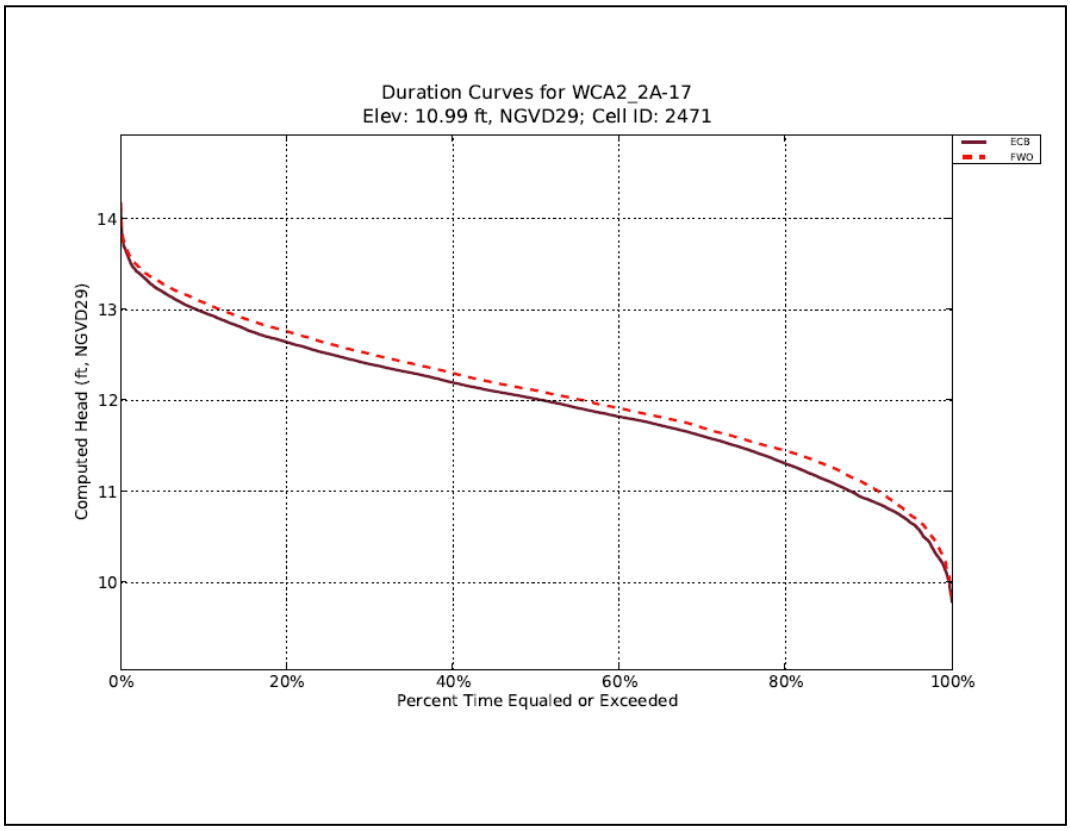


Figure C.1-25. Central WCA-2A Stage Duration Curve

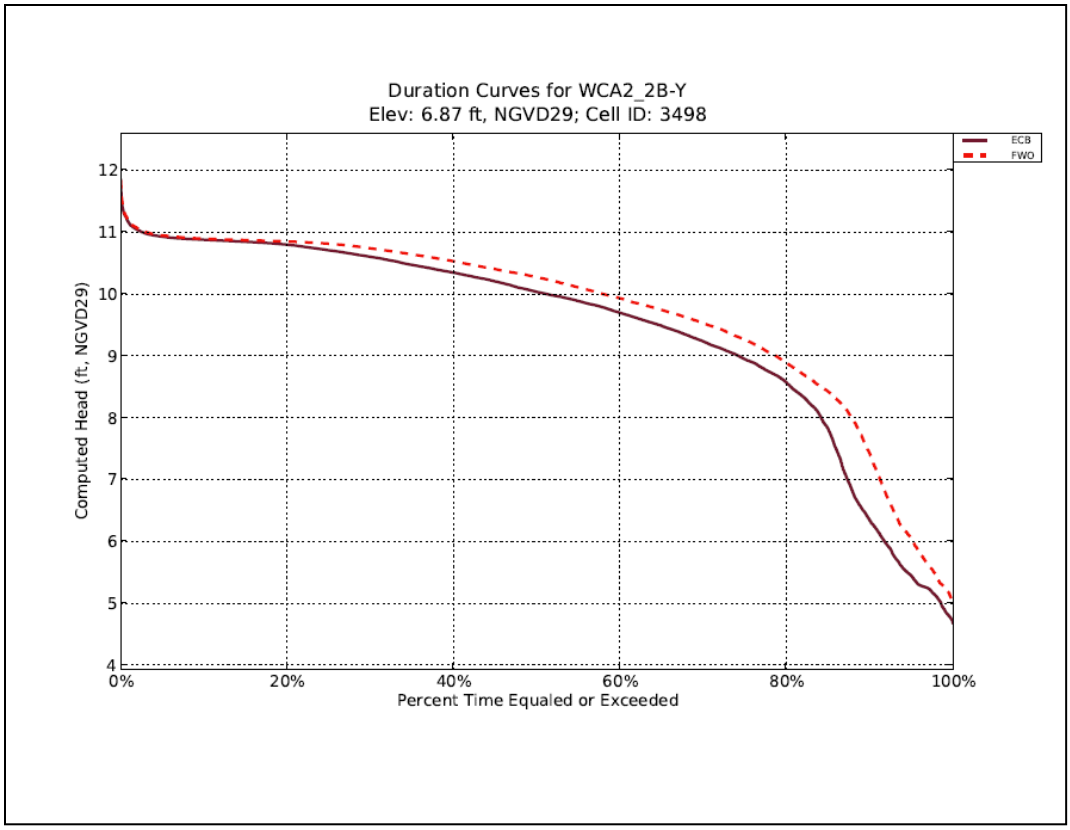


Figure C.1-26. Southern WCA-2B Stage Duration Curve

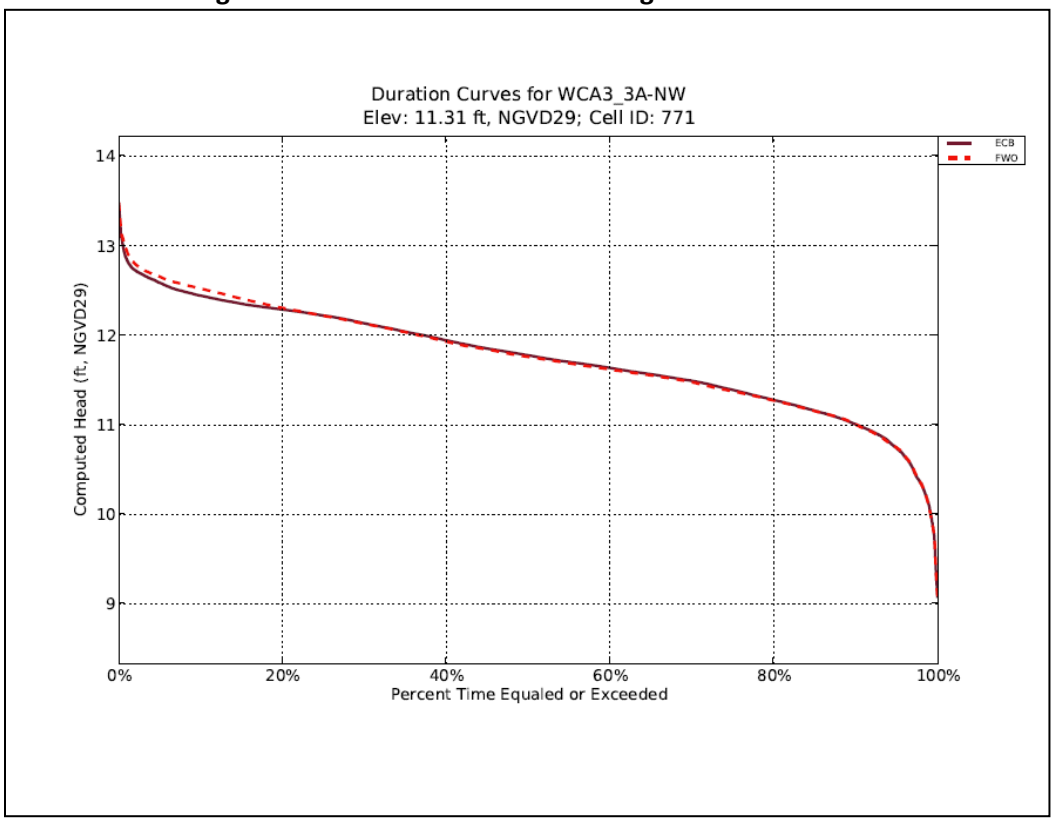


Figure C.1-27. Northwest WCA 3A Stage Duration Curve

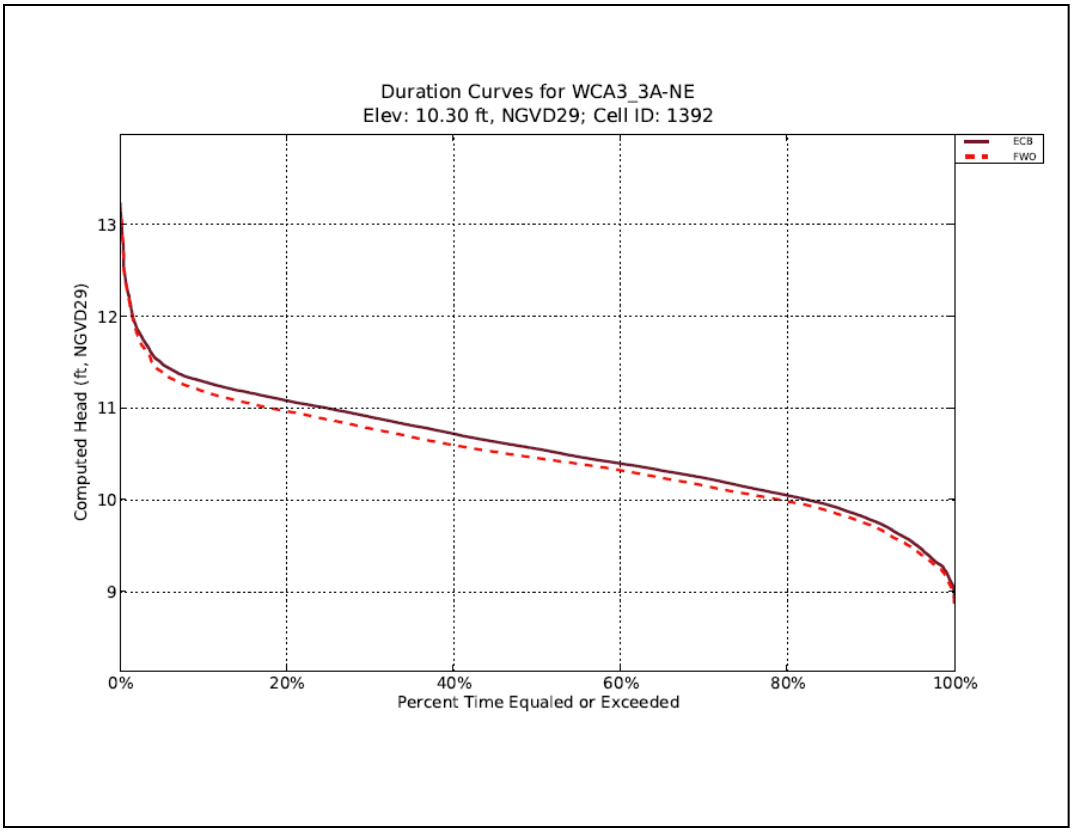


Figure C.1-28. Northeast WCA 3A Stage Duration Curve

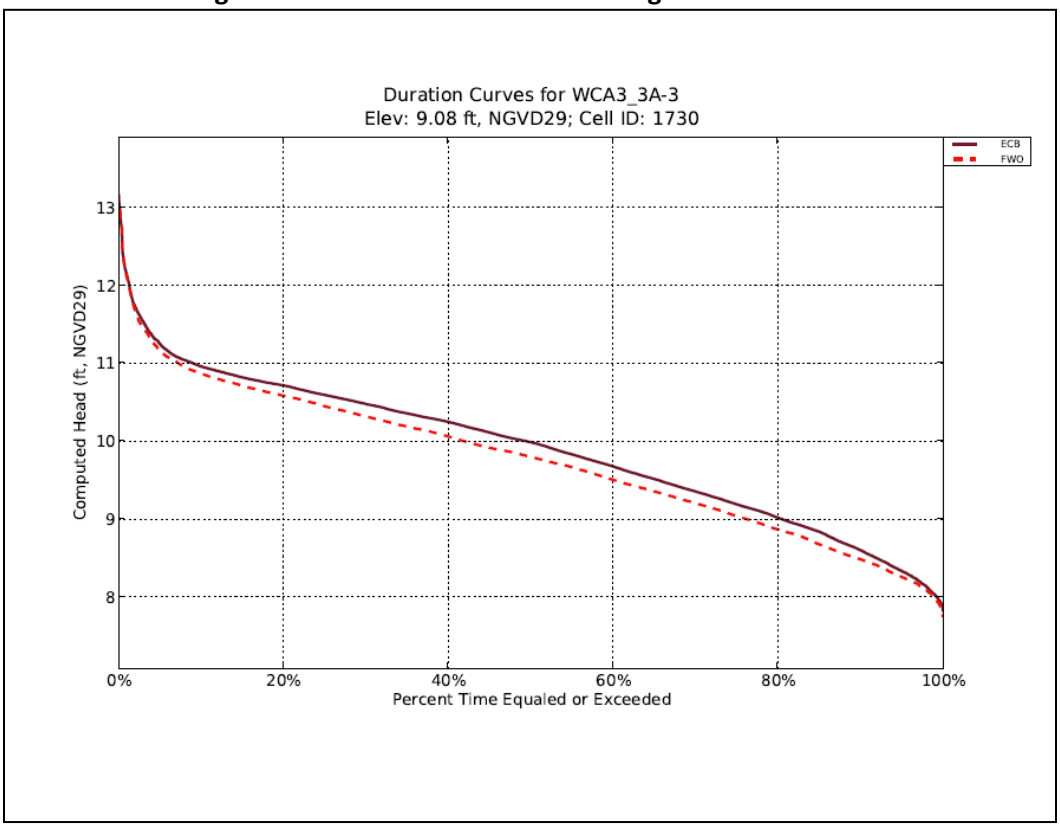


Figure C.1-29. East-Central WCA 3A Stage Duration Curve

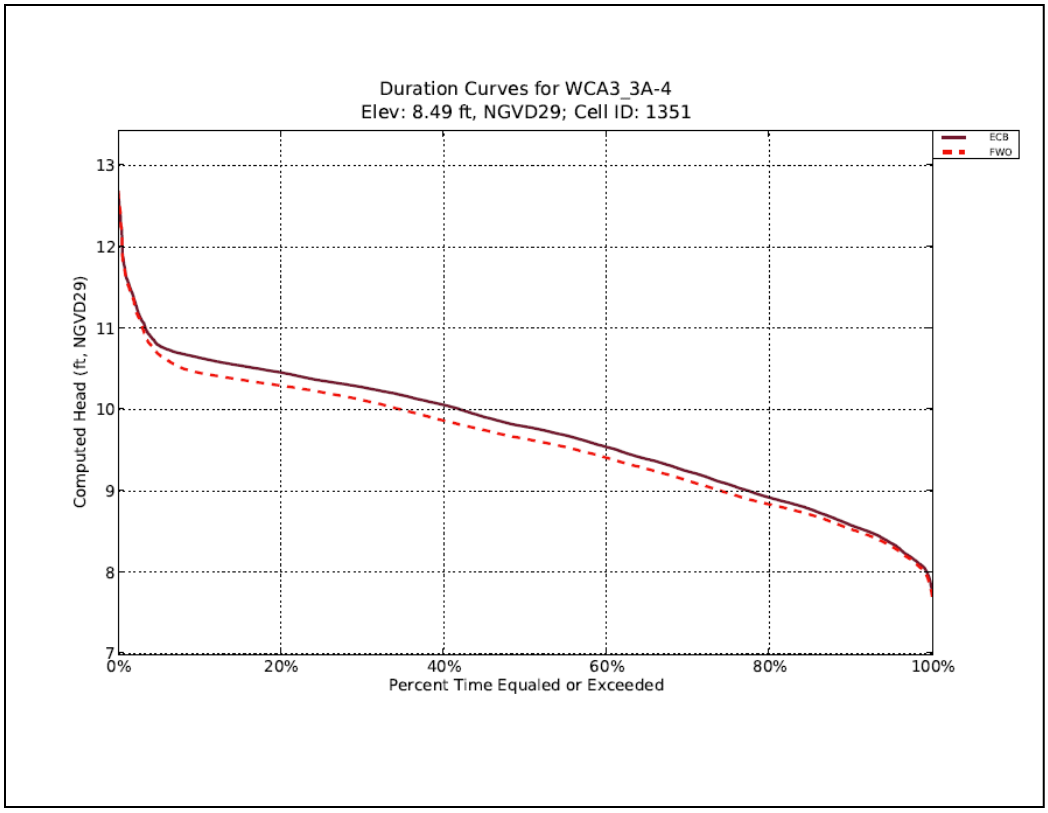


Figure C.1-30. Central WCA 3A Stage Duration Curve

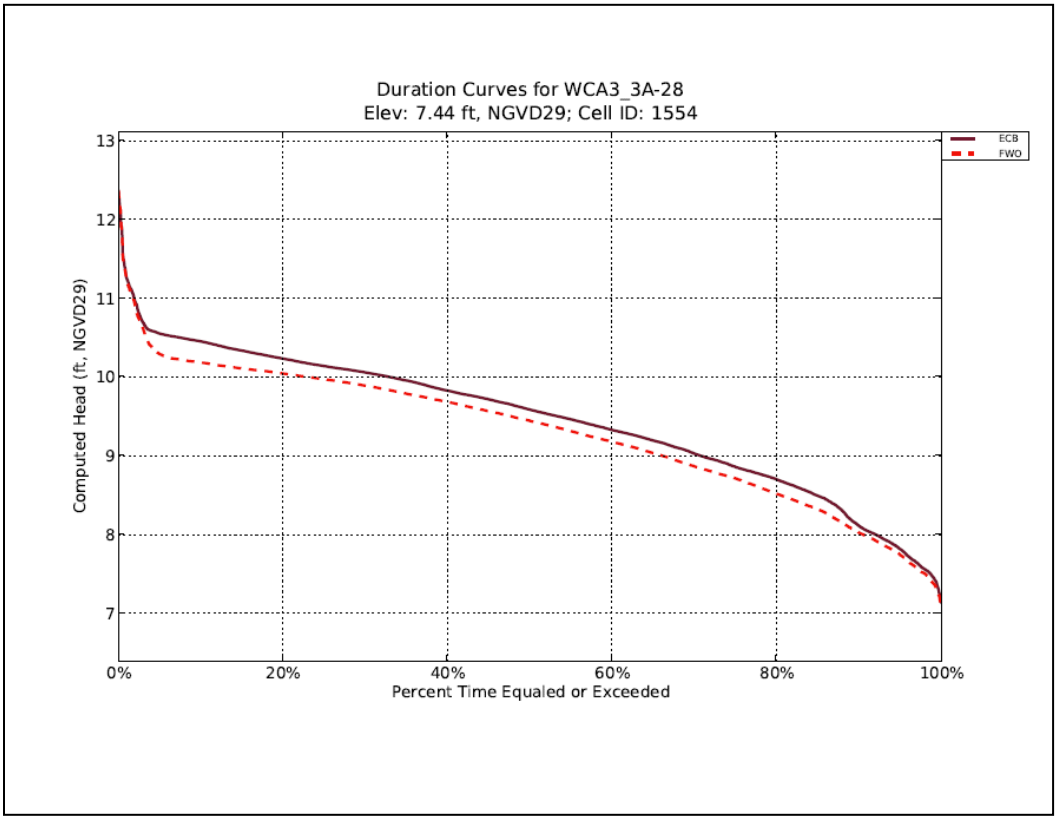


Figure C.1-31. South WCA 3A Stage Duration Curve

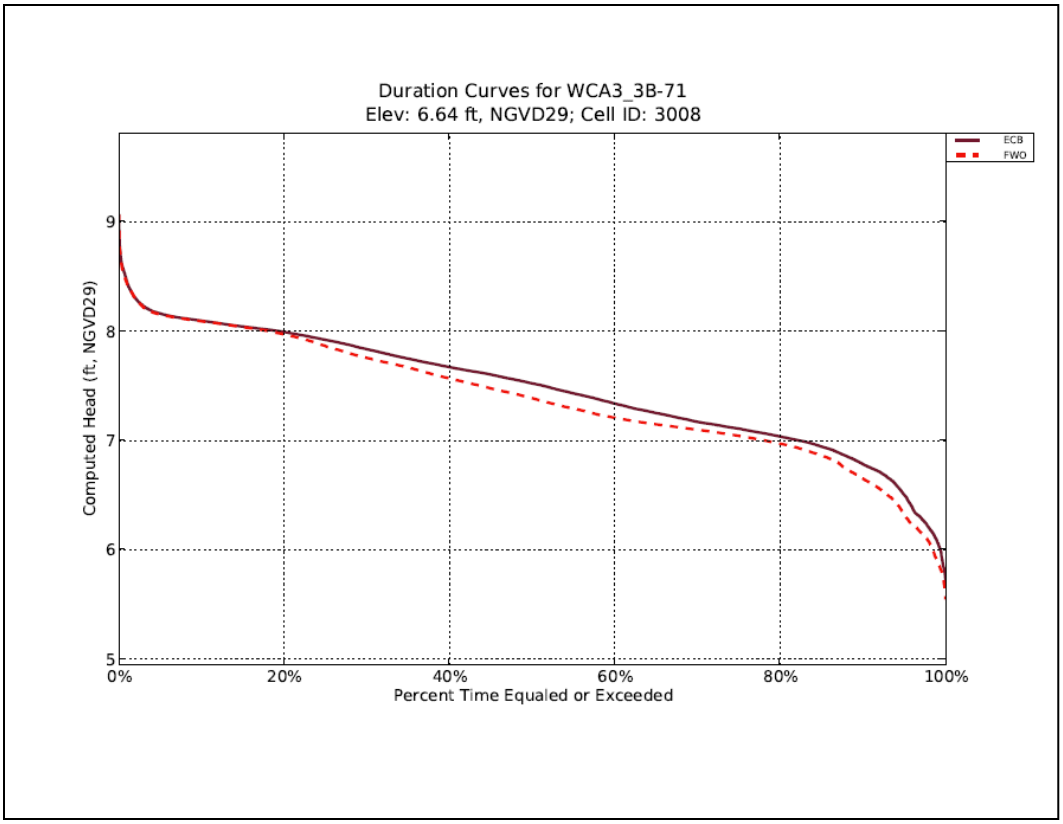


Figure C.1-32. Central WCA-3B Stage Duration Curve

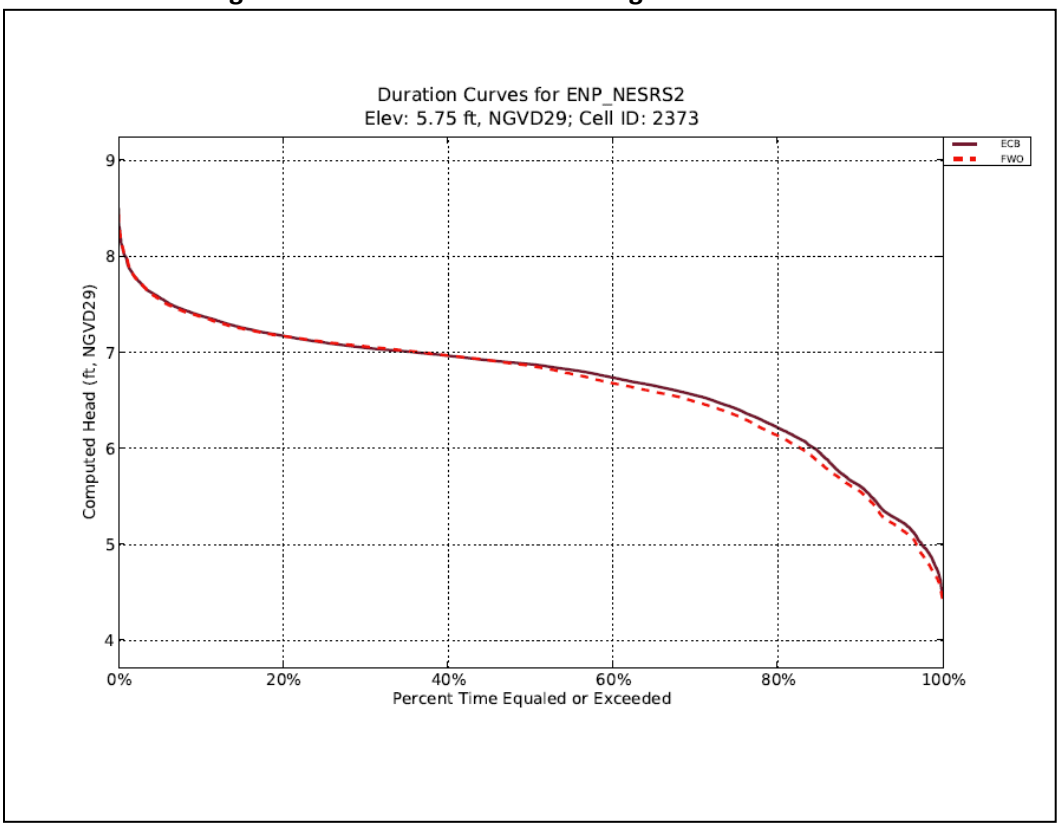


Figure C.1-33. Northeast ENP Stage Duration Curve

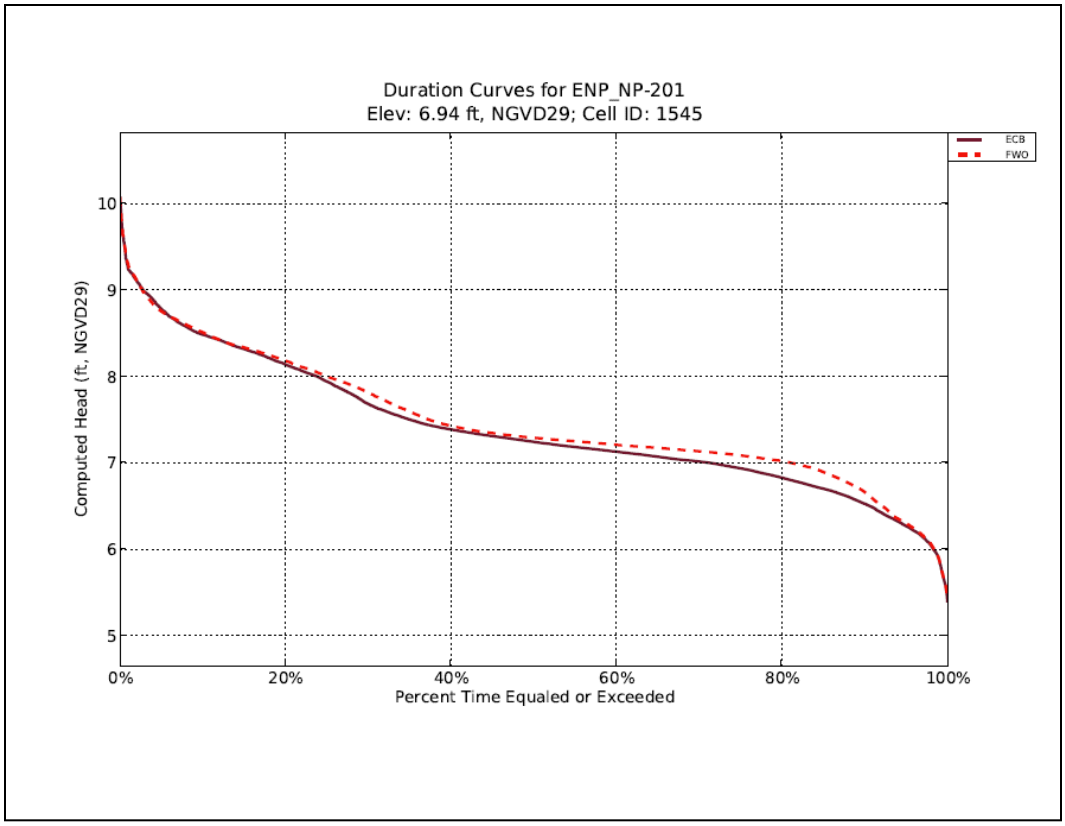


Figure C.1-34. Northwest ENP Stage Duration Curve

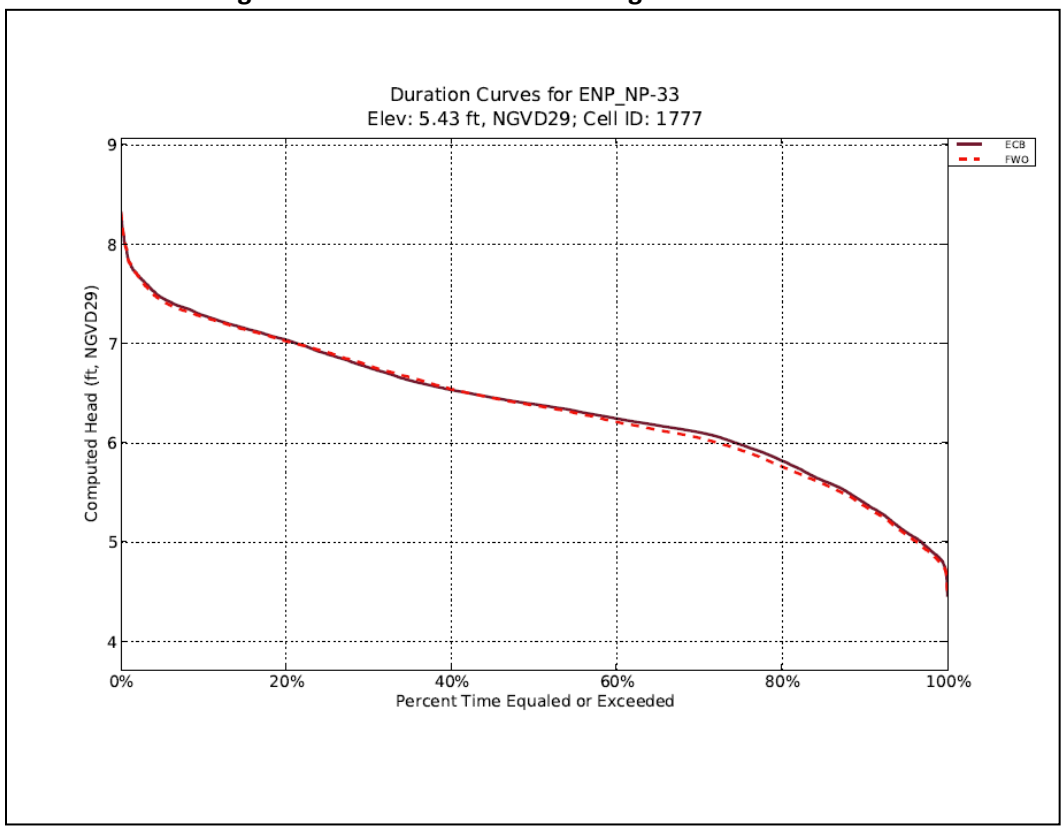


Figure C.1-35. Central ENP Stage Duration Curve

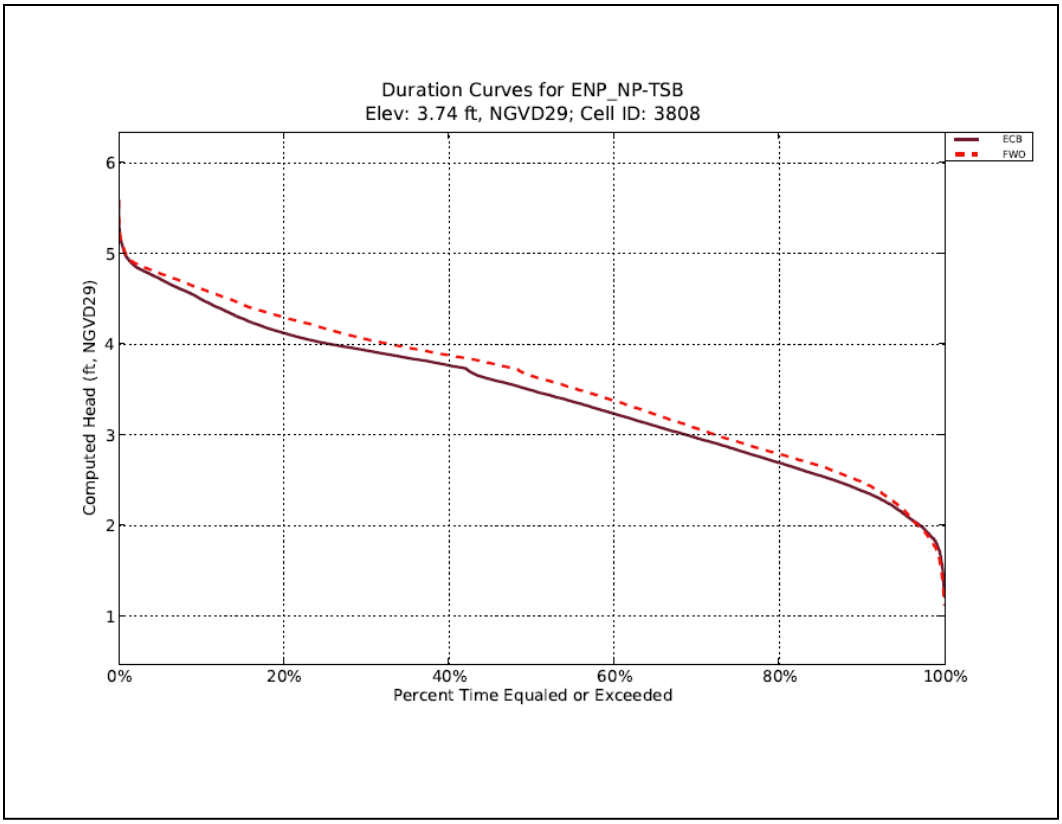


Figure C.1-36. ENP Taylor Slough Stage Duration Curve

C.1.3.9 Regional Water Management (Operations)

The FWO for CEPP assumes the construction and implementation of currently authorized CERP and non-CERP projects, and other Federal, state, or local projects constructed or approved under existing governmental authorities that occur in the CEPP study area; the CEPP FWO therefore included first generation CERP projects already authorized and under construction (Indian River Lagoon-South Project, Picayune Strand Restoration Project, Site 1 Impoundment Project), second generation CERP projects authorized by Congress in WRDA 2014 (Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, Caloosahatchee River (C-43) West Basin Storage Reservoir, C-111 Spreader Canal Western Project), and non-CERP projects currently in progress (SFWMD Restoration Strategies, C&SF C-51 West End Flood Control Project, the C-111 South Dade Project, the Kissimmee River Restoration Project, Modified Water Deliveries, and the DOI Tamiami Trail Modification Next Steps Project).

For CEPP modeling of the FWO with the RSM-BN and RSM-GL models, operations protocols for the first and second generation CERP projects were modeled consistent with the draft Project Operating Manuals, as documented in the respective PIRs. The completed Kissimmee River Restoration project included the Headwaters Revitalization Schedule for the Kissimmee Chain of Lakes as defined for the UKISS modeling conducted by the Kissimmee River project team. The CEPP FWO representation of the C-111 South Dade and Modified Water Deliveries project features do not change operations from the ECB, which includes the L-29 Canal stage constraint at 7.5 feet NGVD, the G-3273 constraint at 6.8 feet NGVD, and the 2011 Interim Operating Criteria for the 8.5 SMA. Therefore, effects are as described in **Section C.1.1.9**.

C.1.3.9.1 Lake Okeechobee

The FWO assumption for the operation of Lake Okeechobee is the LORS 2008. The CEPP team recognizes that when it was approved, LORS 2008 was identified as an interim schedule and that a subsequent schedule would be considered after the modifications to Herbert Hoover Dike (HHD) were completed. Until a new operating schedule is developed under a different, future study, LORS 2008 is the best estimate for operations.

The CEPP FWO modeling assumed operation of Lake Okeechobee as specified in the November 2007 LORS Final EIS (ROD approved in April 2008), with the other specified adjacent FWO projects (Kissimmee River Restoration, Caloosahatchee River (C-43) West Basin Storage Reservoir, Indian River Lagoon-South Project) in place and operational; Lake Okeechobee FWO operations were not further optimized during CEPP to consider utilization of additional operational flexibility, including potential higher lake stages. Therefore, effects are as described in **Section C.1.1.9.1**.

C.1.3.9.2 Greater Everglades

The CEPP FWO assumes implementation of the SFWMD Restoration Strategies, including construction of the A-1 FEB impoundment and 6,500 acres of additional STA treatment wetlands, within the EAA to achieve compliance with the 2012 FDEP Consent Order for water quality inflows to the EPA. The September 2012 Consent Order issued to the SFWMD by the FDEP is the result of extensive negotiations between the state and Federal parties. The Central Flow-way components of the SFWMD Restoration Strategies are included in the CEPP FWO modeling.

No modifications to the WCA 1 or WCA 2 Regulation Schedules are included in the CEPP FWO, and operations of these WCAs are consistent with the ECB. Effects would be as described in **Section C.1.1.9.2** with respect to WCA 1 and 2.

In addition to the CERP and non-CERP projects previously specified, the CEPP FWO includes implementation of the ERTP operational plan for WCA 3A, ENP, and the SDCS, which has replaced the IOP. The ERTP superseded the IOP in October 2012 and is intended to be a transitional temporary plan to be used until completion of the final Operational Plan that was to be developed as part of the MWD project. Under the ERTP, WCA 3A is regulated according to a seasonally varying 8.75 to 10.50 feet NGVD regulation schedule and a slightly modified Rainfall Plan, as per the ERTP (December 2011 ERTP Final EIS; refer to **Figure C.1-37**). The most notable changes with the WCA 3A Interim Regulation Schedule under ERTP, compared to that under IOP, are the following changes (refer to the ERTP Final EIS for additional details): the top of the WCA 3A Interim Regulation Schedule (Zone A) was lowered seasonally by between 0.25-0.50 feet; the IOP Regulation Schedule transition zones (Zones B and C) were eliminated; the bottom zones (Zone D and Zone E1) were extended; the S-12C seasonal closure under IOP (February 1 through July 14) was removed; and ERTP operations will utilize the FWS Multi-species Transition Strategy (MSTS) and Periodic Scientists Calls (PSC) to provide input to assist the USACE with operational decision-making. Under the ERTP, consistent with IOP, the WCA 3A Interim Regulation Schedule utilizes a 3-gauge average elevation of Sites 63, 64, and 65 in the management of WCA 3A water levels (also known as 3A-3, 3A-4 and 3A-28, respectively). Consistent with the IOP, the goal of the rainfall and regulatory components is to split the flows between the S-12 structures and S-333, with 45 percent of the total flow from WCA 3A passing through the S-12 structures to Western SRS and the remaining 55 percent to discharge through S-333 to NESRS, establishing the target flows for both the S-12 structures and S-333. However, the ERTP additionally includes provisions for dry season conditions or unseasonably dry conditions when ENP recommends that the percent distribution is not limited to 55 percent to NESRS.

Water deliveries to eastern ENP remain controlled by the stage in L-29 Canal in the CEPP FWO assumptions. Consistent with the ECB, the water management operating criteria for the L-29 borrow canal between S-333 and S-334 is meant to limit the L-29 borrow canal stage to no more than 7.5 feet NGVD in response to existing roadway sub-base concerns identified by the Florida Department of Transportation (FDOT). Although the CEPP FWO assumes completion of the MWD Tamiami Trail Modifications project, the final Operational Plan for MWD has not been developed. Therefore, for planning purposes the CEPP FWO includes ERTP as the operational plan. Also unchanged from the ECB operations for ENP, when the G-3273 water level within NESRS reaches 6.8 feet, NGVD under FWO operations, S-333 discharges to NESRS will be discontinued until G-3273 falls below 6.8 feet, NGVD.

There are three distinct modes of water management operations for ERTP, which are consistent with the previous IOP: Column 1, Column 2, and water supply. Water management operating criteria within Column 1 occurs when WCA 3A discharges can be achieved by discharges from the S-12 structures, S-333, S-151, S-343A, S-343B, and/or S-344. Water management operating criteria within Column 2 occurs when WCA 3A discharges are made via S-333 to the L-29 Canal and L-31N Canal, the ENP SDCS; Column 2 generally requires the use of pump stations S-331, S-332B, S-332C, and S-332D. Column 2 is used to offset or mitigate for adverse effects on WCA 3A related to closure periods at water management structures to protect CSSS-A. Column 2 generally occurs when any S-12 structure is closed in order to protect the Cape Sable seaside sparrow (CSSS) (January 1 through July 14, under ERTP), although Column 1 may continue until the capacity of the S-12 structures that remain open is insufficient to handle the discharge from WCA-3A. If necessary, Column 2 may continue past re-opening of the S-12 structures (July 15) to mitigate for adverse effects on WCA 3A resulting from the ERTP closures of S-12A, S-12B, S-343A, S-343B, and S-344. All other specified operations in the CEPP FWO for WCA 3A, WCA 3B, and ENP are unchanged from the ECB. Additional detail is included in the December 2011 ERTP Final EIS and is incorporated by reference in this document.

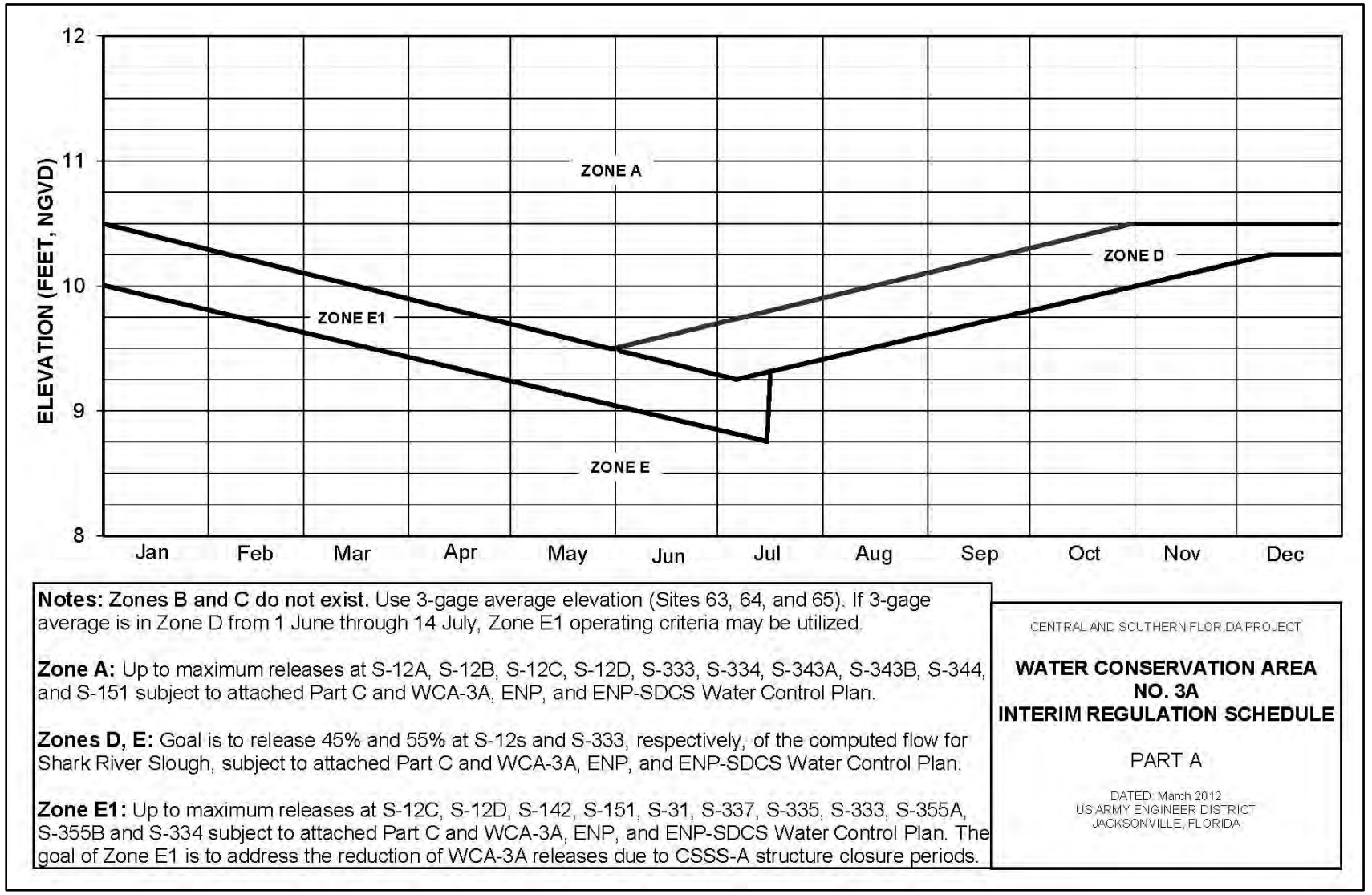


Figure C.1-37. ERTP Water Conservation Area 3A Interim Regulation Schedule Part A

C.1.3.10 Flood Control

The negative effects associated with flooding are expected to increase during the period between the present and the year2072. As agricultural and urban development continues, the volume, duration, and frequency of floodwaters may increase, and the actual levels of service for flood control may decline in some areas. If sea level change continues as predicted, it is foreseeable that the Biscayne aquifer is likely to experience greater intrusion of saltwater possible rendering some of the current water supply well fields unusable due to contamination. Higher groundwater stages in the project area would reduce the ability of water managers to store rainfall runoff wither within wetlands or the surficial aquifer, resulting in increased intensity of stormwater discharges through the primary canals. Reduced water storage reduces the capacity of the flood control system to accommodate runoff and would likely lead to increased frequency of flooding events. Sea level change may also impact flood control effectiveness as rising tail water conditions at the coastal canal structures reduce the effective maximum discharge rates. As additional information becomes available, these structures may be modified or replaced with pumps to ensure continued effective flood control. This may also require the implementation of forward pumping to maintain the existing level of flood protection in the future. An analysis of sea level change on the recommended plan is discussed in **Section 6** and **Annex I**. Sea level change is not included in the FWO modeling for CEPP.

Future non-CERP projects, implemented through the USACE and/or the SFWMD may potentially alter the levels of service for flood control within the CEPP project area, including but not limited to: potential Lake Okeechobee Regulation Schedule changes, SFWMD Restoration Strategies, C&SF C-51 West End Flood Control Project, the C-111 South Dade Project, the Kissimmee River Restoration Project, Modified Water Deliveries, and other potential future C&SF operational plan studies. Potential flood control affects, including improved or reduced levels of service, would be thoroughly assessed through the public NEPA process. To the extent that these projects have been identified and defined, these non-CERP projects have been included in the CEPP FWO modeling assumptions; potential future operational plans for Lake Okeechobee, implementation of the Modified Water Deliveries and C-111 South Dade projects, and other potential future C&SF operational plan studies are therefore not able to be included in the CEPP FWO modeling.

The Water Resources Development Act of 2000 (section 601 of WRDA 2000) approved the CERP Plan contained in the "Final Integrated Feasibility Report and Programmatic Environmental Impact Statement" dated April 1, 1999. As stated in section 601(h) of WRDA 2000, "the overarching objective of the Plan is the restoration, preservation, and protection of the south Florida ecosystem while providing for other water-related needs of the region, including flood protection and water supply." Section 601 of WRDA 2000 required the Secretary of the Army, with the concurrence of the Secretary of the Interior and the Governor of Florida, and after notice and opportunity for public comment, to promulgate Programmatic Regulations to ensure that the goals and purposes of the Plan are achieved and to establish the processes necessary for implementing the Plan. The final Programmatic Regulations became effective on December 12, 2003 as Title 33, Part 385 of the Code of Federal Regulations (CFR).

Identifying if an elimination or transfer of existing legal sources of water will occur as a result of implementation of CERP and whether levels of service for flood protection will be reduced by implementation of CERP is required by section 601(h)(5) of WRDA 2000. The WRDA 2000 Savings Clause requires that "Implementation of the Plan shall not reduce levels of service for flood protection that are: (i) in existence on the date of enactment of this Act (December 11, 2000); and (ii) in accordance with applicable law." Consistent with the Savings Clause requirements, each CERP project included in the CEPP FWO (Indian River Lagoon-South Project, Picayune Strand Restoration Project, Site 1

Impoundment Project, Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, Caloosahatchee River (C-43) West Basin Storage Reservoir, C-111 Spreader Canal Western Project) must independently demonstrate in the respective PIRs that implementation of these CERP projects would not adversely impact the levels of service for flood protection. Operations protocols for the first and second generation CERP projects were modeled in the CEPP FWO consistent with the draft Project Operating Manuals, as documented in the respective PIRs.

Compared to the CEPP ECB, the CEPP FWO modeling indicated no change to flood control stages within the wettest 10% of hydrologic conditions for LECSA 1 (Palm Beach) and LECSA 2 (Broward); no change to flood control stages within the wettest 10% of hydrologic conditions along the L-30 Canal in LECSA 3 (Miami); and a slight increase to flood control stages within the wettest 10% of hydrologic conditions along the L-31N Canal in LECSA 3.

C.1.3.11 Water Supply

Future non-CERP projects within the CEPP project area, implemented through the USACE and/or the SFWMD may potentially partially or entirely eliminate water supply sources or transfer water supply to new sources. Currently identified future non-CERP projects including, but are not limited to: potential Lake Okeechobee Regulation Schedule changes, the C-111 South Dade Project, the Kissimmee River Restoration Project, Modified Water Deliveries, and other potential future C&SF operational plan studies. Potential water supply affects, including improved or reduced levels of service, would be thoroughly assessed through the public NEPA process. To the extent that these projects have been identified and defined, these non-CERP projects have been included in the CEPP FWO modeling assumptions; potential future operational plans for Lake Okeechobee, implementation of the Modified Water Deliveries and C-111 South Dade projects, and other potential future C&SF operational plan studies have not been presently defined and were therefore not included in the CEPP FWO modeling.

Identifying if an elimination or transfer of existing legal sources of water will occur as a result of implementation of CERP and whether levels of service for flood protection will be reduced by implementation of CERP is required by section 601(h)(5) of WRDA 2000. The WRDA 2000 Savings Clause requires that "Until a new source of water supply of comparable quantity and quality as that available on the date of enactment of this Act is available to replace the water to be lost as a result of implementation of the Plan, the Secretary and the non-Federal sponsor shall not eliminate or transfer existing legal sources of water, including those for: (i) an agricultural or urban water supply; (ii) allocation or entitlement to the Seminole Tribe of Florida under section 7 of the Seminole Indian Land Claims Settlement Act of 1987; (iii) the Miccosukee Tribe of Indians of Florida;(iv) water supply for Everglades National Park; or (v) water supply for fish and wildlife." Consistent with the Savings Clause requirements, each CERP project included in the CEPP FWO (Indian River Lagoon-South Project, Picayune Strand Restoration Project, Site 1 Impoundment Project, Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, Caloosahatchee River (C-43) West Basin Storage Reservoir, C-111 Spreader Canal Western Project) must independently demonstrate in the respective PIRs that implementation of these CERP projects would not adversely impact the existing legal sources for water supply. Operations protocols for the first and second generation CERP projects were modeled in the CEPP FWO consistent with the draft Project Operating Manuals, as documented in the respective PIRs.

C.1.3.11.1 Lake Okeechobee

In the Lake Okeechobee Service Area, which includes the EAA, the volume of available fresh water is limited. Specifically, the Lake Okeechobee is a limited source due to implementation of the 2008 LORS,

and concerns regarding the lake's MFL criteria. As a result of the impacts to water supply, the SFWMD enacted rules to limit future additional withdrawals from Lake Okeechobee in order to prevent further degradation of the level of certainty for existing legal users.

Despite limitations on future demand (no water supply demand increases are included in the FWO modeling), compared to the ECB, the frequency of water restrictions within the Lower East Coast Service Areas is projected to slightly increase for the CEPP FWO due to Lake Okeechobee falling below the Water Shortage Trigger line as defined by LOWSM: 3 additional years with 3 or more months with restrictions for LECSA 1; 1 additional years with 3 or more months with restrictions for LECSA 2; and 3 additional years with 3 or more months with restrictions for LECSA 3. When HHD remediation of Reaches 1, 2, and 3 and replacement/removal of culverts are complete and the HHD DSAC Level 1 rating is lowered, it may be possible to allow higher maximum lake stages and increased frequency and duration of high lake stages, but this assumption was not included in the CEPP modeling (2008 LORS is assumed for the CEPP FWO, without use of additional operational flexibility). In addition, completion of the Kissimmee River Restoration Project and implementation of a new operating schedule is expected in the FWO. As a result inflows to the Lake would have a different seasonal pattern and magnitude, though the new operating schedule is not known nor included in the FWO analysis.

The CERP C-43 and C-44 reservoirs are assumed to be constructed and operational in the FWO condition, but these projects would not be expected to affect Lake Okeechobee stages. C-43 reservoir captures Lake Okeechobee regulatory releases and the C-44 reservoir captures local basin stormwater runoff. Likewise, implementation of the SFWMD Restoration Strategies' water quality treatment projects in the FWO condition are not expected to affect Lake Okeechobee stages or its ability to supply supplemental irrigation. Most of the land being converted for water quality projects has not been used for agricultural production for a number of years. In addition, the SFWMD Restoration Strategies' projects have been designed to capture existing run-off from the EAA and only the historical limit of up to 60,000 acre feet of water from Lake Okeechobee.

Based on the CEPP FWO modeling assumptions and the resulting stage reductions within Lake Okeechobee, the average annual percentage of water supply demand not met is projected to increase for the EAA and remain consistent with the ECB for the remainder of the LOSA (**Figure C.1-38**). For the eight years with the largest water supply cutbacks within the LOSA, the water supply cutback percentage is reduced for five of the eight years and increased for three of the eight years (1989, 1990, and 2001) (**Figure C.1-39**).

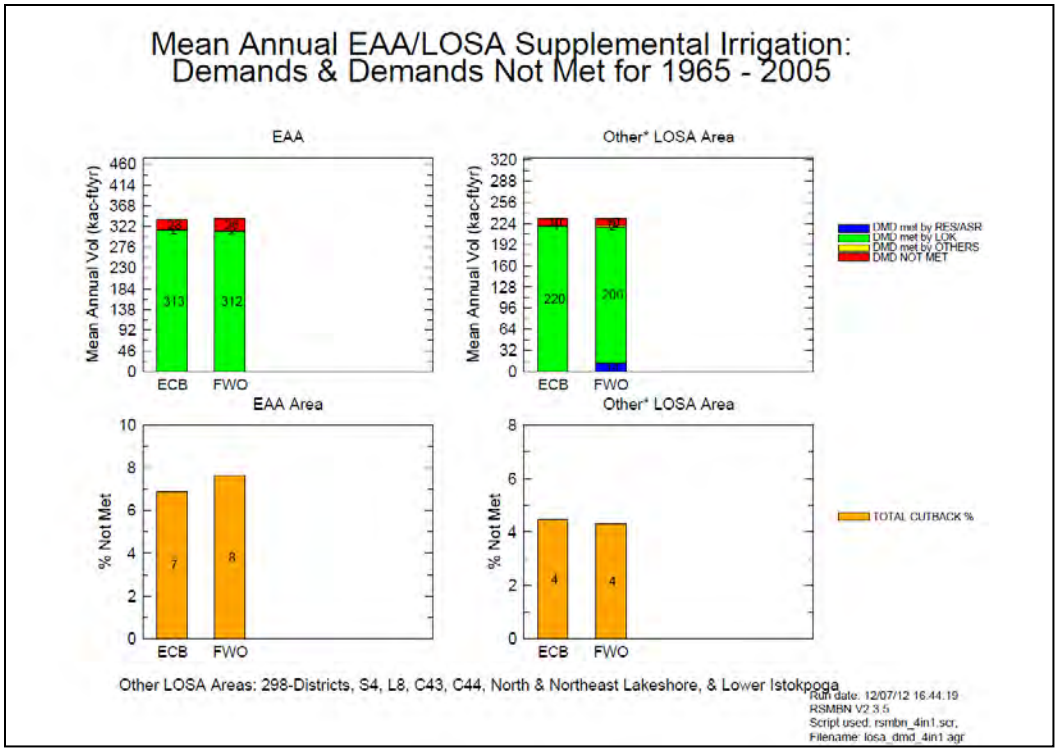


Figure C.1-38. EAA and LOSA Water Supply Performance

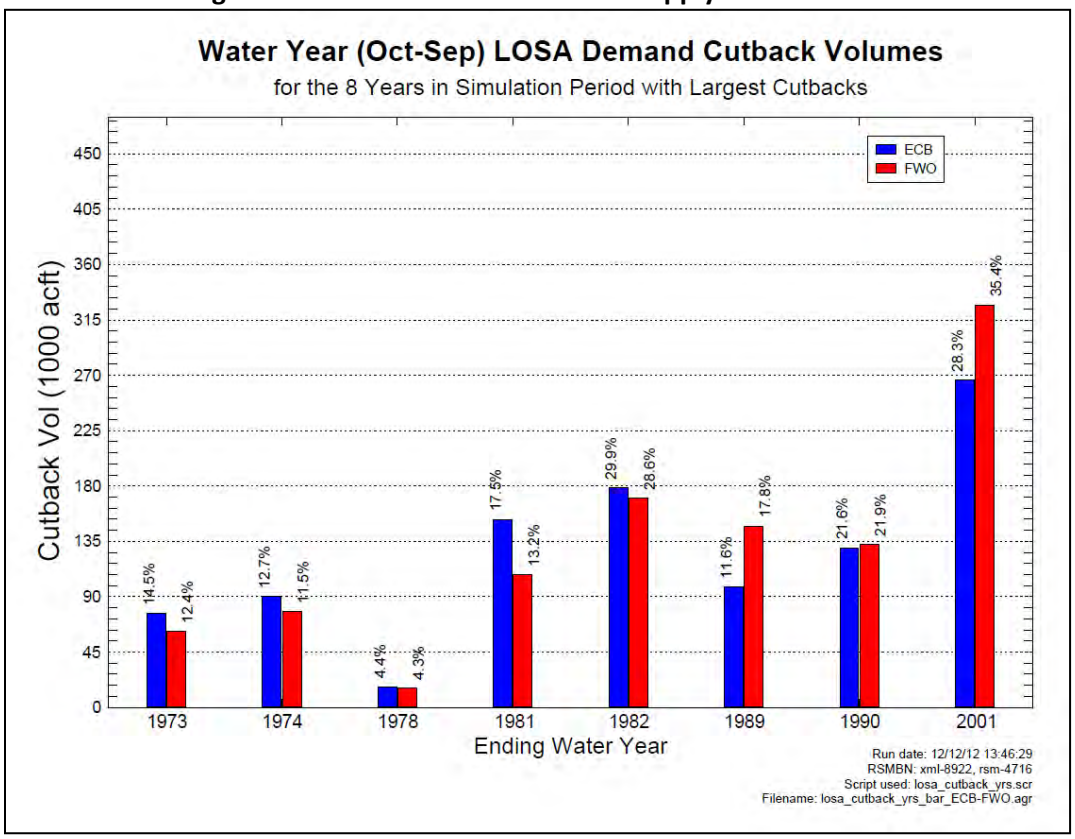


Figure C.1-39. LOSA Water Supply Performance for the Eight Largest Cutback Years

C.1.3.11.2 Seminole Tribe of Florida

Based on the CEPP FWO modeling assumptions and the resulting stage reductions within Lake Okeechobee, the percentage of water supply demand not met for the Brighton Reservation is shown to slightly increase by 0.2% (**Figure C.1-40**). The percentage of water supply demand not met for the Big Cypress Reservation is shown to be moderately reduced by 0.8% (**Figure C.1-41**). The Seminole Tribe of Florida has surface water entitlement rights pursuant to the 1987 Water Rights Compact and subsequent entitlement provisions executed between the Seminole Tribe of Florida, the State of Florida, and the SFWMD, and any potential impacts would need to be avoided or otherwise mitigated.

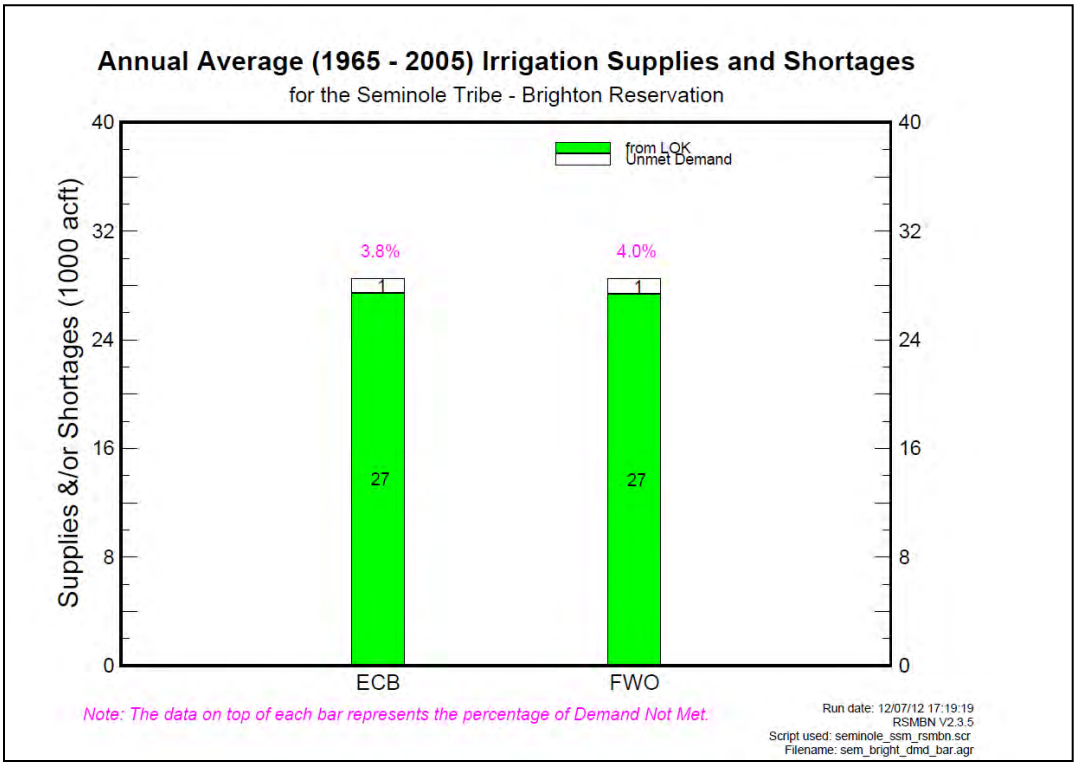


Figure C.1-40. Water Supply Demand for Seminole Tribe of Florida's Brighton Reservation

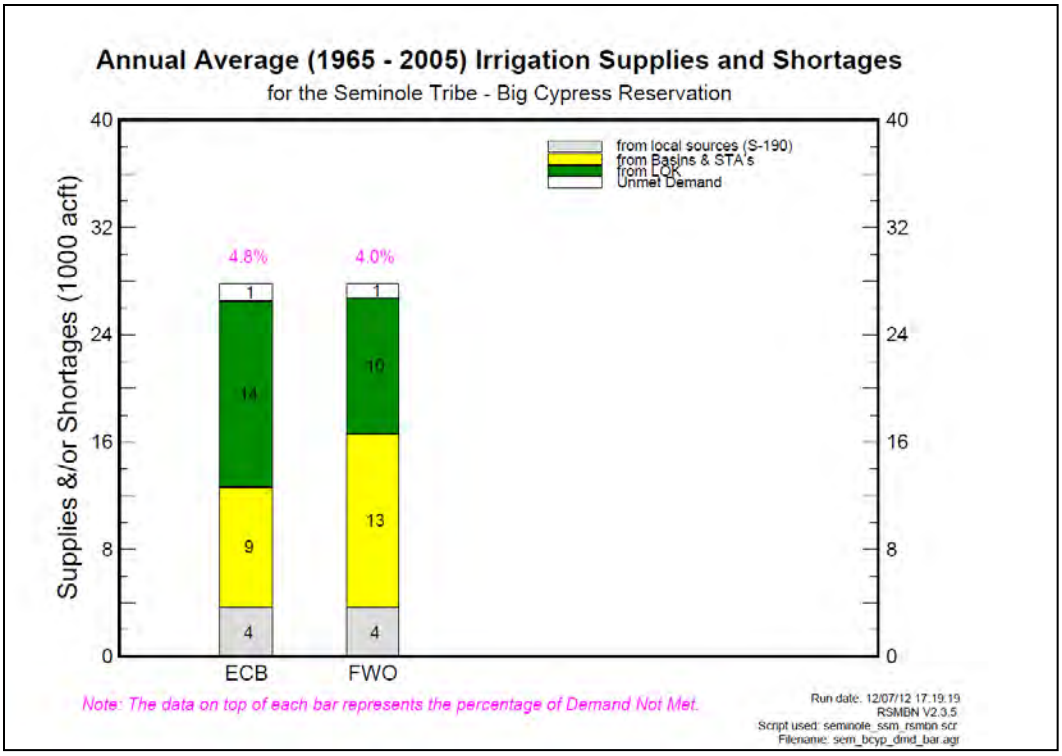


Figure C.1-41. Water Supply Demand for Seminole Tribe of Florida's Big Cypress Reservation

C.1.3.11.3 Lower East Coast Service Areas

Due to the regulatory limits on withdrawals from the SAS that affect the Everglades and WCAs, the water sources will continue to diversify. The SAS was almost the sole source of PWS in the LECSA 15 years ago. Today (2013) it supplies 94% of the PWS. The diversification of sources will continue in the future. Alternative sources include the Floridan Aquifer System, reclaimed water, storage such as ASR and surface and stormwater reservoirs, and demand management through conservation. This diversification will help to protect future supplies.

The CEPP FWO includes the combined effects from implementation of the SFWMD A-1 FEB, the ERTP WCA 3A Regulation Schedule (the CEPP ECB assumed the IOP WCA 3A Regulation Schedule), and the CERP Broward WPA Project, in addition to downstream affects associated with the stage reductions in Lake Okeechobee and reduced regulatory discharges south. The moderately reduced dry season water levels within WCA 3A, resultant from the ERTP lowering the uppermost Zone A of the WCA 3A Regulation Schedule to lower the duration and peak magnitude of wet season stages, has the potential to impact water supply for natural ecosystems and downstream uses. It is expected that this schedule will remain in place for an indeterminate period of time, although the FWS Biological Opinion for ERTP expires in 2016 and re-consultation may be required.

Despite limitations on future demand (no water supply demand increases are included in the FWO modeling), compared to the ECB, the frequency of water restrictions is projected to slightly increase for the CEPP FWO due to Lake Okeechobee falling below the Water Shortage Trigger line as defined by LOWSM: 3 additional years with 3 or more months with restrictions for LECSA 1; 1 additional years with 3 or more months with restrictions for LECSA 2; and 3 additional years with 3 or more months with restrictions for LECSA 3.

The CEPP FWO modeling also indicates changes to regional groundwater conditions within the LECSA, as compared to the CEPP ECB modeling. Despite limitations on future demand, compared to the ECB local groundwater stages east of WCA-1 at PB-1576 (LECSA 1) are expected to decline by 0.2-0.5 feet for the driest 10% of hydrologic conditions (**Figure C.1-42**). Local groundwater stages south of the Site 1 CERP project (G-2739) may be reduced by 0.2 feet for normal to dry conditions and by up to 1.0 feet during extreme dry conditions (**Figure C.1-43**). Within LECSA 2, local groundwater stages are slightly reduced by for the driest 10% of hydrologic conditions. In Miami-Dade County (LECSA 3), L-30 canal stages may be reduced by 0.2-0.4 feet for normal to extreme dry conditions (**Figure C.1-44**); L-31N canal stages may be slightly reduced by 0.1-0.2 feet for extreme dry conditions (**Figure C.1-45**); and C-111 canal stages between S-176 and S-18C are generally lowered by 0.2-0.5 feet for normal to extreme dry conditions (**Figure C.1-46**). Reduced groundwater stages may result in increased water supply demands on the regional system, particularly Lake Okeechobee, to manage canal levels within the target range to prevent saltwater intrusion.

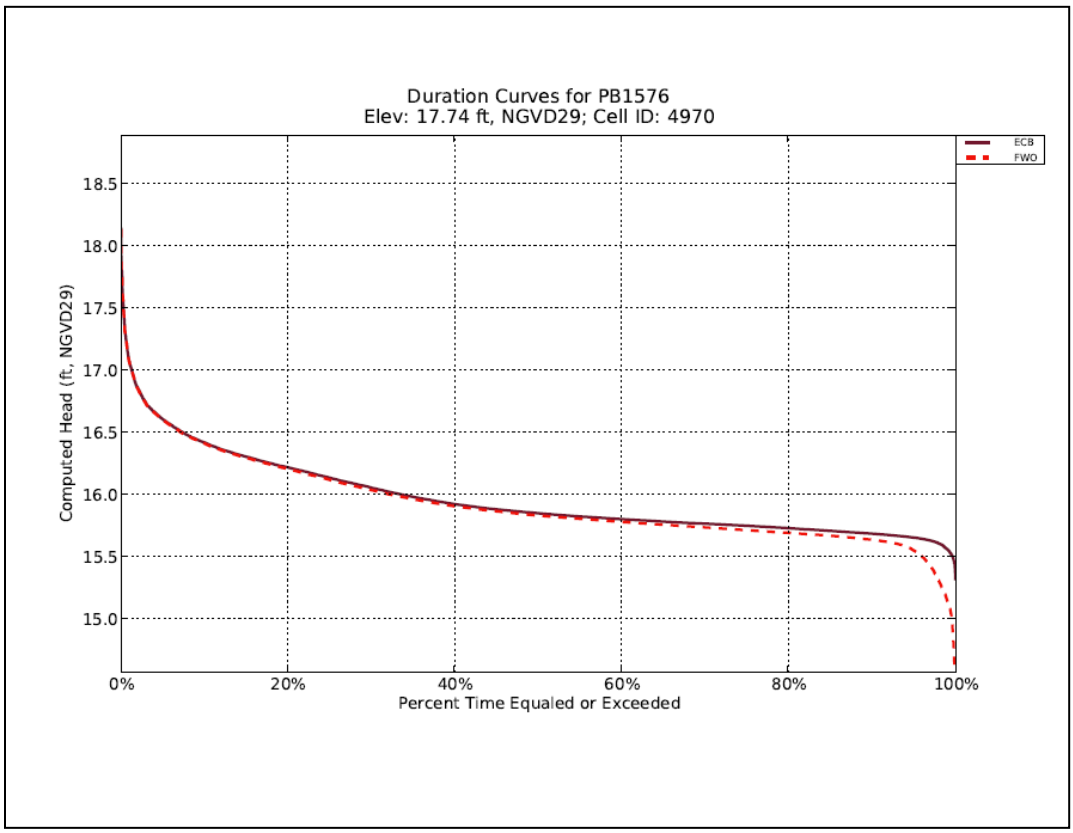


Figure C.1-42. Stage Duration Curve for PB-1576 in LECSA 1

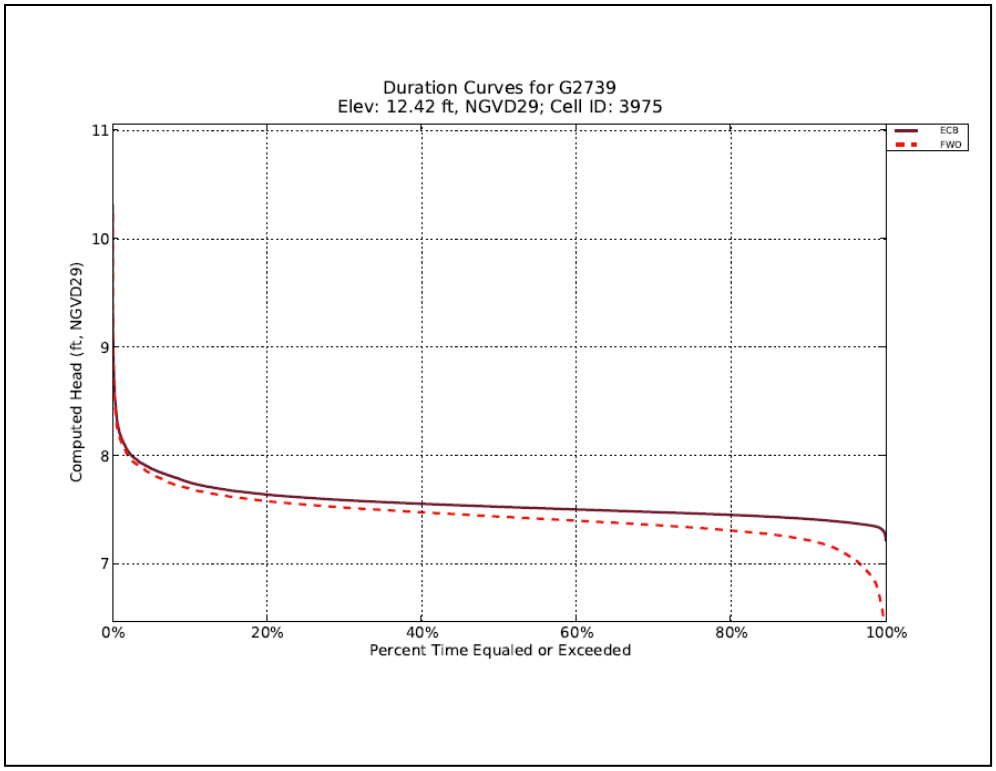


Figure C.1-43. Stage Duration Curve for G-2739 in LECSA 1

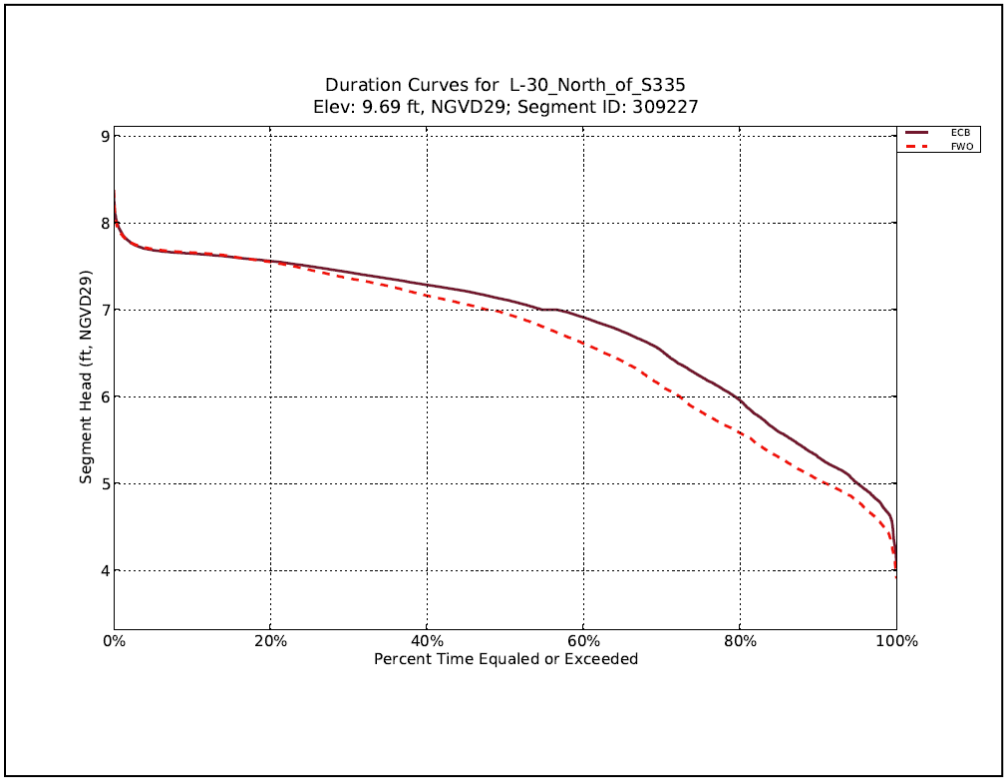


Figure C.1-44. Stage Duration Curve for L-30 Canal in LECSA 3

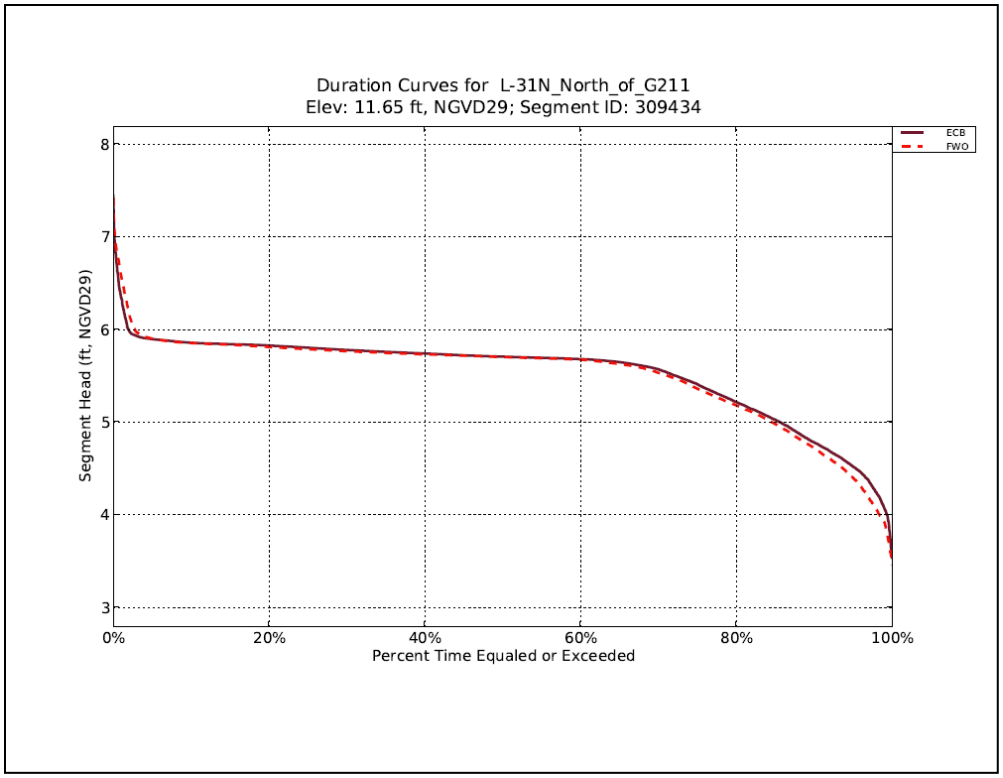


Figure C.1-45. Stage Duration Curve for L-31N Canal in LECSA 3

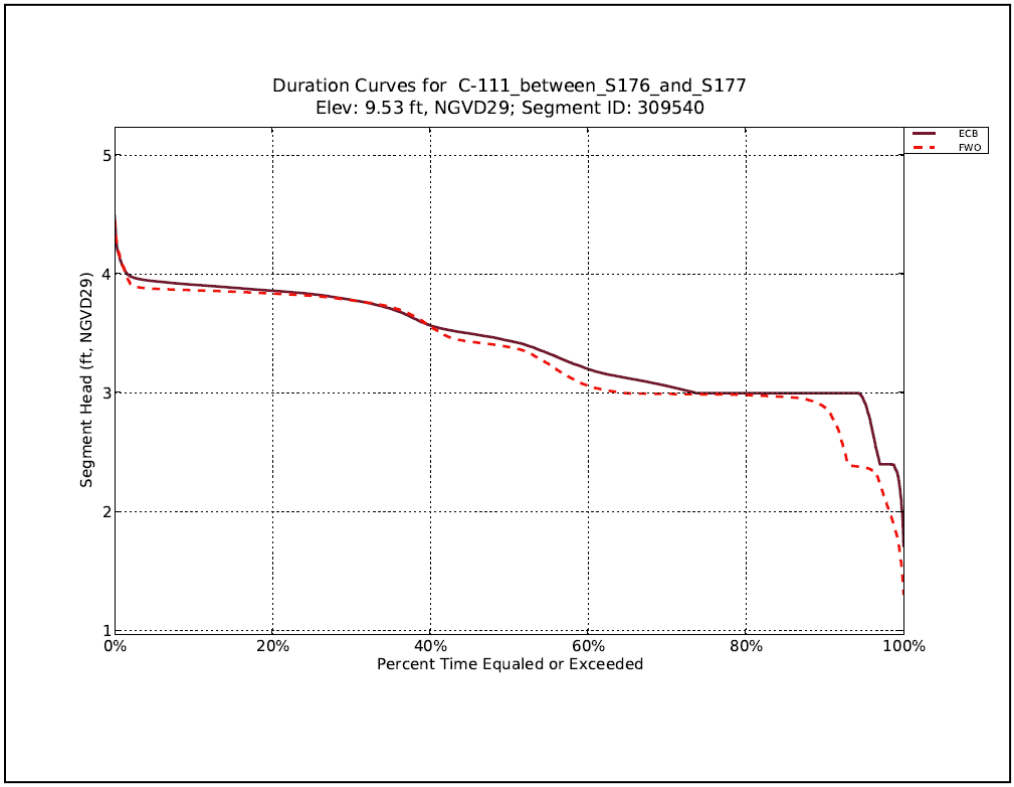


Figure C.1-46. Stage Duration Curve for C-111 Canal in LECSA 3

C.1.3.12 Water Quality

The two most significant water quality issues within the study area are associated with nutrient pollution and the bioaccumulation of mercury by fish and birds. General discussion of the phosphorus issues within the basin are provided here. More detained discussions on phosphorous can be found in **Annex F**.

C.1.3.12.1 Lake Okeechobee

Water quality in Lake Okeechobee should improve under the FWO condition relative to the existing conditions as a result of implementation of TMDLs and associated BMAPs within the Upper Kissimmee River Basin as well as lake basin. The State of Florida has committed to achieving the phosphorus TMDL for the lake by implementing a series of source controls and treatment facilities within the basin. Achieving the TP load TMDL for the lake of 140 tons/year will result in improved dissolved oxygen conditions and reduced incidence of algal blooms.

Mercury methylation conditions within the lake should improve due to the implementation of the proposed mercury TMDL for Florida; however, the greatest reduction in methylated mercury will only come about through international controls on atmospheric emissions of mercury related to the combustion of coal and other fuels.

C.1.3.12.2 Northern Estuaries

Nutrient and dissolved oxygen conditions should improve during the wet season within the Caloosahatchee River and Estuary given the reduction in high flow events due to implementation of the C-43 Reservoir Project (USACE 2010). The frequency of dry season algal events within the upper estuary may decrease as a result of increased dry season flows through the S-79 structure during the late spring due to implementation of the C-43 Reservoir Project (USACE 2010).

Nutrient and dissolved oxygen conditions should improve during the wet season within the St. Lucie Estuary given the reduction in high flow events due to implementation of the Indian River Lagoon South Project (USACE 2004a). Low flow event conditions do not change significantly within the St. Lucie for FWO conditions; therefore no change to water quality is expected during the dry season. Mercury methylation conditions within the estuaries should improve due to the implementation of the proposed mercury TMDL for Florida; however, the greatest reduction in methylated mercury will only come about through international controls on atmospheric emissions of mercury related to the combustion of coal and other fuels.

C.1.3.12.3 Everglades Agricultural Area

Nutrient and sulfate loading into the EAA and from interbasin transfers (such as from Lake Okeechobee) should decrease as a result of the implementation of TMDLs and BMPs. Implementation of the SFWMD's Restoration Strategies program which includes the construction of additional STA treatment and storage capacity will increase removal of nutrients and sulfate and decrease loading to the downstream Everglades. Water quality modeling done using the Dynamic Model for Stormwater Treatment Areas (DMSTA) indicates that implementation of the Restoration Strategies program will result in meeting the 2012 WQBEL (Water Quality Based Effluent Limit) which is defined as 1) not to exceed 13 ppb AFWM (annual flow-weighted mean) in more than 3 out of 5 years, and not to exceed 19 ppb AFWM in any given year. The WQBEL is applied at the discharge of each individual STA. The cessation of agricultural activities on the A-1 FEB lands and other U.S. Sugar Lands purchased by the SFWMD will result in the reduction of sulfate loads downstream due to reduced soil oxidation and

reduced sulfate loading on those lands. Construction of the A-1 FEB may cause a short-term release of methylated mercury; however, monitoring during the start up phase should minimize this.

C.1.3.12.4 Greater Everglades

Mercury methylation will continue to be a problem within the Greater Everglades in the FWO condition. The implementation of new mercury emission criteria by the USEPA and FDEP will reduce locally sourced mercury deposition; however, internationally sourced airborne mercury sources from developing countries such as Brazil, India, and China are not projected to decrease.

C.1.3.12.4.1 Water Conservation Areas 1 and 2

Water quality conditions for the FWO should be improved in WCA 1 and WCA 2 relative to the existing baseline condition because the implementation of the SFWMD's Restoration Strategies features will reduce TP loads into these areas. Reduced sulfate loading is likely to somewhat alter the areas where mercury methylation is problematic within WCA 2.

C.1.3.12.4.2 Water Conservation Area 3A

Nutrient and sulfate concentrations and loads for WCA 3A for the FWO condition should decrease relative to the existing baseline condition because of the implementation of the SFWMD's Restoration Strategies features within the central flow path of the EAA. The reduction in nutrient loads to WCA 3A should reduce the rate at which native vegetation within the marsh is replaced by ecologically less desirable cattails. A summary of the existing nutrient conditions within WCA 3A is found in **Annex F**.

Given the complexity of the methylmercury cycle, it is not possible to predict with certainty the effect of future hydrology and mercury/sulfate loading on methylmercury formation and bioaccumulation. It is likely that some areas of WCA 3A will see higher mosquitofish mercury concentrations while other areas will see lower mosquitofish mercury concentrations. Given the reduction in atmospheric mercury deposition over the last 15 years which is thought to be the cause of the reduction in bioaccumulated mercury observed in fish over this time period, it is likely that future methylation and bioaccumulation of mercury will not exceed the peak concentrations seen 15 or so years ago unless atmospheric mercury loading increases.

C.1.3.12.4.3 Water Conservation Area 3B

The FWO alternative should have some improvement in WCA 3B water quality given the expected reduction in nutrient loading from the EAA and the S-9 basin. However, increased severity of dryout events due to shortened hydroperiods as a result of water management practices is likely to result in additional marsh fire events. Fire events re-mobilize soil bound pollutants and temporarily degrade water quality by increasing water column TP and possibly increasing methylmercury formation. The effects of increased dry events on column methylmercury concentrations and total mercury body burden in fish and birds in WCA 3B cannot be predicted with certainty, though it is probable given recent downward trends in measured mercury concentrations in this area that the FWO condition is not likely to result in bioaccumulation that exceeds historic concentration maximums unless atmospheric mercury loads increase from present levels.

C.1.3.12.4.4 Everglades National Park

The quality of water entering SRS under the FWO condition should be improved relative to the baseline condition given the additional treatment capacity provided in the EAA and in the S-9 basin. Discharges from WCA 3A into SRS are more likely to meet the applicable TP criteria under the FWO condition than under baseline conditions. Sulfate concentrations in water discharged to Shark River Slough should be

lower under the FWO condition than present condition given the additional removal of sulfate that will result from the expansion of STAs and construction of the A-1 FEB.

C.1.3.13 Air Quality

During the period between the present and 2072, air quality is expected to be degraded due to increased populations and urbanization. Air quality is expected to comply with air quality standards; however it is possible that regions of the project area may be classified as air quality non-attainment zones.

C.1.3.14 Hazardous, Toxic and Radioactive Wastes

The HTRW conditions under the future without project condition are expected to be very similar to the present condition. Farming operations and the accompanying HTRW contamination would continue on the A-2 FEB lands for the foreseeable future until the overlying peat soils are exhausted due to oxidation. HTRW contamination and cleanup will continue at present rates given continued agricultural, residential, and commercial use of other lands within the study area.

C.1.3.15 Cultural Resources

The conditions under the FWO conditions are expected to be very similar to the existing conditions. Farming operations would continue in EAA A-2 lands, causing adverse effects to two significant cultural resource sites. Under ERTP operations, stages are generally decreased in southern WCA 3A, therefore having a beneficial effect to tree islands currently occupied by members of the Miccosukee Tribe of Indians of Florida. Investigations mandated by the ERTP Programmatic Agreement would completed in ca. 2016 resulting in a determination of effects of fluctuating water on subsurface cultural material throughout the Everglades ecosystem. Future research will be needed to determine if prolonged dry down events in areas such as northern WCA 3A and WCA 3B adversely affects archaeological sites.

All state owned and/or managed state lands, including cultural resources within those lands would be managed as described in F.S. 267.061(2) and management plans developed in consultation with the Florida Division of Historic Resources. See Appendix G in "A Conceptual Management Plan for The Everglades Complex of Wildlife Management Areas" at http://myfwc.com/conservation/terrestrial/management-plans/online-mps/. Cultural Resources within National Park Service Lands would be managed in accordance to Federal laws and pre-established management plans for resources under National Park Service jurisdiction.

C.1.3.16 Socioeconomics

The 2010 Census count of total population as reported by the United States Census Bureau is the basis for the 2010 population estimates as reported by the University of Florida's Bureau of Economic and Business Research (BEBR). The 2010 BEBR estimates for permanent resident population (BEBR 2011) are the basis for estimating 2030 populations for each county in the LEC. **Table C.1-12** provides BEBR population projections for the low, medium, and high ranges for 2015–2040 for the LEC Planning Area.

Table C.1-12. BEBR Population Projections for the LEC Planning Area for 2010-2040.

	Projections					
	2015	2020	2025	2030	2035	2040
Palm Beach County						
Low	1,342,600	1,367,700	1,383,900	1,389,700	1,384,900	1,370,900
Medium	1,394,300	1,482,900	1,568,500	1,648,000	1,720,000	1,786,000
High	1,454,500	1,605,600	1,761,400	1,919,200	2,077,300	2,236,700
Broward County						
Low	1,736,800	1,726,300	1,710,600	1,689,000	1,661,600	1,632,900
Medium	1,788,200	1,834,500	1,877,700	1,916,200	1,949,700	1,982,500
High	1,844,200	1,946,700	2,048,900	2,149,600	2,248,100	2,349,700
Miami-Dade County						
Low	2,528,700	2,564,400	2,590,900	2,606,400	2,610,300	2,604,100
Medium	2,600,900	2,722,900	2,841,400	2,952,800	3,055,100	3,150,200
High	2,685,100	2,891,800	3,103,400	3,317,200	3,531,500	3,747,400

C.1.3.17 Land Use

The region, including cities within the study area, is expected to continue to grow both in population and in the development that population demands. Florida is expected to grow at a rate exceeding the national expected growth rate. But the growth rate is expected to diminish in the future. This is consistent with the concept of urban sprawl. As most highly demanded real estate is developed and an area becomes built out, its ability or willingness to absorb additional population growth through more intense methods of development becomes limited. Counties that have traditionally grown at a rate exceeding the state growth rate will slow, and the most intense future population growth will occur in other counties. Growth beyond available developable land will require changes in land use and possible rezoning of existing land. Urban or commercial development should occur within major urban service areas located within the project area. Agriculture is expected to remain a strong economic force, yet conceding some ground to urban development and conservation efforts. It is not anticipated that land use acreages will increase or decrease substantially.

C.1.3.18 Recreation

In general, the variety of recreational interests in the United States appears to be increasing along with recreational participation rates. As future recreation needs and interests develop, it is important to recognize that participation in specific types of recreational activities is often linked to demographic factors such as age and income. For example, participation in activities requiring vigorous exercise is considerably higher for young people than for senior citizens. However, the elderly population is increasing recreation participation because of the growing awareness of the importance of physical fitness. Participation in most activities is low for those with family incomes below $25,000 per year. Interestingly, participation is low for those with family incomes greater than $100,000 per year. Most outdoor recreational activities appear to be enjoyed largely by the middle class, those with family incomes between $25,000 and $75,000 per year.

The State Comprehensive Outdoor Recreation Plan (SCORP) is the best source of information on recreation demand and supply at the state and regional scales. The SCORP organizes outdoor recreation in Florida into 47 categories that encompass a variety of recreation activities including team sports (e.g., basketball and baseball), individual sports (e.g., golf and tennis), hunting, fishing, swimming and boating. Recreation demands were developed for the SCORP through surveys of residents and tourists. Participation in outdoor recreation activities is expressed in terms of user-occasions, which occur each time an individual participates in a single outdoor recreation activity.

The number of user-occasions was calculated for each planning region as well as the entire state by type of activity. Demand was estimated for 2000, 2007, 2010, 2015 and 2020 by applying the per capita participation rates to population projections. **Table C.1-13** presents Year 2007 and projected Year 2015 demands for the selected recreation activities in SCORP Planning Regions Treasure Coast and south Florida. This table includes user- occasions as well as facility/resource needs. As part of the without project conditions, all of the regions are expected to have significant increases in demands for the selected recreation activities with a commensurate need to increase development of the regions' recreation resources and facilities.

Table C.1-13. Demand and Facility Needs (2007 and 2015) Selected Recreation Activities

Activity	Units	Demand (user-occasions)		Additional Facility Needs	
		2007	2015	2007	2015
Hunting	Acres	663,841	772,849	1,041,817	100,137
RV/Trailer Camping	Camp Sites	2,203,445	2,779,565	19,278	2,231
Tent Camping	Camp Sites	888,761	1,136,981	2,094	223
Bicycling	Miles	1,502,910	1,644,911	247	29
Hiking	Miles	1,282,041	1,672,767	812	99
Horseback Riding	Miles	1,780,575	2,189,849	302	33
Nature Study	Miles	1,456,739	1,988,143	371	46
Canoeing	N/A.	108,405	142,253	357	not estimated
Freshwater Boat Ramps	Lanes	559,201	620,305	247	26
Freshwater Bank Fishing	Feet	711,215	786,890	15,755	2,801

C.1.3.19 Noise

Sources of noise associated with surrounding land use are expected to be similar to those described in existing conditions. During the period between the present and the year 2072, noise within the major natural areas of south Florida would continue to be limited and of low occurrence. Noise levels would be expected to change where land use is projected to change. Within rural municipalities and urban areas, sound levels would be expected to be of greater intensity, frequency, and duration as areas are further developed in 2072 from agricultural to residential/commercial due to increased noise from traffic, construction associated with development, and increased operations at commercial and industrial facilities.

C.1.3.20 Aesthetics

Sources of visual aesthetics are expected to be similar to those described in existing conditions. Visual characteristics would be expected to change where land use is projected to change. During the period between the present and the year 2072 the visual environment within the major natural areas of south Florida, is expected to decline as changes in the availability and distribution of freshwater would further exacerbate changes occurring in fish and wildlife resources and vegetative communities as described in **Sections C.1.2.1** and **C.1.2.2**. Within rural municipalities and urban areas, the occurrence of visible topographic features would be expected to be of greater occurrence as areas are further developed in 2072 from agricultural to residential/commercial. Increased occurrence of visible topographic features (i.e. heavily used roads, highways, single-family homes, high rises, commercial and industrial facilities) may detract from the regional aesthetic.

C.1.4 FUTURE WITHOUT PROJECT CONDITIONS OF NATIVE AMERICANS

The Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida would continue to rely upon the Everglades in its natural state to support their religious, subsistence, and commercial activities. Changes in the availability and distribution of freshwater and further disruption of natural water sheetflow due to levees, roads, and canals would further exacerbate changes occurring in the Greater Everglades. Although under ERTP, some areas within southern WCA 3A show improvement, the continuation of altered hydroperiods would have adverse effects on vegetative communities and fish and wildlife resources such as degradation due to over drying within northern WCA 3A, WCA 3B, and ENP, and ponding and prolonged high water levels within southern WCA 3A. Therefore the religious, subsistence, and commercial activities have the potential to be affected by the changing environment due to the above stated potential changes to the Everglades.

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APPENDIX C.2.1

EFFECTS OF THE ALTERNATIVES

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C.2 EFFECTS OF THE ALTERNATIVES

C.2.1 EFFECTS OF THE FINAL ARRAY OF ALTERNATIVES

This appendix provides a detailed discussion of the potential environmental effects, which can be either positive or negative, that could result from implementation of the Central Everglades Planning Project (CEPP) Alternatives. The evaluation of the effects was based on results of modeling simulations, current information including scientific literature, direct observation, project design reports, reasonable scientific judgment, the scoping process, and other environmental impact statement (EIS) documents for similar projects. The No Action Alternative (for consistency of the report the **No Action Alternative** is referred to as the **Future Without [FWO]** for the remainder of the report), previously discussed in Section C.1.2, considers the environmental conditions in the affected regions without the Proposed Action.

Environmental impacts include both direct and indirect effects. Under the Council on Environmental Quality (CEQ) regulations, direct effects are "caused by the action and occur at the same time and place," while indirect effects are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR 1508.8).
Under the National Environmental Policy Act (NEPA), one purpose is to identify at an early stage the significant environmental issues deserving of study and deemphasizing insignificant issues, narrowing the scope of the environmental impact statement accordingly (40 CFR Sec 1501.1). I

The resource conditions that were evaluated include climate, geology, soils, vegetation, wildlife, hydrology, water quality, flood control, air quality, hazardous, toxic and radioactive waste (HTRW), noise, aesthetics, land use, agriculture, socioeconomics, recreation, cultural resources and invasive species.

C.2.1.1 Climate

Climate change is expected to alter rainfall and evapotranspiration patterns over the next 100 years. USACE sea level change projections for the period from 2015 to 2065 for Key West, Florida and the broader south Florida area for historic, intermediate and high rates of future sea level rise are +4 inches, +10 inches and +26 inches, respectively http://publications.usace.army.mil/publications/eng-circulars/EC_1165-2-212.pdf. The regional hydrologic models used to simulate with- and without project conditions require climatic and tidal data as boundary conditions. The model tidal boundary used in the regional hydrologic model was developed using historic tidal data from two primary (Naples and Virginia Key) and five secondary NOAA stations (Flamingo, Everglades, Palm Beach, Delray Beach, and Hollywood Beach). Simulation model tidal boundary conditions that reflect future sea level change were not available for the range of potential sea level change expected. However, the impact of sea level change on project benefits is assessed in **Annex I** for the FWO and with project conditions per USACE guidance EC 1165-2-212.

Since 1900, there have been two cool phases and two warm phases of the Atlantic Multidecadal Oscillation (AMO) cycle with each of these phases lasting approximately 20-40 years each. The exact year of the phase start and finish is an estimate as each phase goes through a "transition period" of a few years. South Florida was in a much drier regime from 1965 to the early 1990s when the AMO transitioned from the cool phase to the warm phase. South Florida experienced more droughts and dry weather during the cool phase, with high-water events (some extreme) being more frequent during the current warm phase. South Florida has been in a "wetter" regime since the early 1990s mostly due to the AMO. With

AMO phases lasting typically 20-40 years, the current AMO warm phase has likely peaked. Thus, the generally wetter than normal conditions that Florida has experienced since the early 1990s should begin to slowly decline. After the peak, the warm phase wave will begin its gradual decline where we will see continually cooler anomalies over the next 10-20 years. As we approach the end of the cycle, Florida will experience an increase in dry years compared to wet years. Given the temporal stage of the current phase, conditions will continue to remain wetter than average for the next 10-20 years, but with a slow and gradual decline in intensity until this phase ends and a cool phase begins. However, low frequency dry years can still occur due to other events such as La Niña, which can occur on an average of every 2-7 years.

Global climate change and variability, particularly at regional levels, are not completely understood. Over the last two decades, South Florida Water Management District (SFWMD) scientists have researched how natural, global climatic patterns such as the El Niño/La Niña-Southern Oscillation and the Atlantic Multidecadal Oscillation are linked to South Florida's weather and climate. Based on this expanded experience and knowledge, the SFWMD has already adopted progressive measures to incorporate climate outlook into its planning and operations. The CEPP features will be designed robustly to handle extreme wet and dry conditions, floods and droughts, and will be operated based on the climate outlook described above. Climate change is difficult/controversial to predict and our CEPP assessment is not an exercise to predict what the climate change will be, but to select the best plan possible whatever climate change will occur.

Implementation of any of the CEPP action alternatives would have a negligible effect on climate within the action area. Minor, localized and less than significant effects to microclimate may occur under all CEPP action alternatives as a result of redistribution of water and shifts in vegetation. Potential effects may include increases in evapotranspiration and temperature changes due to an increase in spatial extent of wetlands, changes in vegetative communities, and redistribution of water as described in **Appendix C.1.1.1** and **Appendix C.1.3.1.**

C.2.1.2 Geology and Soils

On the A-2 flow equalization basin (FEB) footprint, with all the action alternatives, there would be minor and less than significant geologic impacts within the project area from the removal of surface cover (e.g. vegetation and soil), of caprock from blasting, and removal of limestone to obtain material for construction of levees, canals and roads. All action alternatives would result in conversion of relatively flat, uniform agricultural lands to an FEB (4 feet maximum operating depth) and exterior levees up to 10 feet above existing grade (generally 7 to 9 feet North Atlantic Vertical Datum 1988).

Improved hydroperiods and sheetflow in Water Conservation Area (WCA) 3A, WCA 3B, and Everglades National Park (ENP) reduce soil oxidation, which is expected to promote peat accretion necessary to rebuild the complex mosaic of habitats across the landscape. All action alternatives show an increase in inundation duration over the FWO that will significantly decrease soil oxidation, subsidence and peat fires. All action alternatives improved hydrologic conditions in northern WCA 3A in comparison to FWO by increasing stages and resulting hydroperiods within the area. All action alternatives scored the highest in terms of meeting the desired targets for measures of inundation duration, drought intensity, and slough vegetation suitability (**Appendix G**, **Table G-6**, **Table G-7**, and **Table G-8**). All action alternatives improved hydrologic conditions in northern and southern ENP (Zones ENP-N and ENP-S) in comparison to the FWO by significantly increasing depths and resulting hydroperiods in Northeast Shark River Slough (NESRS; **Table G-14,** and **Table G-15**). Consistent with other regions of the Greater Everglades, action alternatives scored the highest in terms of meeting the desired targets for measures

of inundation duration, drought intensity, and slough vegetation suitability. Within southern ENP, Alternatives (Alts) 3 and 4 produced slightly higher depths as depicted by the normalized weekly stage duration curve for Indicator Region (IR) 130 (**Figure G-23**). Alternative 4 produced slightly higher depths than Alternative (Alt) 3. Alternative 4 generally produced improved inundation patterns in southern ENP. Indicator region 130 was inundated for 96% of the POR for Alt 4; a 9% increase in inundation duration relative to the FWO. Alternative 3 inundated this location for 95% of the POR. Alternatives 1-2 inundated this location for 93% of the POR. Alternative 4 reduced drought intensity at IR 130 over the period of record by 676 ft-days relative to the FWO. Alternatives 3, 2, and 1 provided a reduction of 558, 477, and 456 ft-days over the POR at this location respectively. Alternative 4 improved the number and duration of dry events in NESRS relative to the remaining alternatives at several of the IRs in Zone ENP-S (**Table G-17**). Improved inundation patterns in southern ENP resulted in better suitability for slough vegetation for Alt 4 (**Figure G-24**).

C.2.1.3 Vegetation

C.2.1.3.1 Lake Okeechobee

Negligible and less than significant effects to vegetation within Lake Okeechobee's extensive littoral zone are anticipated as a result of any of the alternatives. As compared with FWO, all CEPP action alternatives reveal the potential for short-term minor adverse effects to aquatic vegetation due to higher than preferred lake stages. However, these multiple day events in which Lake Okeechobee stage exceeded 15.0 feet NGVD occurred approximately 5% of the POR. CEPP maintains stage ranges described within the Lake Okeechobee Regulation Schedule (2008 LORS); therefore effects to vegetation under the action alternatives would be as described in 2008 LORS.

C.2.1.3.2 Northern Estuaries

Currently, many submerged aquatic vegetation (SAV) beds are stressed and have been reduced or eliminated from their former areas by extreme salinity fluctuations, increased turbidity, sedimentation, dredging, damage from boats, and nutrient enrichment which causes algal blooms that, in turn, restrict light penetration. All CEPP alternatives are designed to divert water that in FWO would be released to the Atlantic Ocean and Gulf of Mexico to the A-2 FEB and Greater Everglades, therefore as compared with FWO, all CEPP action alternatives show a slight performance improvement within the Northern Estuaries as indicated by fewer high volume flow months, providing a minor beneficial effect. Reduction in high flows and accompanying flow velocities would result in lower suspended solid loading and decreased concentration of colored dissolved organic matter, thereby allowing greater light penetration to promote growth of SAV. In addition, reduction in high volume discharge events from Lake Okeechobee would reduce extreme salinity fluctuations associated with such events. Although some SAV are tolerant of a wide range of salinity levels, a reduction in high volume discharge events would reduce stress to SAV and aid in long term health of estuarine habitat and biota. Implementation of any CEPP alternative would help to maintain the target frequency and duration of water releases to the Northern Estuaries and would help curtail continued habitat loss and allow the recovery of more desirable vegetative communities.

C.2.1.3.2.1 Upper Caloosahatchee River Estuary

Negligible and less than significant effects are predicted within the Upper Caloosahatchee Estuary as a result of any CEPP action alternative.

C.2.1.3.2.2 Lower Caloosahatchee River Estuary

In the Lower Caloosahatchee Estuary, all CEPP action alternatives performed better than the FWO having fewer days at <16 practical salinity units (psu), reflecting fewer high flow events, providing minor beneficial effects. Increases of 7.8% were predicted for seagrass shoots (shoal grass) per acre at Shell Point for all of the CEPP action alternatives.

C.2.1.3.2.3 St. Lucie Estuary

Compared to FWO, all CEPP action alternatives had a higher number of days in the preferred 12 – 20 psu envelope and fewer days at <12 psu which would benefit seagrass habitat within the estuary and Indian River Lagoon providing minor beneficial effects. In comparison with FWO, an approximate 6.5% increase in manatee grass (*Syringodium filiforme*) shoots per acre is anticipated with implementation of any CEPP action alternative. Increases in low flow violations during the dry season were indicated by the modeling effort; however, due to the infrequency of the increases in these events is expected to have a negligible effect on SAV within the St. Lucie Estuary. Although these extreme dry spells are rare in the SLE, they can occur and therefore supplemental flows during dry times may be warranted and have been accounted for in the IRLS water reservation process. Delivery of those supplemental flows should ideally take place through the North Fork St. Lucie River.

C.2.1.3.3 Everglades Agricultural Area

Negligible and less than significant effects to vegetation within the Everglades Agricultural Area (EAA) are anticipated as a result of any of the action alternatives. As all of the property that will be used to construct the A-2 Flow Equalization Basin (FEB) is considered to be atypical jurisdictional wetlands based on hydric soils and hydrology; wetland vegetation is anticipated to return to the site once construction of the A-2 FEB is complete. During construction, temporary short-term effects are expected to vegetation within the construction area, however, these are considered to be minor as the land was formerly used for agriculture.

C.2.1.3.4 Greater Everglades

Due to changes in the quantity, quality, distribution and timing of water entering the Greater Everglades ecosystem, significant and moderate effects on wetland hydrology and vegetation would potentially occur under each of the CEPP action alternatives. The primary factors influencing the distribution of dominant freshwater wetland plant species of the Everglades are soil type, soil depth, and hydrological regime (USFWS 1999). All four action alternatives improved hydroperiods and sheetflow in WCA 2A, WCA 3A, WCA 3B, and ENP which result in reduced soil oxidation and promoting of peat accretion necessary to rebuild the complex mosaic of habitats across the landscape. All four action alternative provide moderate beneficial effects in hydroperiods in WCA 2A compared to FWO. However, all action alternatives had a moderate adverse effect in WCA 2B by significantly decreasing stages compared to FWO. In the L-28 Triangle, all action alternatives showed an improvement in hydroperiod over FWO, with Alt 1 having greater improvement than Alts 2-4. In the Greater Everglades, improved hydroperiods and sheetflow in WCA 3A, WCA 3B and ENP under all CEPP action alternatives result in reduced soil oxidation, which is expected to promote peat accretion necessary to rebuild the complex mosaic of habitats across the landscape. Differences among alternatives were found within northern WCA 3A, WCA 3B and southern ENP and are described in greater detail below. These differences may be largely attributed to the location of project features and distribution of water across the landscape. For example, Alt 1 which includes a 3 mile spreader canal west of S-8 provides the greatest improvements in northwestern WCA 3A. In comparison, Alts 3 and 4 provide more water to Shark River Slough (SRS) and the southern marl prairies, improving conditions for tree islands and ridge and slough habitat within ENP and salinity within Florida Bay. Alternative 1 performed slightly better than Alternatives 2, 3, and 4 in northern WCA 3A.

As a result of reduced freshwater inflow and drainage by the Miami Canal, northern WCA 3A is currently dominated largely by mono-specific sawgrass stands, with large areas of shrubs and monotypic cattail and lacks the diversity of communities that exists in central and portions of southern WCA 3A. All of the CEPP action alternatives include features to distribute water through spreader canals in the L-5 across northern WCA 3A and backfill portions of the Miami Canal north of Interstate 75, thereby increasing hydroperiods and depths within this area providing major beneficial effects. Variation in the distribution of inflows into northern WCA 3A and backfill of the Miami Canal did not significantly influence performance among action alternatives. Implementation of CEPP is expected to rehydrate much of northern WCA 3A by providing a means for redistributing treated Stormwater Treatment Area (STA) discharges from the L-4 and L-5 in a manner that promotes sheetflow and by removing the drainage effects associated with the Miami Canal. Resumption of sheetflow and related patterns of hydroperiod and water depth will significantly help to restore and sustain the microtopography, directionality, and spatial extent of ridges and sloughs and improve the health of tree islands in the ridge and slough landscape.

Alternative 1 generally produced improved inundation patterns in northwestern WCA 3A. Indicator region 114 was inundated for 92% of the POR for Alt 1; an 18% increase in inundation duration relative to the FWO. Alternatives 2, 3, 4 showed similar results; inundating this location for 91% of the POR; representing a 17% increase in inundation duration relative to the FWO. Alternative 1 generally produced higher depths within northwestern WCA 3A as depicted by the normalized weekly stage duration curve for IR 114 (**Appendix G**, **Figure G-12**). Although none of the action alternatives would provide the necessary inundation pattern for slough vegetation restoration, all of the CEPP action alternatives act to rehydrate northern WCA 3A thereby are expected to promote peat accretion, reducing the potential for high intensity fires and promoting transition from upland to wetland vegetation.

Rehydration of previously dry areas within northern WCA 3A has the potential to temporarily mobilize nutrients within the water column; however, this is not expected to be a significant issue since portions of WCA 3A north of Interstate 75 experience annual dryout and rehydration with no significant downstream impact. One notable concern would be the introduction of phosphorus into previously unimpacted areas (i.e. central and southern WCA 3A) potentially resulting in vegetation shifts. Chaing et al. (2000) suggested that phosphorus loadings alter the Everglades plant communities through increased plant productivity, tissue phosphorus storage, soil phosphorus enrichment and shifts in plant species composition. The overall change in phosphorus loads in most areas is expected to be minor and vegetation shifts driven by water quality should be localized. Previous studies have shown that slough and sawgrass communities have been replaced by cattail-dominated communities (Davis et al. 1994; Rutchey and Vilchek 1994, Newman et al. 1998). However, Craft et al. (1995) and Chaing et al. (2000) observed no significant change in macrophyte species diversity or expansion of cattails in study plots receiving nutrient additions during the two years and four years, respectively, of their studies. Vegetation that can assimilate nutrients directly from the water column appears to be the most sensitive to nutrient enrichment and include periphyton and floating-leaved plants, such as spatterdock and water lily (Chaing et al. 2000, Newman et al. 2004). The periphyton-*Utricularia* complex may be quite sensitive to increased phosphorus, as illustrated by the disappearance of this complex from enriched study plots after the third year (Chaing et al. 2000).

Many areas of WCA 3A, particularly within central WCA 3A still contain good quality wetland habitat consisting of a complex of tree islands, sawgrass marshes, wet prairies, and aquatic sloughs. Vegetation and landscape patterning in the central portion of WCA 3A resembles pre-drainage conditions most closely and represents some of the best examples of remnant Everglades habitat in south Florida (RE-

COVER 2009). These areas remain largely unaffected by any of the CEPP Action Alternatives. Increases in depth within central WCA 3A were not as significant as increases in observed depths in northern WCA 3A; however maintenance of existing conditions within this region of the project area is desirable as ridge and slough habitat is well conserved.

In southern WCA 3A, high water levels during the wet season are important in maintaining quality wet prairie and emergent slough habitat (USFWS 2010). However, prolonged high water levels and extended hydroperiods have resulted in vegetation shifts within southern WCA 3A, negatively impacting tree islands and fragmenting sawgrass ridges, resulting in the loss of historic landscape patterning. None of the CEPP action alternatives, as stated in the FWO discussion, would provide beneficial effects to southern WCA 3A through reduction in high water levels or duration. Alternatives 2, 3, and 4 performed slightly better than Alt 1 within southern WCA 3A. Negligible effects in vegetation are anticipated within this region.

Typical Everglades vegetation, including tree islands, wet prairies, sawgrass marshes, and aquatic sloughs also occur throughout WCA 3B. However, within WCA 3B, the ridge and slough landscape has been severely degraded by the virtual elimination of overland sheetflow due to the L-67 Canal and Levee system. WCA 3B experiences very little overland flow and has become primarily a rain-fed system predominated by shorter hydroperiod sawgrass marshes with relatively few sloughs or tree islands remaining. Water levels in WCA 3B are also too low and do not vary seasonally, contributing to poor ridge and slough patterning. Loss of sheetflow to WCA 3B has also accelerated soil loss reducing elevations of the remaining tree islands in WCA 3B and making them vulnerable to high water stages.

Alternative performance varied greatly within WCA 3B due to structural and operational variations among CEPP action alternatives with respect to construction of conveyance features within L-67 A, C and L-29 levees, along with associated levee removal. Alternative 2 scored the highest in terms of meeting the desired performance measure targets within this area, followed by Alternatives 1, 3 and 4 respectively. All action alternatives improved hydrologic conditions in WCA 3B in comparison to FWO by increasing stages and resulting hydroperiods within the area as measured by the RECOVER Slough Vegetation Performance Measure providing minor beneficial effects (See **Appendix G - Figure G-19**). Increases in stages and hydroperiods would promote wetland vegetation transition, through contraction of sawgrass marshes and expansion of wet prairies, and in deeper regions, sloughs. Plant species diversity will likely increase in WCA 3B with species composition in wet prairies determined largely by peat depth and substrate type (Powers 2005). Submerged aquatic plants are commonly associated with sloughs providing structure for growth of periphyton, the main source of primary production within the freshwater Everglades (Gunderson 1994, Powers 2005).

Although none of the action alternatives met the desired dry and wet season water depths for slough vegetation in WCA 3B, Alt 2 improved inundation patterns within WCA 3B and slightly improved conditions for slough vegetation relative to Alts 3, 1, and 4 by increasing water depths in both the wet and dry season (refer to **Appendix G**, **Figure G-18** and **Figure G-19)**. The increased ability of Alt 2 to rehydrate WCA 3B and increase hydroperiods, especially relative to Alt 4, may come at a potential cost to tree islands. The potential moderate adverse effects are greatest for Alt 2 and Alt 3 because a third of the population of tree islands in WCA 3B are only 0.7-1.1 feet above the surrounding sloughs. It is hypothesized from modeling of tree islands in WCA 2A, where 90% of tree islands have been converted to sawgrass, that tree islands cannot withstand full inundation in excess of 120 days for two years in a row (Sklar and van der Valk 2002). However, it is not clear if this is appropriate for tree islands within WCA 3B because tree island species in WCA 3B appear to be phenotypically plastic, which means they

have a greater ability to adapt to longer hydroperiods (Fred Sklar, personal communication). Increasing the operational flexibility for each alternative will allow for better adaptive management and preservation of tree islands within WCA 3B.

All CEPP action alternatives include conveyance features and levee removal within L-67A and C, thereby providing new point source discharges of water into WCA 3B. At the end of the dry season, there is the potential for flushing of water and remobilization of nutrients within the water column, potentially having a minor adverse effect on vegetation within WCA 3B. As indicated for northern WCA 3A, mobilization and introduction of phosphorus are a notable concern. However, it is anticipated that Broward County Water Preserve Areas (BCWPA) Project would be constructed prior to CEPP implementation, thereby reducing discharges from S-9 into L-67A. Currently, total phosphorous (TP) within L-67A ranges between 10 and 20 ppb, depending upon the time of year. With completion of the BCWPA Project, it is anticipated that TP within L-67A will be greatly reduced and therefore minimal effects to vegetation due to changes in water quality are anticipated within WCA 3B. Cattail expansion will be monitored as outlined within Annex D, Project Monitoring and Adaptive Management Plan. Tree islands contain extraordinarily high levels of TP in their soil suggesting that they may play a major role in the biogeochemical cycles of nutrients in the Everglades (Sah 2004, Troxler and Childers 2010, Troxler and Richards 2009, Wetzel 2002, Wetzel et al. 2009, 2011). Wetzel et al. (2011) found that soil TP levels within WCA 3A and WCA 3B tree islands were approximately 4 times higher than the surrounding marsh TP levels. Tree islands within WCA 3B may help to capture and focus nutrients, assisting to minimize potential effects on sawgrass and wet prairie communities within this region (Wetzel et al. 2011).

Flows through SRS under current system compartmentalization and water management practices are greatly reduced when compared with pre-drainage conditions. The result has been lower wet season depths and more frequent and severe dry downs in sloughs and reduction in extent of shallow water edges. Over-drainage in the peripheral wetlands along the eastern flank of NESRS has resulted in shifts in community composition, invasion by exotic woody species and increased susceptibility to fire. Implementation of CEPP is expected to rehydrate much of NESRS by providing a means for redistributing flows from WCA 3B to ENP and provide a moderate beneficial effect. Resumption of sheetflow and related patterns of hydroperiod will significantly help to restore pre-drainage patterns of water depths and the complex mosaic of Everglades' vegetation communities.

As compared with FWO, all CEPP action alternatives produced significantly higher depths and inundation durations (refer to **Appendix G**, **Figure G-21** and **Figure G-22**). Within northern ENP, alternative performance was similar with all action alternatives reducing the number of dry events within SRS and extending average hydroperiods by 35 to 90 days depending upon location. Reduction in number and duration of dry events and extended hydroperiods is expected to reduce soil oxidation, decrease fire potential, promote peat accretion and aid in restoration of historic wetland vegetation communities providing a minor beneficial effect. Within southern ENP, Alts 3 and 4 produced slightly higher depths as compared with Alts 2, 1 and FWO (refer to **Appendix G**, **Figure G-23**). Improved inundation patterns produced by Alt 4 in southern ENP resulted in better suitability for slough vegetation. Although none of the action alternatives met the desired dry and wet season water depths for slough vegetation in southern ENP; Alt 4 slightly improved conditions for slough vegetation relative to Alts 1, 2 and 3 by increasing water depths in both the wet and dry season within this region.

All CEPP action alternatives include increasing capacity at S-333 from 1350 cubic feet per second (cfs) to 3000 cfs. With an increase in S-333 flow, there is an increased likelihood of increased TP entering NESRS. Potential changes in water quality due to implementation of the CEPP action alternatives have

the potential to have a minor adverse effect on vegetation within ENP. The Everglades, a phosphorus-limited system, historically received most inputs of phosphorus through rainfall, with average TP concentrations of less than 0.01 milligrams per liter (mg/L) (McCormick et al. 1996, Newman et al. 2004). However, more recently, areas within ENP, including NESRS, have been exposed to TP concentrations at or in excess of 0.10 mg/L (SFWMD 2010). These concentrations and any additional inputs resulting from implementation of any of the CEPP action alternatives (refer to **Section 5.1.9, Water Quality** for details), have the potential to result in vegetation changes within NESRS. Vegetation that can assimilate nutrients directly from the water column appears to be the most sensitive to nutrient enrichment and include periphyton and floating-leaved plants, such as spatterdock and water lily (Chaing et al. 2000; Newman et al. 2004). Chaing et al. 2000 demonstrated that the periphyton-*Utricularia* complex may be quite sensitive to increased phosphorus, as illustrated by the disappearance of this complex from enriched study plots after the third year. Potential effects to vegetation and species community composition within NESRS and ENP cannot fully be determined at this time. Water quality within the CEPP action area will continue to be monitored, as described in **Annex D**, to determine any associated changes.

Non-native and invasive plant infestations in the action area may be exacerbated by soil disturbance, increased nutrients and hydrological modification. Many non-native and invasive species are flourishing in a variety of habitats and are negatively affecting the ecology throughout the Everglades. Non-native and invasive plant species are most frequently encountered in disturbed areas and areas where water quality has been impacted by increased nutrient loads. Construction and hydrological modification under each of the action alternatives may have a minor adverse effect on the growth of non-native plant species within the CEPP action area. Refer to **Section 5.1.17** and **Appendix C.2.1, Section C.2.1.18** for additional information.

C.2.1.3.4.1 Slough/Open Water Marsh

Deep slough communities formerly occurred throughout the pre-drainage Ridge and Slough region of the Everglades (McVoy et al. 2011). Sloughs within the Greater Everglades have been degraded by compartmentalization resulting in reduced sheetflow, depths and inundation durations, altering vegetation community structure and resulting in expansion of wet prairie and sawgrass marsh communities. Overland sheetflow has been virtually eliminated from WCA 3B due to the L-67 Canal and Levee system, resulting in the loss of deep water sloughs and dominance of shorter hydroperiod dense sawgrass marsh. Vegetative trends within ENP have also included the conversion of slough/open-water marsh communities to shorter hydroperiod sawgrass marshes and wet prairies (Davis et al. 1994, Davis and Ogden 1997; Armentano et al. 2006; McVoy et al. 2011). All CEPP action alternatives provide significant increases in sheetflow and hydroperiod with the greatest flows in ENP achieved with Alts 4 and 3, respectively, providing major and significant beneficial effects. As a result of increased flows, depths and durations, it is expected that shorter hydroperiod sawgrass marshes will transition to wet prairie and slough/open water marsh communities. Shifts from one vegetation type to another may occur in a relatively short time frame (1 to 4 years) following hydrological alteration (Armentano et al. 2006, Zweig 2008, Zweig and Kitchens 2008, Sah et al. 2008). Although none of the CEPP action alternatives met desired dry and wet season water depths for slough vegetation within WCA 3B and southern ENP; Alt 4 slightly improved conditions for slough vegetation relative to Alts 1, 2 and 3 by increasing water depths in both the wet and dry season within these regions.

C.2.1.3.4.2 Sawgrass Marsh

As a result of increased flows, depths and inundation durations under the action alternatives, it is expected that shorter hydroperiod sawgrass marshes will transition to wet prairie, except where there is

deep water that will transition to slough. It is expected that increased flow within northern WCA 3A and WCA 3B will aid to reduce dense sawgrass stands and help to promote a mosaic of wetland vegetation types within this area providing minor beneficial effects.

C.2.1.3.4.3 Wet Marl Prairies

Areas within the eastern marl prairies along the boundary of ENP suffer from over-drainage, reduced water flow, exotic tree invasion and frequent human-induced fires (Lockwood et al. 2003; Ross et al. 2006). To alleviate the perpetually drier conditions and associated problems, increased water flows within this area are required. Alternatives 3 and 4 provide more water to SRS and the southern marl prairies as compared with Alts 1 and 2, respectively. Increased hydroperiods within the eastern marl prairies may act to alleviate some of the problems associated with drier conditions and promote a shift in species community composition to benefit native vegetation and provide a minor beneficial effect.

Hydroperiods within the eastern marl prairies in the vicinity of Cape Sable Seaside Sparrow (CSSS), sub-population E (CSSS-E), along the eastern edge of SRS (**Figure C.2.1-18**), reveal an increase in hydroperiod with implementation of any of the CEPP action alternatives, with an average annual increase ranging from 25 days (Alt 2) to 31 days (Alt 4) within the vicinity of IR-E1 and 18 (Alt 2) to 22 days (Alt 4) within the vicinity of IR-E2 (**Figure C.2.1-34** and **Figure C.2.1-35**). Increased hydroperiods within the eastern marl prairies may potentially result in a shift in vegetation and a significant and unavoidable adverse effect. Ross et al. (2004) noted differences in species composition within wet prairies based upon hydroperiod. Shorter hydroperiod prairies were dominated by *Muhlenbergia* (muhly grass), *Schizachyrium* (little bluestem) and *Paspalum* (bahia grass), while longer hydroperiod prairies consisted of *Cladium* (sawgrass)*, Schoenus (sedge) and Rhynchospora* (beak-rush)*.*

Analyses of hydroperiods with the northwestern marl prairies in the vicinity of CSSS, subpopulation A (CSSS-A) reveal a reduction in hydroperiod in this area as compared with the FWO. Pollen data indicate that the marl prairies west of SRS are not a natural feature of the Everglades landscape but developed after twentieth century hydrologic modification of the system reduced flow to the region (Bernhardt and Willard 2006). Prior to the modifications, plant communities at the sites analyzed by Bernhardt and Willard (2006) in western SRS consisted of sawgrass marshes. The authors concluded that "the current spatial distribution and community composition of marl prairies are a response to water management and land cover changes of the twentieth century; and further sampling of modern marl prairie communities and adjacent communities is necessary to document the pre- and post-drainage distribution of marl prairie" (Bernhardt and Willard 2006). Although in the southwestern marl prairies (A-2), the marl prairie hydroperiod target is met less frequently as compared with the FWO (9 out of 41 years for FWO compared with 8 out of 41 years for all CEPP action alternatives); the difference is not likely to result in a significant vegetation transition to historic sawgrass marshes.

C.2.1.3.4.4 Tree Islands

C.2.1.3.4.4.1 Northern WCA 3A

Since it is not yet clear how to restore the "ghost" tree islands that are indicative of where tree islands existed some 60 years ago, nor restore the density and pattern of islands that existed before drainage of the Everglades in 1888, the objectives for CEPP restoration for tree islands is predominantly to do no more harm. It is also to create a hydrologic regime that will facilitate a return of the elevations, extent, and diversity that currently exists (as reference sites) in central WCA 3A and in regions of ENP, where islands appear to be relatively large, healthy and devoid of exotics. The problem is that restoration

solutions for one region of the landscape will not work for all regions because the legacy of water management is a strongly compartmentalized ecological landscape.

For this analysis of the four CEPP action alternatives it is necessary to focus on three regions where tree islands have been struggling to survive. Due to the complexity of the management options associated with CEPP in WCA 3B, this analysis is focused on: 1) northern WCA 3A, 2) southern WCA 3A, and 3) SRS within ENP.

Over the last 100 years of drainage and water management, northern WCA 3A has been significantly drier than all the other wetlands in WCA 3. This has caused the sawgrass-plains community to expand along the Eastern boundaries of WCA 3 (Davis 1943), the ridge and slough pattern to disappear (**Figure C.2.1-1**), and tree islands to be small and extremely few in numbers (**Figure C.2.1-2**). Most of the tree islands left in northern WCA 3A are small round features with no obvious natural tear-drop shape. Many have very short hydroperiods and only support terrestrial vegetation because they "sit" on high rock pedestals, which prevent them from subsiding to the same extent as the surrounding marshes.

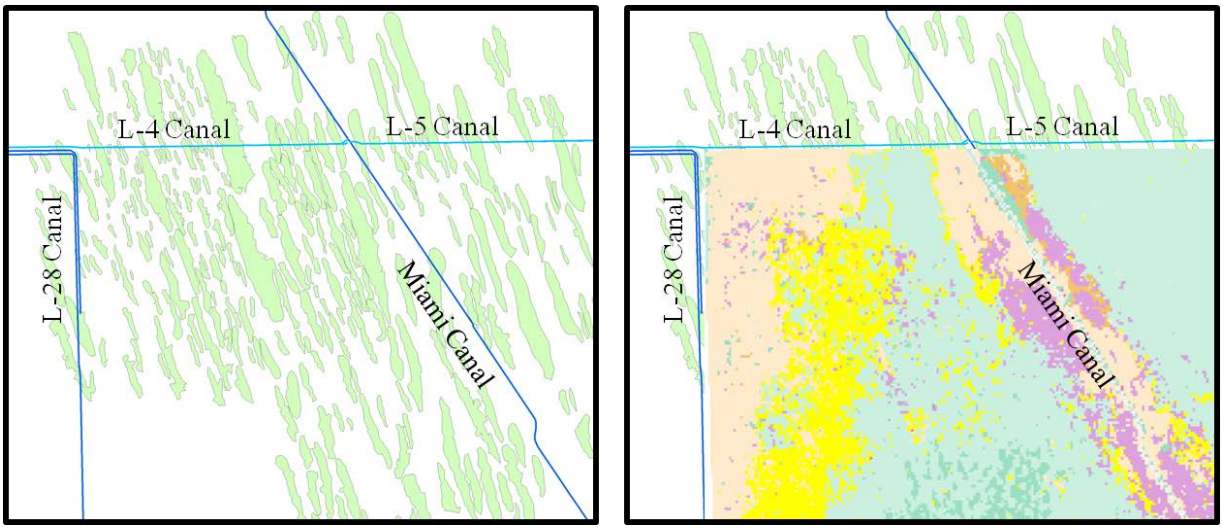

Figure C.2.1-1. Vegetation patterns seen today in NW WCA-3A (right) compared to the ridge and slough pattern observed in 1942 black & white aerial photography (left). The L-4, L-5 and L-28 canals are shown as geo-references and did not exist in 1942. Color legend for current vegetation map: Light Blue=sawgrass; Dark Blue=slough vegetation; Purple=cattail; Yellow=shrubs/sawgrass; Peach=shrubs/trees.

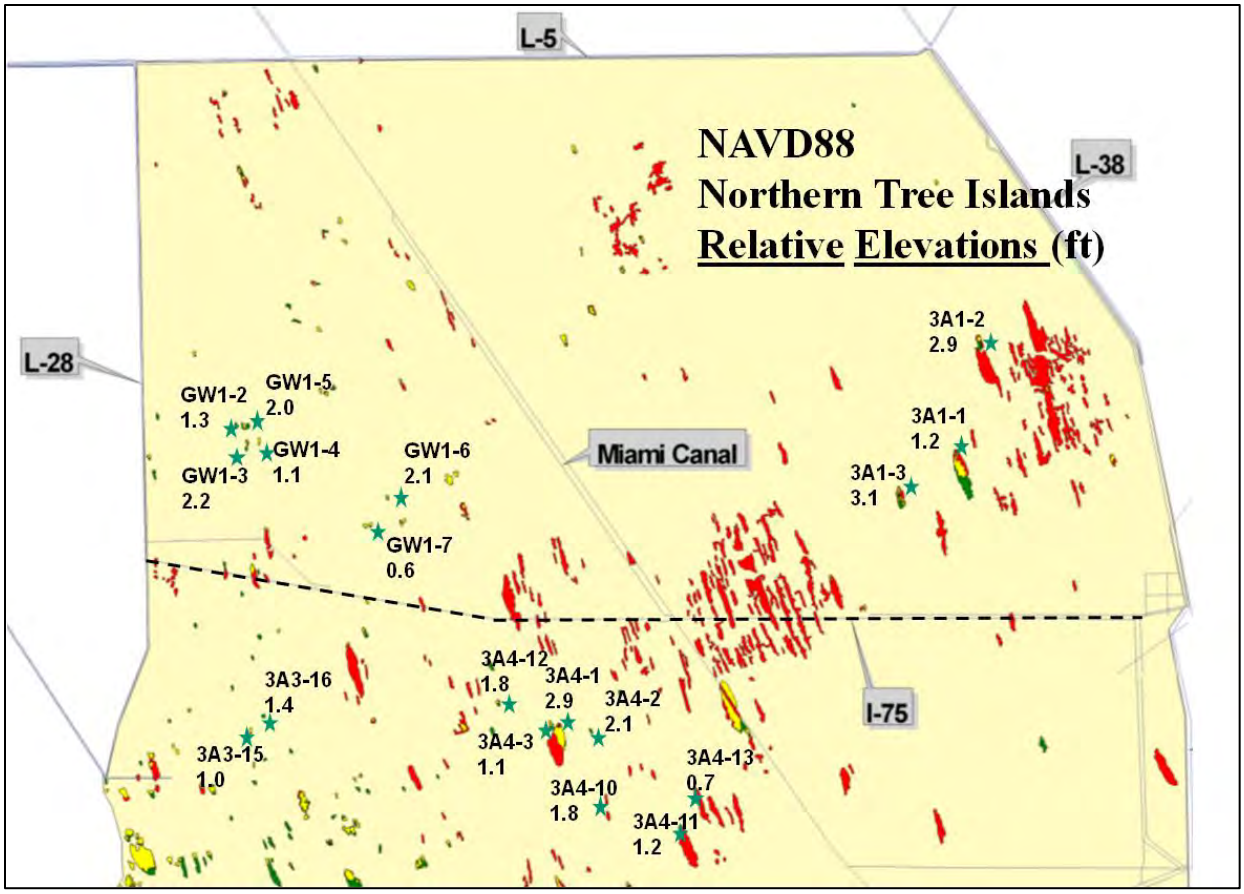

Figure C.2.1-2. Shrub-dominated ridges and tree islands in northern WCA 3A that are greater than or equal to 2 hectares are show as green (islands getting larger), yellow (islands that have not changed), or red (shrubs and trees no longer exist).

Mean annual ponding depths, comparing CEPP action alternatives and FWO within northern WCA 3A (**Figure C.2.1-3**) indicate widespread hydrological improvement and minor beneficial effect. With the exception of areas immediately downstream of the S-11 structures (separating southern WCA 2A from WCA 3A), none of the areas in northern WCA 3A under ECB and FWO conditions have an annual water depth greater than one foot. However, with the backfilling of the Miami Canal as part of the action alternatives and with all FEB waters going to the NW Spreader Canal (Alt 1) the water depths significantly increase throughout the Greater Everglades, but especially in the western areas of northern WCA 3A, where the average depth increases from 0.5 foot to 2.0 feet. This increased average water depth pattern is only slightly different than those calculated for Alts 2, 3 and 4, which all exhibited an increase in the spatial extent of the 2.0 ft average water depths along the central Miami Canal area and in northeastern WCA 3A. The increased depths are not expected to adversely affect tree islands. These water depths are not expected to create any flooding stress on islands that already exist and especially those needed by the wading birds for nesting (designated as 3A1-1, 3A1-2 and 3A1-3 in **Figure C.2.1-2**). Instead these water depths are expected to significantly increase fish habitat and density of fish and improve the potential for tree island restoration.

As indicated in **Figure C.2.1-4**, all CEPP action alternatives result in similar patterns of rehydration within northern WCA 3A and all significantly decrease the amount of time when this region goes completely

dry. Gage 3A-3 in northeastern WCA 3A, used to track droughts, indicates that with the FWO, this area will continue to be dry 40% of the time and that only 10% of the time is there more than one foot of water in the area. Tree islands are connected to the surrounding peat marshes via the roots of the trees. Although tree roots are still receiving water from wicking within the peat (unless the tree island is rocky), when the water table drops below these roots, the microclimate of these islands gets too dry and they can burn. All CEPP action alternatives create the hydrology necessary to restore tree islands and reduce the potential for devastating fires providing major beneficial effects. Under all CEPP action alternatives, the duration of water above marsh surface increases to 90%, but at the same time, tree island flooding stress (i.e., ponding depths greater than 3.0 ft) remained extremely rare.

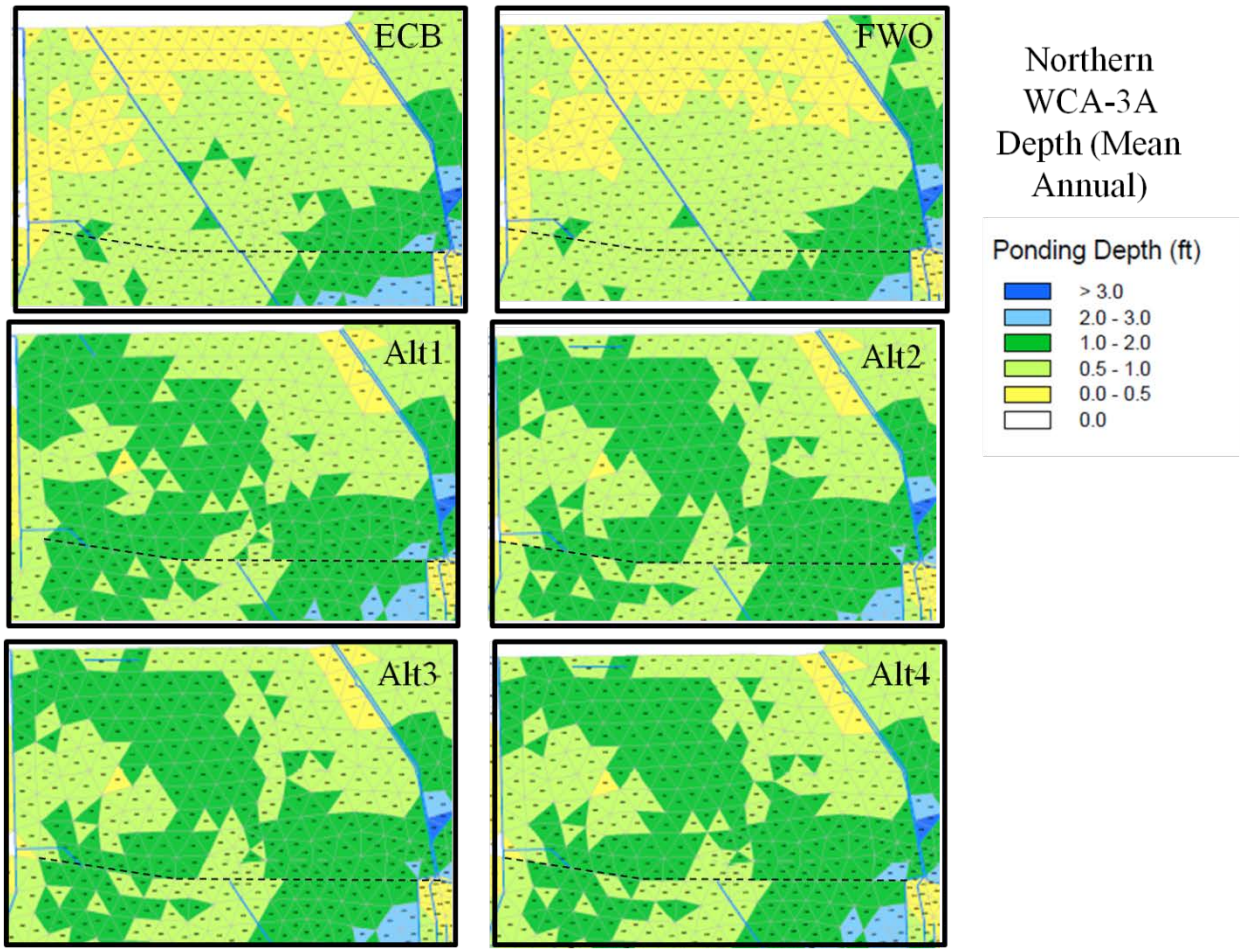

Figure C.2.1-3. The mean annual ponding depths, comparing ECB and FWO with CEPP action alternatives for northern WCA 3A.

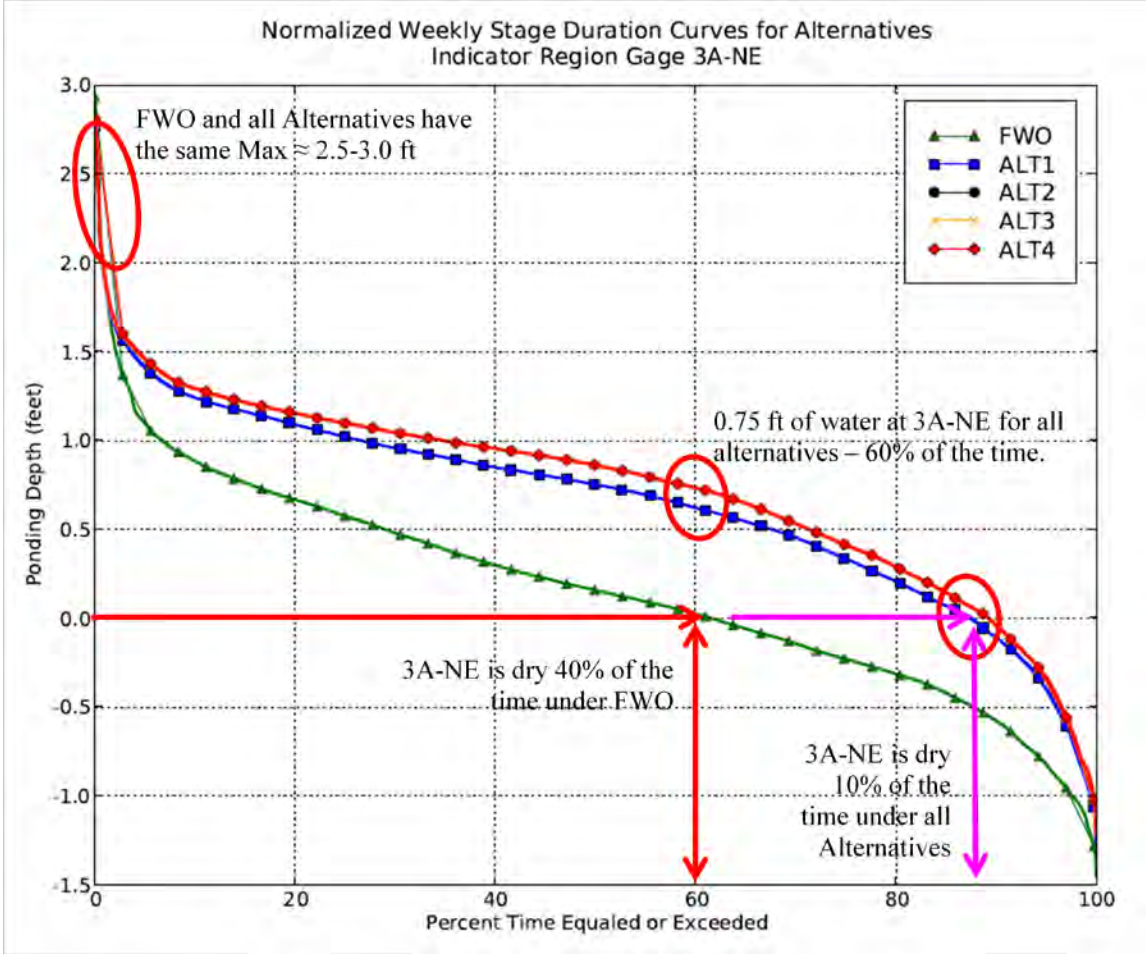

Figure C.2.1-4. All the action alternatives rehydrate this Northern Eastern WCA 3A gage location to similar amounts and all significantly decrease the amount of time when this region goes completely dry.

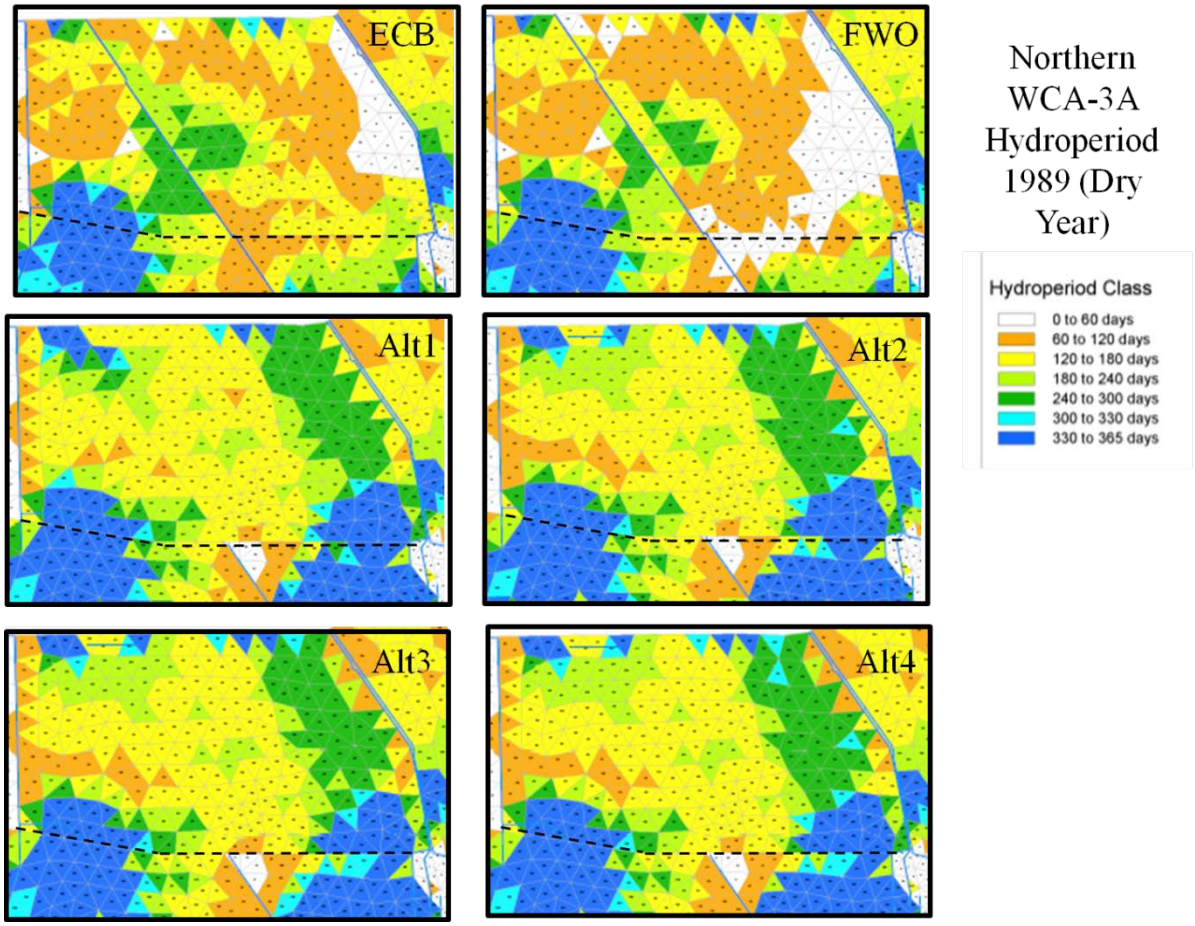

Figure C.2.1-5. During dry years, for the ECB and the FWO, this region was dominated by hydroperiods of 120 days or less. This degree of dryness makes tree islands and their associated nesting wading birds vulnerable to fires and nest predation by raccoons. All the action alternatives remove this hydrologic and predatory stress.

Rehydration of northern WCA 3A is expected to prevent further tree island degradation and peat fires, and set in motion trends to restore ridge-slough-island patterns. To consider this expectation, the hydroperiod response to a particularly dry year (1989) was evaluated (**Figure C.2.1-5**). In 1989, for ECB and FWO, this region was dominated by hydroperiods of 120 days or less. For FWO, regions downstream of S-11 became dry all year round. This degree of dryness makes the tree islands, used by large numbers of wading birds for nesting, extremely vulnerable to fires and nesting predation by raccoons. All CEPP action alternatives remove this hydrologic stress because the slope of the land in this northern region is mostly from west to east, so most of the water that enters in the west with Alts 1, 2, 3, and 4 (even during very wet years like 1995) tends to flow to regions in the east (**Figure C.2.1-6**). With all CEPP action alternatives, northern WCA 3A will no longer have extremely short hydroperiods. Instead, this area will have more spatially uniform hydroperiods that vary between 120 and 240 days providing a minor beneficial effect.

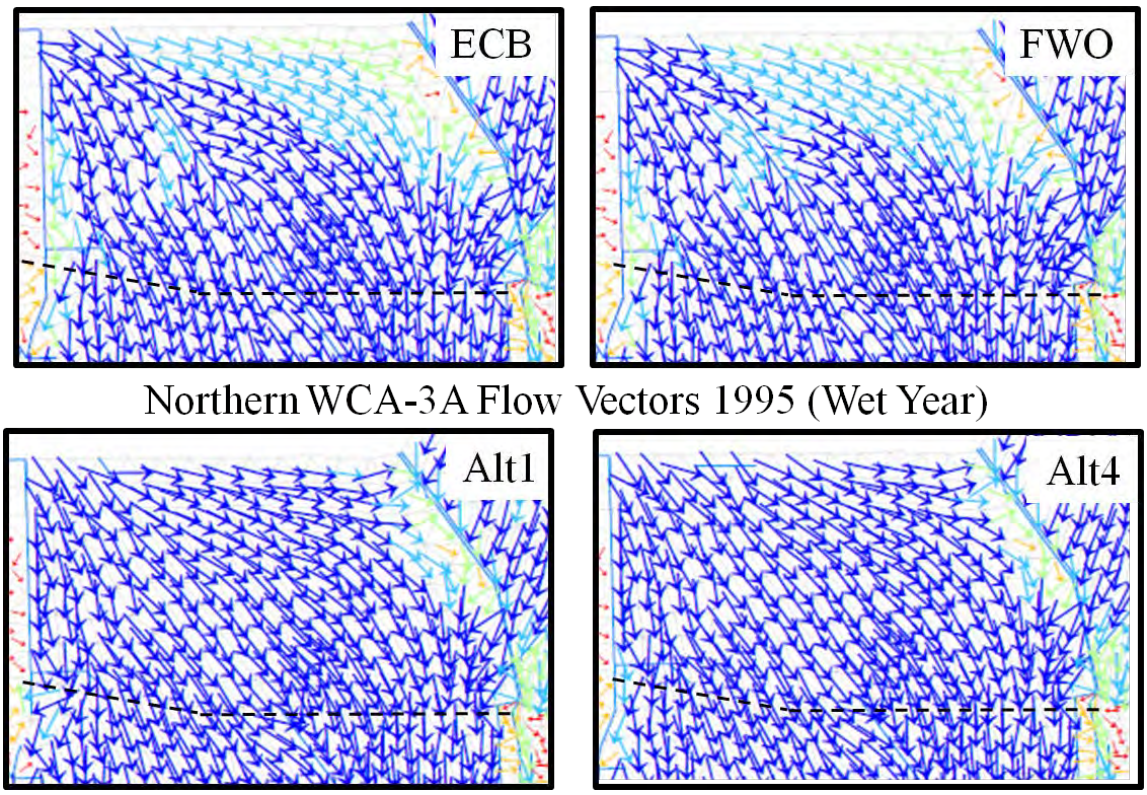

Figure C.2.1-6. Flow vector maps depicting flow patterns within northern WCA 3A for CEPP action Alternatives in comparison with ECB and FWO. Flow patterns for Alt2 and Alt3 were the same as Alt4. The ECB and FWO do a poor job of rehydrating the NE-WCA3A.

C.2.1.3.4.4.2 Southern WCA 3A

The long-term goals for CERP are to reconnect the historic flow paths along the flow lines shown in **Figure C.2.1-7**. As part of CEPP, this tree island evaluation looks at the L1 and L2 transects in relation to the known elevations of tree islands along a 2-mile swatch down each North-South transect represented in **Figure C.2.1-7**. **Figure C.2.1-7** indicates that some 60% of the tree islands in WCA 3A have been converted to marsh since 1942. It also shows the extent of currents islands throughout the landscape. Upon review of soil elevations and water depths along the L1 transect (**Figure C.2.1-8**); it is very difficult to see any differences between any of the action alternatives. The only differences were: 1) a slight reduction in water depths just north of Tamiami Trail (Highway 41) in southern WCA 3A for Alt 4; and 2) a slight increase in water depths at the very top of the L1 transect for Alt 1. Neither of these differences appears to be great enough to have any effects on tree islands. Hydrologic regimes in central WCA 3A for each alternative were not different. However, hydrologic regimes in ENP did change substantially with each alternative and potential impact to these tree islands are discussed in further detail within the SRS section. It should be noted that islands in ENP are much higher and drier than the surrounding marshes and as a result, none of the action alternatives caused any flooding stress for tree islands.

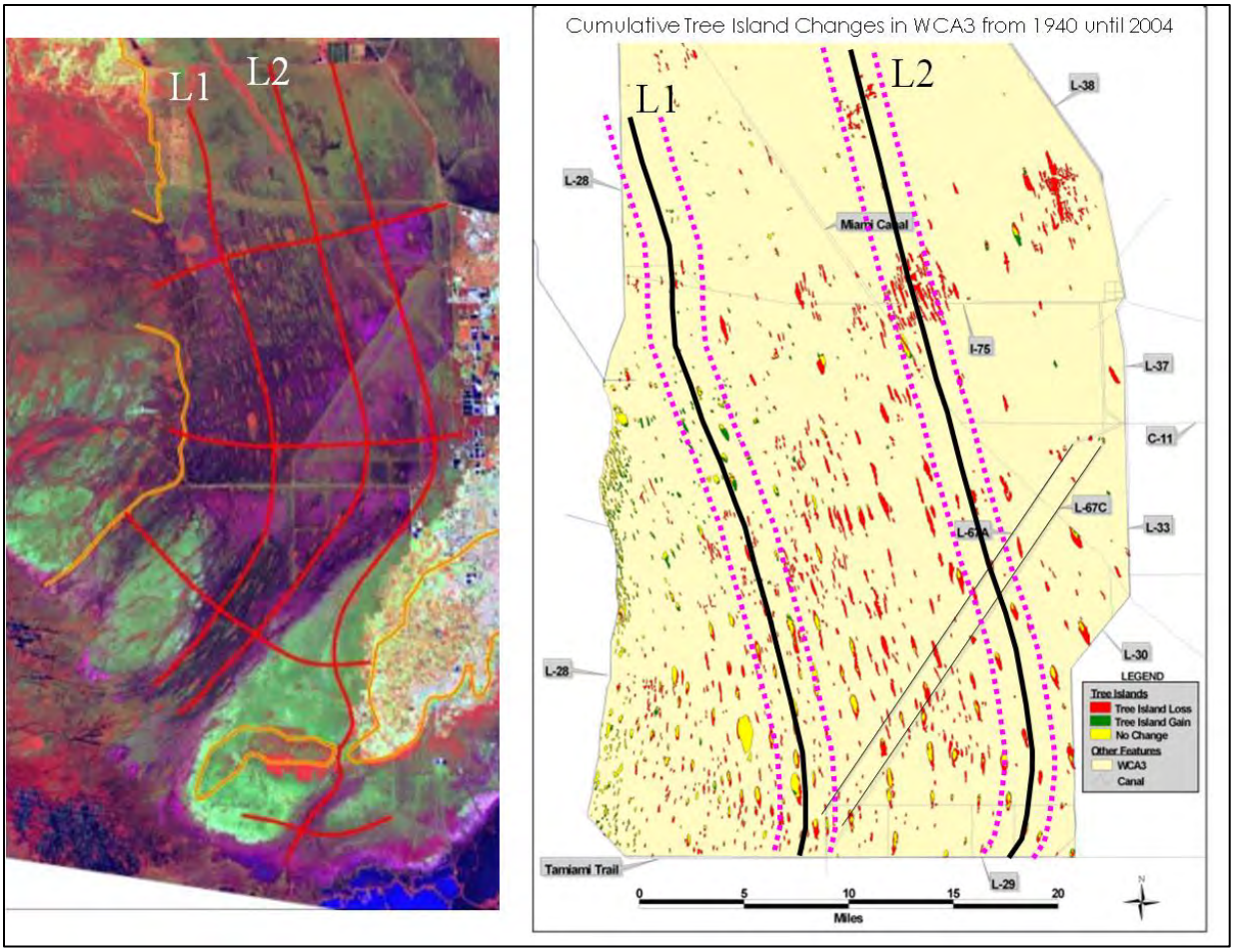

Figure C.2.1-7. L1 and L2 are historic flow paths across the extant landscape (Left) and across known elevations of tree islands within a 2-mile swatch down each N-S transect (Right).

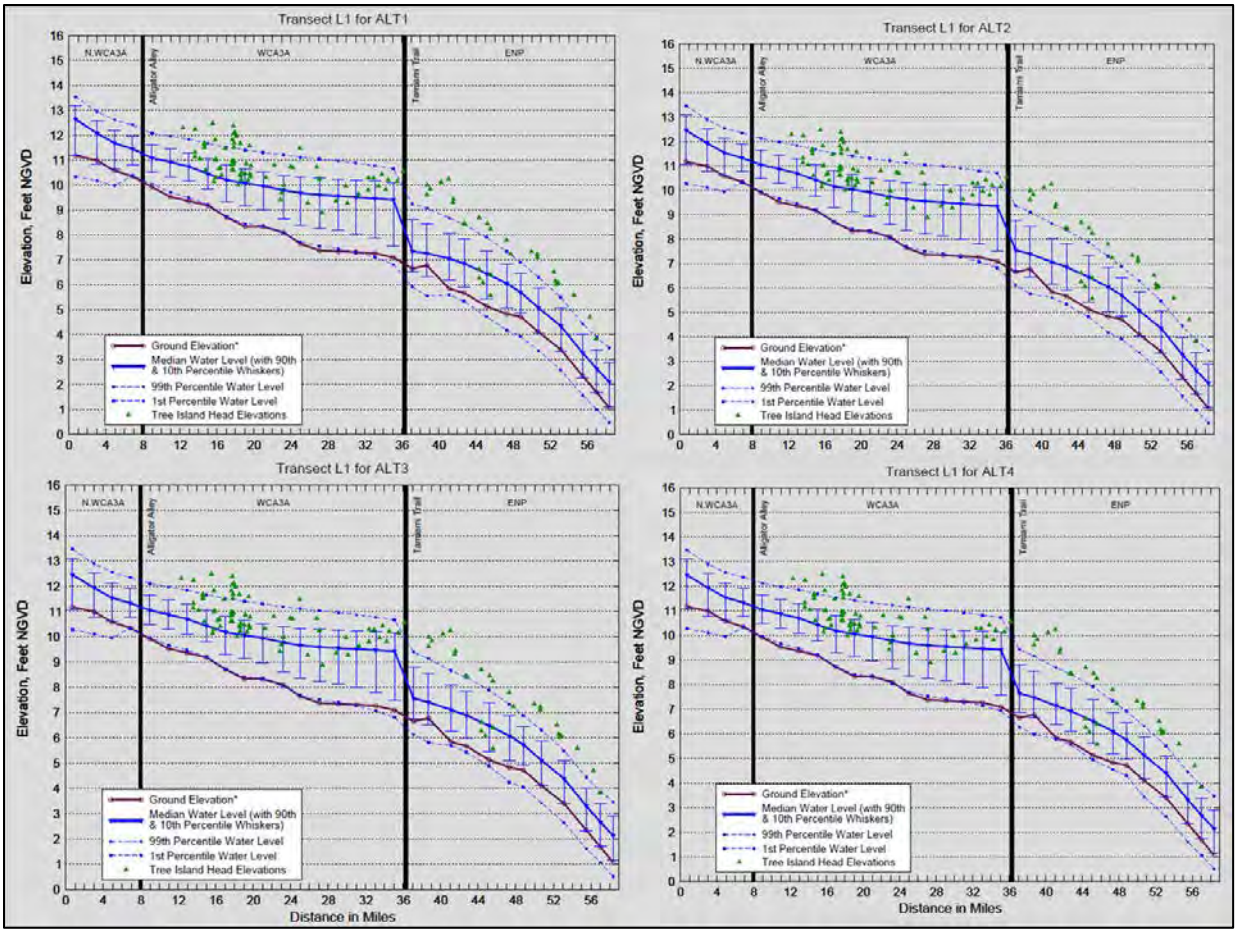

Figure C.2.1-8. The L1 "viewing window" transect going from North WCA 3A through SRS was used to see if the water depths (means and Std Deviations relative to ground elevations) for the four CEPP action alternatives were likely to increase or decrease flooding stress on tree islands (green triangles).

Changes in hydrology along the L2 transect (**Figure C.2.1-7**) in relationship to tree islands did not capture as many islands as the L1 transect, but showed the same result as Figure (**Figure C.2.1-8**) (i.e. no impacts to tree islands in WCA 3A). However, there were some small differences between Alts 1, 2 and 3 in comparison to Alt 4 in WCA 3B (**Figure C.2.1-9**). Alternative 2 (also indicative of Alt 1 and 3 results) added about 0.5 ft of depth to WCA 3B. Rehydration of WCA 3B is expected to prevent harmful fires that result in tree island loss.

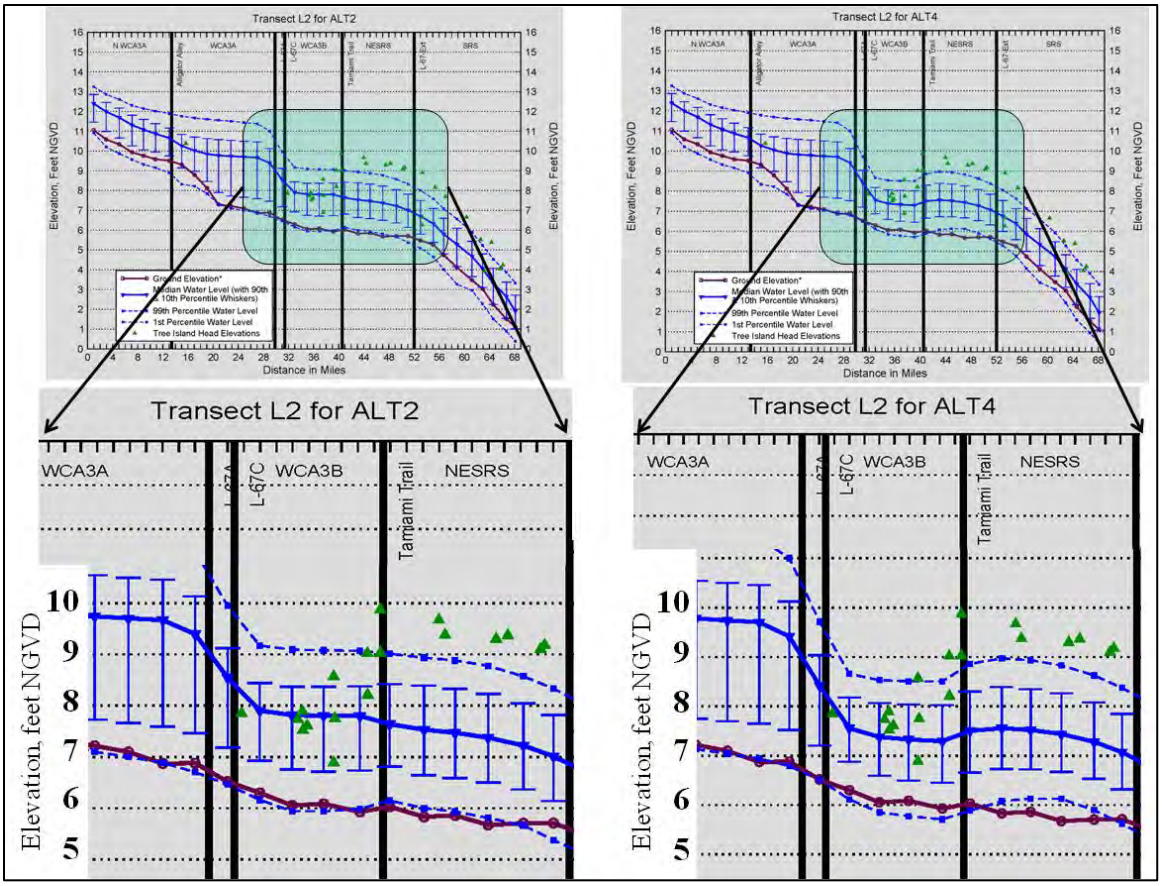

Figure C.2.1-9. The L2 flow path (Figure C.2.1-7) passes through WCA 3B, where Alterative 2 (representative of Alt-1 and Alt-3) added about 0.5 ft of additional water, which is not considered to be great enough to cause flooding stress and may instead prevent tree islands from burning.

Finally, for Southern WCA 3A, none of the action alternatives had any impact on tree islands in comparison to the FWO (**Figure C.2.1-10**). This was due to the inclusion of the 2012 Everglades Restoration Transition Plan (ERTP) WCA 3A regulation schedule in FWO. The ERTP effectively lowers the potential of flooding stress of trees on trees islands in the most southern reaches of WCA 3A. All the CEPP action alternatives provide similar benefits to tree islands within southern WCA 3A because they include ERTP.

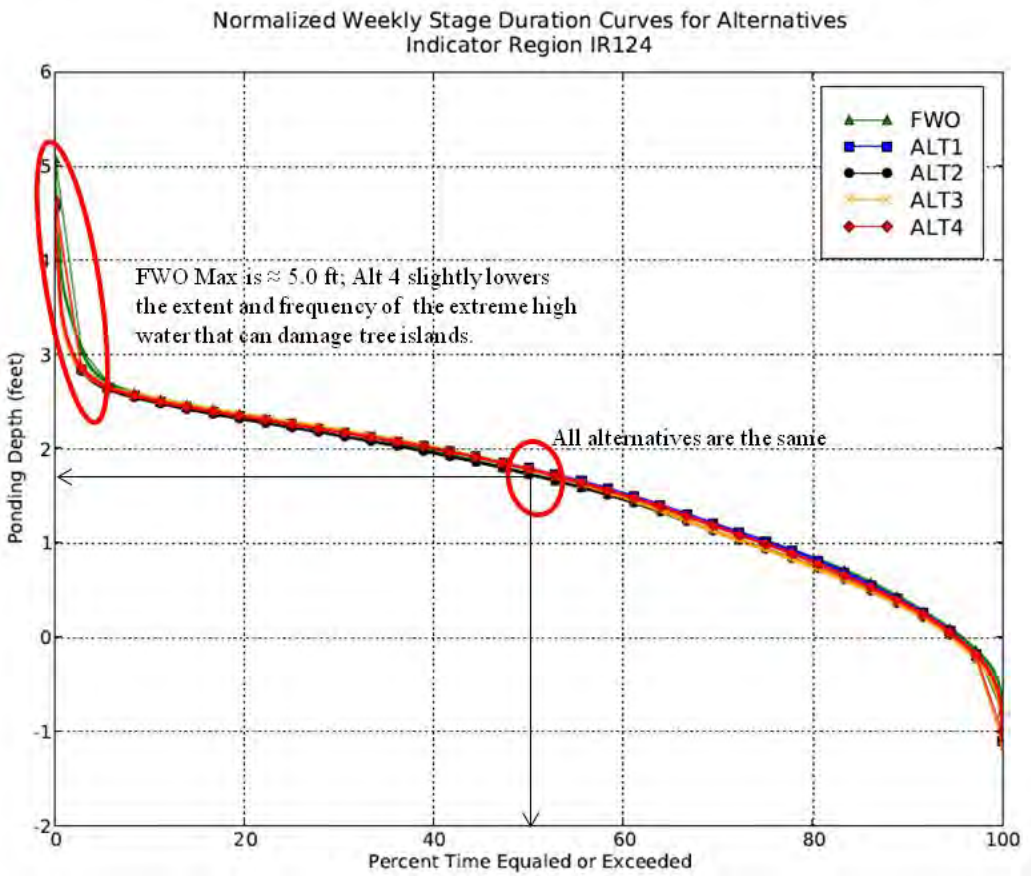

Figure C.2.1-10. Indicator Region 124 is in the southern extent of WCA 3A where tree islands can occasionally be stressed by depths greater than 2.5 ft for extended periods of time. The ERTP schedule in the FWO reduced that stress and Alt-4 was found to slightly reduce this stress even more. F or most of the time, all action alternatives were the same as the FWO.

C.2.1.3.4.4.3 Shark River Slough (SRS)

Tree islands in SRS rise high above the surrounding marsh (**Figure C.2.1-8** and **Figure C.2.1-9**). Their potential for flooding stress is practically non-existent. Instead, ENP is faced with a reduction in islands due to intensive fires that migrate across the marshes and burn tree island peat soils leaving only rocky outcroppings. The objective of CEPP action alternatives is to prevent extensive dry-downs and create extended hydroperiods. **Figure C.2.1-11** shows a 55% decline in the extent and number of tree islands in SRS since 1942 and it shows that the entire region, including the Rocky Glades along the eastern border of SRS, has a hydroperiod less than 180 days for a typical dry year under ECB and FWO conditions. The FWO expands the driest hydroperiod classification across the area during wet and dry years compared to the ECB. The Action alternatives create similar hydroperiods across the area (**Figure C.2.1-12**), and are significantly better at maintaining longer hydroperiods within SRS and of Tamiami Trail compared to the ECB and FWO. Alternative 4 appears to do the best job of creating regions with hydroperiods created than 180 days and preventing regions from completely drying out during a dry year like 1989 (**Figure C.2.1-12**).

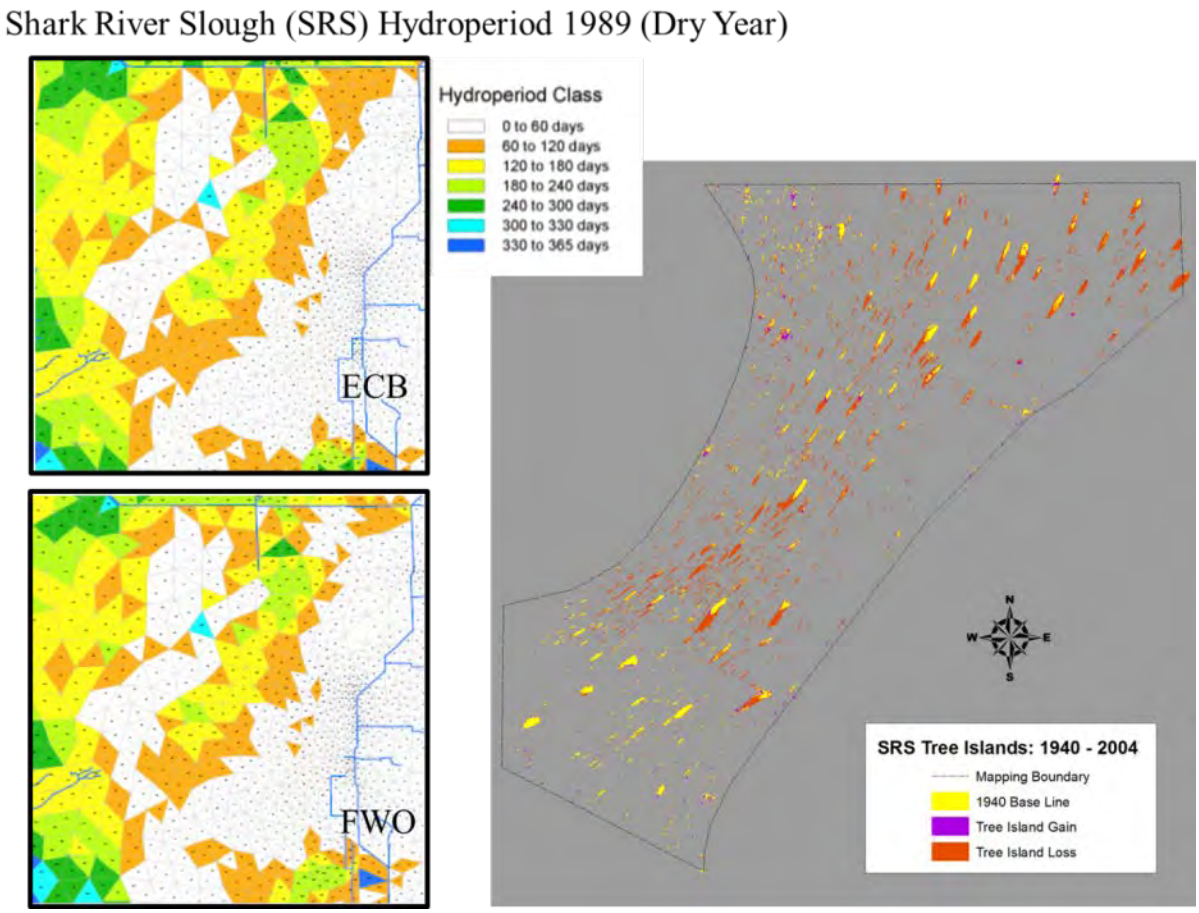

Figure C.2.1-11. Tree islands in SRS have significantly been reduced since 1940 (Right), which is believed to be caused by intense fires that occur during dry years like 1989 when hydroperiods are less than 120 days over vast areas (Left). The FWO is not an improvement over the ECB, especially immediately downstream of Tamiami Trail.

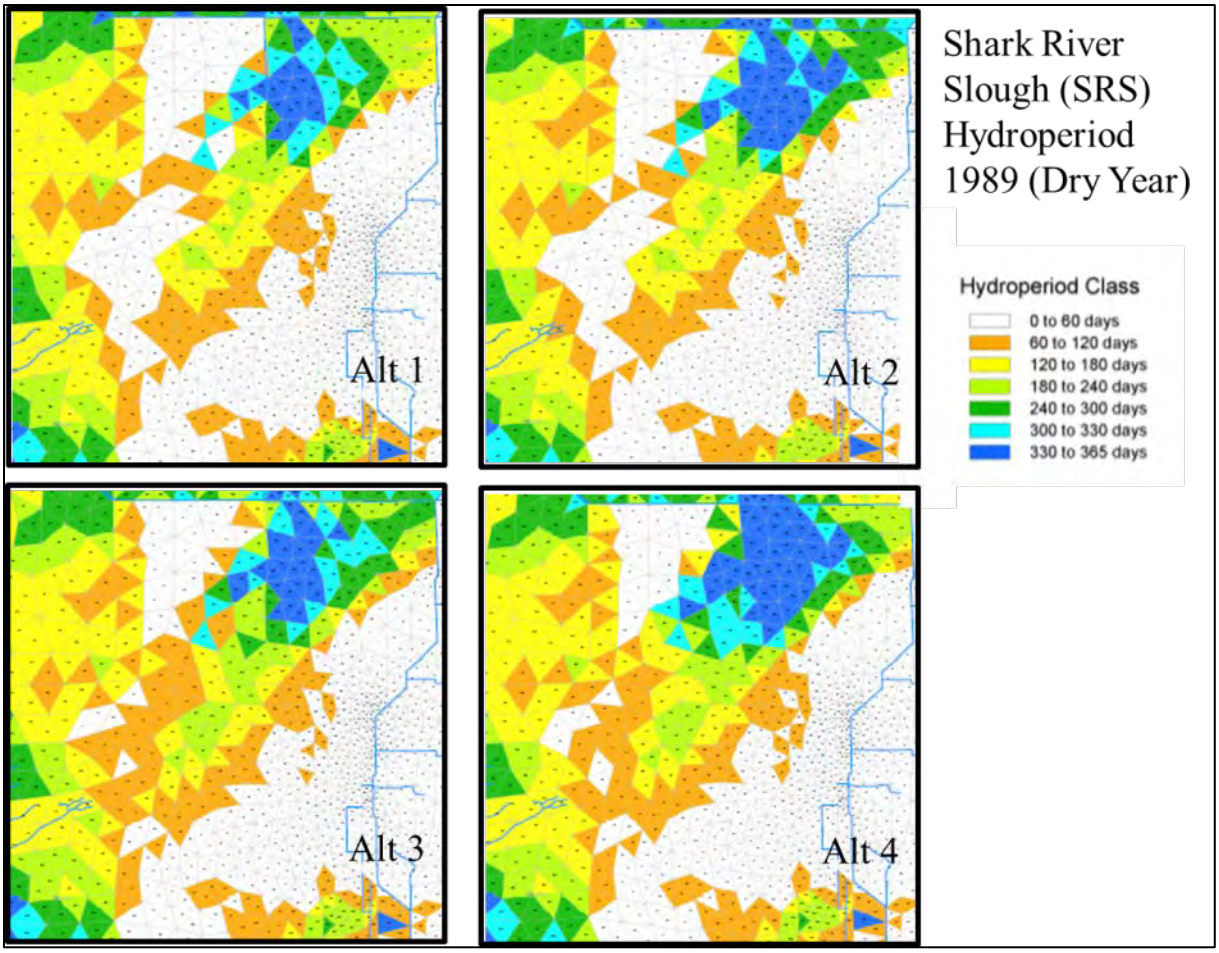

Figure C.2.1-12. Alternative 1 was the least effective at expanding the spatial extent of the 60-180-day hydroperiod classes and Alt-4 was the most effective. Alt-4 was the most effective at creating regions with hydroperiods of up to 300 days.

Figure C.2.1-13 may be the best graphic for depicting the overall hydrologic improvements in SRS, especially in the NESRS, downstream of Tamiami Trail (Gage NESRS1), associated with the CEPP action alternatives in comparison to the ECB and the FWO. This region saw significant improvements to the hydrology for tree islands because none of the action alternatives created water depths indicative of flooding stress and all the action alternatives, especially Alt 4, were able to prevent the marsh habitat surrounding tree islands from drying out for extended periods of time, thus reducing the potential for tree island degradation due to fires. Reduction of fires would be very protective of tree islands and may enhance the redevelopment of healthy tree island tails since flow fields are also expected to improve. Alternative 4 gave this region a little added protection compared to the other alternatives because it was the only alternative that prevented NESRS1 from going completely dry in 1974, a very dry year. The additional water depths of 1.0 foot associated with all the action alternatives during wet years did not increase maximum depths above 3.0 feet and as such did not represent a flooding stress to tree islands.

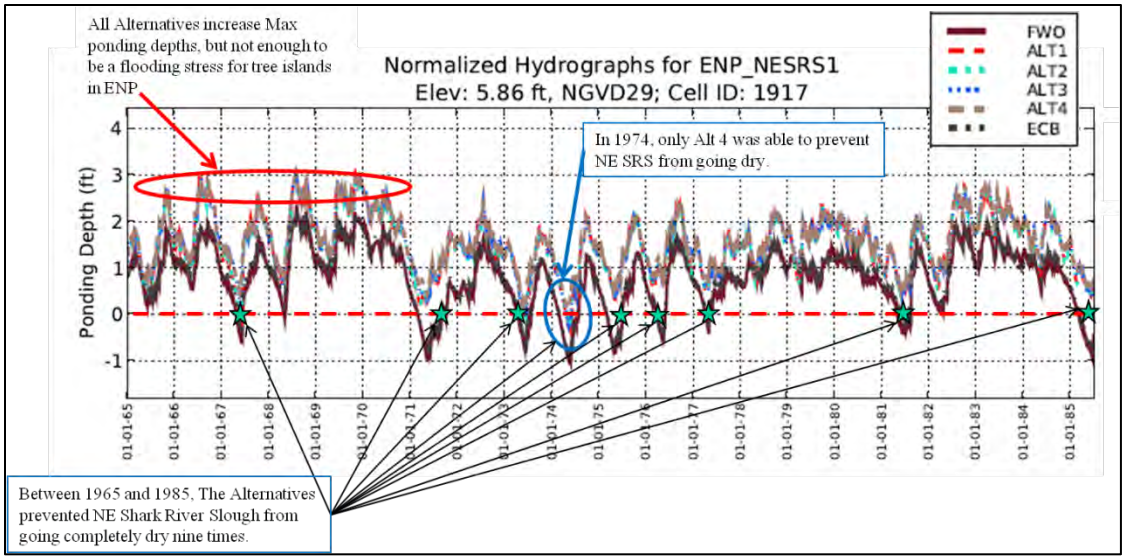

Figure C.2.1-13. Normalized hydrographs for Gage NESRS1 located with NESRS, close to Tamiami Trail. (Note: These data in Figure C.2.1-13 are shown as an example; the same trends were observed for the second half of the 41-year simulations.)

The normalized stage duration curve for central SRS Gage P-33 (**Figure C.2.1-14**) is a good summary of the hydrologic benefits of the action alternatives for tree islands in ENP. The additional 0.5 ft of water in SRS is expected to better reconnect the groundwater dynamics (roots and peat) of tree islands to the hydrology of the surrounding marshes. This has been found in tests done in the Loxahatchee Impoundment Landscape Assessment Facility to be an important natural connectivity that hydrates the island peats, transports nutrients and supports vegetative growth (Fred Sklar, Personal Communication). The action alternatives rehydrate SRS without creating any long periods of high water depths that could cause flooding stress. The FWO and all action alternatives have the same maximum water depths of approximately 3.0 ft. The advantage to tree islands of one alternative over another does not appear in the stage duration analysis until stages fall below 1.0 foot. Alternative 4 was most protective of extant tree islands and most likely to enhance tree island restoration and growth because it had the longest hydroperiod aboveground elevations and the shallowest belowground water table of any of the other alternatives.

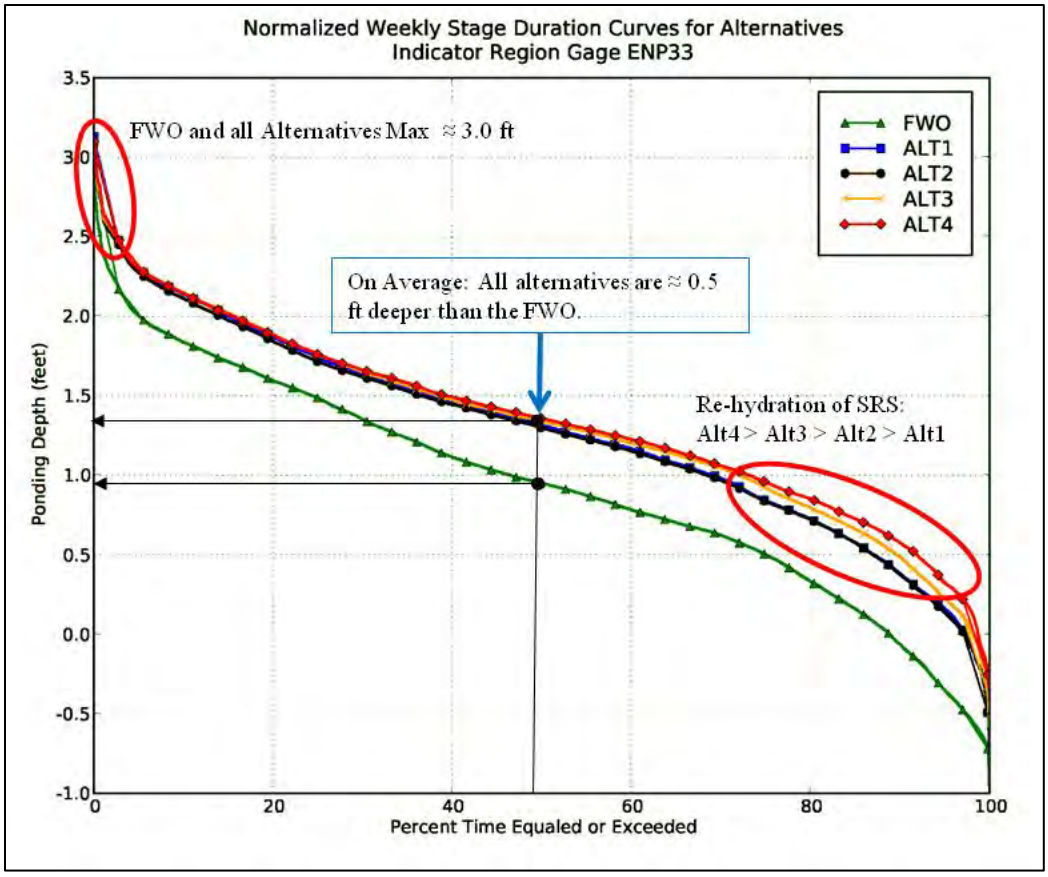

Figure C.2.1-14. **Normalized stage duration curves for CEPP action alternatives for Indicator Region Gage ENP33.**

In summary, negligible and less than significant effects to tree islands within WCA 3A and ENP are anticipated to occur under any of the CEPP action alternatives; however, lower elevation tree islands within WCA 3B may have a significant and major adverse effect by CEPP implementation, with Alts 2 and 3 resulting in the greatest potential impact. Approximately one-third of all tree islands within WCA 3B are elevated only 0.7-1.1 feet above the surrounding marsh. Due to increased stages within WCA 3B, these tree islands may suffer inundation and prolonged high water periods that may induce stress. It is hypothesized from modeling of tree islands in WCA 2A, where 90% of tree islands have been converted to sawgrass, that tree islands cannot withstand full inundation in excess of 120 days for more than two years in a row (Sklar and van der Valk 2002). According to Wu et al. (2002), when water depths on tree islands exceed one foot for greater than 120 days, even the most water tolerant species are affected. However, it is not clear if this is appropriate for tree islands within WCA 3B because tree island species in WCA 3B are considered phenotypically plastic, meaning they have a greater ability to adapt to longer hydroperiods (Fred Sklar, personal communication). Increasing the operational flexibility for each alternative will allow for better adaptive management and preservation of tree islands within WCA 3B.

Extended ponding of deep water, most notably within southern WCA 3A, has resulted in a lack of seedling establishment on tree islands due to stress from prolonged inundation (McKelvin et al. 1998). Lowering of water levels within southern WCA 3A would aid in reducing future tree island degradation due to prolonged inundation and high water depths. However, little change in water levels within southern WCA 3A will be realized with implementation of any of the CEPP action alternatives.

C.2.1.3.4.5 Rockland Pine Forest

No changes in hydrology are expected within rockland pine forest and therefore negligible and less than significant effects are predicted within Rockland pine forest as a result of implementation of any of the CEPP action alternatives.

C.2.1.3.4.6 Tropical Hardwood Hammock

Tropical hardwood hammocks on the Miami Rock Ridge have been affected by a lowered water table associated with the reduction of freshwater flow through the Everglades. Since all CEPP action alternatives provide increased flow through the Greater Everglades, it is anticipated that tropical hardwood hammocks would have minor beneficial effects from implementation of any of the CEPP action alternatives. As with other vegetative communities, Alts 4 and 3, respectively, would provide the greatest rehydration benefits to ENP as compared with Alts 1, 2 and FWO.

C.2.1.3.5 Southern Coastal Systems

The estuarine communities of Biscayne and Florida Bays have been affected by upstream changes in freshwater flows through the Everglades and eastward across the Miami Rock Ridge. The estuarine communities of Biscayne Bay have been further affected by agricultural and urban development of the areas east of the current boundaries of Everglades National Park.

C.2.1.3.5.1 Mangroves

A reduction in freshwater inflows into Florida Bay and alterations of the normal salinity balance have affected mangrove community composition and may have contributed to a large-scale die-off of seagrass beds (USFWS 1999). Mangrove communities along Biscayne Bay have also seen a reduction in freshwater inflows and a reduction in historic habitat range by urban and agricultural development leaving only a remnant ribbon of suitable habitat immediately adjacent to the Bay. Mangrove communities occur within a range of salinities from 0 to 40 psu. Both bays experiences salinities in excess of 40 psu on a seasonal basis. Biscayne Bay is also subject to rapid decreases in salinity on the order of 10-20 psu from fresh water pulses delivered by the surface water management canal system.

As compared with FWO, all CEPP action alternatives provide increased freshwater flows to Florida Bay and the Southwest Coast, thereby aiding to lower salinities levels within these areas to better encompass mangrove salinity tolerance range and providing a minor beneficial effect. Alternative 4 is anticipated to provide the greatest benefit, followed by Alts 3, 1 and 2 (refer to Appendix G for Florida Bay Salinity Performance Measure results).

In Biscayne Bay, Alt2 was the only alternative that provided additional flows when compared to FWO and has a minor beneficial effect. Alts 1, 3, and 4 all provided less water than FWO, in descending order having a minor adverse effect. Flows to the coast were not evenly distributed with all alternatives showing positive benefits in the northern Biscayne Bay and negative effects in central and southern Biscayne Bay. Alternative 2 is likely to provide a significant benefit to the mangrove communities by providing additional flows to the coast, thereby lowering salinity levels and/or reducing the number of days salinities exceed 40 psu. Alternative 1 is likely to provide the same level of benefit as FWO and Alts 3 and 4 would likely result in a significant negative effect to the mangrove communities by increasing the likely hood of maintaining salinity conditions in Biscayne Bay above the preferred salinity range of mangroves for longer periods of time than FWO. All alternatives generally show an unfavorable seasonal flow pattern with reductions in flows compared to FWO generally greater during the dry season. Refer to **Annex E** for Biscayne Bay Flow at Coastal Structures.

C.2.1.3.5.2 Seagrass Beds

Seagrasses within Biscayne and Florida Bays have long suffered from high salinities due to long-term reductions of freshwater flow. In addition, seagrass beds in Biscayne Bay are also subject to rapid decreases in salinity on the order of 10-20 psu and scouring of bottom sediments from fresh water pulses delivered by the surface water management canal system. Seagrasses have an optimum salinity range of 24 to 35 psu, but can tolerate considerable short-term salinity fluctuations.

As compared with FWO all action alternatives provide increased freshwater flows to Florida Bay and the southwestern coastal estuaries, thereby lowering salinities within these areas to better align with seagrass salinity tolerance ranges and providing a significant beneficial effect in coastal bays and nearshore to the transition zone. Models predicted that reduced salinity would contribute to enhanced seagrass species diversity and improved resilience of the ecosystem in northern Florida Bay.. Alternative 4 provides the greatest benefit, followed by Alts 3, 1 and 2. Refer to Appendix G for Florida Bay Salinity Performance Measure results.

In Biscayne Bay, Alt2 was the only alternative that provided additional flows when compared to FWO and has a minor beneficial effect. Alts 1, 3, and 4 all provided less water than FWO, in descending order, having a minor adverse effect. Flows to the coast were not evenly distributed spatially with all alternatives showing positive benefits in the northern Biscayne Bay and negative effects in central and southern Biscayne Bay. Alternative 2 is likely to provide a benefit to the seagrass beds by providing additional flows to the coast, thereby lowering salinity levels and/or reducing the number of days salinities exceed 40 psu. Alternative 1 is likely to provide the same level of benefit as FWO and Alts 3 and 4 would likely result in a negative effect to the seagrass beds by increasing the likely hood of maintaining salinity conditions in Biscayne Bay above the preferred salinity range of seagrasses for longer periods of time than FWO. All alternatives generally show an unfavorable seasonal flow pattern with reductions in flows compared to FWO generally greater during the dry season. Refer to **Annex E** for Biscayne Bay Flow at Coastal Structures.

C.2.1.4 Threatened and Endangered Species

The overall objective of CEPP is to rehydrate the Everglades in order to help restore the WCAs and the Everglades back to historical, pre-drainage conditions. This should improve conditions for Everglade snail kite, wood stork, and other wading birds and their habitats in south Florida, while CEPP also strived to maintain nesting season requirements for the Cape Sable Seaside Sparrow (CSSS).

Federally threatened, endangered, and candidate species that may occur within the study area include: Florida panther (*Puma concolor coryi*), Florida population of West Indian Manatee and its critical habitat (Florida manatee) (*Trichechus manatus*), Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*), Everglade snail kite (*Rostrhamus sociablis plumbeus*) and its critical habitat, Northern crested caracara (*Caracara cheriway*), piping plover (*Charadrius melodus*), red-cockaded woodpecker (*Picoides borealis*), roseate tern (*Sterna dougallii dougallii*), wood stork (*Mycteria americana*), American alligator (*Alligator mississippiensis*), Florida bonneted bat (*Eumops floridanus*), American crocodile (*Crocodylus acutus*) and its critical habitat, Eastern indigo snake (*Drymarchon corais couperi*), Schaus swallowtail butterfly (*Heraclides aristodemus ponceanus*), Miami blue butterfly (*Cyclargus thomasi bethunebakeri*), Florida leafwing butterfly (*Anaea troglodyta floridalis*), Bartram's hairstreak butterfly (*Strymon acis bartrami),* Stock Island tree snail (*Orthalicus reses* [not incl. *nesodryas*]), crenulate lead-plant (*Amorpha crenulata*), Cape Sable thoroughwort (*Chromolaena frustrata*) deltoid spurge (*Chamaesyce deltoidea*

ssp. *deltoidea*), Garber's spurge (*Chamaesyce garberii*), Okeechobee gourd (*Cucurbita okeechobeensis* ssp. *okeechobeenis*), Small's milkpea (*Galactia smallii*), tiny polygala (*Polygala smallii*), smalltooth sawfish (*Pristis pectinata*) and its critical habitat, Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and its critical habitat, blue whale (*Balaenoptera musculus*), finback whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), sei whale (*Balaenoptera borealis*), sperm whale (*Physeter macrocephalus*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), leatherback sea turtle (*Dermochelys coriacea*), Kemp's ridley sea turtle (*Lepidochelys kempii*), loggerhead sea turtle (*Caretta caretta*), Johnson's seagrass (*Halophila johnsonii*) and its critical habitat, elkhorn coral (*Acropora palmata*) and its critical habitat, and staghorn coral (*Acropora cervicornis*) and its critical habitat. Species described in the following section were determined by the Corps to potentially be affected by the project. No effect species determinations are described in Annex A, CEPP Biological Assessment and the CERP Programmatic Biological Assessment for NOAA NMFS.

The USACE and USFWS, in conjunction with the multi-agency CEPP team, used performance measures (PMs, **Table C.2.1-1**) and ecological targets (ETs, **Table C.2.1-2**) for each species and their habitat developed for the Everglades Restoration Transition Strategy (ERTP) (USFWS 2012). Performance Measures (PMs) are defined as a set of operational rules that identify optimal WCA 3A water stages and recession rates to improve conditions in WCA 3A for snail kite, wood stork, wading birds, and tree islands. The USACE believes that the depths in PM-B are too restrictive and therefore did not use that PM in our analysis of effects. Instead, we deferred to using apple snail (PM-C) PM as a more appropriate assessment since they are based upon published literature (Darby). In addition, PM-A addresses the nesting window for CSSS-A, as outlined in the 1999 USFWS Reasonable and Prudent Alternative (RPA). Ecological Targets are designed to support the intention of the PMs by providing hydroperiod guidelines to help maintain appropriate nesting and foraging habitat. As referenced in the ERTP PMs and ETs (USACE 2011), **Figure C.2.1-15** shows the locations of the gages specified within the ERTP PMs and ETs.

Table C.2.1-1. ERTP Performance Measures Used to Evaluate Potential CEPP Effects on Threatened and Endangered species.

Species	PM	Description of PM
CSSS	A	*NP-205 (CSSS-A): Provide a minimum of 60 consecutive days at NP-205 below 6.0 feet NGVD beginning no later than March 15*
Everglade Snail kite	B	WCA-3A: For Everglade snail kites, strive to reach waters levels between 9.8 and 10.3 feet NGVD by December 31, and between 8.8 and 9.3 feet between May 1 and June 1.
	C	*WCA-3A: For apple snails, strive to reach water levels between 9.7 and 10.3 feet NGVD by December 31 and between 8.7 and 9.7 feet between May 1 and June 1.*
	D	*WCA-3A (Dry Season Recession Rate): Strive to maintain a recession rate of 0.05 feet per week from January 1 to June 1 (or onset of the wet season). This equates to a stage difference of approximately 1.0 feet between January and the dry season low.*
	E	*WCA-3A (Wet Season Rate of Rise): Manage for a monthly rate of rise less than or equal to 0 .25 feet per week to avoid drowning of apple snail egg clusters.*
Wood stork/ wading birds	F	*WCA-3A (Dry Season Recession Rate): Strive to maintain a recession rate of 0.07 feet per week, with an optimal range of 0.06 to 0.07 feet per week, from January 1 to June 1.*
	G	*WCA-3A (Dry Season): Strive to maintain areas of appropriate foraging depths (5-25 cm) within the Core Foraging Area (CFA) (18.6 mile radius) of any active wood stork colony.*
	H	*WCA-3A (Dry Season): Strive to maintain areas of appropriate foraging depths (5-15 cm) within the CFA (7 to 9 mile radius) of any active white ibis or snowy egret colony.*

*Note: All stages for WCA-3A are as measured at WCA 3- gage average [WCA-3AVG] [Sites 63, 64, 65])

Table C.2.1-2. ERTP Ecological Targets (ET) Used to Evaluate Potential CEPP Effects on Threatened and Endangered species.

Species	ET	Description of PM
CSSS	1	*NP-205 (CSSS-A): Strive to reach a water level of less than or equal to 7.0 feet NGVD at NP-205 by December 31 for nesting season water levels to reach 6.0 feet NGVD by mid- March.*
	2	*Strive to maintain a hydroperiod between 90 and 210 days (3 to 7 months) per year throughout sparrow habitat to maintain marl prairie vegetation.*

*Note: All stages for WCA-3A are as measured at WCA 3- gage average [WCA-3AVG] [Sites 63, 64, 65])

USFWS, along with Dr. Wiley Kitchens (Ph.D. of the University of Florida), Phil Darby (Ph.D. of the University of West Florida), and Dr. Christa Zweig (Ph.D. of the University of Florida), developed a series of water depth recommendations for WCA 3A that addresses the needs of the snail kite, Florida apple snail, and vegetation characteristic of their habitat, along with a wood stork component that was developed by James Beeren and Mark Cook (Ph.D.) from the SFWMD (**Figure C.2.1-16**). This water management strategy is divided into three time periods representing the height of the wet season (September 15 to October 15), the pre-breeding season (January) and the breeding season (termed dry season low, May 1 to June 1) and illustrates appropriate water depths to attain within each time period. Water depth recommendations as measured at the WCA 3AVG proposed within the USFWS 2010 Draft Multi-Species Transition Strategy (MSTS) forming the basis for ERTP PMs and ETs. Please note that these water depths are not targets, but used as guidance and represent a compromise between the

needs of the three species. Inter-annual variability is extremely important in the management of the system to promote recovery of the species.

Regional Simulation Model – Glades Lower East Coast Service Area (RSMGL) model results were used to compare performance of action alternatives in relation to the ERTP PMs and ETs in order to select the alternative that best met the CEPP objectives. Microsoft Excel 2007 was used to analyze RSM results and create bar graphs to graphically compare action alternatives. All calculations are based upon the RSM 41-year POR from 1965 through 2005.

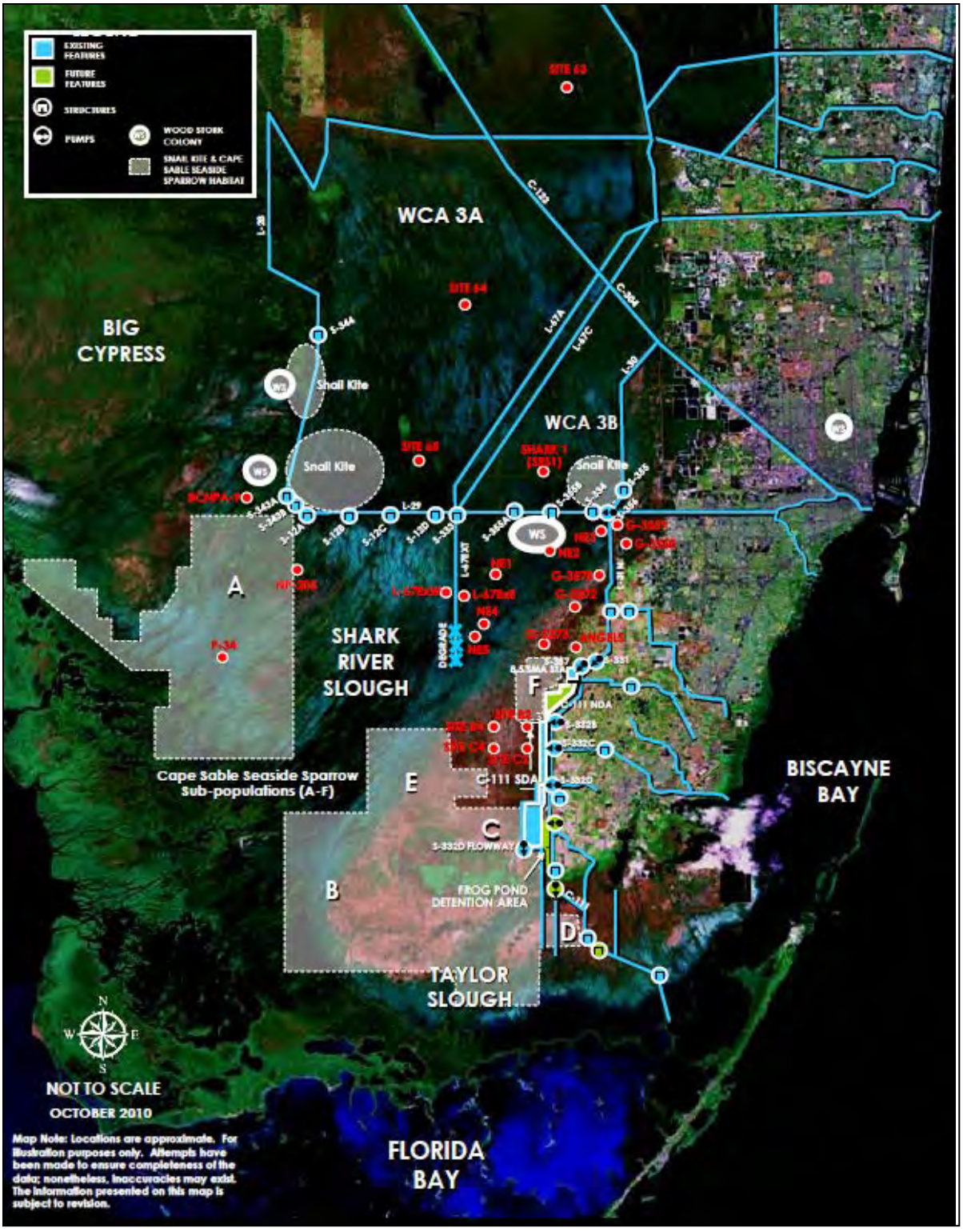

Figure C.2.1-15. Location of gages within the CEPP action area as referenced in the Everglades Restoration Transition Plan Performance Measures and Ecological Targets.

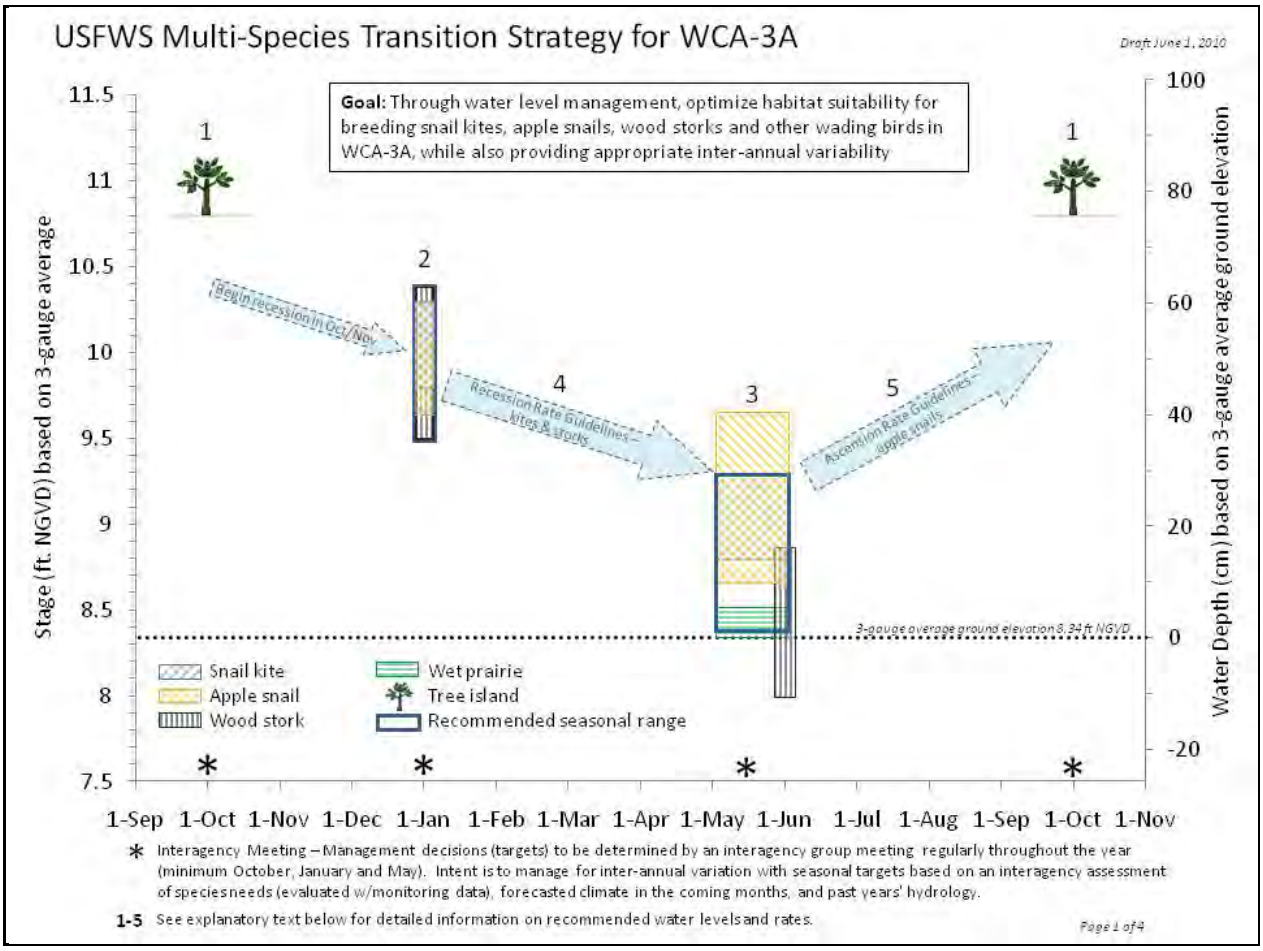

Figure C.2.1-16. U.S. Fish and Wildlife Service Multi-Species Transition Strategy for Water Conservation Area 3A.

C.2.1.4.1 Everglades Snail Kite

Snail kite habitat consists of freshwater marshes and the shallow vegetated edges of lakes where the apple snail (*Pomacea paludosa*), the snail kite's main food source, can be found. Snail kite populations in Florida are highly nomadic and mobile; tracking favorable hydrologic conditions and food supplies, and thus avoiding local droughts. Snail kites move widely throughout the primary wetlands of the central and southern portions of the State of Florida. Snail kite is threatened primarily by habitat loss and destruction. Widespread drainage has permanently lowered the water table in some areas. This drainage permitted development in areas that were once snail kite habitat. In addition to loss of habitat through drainage, large areas of marsh are heavily infested with water hyacinth, which inhibits the snail kite's ability to see its prey (USFWS 1986).

The snail kite has a highly specialized diet typically composed of apple snails, which are found in palustrine, emergent, long-hydroperiod wetlands. As a result, the snail kite's survival is directly dependent on the hydrology and water quality of its habitat (USFWS 1999). Snail kites require foraging areas that are relatively clear and open in order to visually search for apple snails. Suitable foraging habitat for the snail kite is typically a combination of low profile marsh and a mix of shallow open water. Shallow wetlands with emergent vegetation such as spike rush (*Eleocharis* spp.), maidencane, sawgrass, and other native emergent wetland plant species provide good snail kite foraging habitat as long as the vegetation is not too dense to locate apple snails. Dense growth of plants reduces the ability of the snail kite to locate apple snails and their use of these areas is limited even when snails are in relatively high

abundances (Bennetts et al. 2006). Areas of sparse emergent vegetation enable apple snails to climb near the surface to feed, breathe, and lay eggs and thus they are easily seen from the air by foraging snail kites. Suitable foraging habitats are often interspersed with tree islands or small groups of scattered shrubs and trees which serve as perching and nesting sites.

Snail kite nesting primarily occurs from December to July, with a peak in March-June, but can occur year-round. Nesting substrates include small trees such as willow, cypress (*Taxodium* spp.) and pond apple, and herbaceous vegetation such as sawgrass, cattail, bulrush (*Scirpus validus*) and reed (*Phragmites australis*). Snail kites appear to prefer woody vegetation for nesting when water levels are adequate to inundate the site (USFWS 1999). Nests are more frequently placed in herbaceous vegetation during periods of low water when dry conditions beneath willow stands (which tend to grow to at higher elevations) prevent Snail kites from nesting in woody vegetation (USFWS 1999). It is rare for a nest to collapse (not survive) in woody vegetation but common in non-woody vegetation, especially on lake margins (USFWS 1999). In order to deter predators, nesting almost always occurs over water (Sykes 1987a; Sykes et al. 1995).

Rehydration and vegetation shifts within northern WCA 3A and increased hydroperiods within ENP is likely to increase suitable habitat for apple snails, thereby increasing spatial extent of suitable foraging opportunities for snail kites providing a moderate beneficial effect. Based on this single metric, in WCA 3B, Alt 4 performed the best overall, followed by, Alts 3, 1, and 2 respectively; however, a more defined operational plan could equalize the performance between plans.

Apple snail egg production is maximized when dry season low water levels are less than 40 centimeters but greater than 10 centimeters (Darby et al. 2002; USFWS 2010). Overall, Alt 4 was the only alternative that showed improvement over the FWO in the number of years when the water depth was less than 40 cm before April 1 (**Table C.2.1-3**) (see **Figure C.2.1-17** for gage locations).

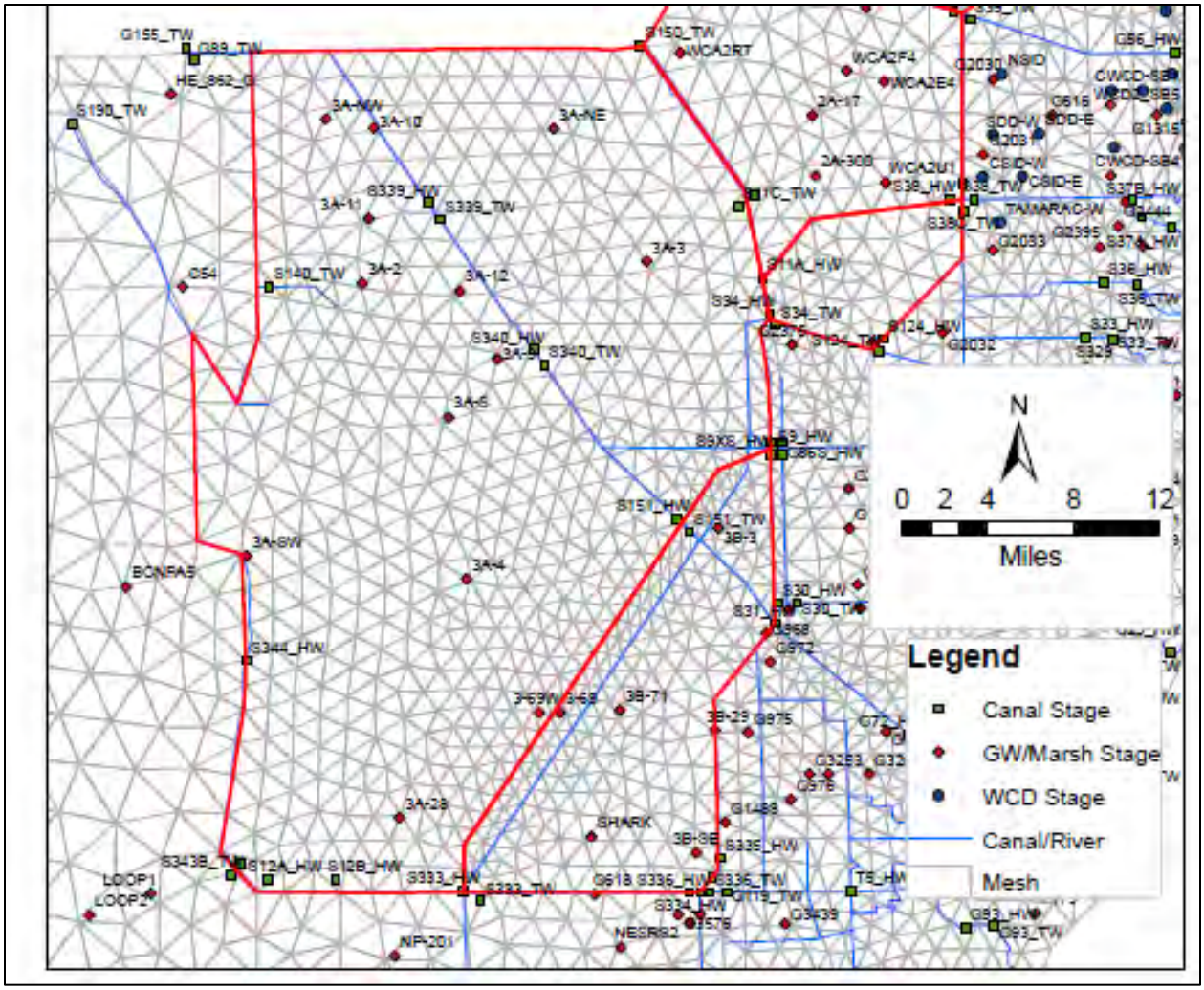

Figure C.2.1-17. Gage locations.

Table C.2.1-3 Number of years in POR met where water depths were less than 40cm before April 1. This metric is important for maximizing apple snail production.

April < 40 cm						
	ECB	**FWO**	**ALT-1**	**ALT-2**	**ALT-3**	**ALT-4**
Gage	3A-NE					
# years met	40	40	39	39	39	39
Gage	3A-NW					
# years met	40	40	24	36	36	36
Gage	3A-3					
# years met	35	36	35	35	35	35
Gage	3A-4					
# years met	33	34	31	32	33	32
Gage	3A-28					
# years met	12	15	16	17	17	16
Gage	3A-SW					
# years met	39	39	39	39	39	39
Gage	3B-71					
# years met	31	32	35	32	36	36
Gage	3BS1W1					
# years met	18	22	23	12	16	31
Total	**248**	**258**	**242**	**242**	**251**	**264**

The totals in **Table C.2.1-4** represent the total of all gages in meeting the apple snail depth requirements for the 41 year POR. All 4 alternative plans should lead to increased apple snail populations in northern WCA 3A. Alternatives 3 and 4 suggest that they could provide appropriate conditions for getting more apple snails into ENP compared to Alts 1 and 2 (**Table C.2.1-4**).

Table C.2.1-4. Number of years met for apple snail depth range

	May 1- June 1						31-Dec					
	ECB	**FWO**	**ALT-1**	**ALT-2**	**ALT-3**	**ALT-4**	**ECB**	**FWO**	**ALT-1**	**ALT-2**	**ALT-3**	**ALT-4**
Gage	**3A-NE**											
# years met	26	27	11	11	11	11	13	15	4	2	2	2
Gage	**3A-NW**											
# years met	8	6	20	25	25	25	0	0	17	5	5	5
Gage	**3A-3**											
# years met	15	9	22	22	22	22	15	11	10	10	11	11
Gage	**3A-4**											
# years met	20	18	24	23	23	24	15	22	24	22	24	24
Gage	**3A-28**											
# years met	15	18	17	18	18	18	4	5	3	4	4	3
Gage	**3A-SW**											
# years met	6	4	9	7	7	7	5	2	0	0	0	0
Gage	**3B-71**											
# years met	24	23	27	26	29	30	5	5	5	11	5	3
Gage	**3BS1W1**											
# years met	14	13	18	11	13	17	19	18	26	12	31	20
Total	**128**	**118**	**148**	**143**	**148**	**154**	**76**	**78**	**89**	**66**	**82**	**68**

In conclusion, snail kite habitat would increase with all CEPP action alternatives and provide moderate and significant beneficial effects.

C.2.1.4.2 Cape Sable Seaside Sparrow

Presently, the known distribution of the CSSS is restricted to two areas of marl prairies east and west of SRS in the Everglades region (within ENP and BCNP) and the edge of Taylor Slough in the Southern Glades Wildlife and Environmental Area in Miami-Dade County. CSSS surveys resulted in a range map that divided the CSSS into six separate subpopulations, labeled as A through F (**Figure C.2.1-18**), with CSSS-A as the only subpopulation west of SRS (Curnutt et al. 1998).

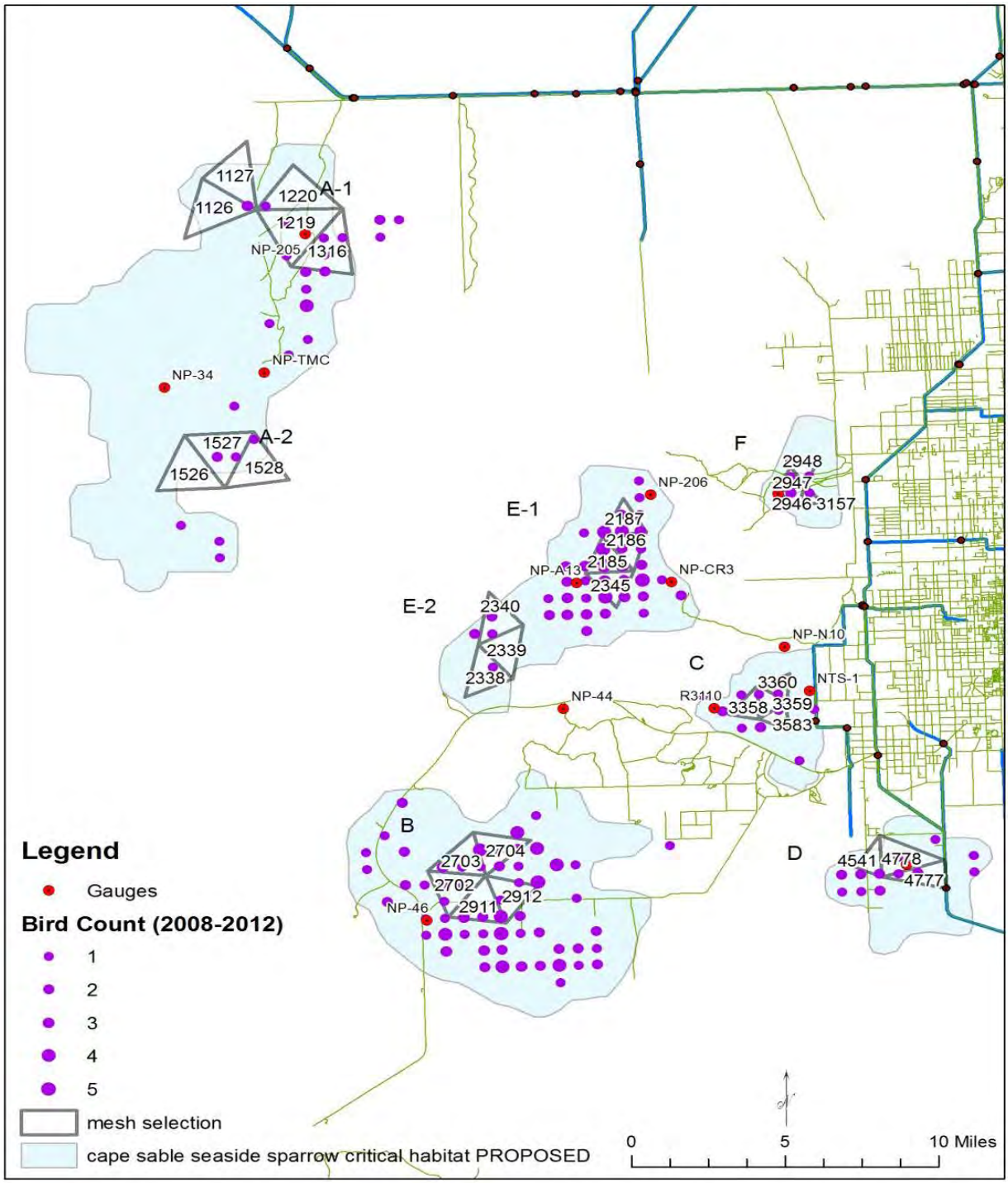

Figure C.2.1-18. Range of CSSS sub populations.

Effects of the action alternatives on the CSSS will be discussed below based on the appropriate PM.

PM-A NP-205 (CSSS-A): Provide a minimum of 60 consecutive days at NP-205 below 6.0 feet, NGVD beginning no later than March 15.

Cape Sable seaside sparrows build nests low to the ground around 14-17 cm. Male CSSS call for mates and set up territories when water levels drop below ground surface. Breeding behavior can be interrupted when water levels rise above ground surface. That is why it is important to maintain water levels below the ground surface for at least 60 days during the nesting season from March 1 to July 15. In order to compare action alternatives in relation to PM-A, the RSMGL simulated NP-205 daily stage was utilized. From this data, the number of consecutive dry days within the CSSS nesting window of March 1 through July 15 is counted. From this data, the number of years (N=41) that NP-205 was less than 6.0 feet, NGVD by March 15 was calculated (**Table C.2.1-5**) and is depicted in **Figure C.2.1-19**. **Table C.2.1-5** and **Figure C.2.1-19** compare the final array of alternatives with the FWO for 60 consecutive dry days at NP-205 between March 15 and July 15. There is little difference between the action alternatives, though Alt 2 performed slightly better than the other alternatives. However, there are differences between the action alternatives and the FWO in all action alternatives. The northern portion of the area occupied by CSSS-A and CSSS-F show a minor beneficial effect over FWO. The northern region within CSSS-A had 22-23 years met in the alternatives compared to 20 years met in the FWO. CSSS- F had 34-36 years met with the alternatives compared to 33 years met in the FWO. The southern region of CSSS- A and CSSS-E show a minor adverse effect compared to the FWO. The southern region of CSSS-A had 22-25 years met in the alternatives compared to 33 years met in the FWO. CSSS-E had 33-34 years met with the alternatives compared to 36 years met in the FWO. **Figure C.2.1-20**, **Figure C.2.1-21** and **Figure C.2.1-22** compare the duration of consecutive dry days between the alternatives and the FWO for the northern and southern regions of CSSS-A and CSSS-E, respectively, since this is where there were significant differences between the alternatives and the FWO. In the northern region of CSSS-A, there is very little difference between alternatives and a slight increase in the duration over the FWO (**Figure C.2.1-20**). However, in the southern region of CSSS-A, the FWO has significantly greater durations of dry periods over 60 days than any of the alternatives (**Figure C.2.1-21**). In CSSS-E, the FWO has a greater duration of consecutive dry days over 60 days than any of the alternatives (**Figure C.2.1-22**).

Table C.2.1-5. PM-A number of years there is a minimum of 60 consecutive days at NP-205 below 6.0 feet, NGVD beginning no later than March 15.

Sub Pop	Gage/Cell	Alt 1	Alt 2	Alt 3	Alt 4	FWO
A	IR-A1	22	23	22	22	20
	IR-A2	25	23	23	22	33
	P34	29	28	27	27	29
	TMC	28	29	26	28	32
B	CY3	40	40	40	40	40
C	R3110	39	39	39	39	39
	E112	38	39	38	40	38
D	EVER4	21	22	21	21	22
E	NE of NPA13	34	34	33	34	36
F	NE of RG2	36	35	34	35	33

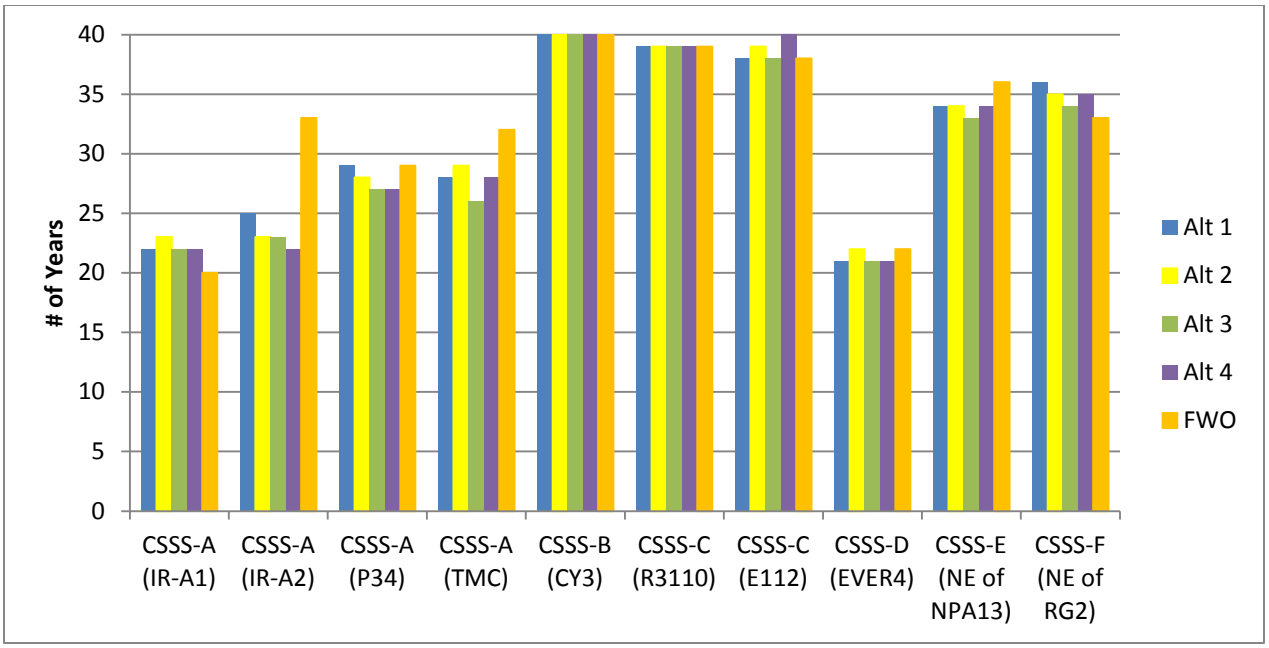

Figure C.2.1-19. PM-A: number of years a minimum of 60 consecutive days at NP-205 below 6.0 feet, NGVD beginning no later than March 15 is met out of the 40 year period of record.

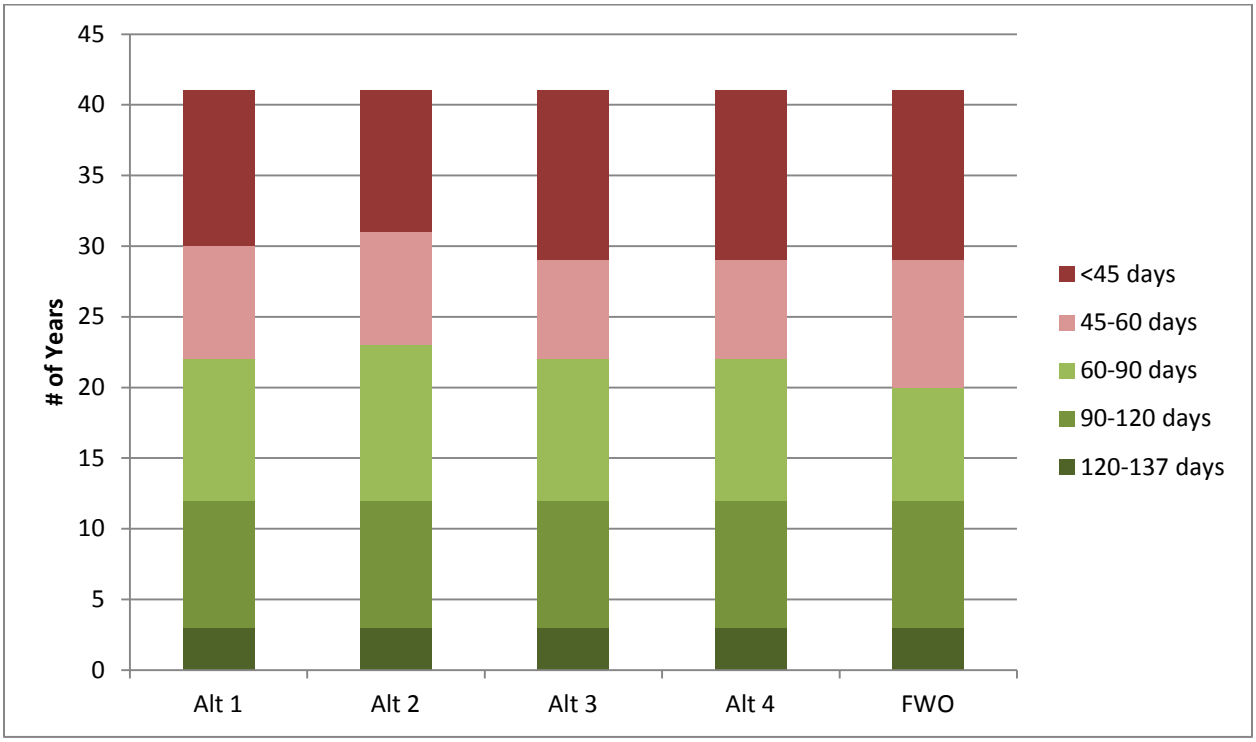

Figure C.2.1-20. Duration of consecutive dry days for the northern region of CSSS-A (IR-A1) between March 1 and July 15.

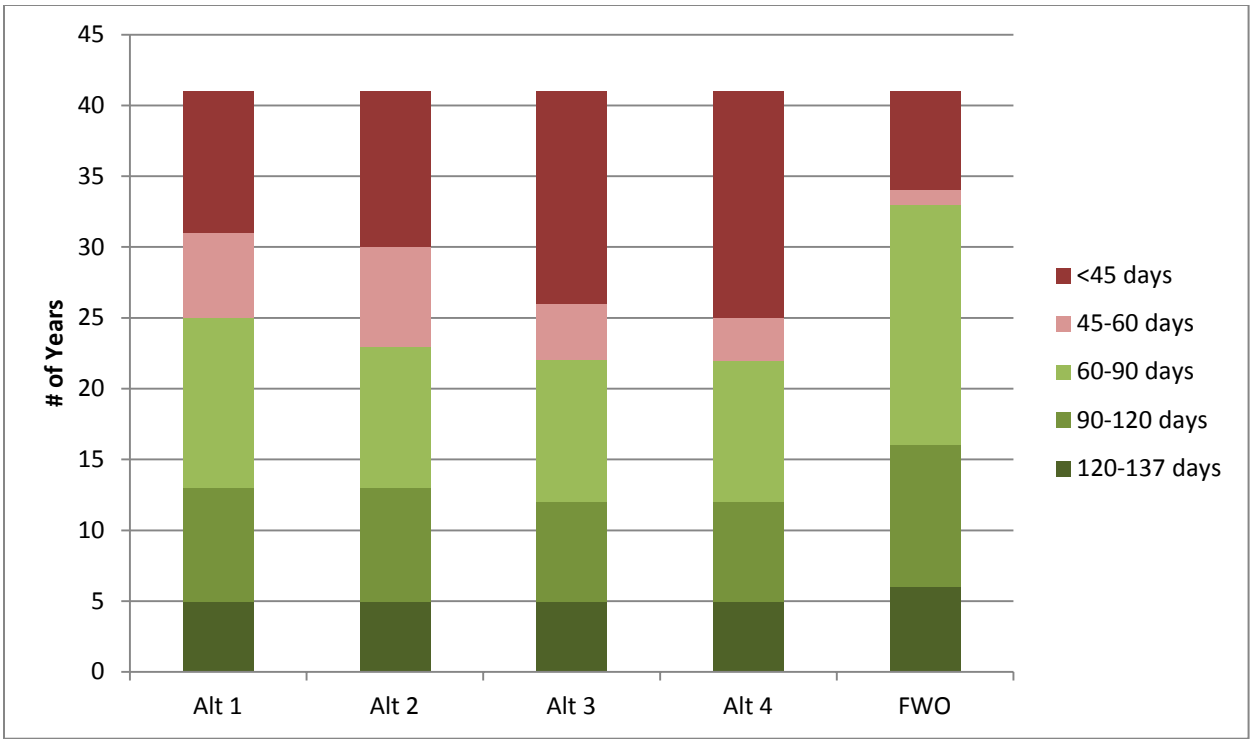

Figure C.2.1-21. Duration of consecutive dry days for the southern region of CSSS-A (IR-A2) between March 1 and July 15.

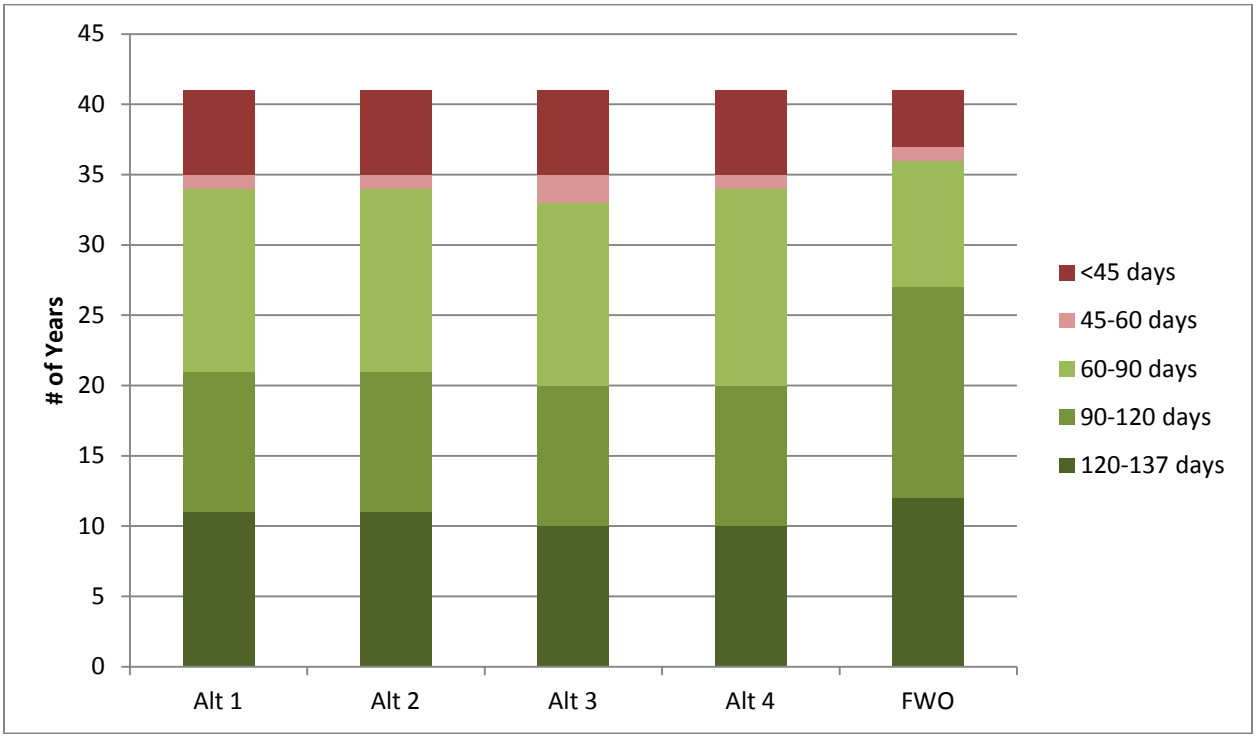

Figure C.2.1-22. Duration of consecutive dry days for CSSS-E (NE of NPA13) between March 1 and July 15.

ET-1 (NP-205, CSSS-A): Strive to reach a water level of less than or equal to 7.0 feet, NGVD at NP-205 by December 31 for nesting season water levels to reach 6.0 feet, NGVD by mid-March.

As illustrated by **Figure C.2.1-23**, ET-1 would have been achieved in 97 percent of years (39 of 40 years) under each of the CEPP action alternatives and the FWO.

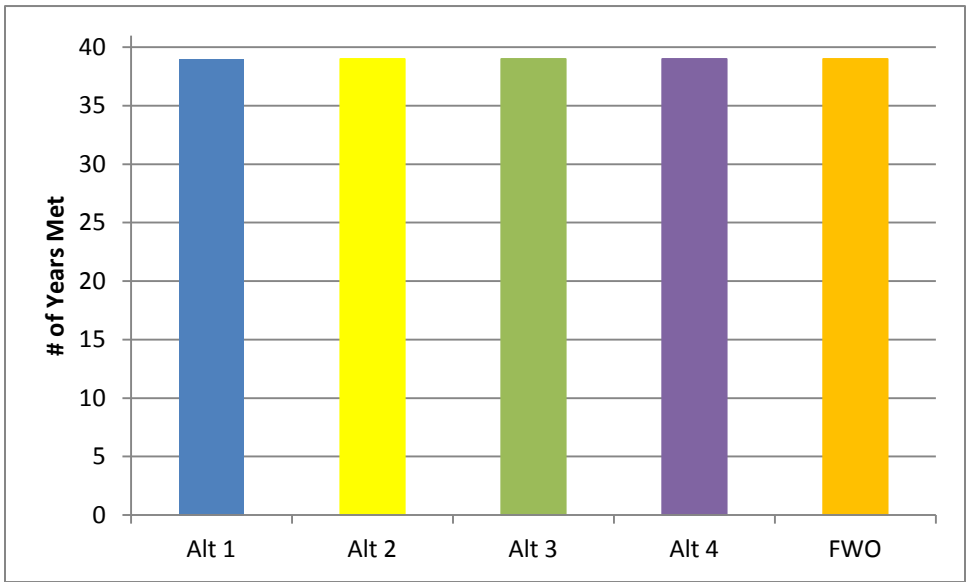

Figure C.2.1-23. ET-1 Number of years over the POR where water levels were at or below 7.0 ft at NP-205 by December 31 for nesting season water levels to reach 6.0 feet by mid-March for the four action alternatives and the FWO.

ET-2 (CSSS): Strive to maintain a hydroperiod between 90 and 210 days (three to seven months) per year throughout sparrow habitat to maintain marl prairie vegetation.

To maintain suitable habitat for CSSS, the annual hydroperiod (i.e., time above ground surface during wet season) should be between 90 and 210 days. Sparrows prefer to nest in short-stature clumped grasses such as *Muhlenbergia*, *Schizachryium*, and *Schoenus.* Habitat can tolerate infrequent years of up to 240 days and below 90 days. In order to compare action alternatives for hydroperiod throughout CSSS habitat, ETs were employed. RSM-GL results for each CSSS subpopulation are depicted in **Table C.2.1-6** and **Figure C.2.1-24** through **Figure C.2.1-35**. **Table C.2.1-6** and **Figure C.2.1-24** compare the final array of alternatives with FWO to maintain a hydroperiod between 90 and 210 days (three to seven months) per year throughout sparrow habitat to maintain marl prairie vegetation. In Northern Sub population A, all action alternatives perform the same and better than the FWO (10 years met compared to 6 years met in FWO) having a negligible or minor beneficial effect. In the southern Sub population A, all action alternatives perform the same, but slightly worse than FWO (8 years met compared to 9 years met in FWO) having a negligible or minor adverse effect. In Sub population B Alts 1, 3, and 4 perform slightly worse (24 years met) than Alt 2 and FWO (25 years met) having a negligible or minor adverse effect. In Sub population C, Alts 3 and 4 perform slightly better (20 years met) than Alt 2 and FWO (19 years met). Alternative 1 performs slightly worse (18 years met) than FWO (19 years met). In sub population D, Alts 2, 3, 4 and FWO performed slightly better (16 years met) than alternative 1 (15 years met). In sub population F, alternative 1 performed slightly better (20 years met) than alternatives 2 and 3 (19 years met), which performed slightly better than Alternative 4 and FWO (18 years met).

Table C.2.1-6. Number of years out of the period of record that the hydroperiod was between 90 and 210 days (three to seven months) each year throughout sparrow habitat in order to maintain marl prairie vegetation.

CSSS Sub Population	*Alt 1*	*Alt 2*	*Alt 3*	*Alt 4*	*FWO*
Northern A	10	10	10	10	6
Southern A	8	8	8	8	9
B	24	25	24	24	25
C	18	19	20	20	19
D	15	16	16	16	16
Northern E	19	19	19	19	24
Southern E	9	9	9	9	12
F	20	19	19	18	18

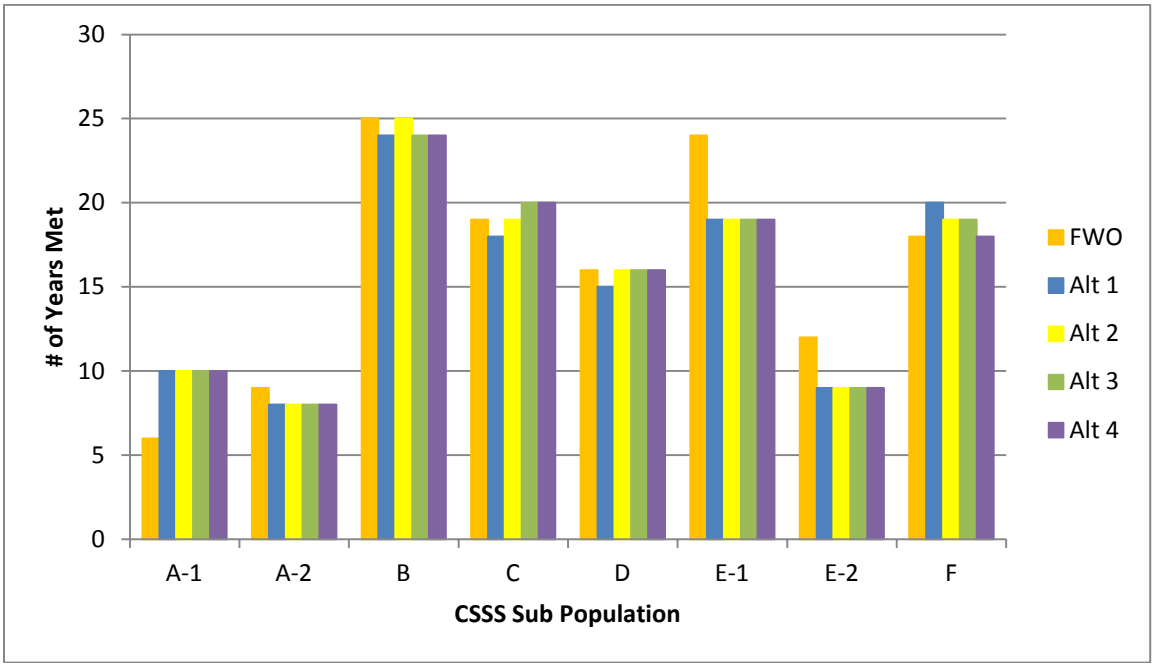

Figure C.2.1-24. Number of years out of the period of record that the hydroperiod was between 90 and 210 days (three to seven months) each year throughout sparrow habitat in order to maintain marl prairie vegetation.

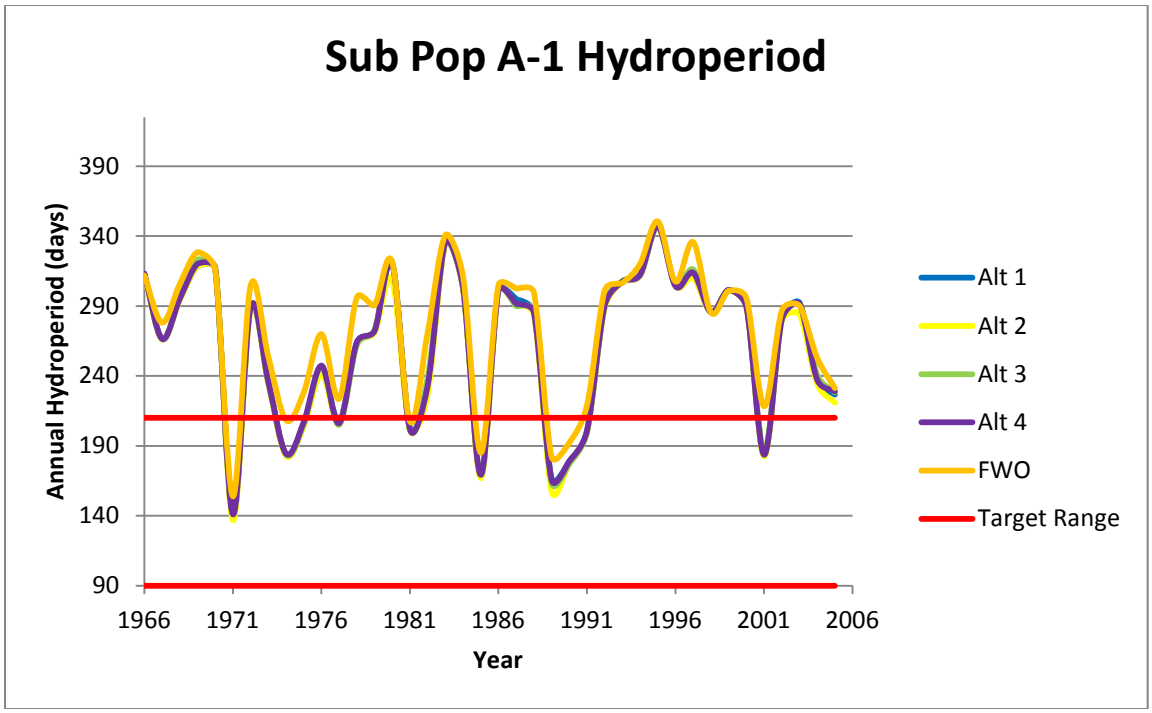

Figure C.2.1-25. Annual hydroperiod for the northern CSSS sub population A over the POR.

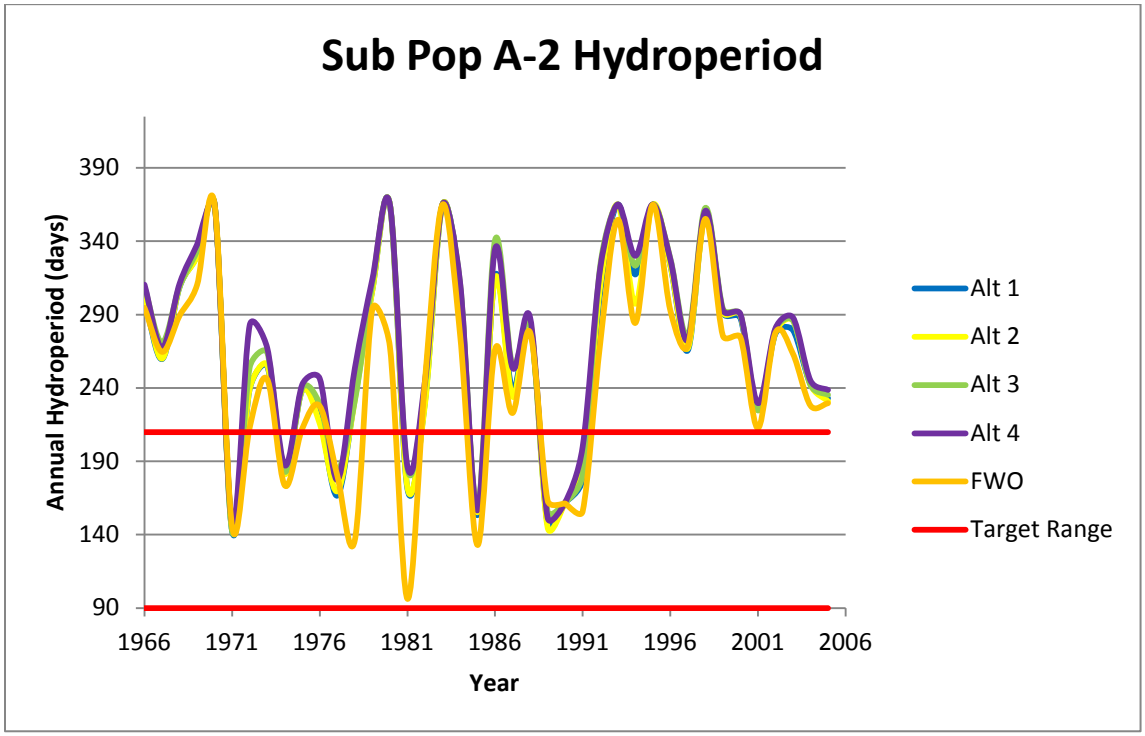

Figure C.2.1-26. Annual hydroperiod for the southern CSSS sub population A over the POR.

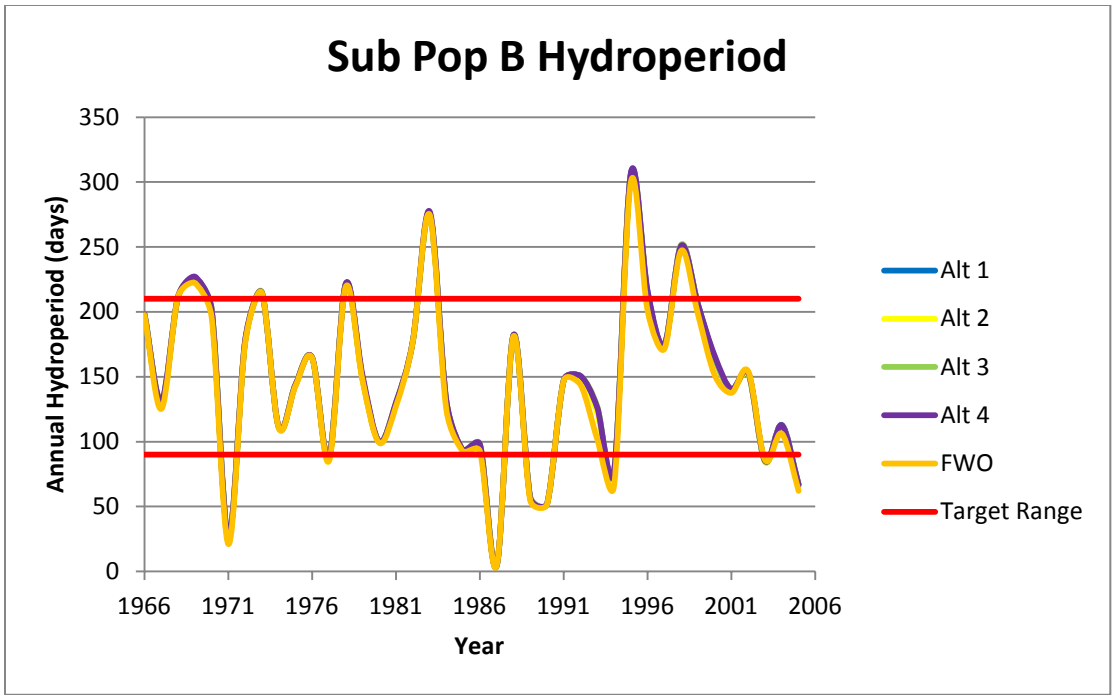

Figure C.2.1-27. Annual hydroperiod for the CSSS sub population B over the POR.

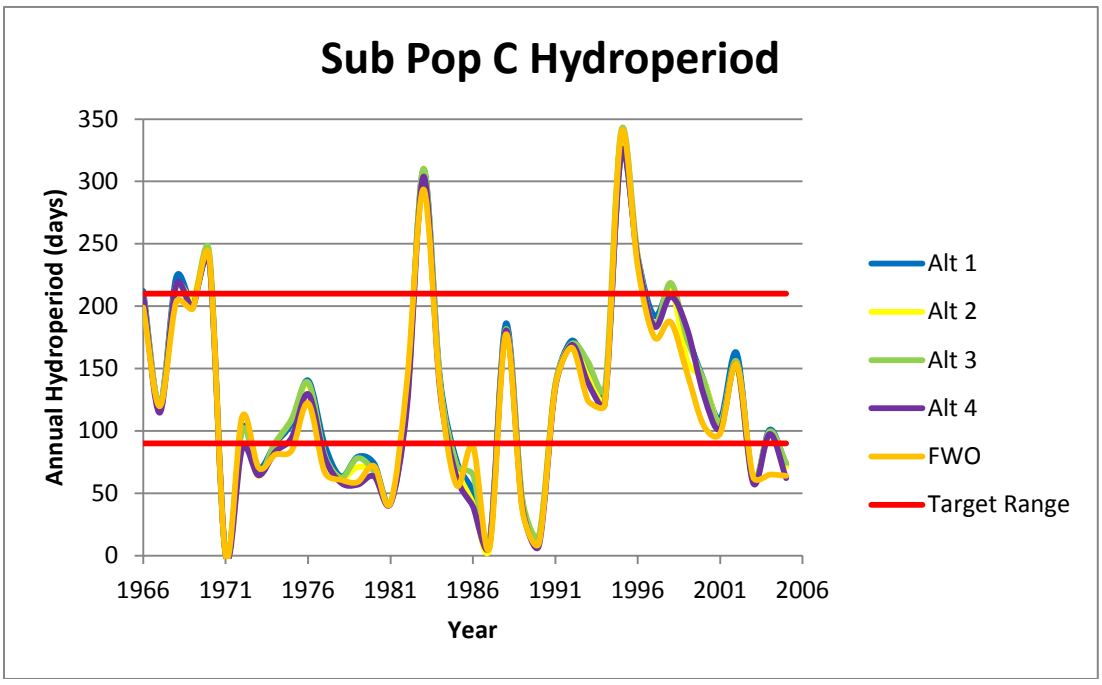

Figure C.2.1-28. Annual hydroperiod for the CSSS sub population C over the POR.

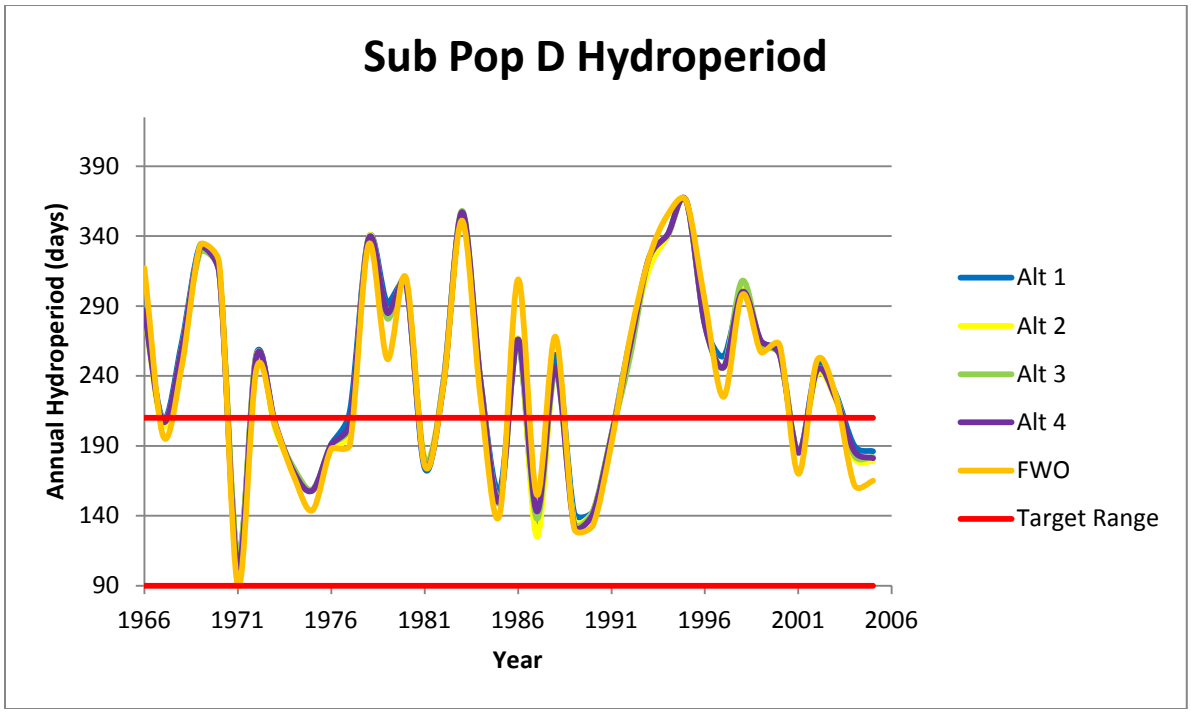

Figure C.2.1-29. Annual hydroperiod for the CSSS sub population D over the POR.

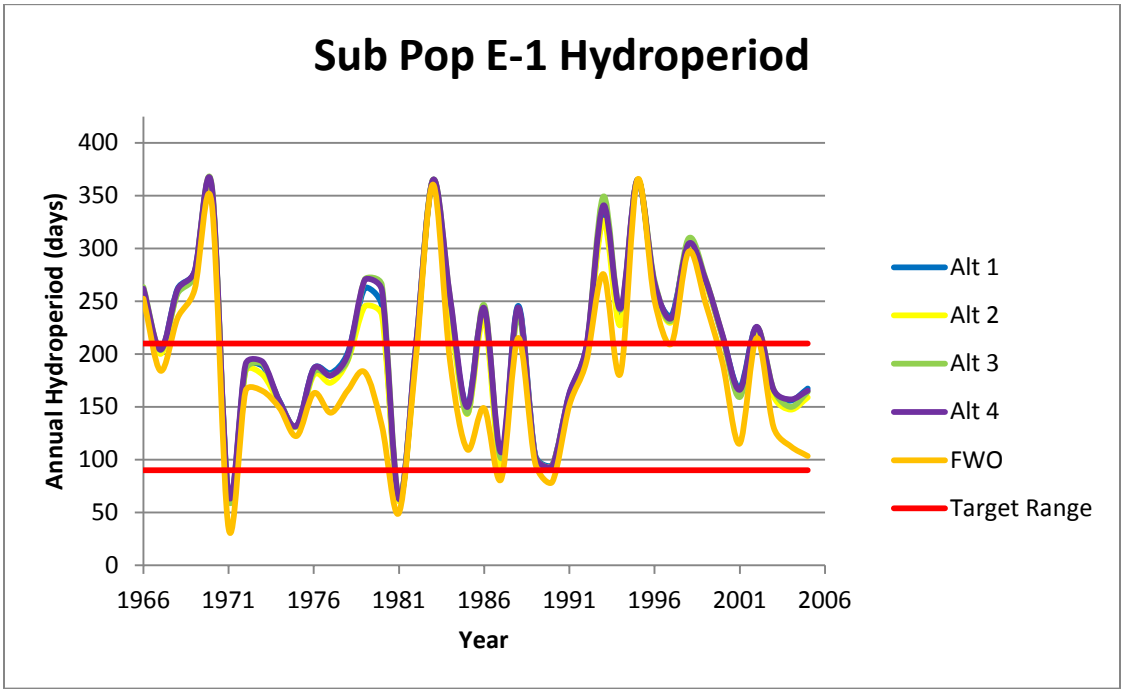

Figure C.2.1-30. Annual hydroperiod for the northern CSSS sub population E over the POR.

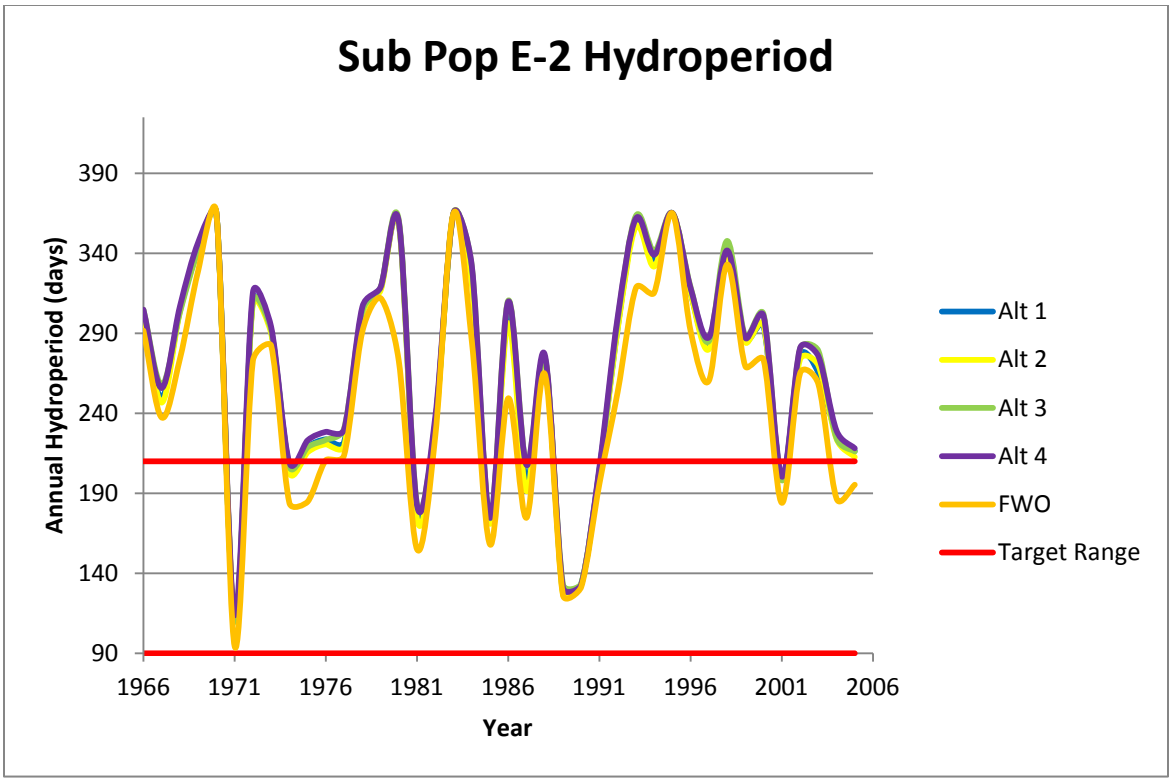

Figure C.2.1-31. Annual hydroperiod for the southern CSSS sub population E over the POR.

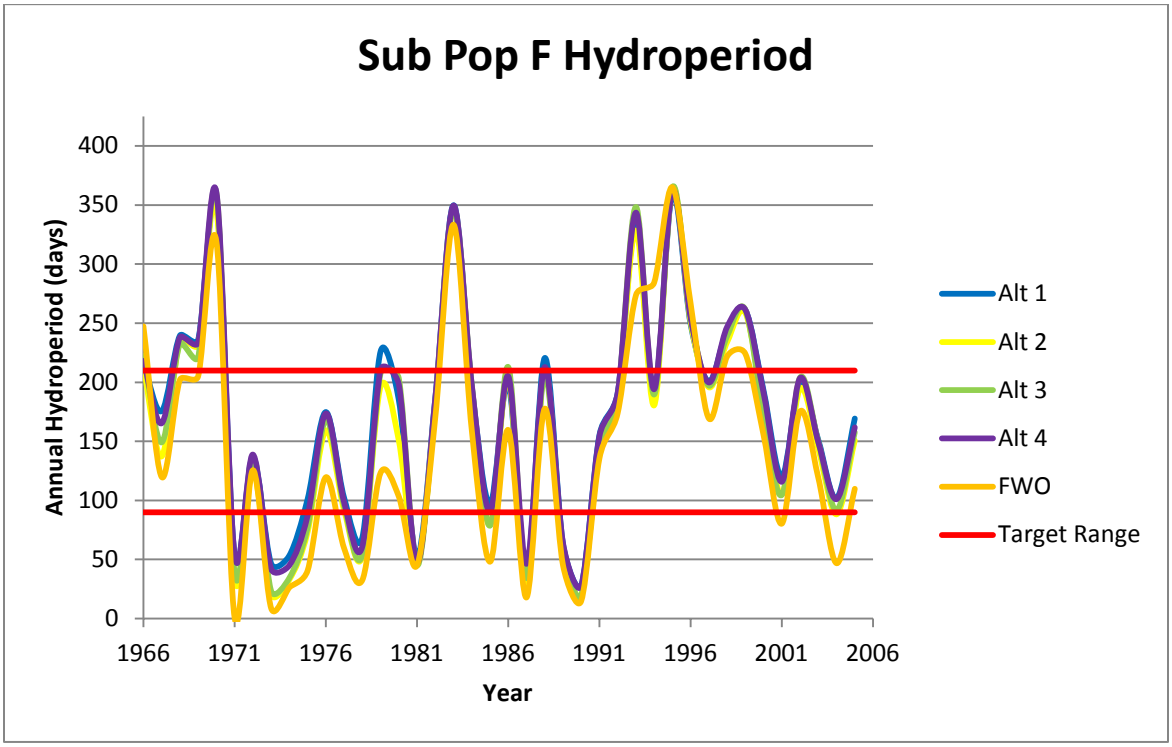

Figure C.2.1-32. Annual hydroperiod for the CSSS sub population F over the POR.

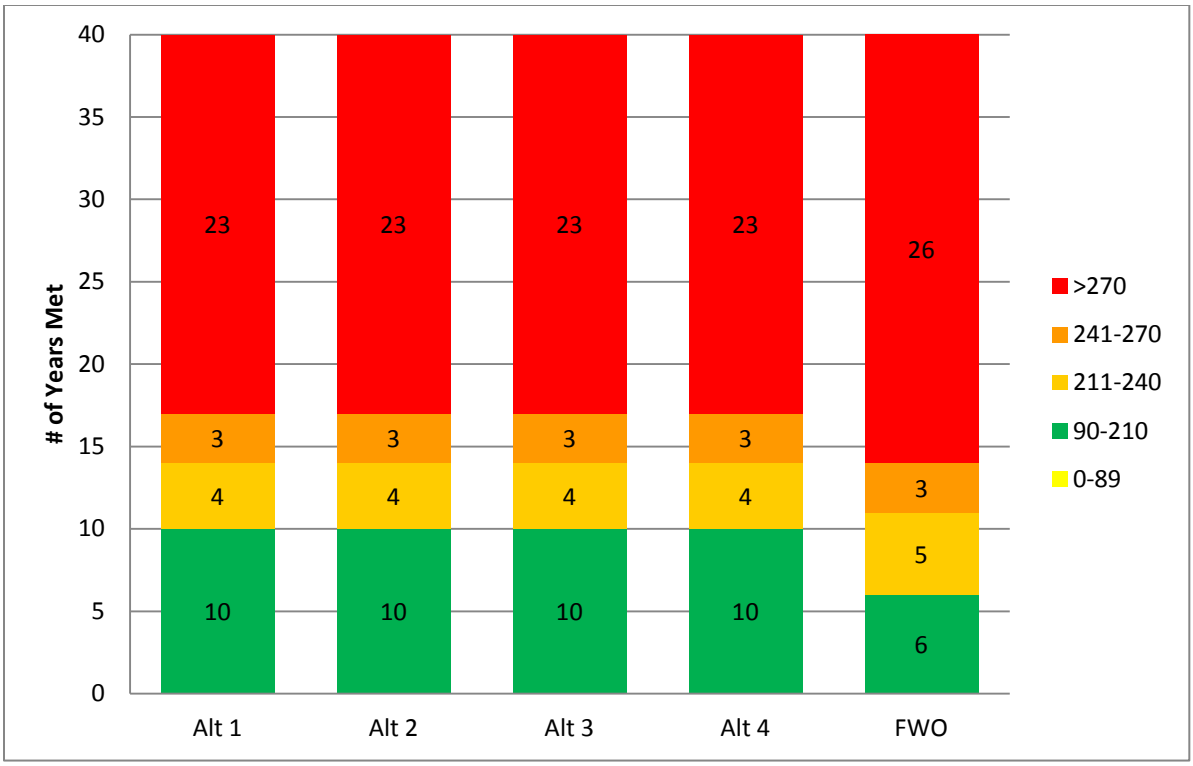

Figure C.2.1-33. Sub population A-1 hydroperiod.

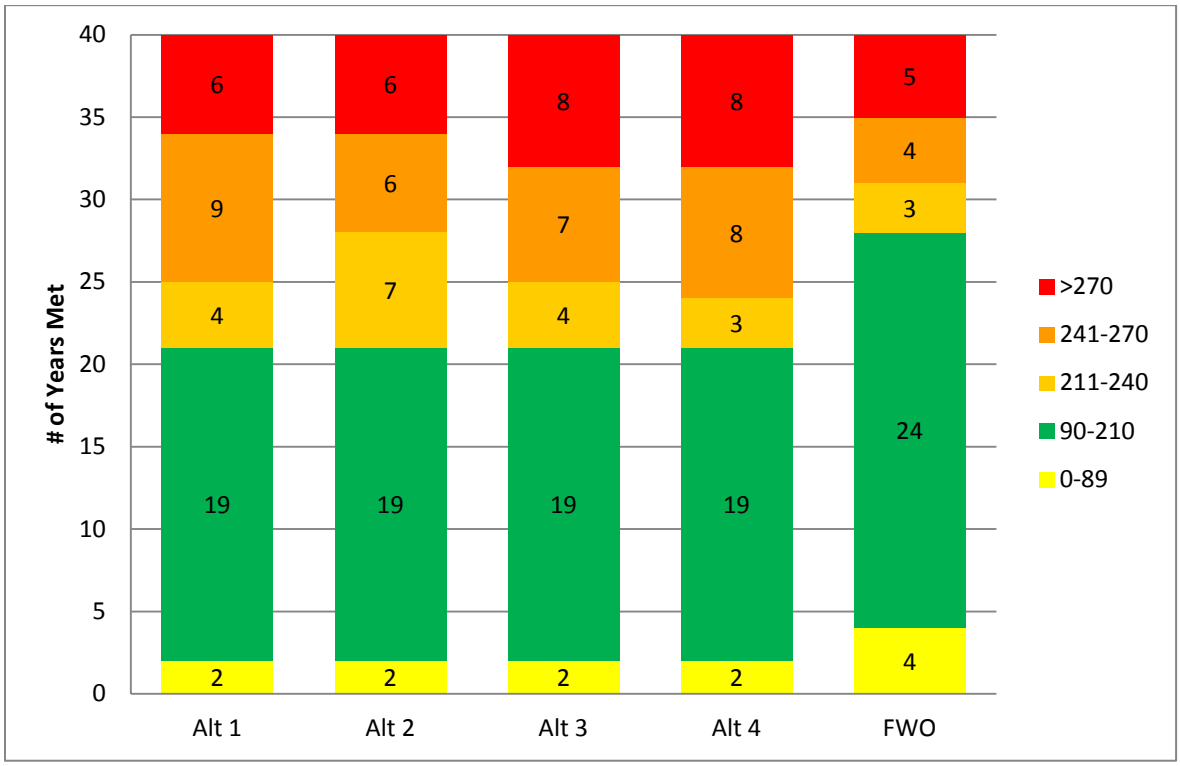

Figure C.2.1-34. Sub population E-1 hydroperiod.

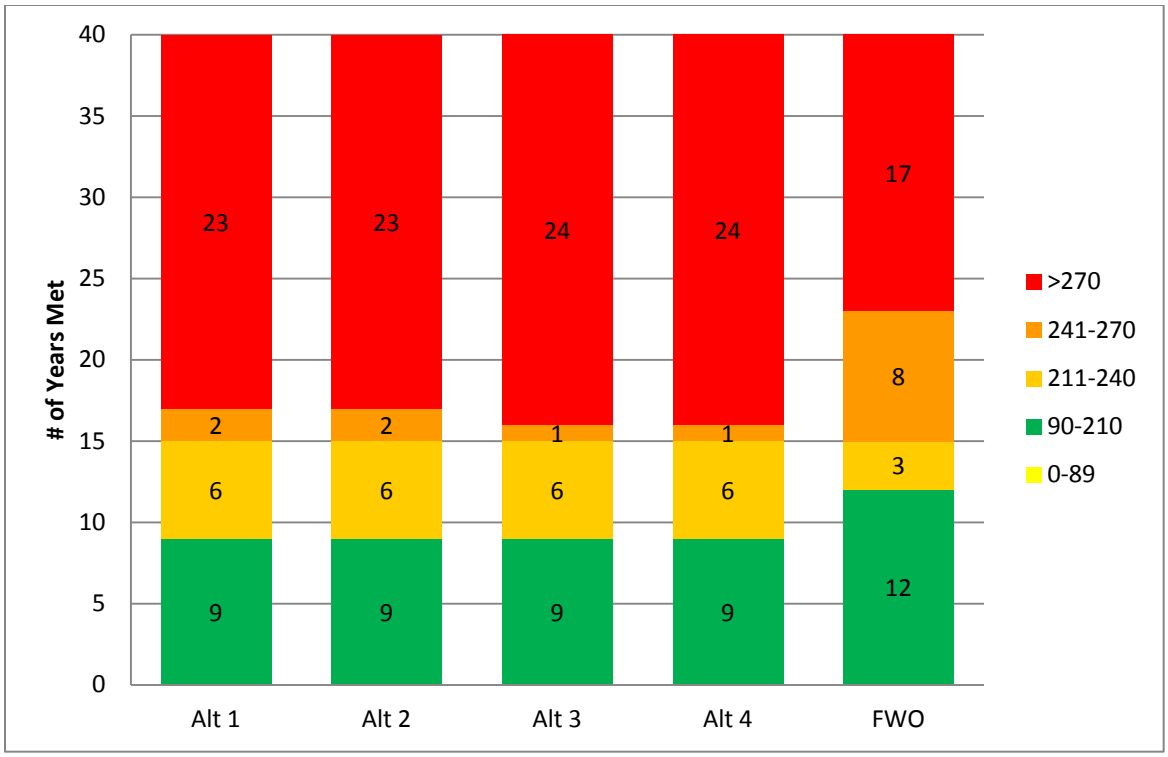

Figure C.2.1-35. Sub population E-2 hydroperiod.

In summary, implementation of any action alternative, with currently defined operations, has the potential to provide a major adverse affect and a significant and unavoidable effect on hydroperiods within the marl prairies adjacent to NESRS. Longer hydroperiods than the FWO are predicted within CSSS-E and southern portions of CSSS-A. Hydroperiods within northern CSSS-A are slightly reduced over the FWO, providing slightly better, but overall too wet conditions for marl prairie habitat and nesting CSSS. Alt 2 is slightly better performing overall, followed by Alts 1, 3, and 4. Nesting condition (or number of dry nesting days) proved to be a less sensitive metric than hydroperiod. Minor improvements were seen in northern CSSS-A and CSSS-F while performance was reduced in southern CSSS-A and E. Alternatives 1 and 2 were slightly better performing than Alts 3 or 4.

C.2.1.4.3 Wood Stork

Historically, the short hydroperiod wetlands within ENP have been important for wood stork foraging during the pre-breeding season with the storks shifting to longer hydroperiod wetlands as the dry season progresses. Hydrological patterns that produce a maximum number of patches with high prey availability (i.e. high water levels at the end of the wet season and low water levels at the end of the dry season) are necessary for high reproductive outputs (Gawlik 2002; Gawlik et al. 2004). Depending upon the elevation and microtopography throughout the WCAs and ENP, implementation of CEPP will produce a variety of wetland habitats that would support prey densities conducive to successful wading bird foraging and nesting.

Water depth and recession rate are the two most important hydrological variables for wood storks (Gawlik et al. 2004) and wading birds. In their analysis of habitat suitability, Gawlik et al. (2004) identified feeding sites where the weekly average water depths from November to April (pre-breeding and breeding season) were between 0.0 and 0.5 feet as the most suitable. Suitability drops to 0.0 when water depths are -0.3 feet below marsh surface or greater than 0.8 feet. Wood storks and other wading

birds require recession to condense their prey items into shallow pools for more effective foraging. It is recognized that areas of suitable foraging habitat will vary both within and between years due to microtopography, antecedent conditions, hydrological and meteorological conditions, and water management actions. It is anticipated that these provisions within CEPP will help to improve foraging conditions within WCA 3A and provide a direct benefit to the wood stork and other wading bird species. Implementation of all action alternatives would be expected to significantly improve conditions for wood storks throughout much of the Greater Everglades. Overall, Alts 3 and 4 perform the best in comparison with Alts 1 and 2.

Several models of wading birds were used to assess potential affects to wading birds within the Greater Everglades as a result of implementation of CEPP action alternatives including: 1) Wood Stork Foraging Probability Index model (South Florida Natural Resources Center 2013); 2) wading bird species distribution (Beerens 2013); and 3) wading bird nesting success (Beerens 2013). ERTP PMs are captured within the Beerens models.

An analysis of wood stork foraging potential was performed to predict improvements to foraging habitat with CEPP implementation (South Florida Natural Resources Center 2013b). The Wood Stork Foraging Probability Index (STORKI v. 1.0) was developed to provide rapid simulations of wood stork foraging conditions in response to modeled CERP scenarios (LoGalbo et al. 2012). The Wood Stork Foraging Probability Index indicates that northeastern WCA 3A and Miami Canal show the most substantial improvements to foraging habitat with all action alternatives performing between 70% to 130% better than FWO and providing moderate beneficial effects (**Figure C.2.1-36**). Improvements are also seen in northwestern WCA 3A, WCA 3B and southern ENP. Alternative 1 does not perform as well in northwestern WCA 3A as the other alternatives, portions of this area remain too wet during some portions of the breeding season. Alternatives 3 and 4 provided 50% to 68% more foraging habitat in WCA 3B and southern ENP respectively. However, in WCA 3B, Alt 2 appears to create conditions that are generally too wet for optimal foraging in most years. All action alternatives performed worse than the FWO in northern ENP (-85%) and WCA 3A South (up to -20%).

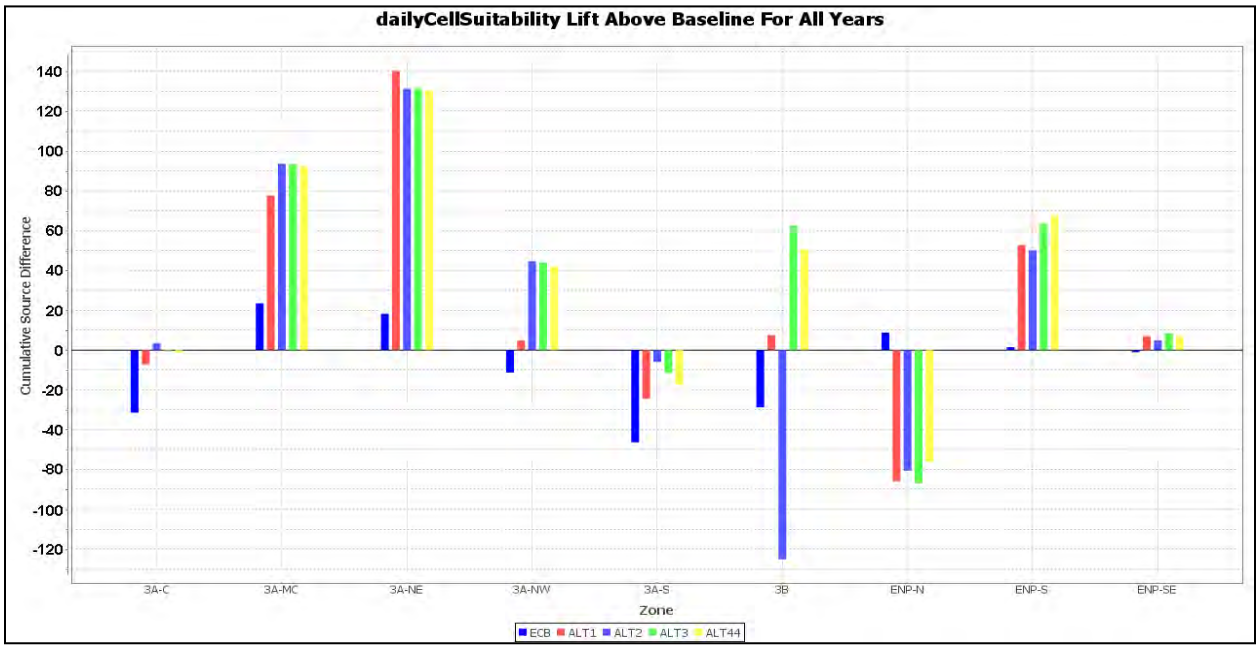

Figure C.2.1-36. Wood stork suitable habitat cumulative (1965-2005) lift above FWO for the action alternatives within each CEPP zone. A maximum score of 1327 is possible if FWO has a suitability score of 0.0 every week and the alternative has a suitability score of 1.0 every week of the 41 year hydrologic model runs. (South Florida Natural Resources Center 2013b)

The situation is less obvious than it appears in **Figure C.2.1-37** for northern ENP. **Figure C.2.1-38** illustrates weekly suitability scores for all the action alternatives at ENP N. FWO exhibits a wide fluctuation of suitability scores over the breeding season. The gravity-driven flowway of Alt 4 results in even larger score fluctuations. High scores are sometimes offset from FWO/ECB, and Alt 4 high foraging scores substantially exceed those of FWO or any of the other alternatives. Alternatives 1, 2, and 3, in contrast, moderate both the highs and lows and, in doing so, reduce the overall foraging suitability for wood stork, as is reflected in **Figure C.2.1-37**. **Figure C.2.1-38** is substantially misleading with respect to Alt 4. Rather than being less desirable than FWO, Alt 4 substantially improves habitat during appropriate parts of the season and reflects a more natural system dynamic over the entire season providing moderate beneficial effects. For comparison, **Figure C.2.1-39** plots the weekly time series of foraging suitability for the Miami Canal CEPP zone. Here, all of the action alternatives are in close agreement and generally, though not always, exceed FWO. (South Florida Natural Resources Center 2013b)

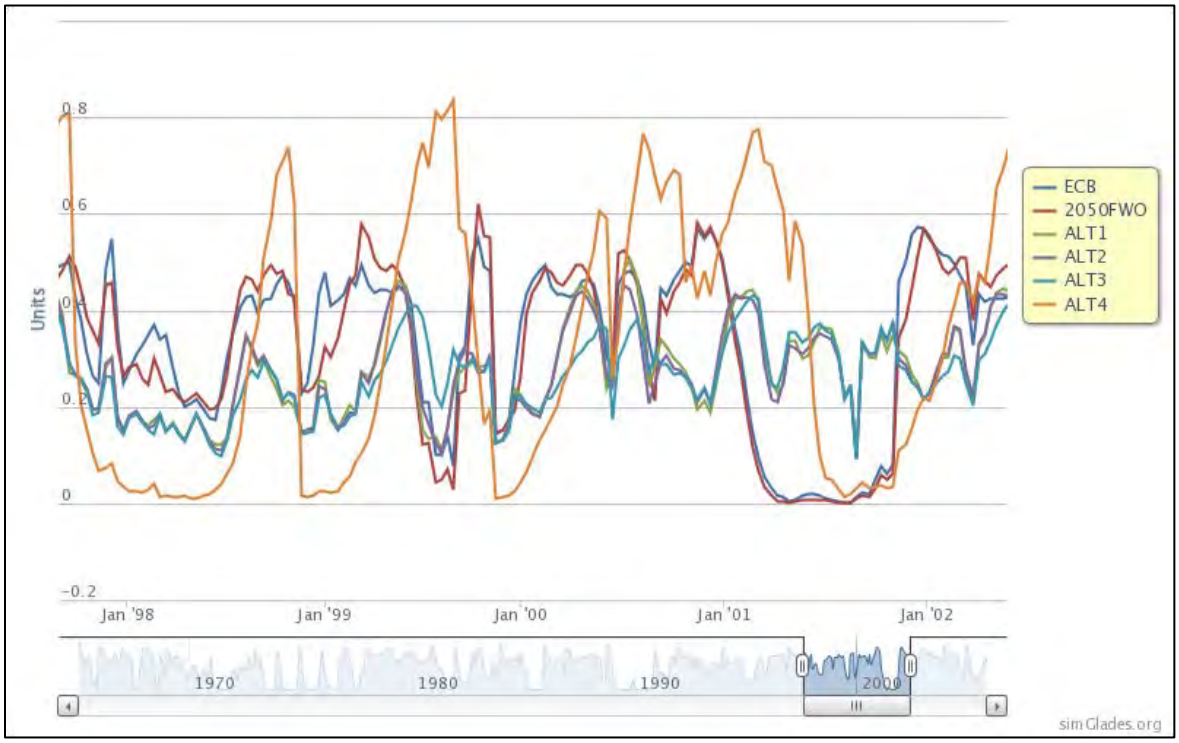

Figure C.2.1-37. Time series of wood stork foraging suitability scores at CEPP zone ENP-N. Scores vary from 0.0 (not suitable) to 1.0 (optimal foraging). To improve clarity, the plot focuses on an abridged time period between July 1997 and July 2002. Other time periods have similar relationships among the action alternatives. (South Florida Natural Resources Center 2013b)

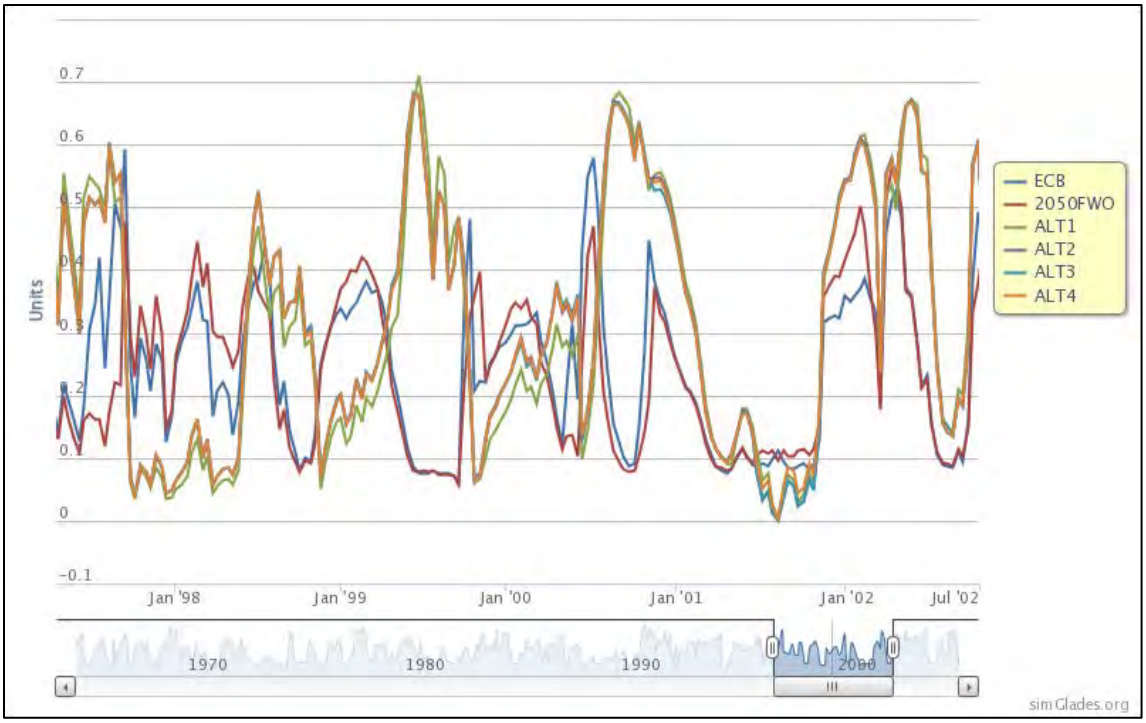

Figure C.2.1-38. Time series of wood stork foraging suitability scores at CEPP zone WCA3A-MC. (South Florida Natural Resources Center 2013b)

When scores are aggregated by WCA the trends are similar (**Figure C.2.1-39**), but lifts are compressed by aggregation over a larger area. **Figure C.2.1-39** includes the addition of WCA 2 and WCA 1 which are outside CEPP action area. WCA 2 has a small (1%) loss of forage suitability resulting from water being redirected from WCA 2 to WCA 3A. WCA 1 foraging suitability change is negligible (ENP 2013).

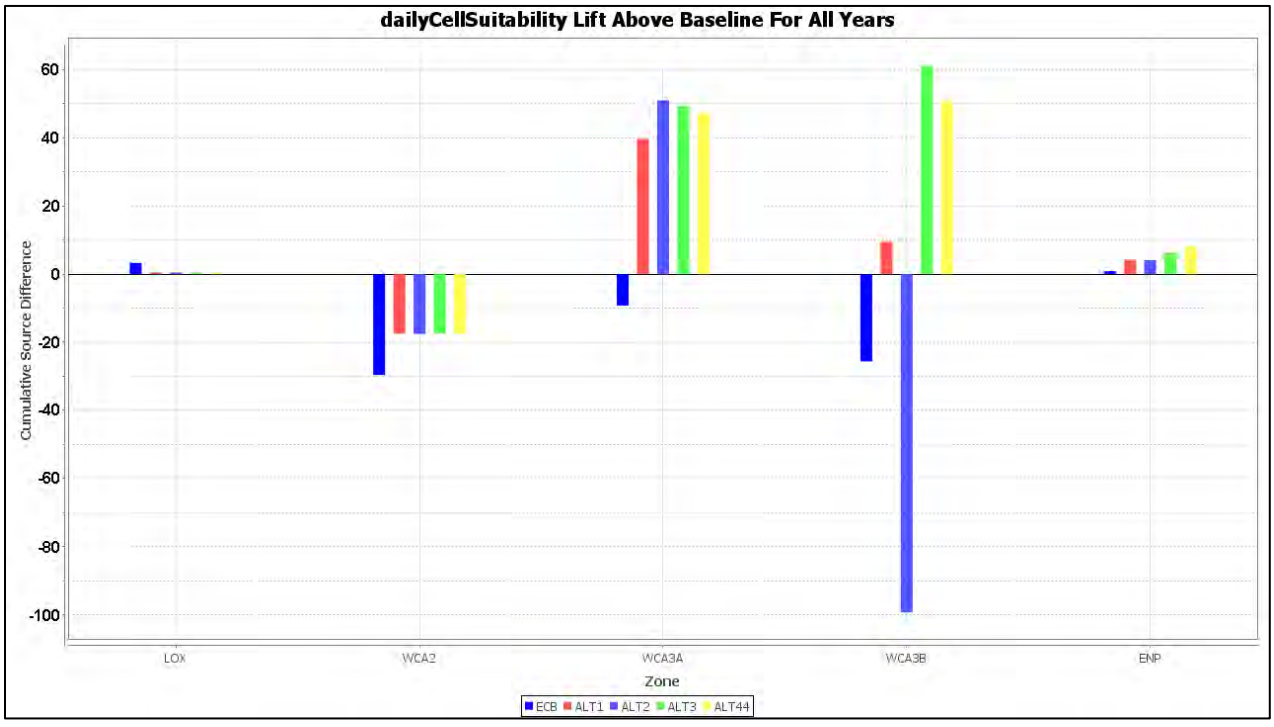

Figure C.2.1-39. Wood stork suitable habitat cumulative (1965-2005) lift above FWO for the action alternatives within each water conservation area (WCA) and ENP. (South Florida Natural Resources Center 2013b)

Wood stork, white ibis, and great egret species distribution were modeled by Beerens et al. 2013 in support of the RECOVER Greater Everglades ecological evaluation. Wood storks generally showed increased numbers in northern WCA 3A and southern ENP for the four action alternatives compared to the FWO. White ibis numbers were also greater in northern WCA 3A and southern ENP, but also in part of central WCA 3A for all action alternatives. The great egret model showed improvements in northern WCA 3A, southern ENP, Central WCA 3A, and WCA 3B, but also indicated reductions in presence in northern ENP.

The wading bird nesting models predict the number of nests for the wood stork, white ibis, and great egret species (Beerens 2013). All four action alternatives generally performed better for great egret, white ibis, and wood stork nesting than FWO providing moderate beneficial effects. In the northern Everglades each alternative showed fewer nests than FWO for white ibis and wood storks, but more nests than FWO for egrets. However, in the southern Everglades, the action alternatives performed better than FWO. The Great Egret nesting model showed the biggest benefit in raw numbers of nests but the Wood Stork model showed a more significant benefit relative to its population size (Beerens 2013). This pattern of better wading bird nesting in the southern Everglades than northern Everglades is not unexpected and is consistent with the prediction that nesting trends in a restored Everglades would increase in the coastal zone, rather than system wide (RECOVER 2009). In the southern Everglades, Alt 3 performed best for white ibis and great egret, whereas Alts 1 and 2 performed best for wood storks.

As compared with FWO, all CEPP action alternatives reveal the potential for significant, short-term negative effects to aquatic vegetation within Lake Okeechobee due to higher than preferred lake stages. As a result, temporary reductions in foraging habitat for shorebirds and short-legged wading birds could occur. However, these multiple day events in which Lake Okeechobee stage exceeded 15.0 feet NGVD occurred approximately 5% of the POR.

C.2.1.4.4 Eastern Indigo Snake

The Eastern indigo snake is the largest native non-venomous snake in North America. It is an isolated subspecies occurring in southeastern Georgia and throughout peninsular Florida. The Eastern indigo snake prefers drier habitats, but may be found in a variety of habitats from xeric sandhills, to cabbage palm hammocks, to hydric hardwood hammocks (Schaefer and Junkin 1990). Eastern indigo snakes need relatively large areas of undeveloped land to maintain their population. The main reason for its decline is habitat loss due to development. Further, as habitats become fragmented by roads, Eastern indigo snakes become increasingly vulnerable to highway mortality as they travel through their large territories (Schaefer and Junkin 1990).

In south Florida, the Eastern indigo snake is thought to be widely distributed. Given their preference for upland habitats, Eastern indigo snakes are not commonly found in great numbers in the wetland complexes of the Everglades region, even though they are found in pinelands, tropical hardwood hammocks, and mangrove forests in extreme south Florida (Duellman and Schwartz 1958; Steiner et al. 1983).

One of the CEPP project features in all action alternatives is a FEB in A-2. This would convert approximately 14,000 acres of former agricultural land to a wetland functioning area. The proposed A-2 FEB consists almost exclusively of drained marsh that has been converted to agriculture. Currently, the

main crop is sugar cane, although rice has also been observed in some fields. A few areas have become overgrown with exotic Brazilian pepper, willow, dog fennel, and grasses including invasive exotic Napier grass. Only two soil types occur in the project area: Pahokee Muck and Lauderhill Muck (NRCS 2012). Both types consist of very poorly drained organic materials that commonly occur in broad freshwater marshes. These soil types indicate hydric soils/wetland areas, which was originally in place prior to human actions. One of the CEPP goals is to help restore lands back to a more natural condition, which in the FEB area, would be considered wetlands.

No natural standing water features are present in the A-2 FEB project area. Natural sloughs and channels are evident in aerial photographs from the 1940s as well as those taken as recently as 2012. These natural sloughs and channels are much drier due to drainage changes, but are the first areas to be inundated during rains. Man-made drainage features such as ditches and narrow canals traverse the A-2 FEB and are continually being modified and created in response to agricultural needs.

Since Eastern indigo snakes occur primarily in upland areas, their presence within the Greater Everglades portion of the project area is somewhat limited. The hydrologic effects of the proposed project are expected to benefit existing or historic wetlands. Once the Miami Canal is backfilled, created tree islands will be constructed, which would potentially provide habitat for the indigo snakes, perhaps offsetting the increased hydroperiods within WCA 3. In addition, improvements to mangrove communities adjacent to Florida Bay may also benefit Eastern indigo snakes within those areas. However, eastern indigo snakes have a high probability of occurrence within the proposed A-2 FEB site and as a result of construction of the A-2 FEB are likely to be displaced, thereby removing approximately 14,000 acres of potential habitat and having a significant and unavoidable major adverse effect.

C.2.1.4.5 Florida Manatee

The federally endangered Florida manatee is a large, plant-eating aquatic mammal that can be found in the shallow coastal waters, rivers, and springs of Florida. Florida manatees live in freshwater, brackish, and marine habitats, and can move freely between salinity extremes. Florida manatees have been observed in conveyance canals within the action area, specifically in the lower C-111 Canal just downstream of S-197; and adjacent nearshore seagrass beds throughout Florida Bay including all waters of Card, Barnes, Blackwater, Little Blackwater, Manatee and Buttonwood sounds. The extensive acreages of seagrass beds in the bay provide important feeding areas for Florida manatees. Decreased salinities within the Northern Estuaries that reduce stress on SAV and promote increases in seagrass shoots have the potential to increase foraging opportunities for manatees in this region and provide a minor beneficial effect. Similarly, increased freshwater flows to Florida Bay and the southwestern coastal estuaries resulting in lowered salinity levels that better encompass seagrass salinity tolerance ranges would also increase foraging opportunities for manatees and provide a minor beneficial effect. Alternative 4 provides the greatest benefit, followed by Alts 3, 1 and 2 (refer to **Section C.2.1.3.5.2, Seagrass Beds** for further information).

Florida manatees also depend upon canals as a source of freshwater and resting sites. It is highly likely that Florida manatees also depend on the deep canals as a cold-weather refuge. The relatively deep waters of the canals respond more slowly to temperature fluctuations at the air/water interface than the shallow bay waters. Thus, the canal waters remain warmer than open bay waters during the passage of winter cold fronts. **Figure C.2.1-40** illustrates canals that Florida manatees have access to within CEPP action area. All CEPP action alternatives include backfilling of portions of the Miami Canal north of Interstate 75. Although **Figure C.2.1-40** shows that manatees can access portions of the Miami Canal, backfilling as described under CEPP is not likely to adversely affect manatees.

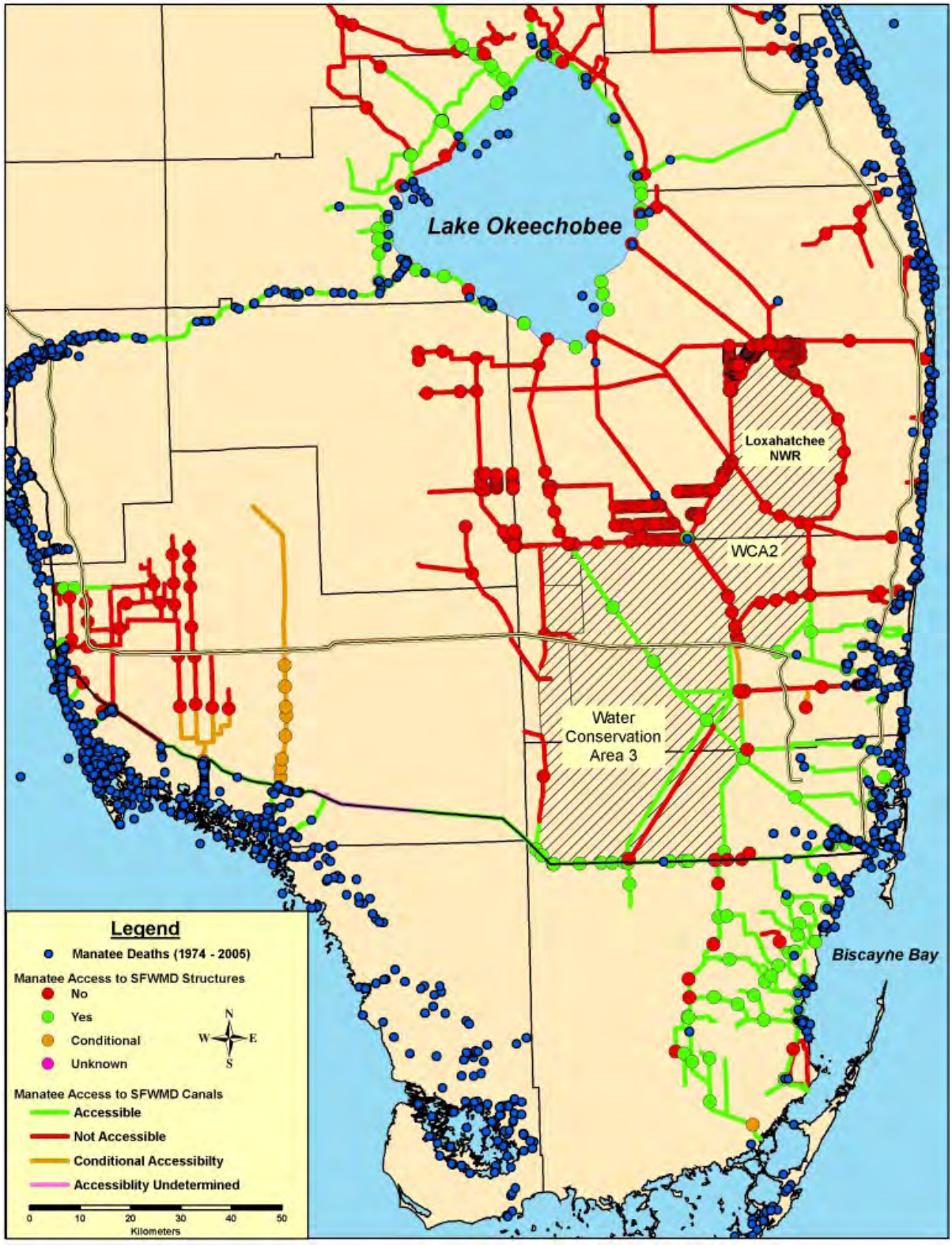

Figure C.2.1-40: Canals that Florida manatee have access to within CEPP action area.

C.2.1.4.6 Florida Panther

The federally endangered Florida panther (*Puma concolor cory)* was once the most widely distributed mammal (other than humans) in North and South America, but it is now virtually exterminated in the eastern United States. Habitat loss has driven the subspecies known as the Florida panther into a small area, where the few remaining animals are highly inbred, causing such genetic flaws as heart defects and sterility. Recently, closely-related panthers from Texas were released in Florida and are successfully breeding with the Florida panthers. Increased genetic variation and protection of habitat may save the subspecies. Florida panthers presently inhabit lands in ENP adjacent to the Southern Glades, and radio tracking studies have shown that they venture into the Southern Glades on occasion during post-breeding dispersion. Reference is made to the revised Panther Key and Panther Focus Area Map for use in determining effects to the Florida panther.

All action alternatives have the potential to have a minor adverse effect on both the Primary and Secondary Zones for Florida panther habitat. Construction of the 14,000 acre FEB within the A-2 parcel in EAA would result in conversion of upland habitat that could be potentially used by Florida panther to transverse the area to wetland habitat, thereby eliminating potential habitat within the panther secondary zone in this region.

Since potentially suitable habitat occurs within the action area, increased water deliveries under all CEPP action alternatives to ENP could affect Florida panther habitat, with the greatest potential affects viewed under Alts 4 and 3. However, as lands within CEPP action area become restored to their more historic natural values, the concomitant improved prey base would result in greater use by the Florida panther utilizing these areas. Based on this information, and the fact that the Florida panther is a wide-ranging species with the majority of sightings west of the action area, the proposed action may affect the Florida panther.

C.2.1.4.7 American Alligator

A keystone species within the Everglades ecosystem, the American alligator (*Alligator mississippiensis*) is dependent on spatial and temporal patterns of water fluctuations that affect courtship and mating, nesting, and habitat use (Brandt and Mazzotti 2000). Historically, American alligators were most abundant in the peripheral Everglades marshes and freshwater mangrove habitats, but are now most abundant in canals and the deeper slough habitats of the central Everglades. Water management practices including drainage of peripheral wetlands and increasing salinity in mangrove wetlands as a result of decreased freshwater flows has limited occurrence of American alligators in these habitats (Craighead 1968, Kushlan 1990, Mazzotti and Brandt 1994). A HSI for alligators was employed to predict potential effects of implementation of CEPP action alternatives. The HSI measures habitat suitability annually for five components of alligator production: (1) land cover suitability, (2) breeding potential (female growth and survival from April 16 of the previous year - April 15 of the current year), (3) courtship and mating (April 16 – May 31), (4) nest building (June 15 – July 15), and egg incubation (nest flooding from July 01 – September 15). (South Florida Natural Resources Center 2013a).

Results indicate that all CEPP action alternatives improve alligator habitat suitability as compared with FWO and provide a minor beneficial effect. Although the greatest improvements were seen in WCA3A with Alt 1, the results were not significantly different from those provided by Alts 4, 2 and 3 respectively. The greatest increase in benefits for all action alternatives as compared with FWO is visible within northern WCA 3A (CEPP Zones 3A-MC, 3A-NE and 3A-NW). All of the alternative plans improve alligator habitat by as much as 20% (**Figure C.2.1-41**) due to additional water deliveries within this region. In northwestern WCA 3A, Alt 1 provided the greatest increase in habitat suitability as compared with Alts

2, 3 and 4, which is likely due to the location of the western spreader canal concentrating flow within that region. Gains are smaller in central WCA 3A, WCA 3B, and northern ENP with modest variations in which alternative best improves scores (**Figure C.2.1-42**). Changes within southern WCA 3A and south-eastern ENP are negligible and less than significant. In southern WCA 3A, Alt 1 performed best overall with a decline in habitat suitability viewed for Alt 3 as compared with FWO. In contrast, in WCA 3B, the greatest improvements over FWO were viewed in order of greatest improvement with Alt 3, 2, 1 and 4. Within ENP, Alts 4 and 3 provided the greatest benefit, respectively, as compared with Alts 2 and 1 which showed similar results. In summary, increasing freshwater flow through the Greater Everglades into ENP under all CEPP action alternatives would provide increased benefits to alligators within these habitats in comparison with FWO. (South Florida Natural Resources Center 2013a)

Major, significant and unavoidable adverse effects to alligators that utilize the Miami Canal would occur under all of the CEPP action alternatives due to backfilling of the Miami Canal. However, these effects are expected to be short-term as alligators will expand into other areas of suitable habitat created as a result of CEPP implementation. Alternatives 1 would provide the least impact to alligators within the Miami Canal due to lesser extent of backfill.

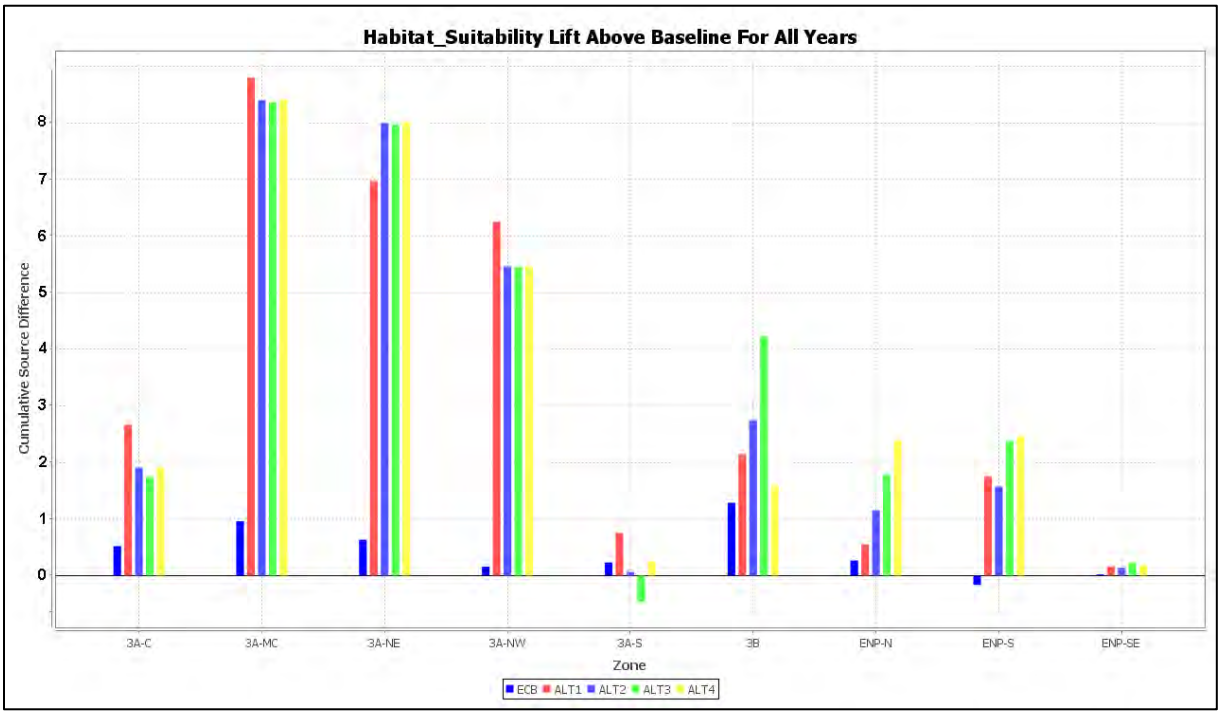

Figure C.2.1-41. Alligator suitable habitat cumulative (1965-2005) lift above FWO for the action alternatives within each CEPP zone. A maximum score of 41 is possible if FWO has a suitability score of 0.0 every year and the alternative has a suitability score of 1.0 every year. (South Florida Natural Resources Center 2013a)

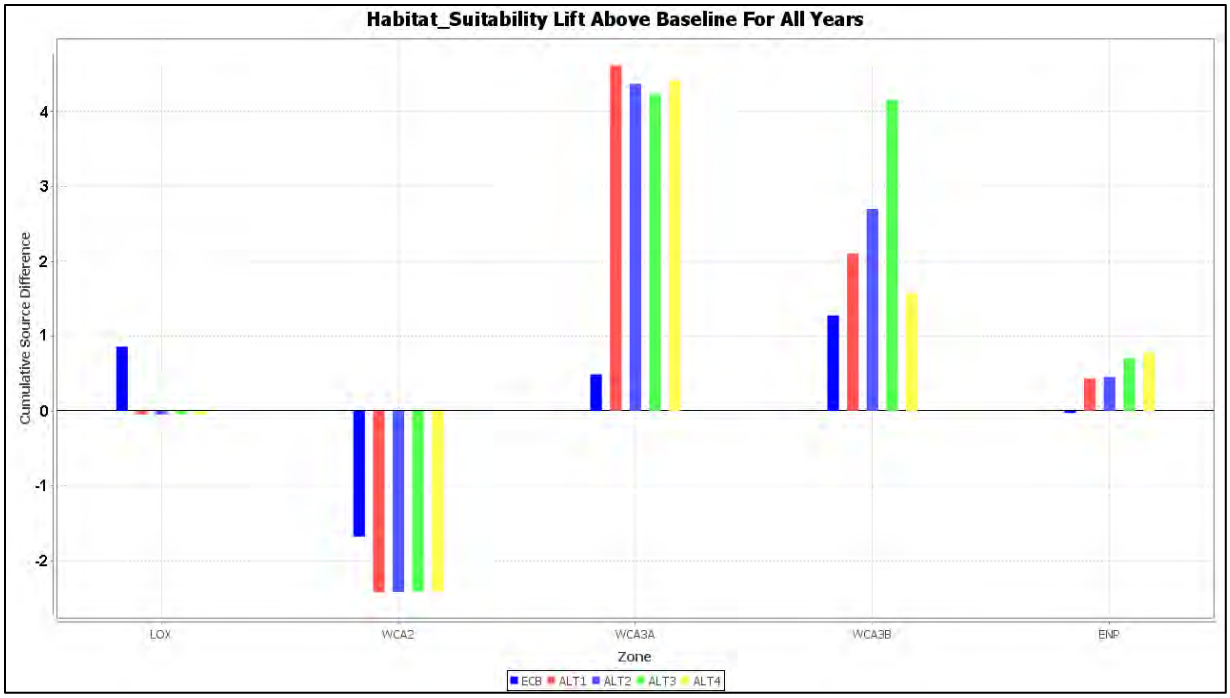

Figure C.2.1-42. Alligator suitable habitat cumulative (1965-2005) lift above FWO for the action alternatives within each water conservation area (WCA). (South Florida Natural Resources Center 2013a)

C.2.1.4.8 American Crocodile

A HSI for juvenile American crocodiles (*Crocodylus acutus*) was employed to predict potential effects of implementation of CEPP Alts 1-4 (Brandt 2013). The crocodile growth and survival index used in this analysis is one of the components of a crocodile HSI that characterizes suitable habitat for crocodiles based on habitat, location of known nest sites, salinity, and prey biomass. The growth and survival index is calculated for August through December, the period following hatching when hatchlings are most vulnerable to high salinities (Moler 1992; Mazzotti 1999; Mazzotti et al. 2007). For this analysis, data from salinity monitoring stations at Joe Bay, Trout Cove, Little Madeira Bay (the stations among the available stations closest to where the highest densities of crocodile nests are) and Long Sound, Little Blackwater Sound, Terrapin Bay and Garfield Bight (generally closer to shoreline stations in areas where crocodiles could occur) are used as input to HSI. Each day between August 1 through December 31 is assigned a score based on the following salinity ranges: salinity <20 psu was assigned the highest score of 1 because salinity in this range is considered most favorable for juvenile crocodile growth and survival (Moler 1992; Mazzotti 1999; Mazzotti et al. 2007); salinity $\geq$ 20 and <30 psu was assigned a score of 0.6; $\geq$30 and <40 psu was assigned a score of 0.3, and >40 psu a score of 0. Average yearly and an average overall score were calculated.

Results from applying the salinity data into the juvenile crocodile HSI is shown in **Figure C.2.1-43.** The plot shows the lift (Alternative minus FWO) of an index of juvenile crocodile growth and survival at sites along the northern Florida Bay shoreline for all years of the model runs. Sites in the orange box historically have had the most crocodile nesting. For the four sites with the highest predicted growth and survival, Alt 4 appears to perform better than the other alternatives. However, the difference in performance between alternatives is very subtle. For example, the maximum difference between Alt 4 and Alt 2 occurred in Terrapin Bay and is only about 0.02 units of the 0-1 scale index. Also, determination of any statistical significance between action alternatives is not possible. Not

surprisingly, the ranking of action alternatives follows the salinity performance measure ranking (Alt 4>Alt 3>Alt 1>Alt 2) because salinity is the only driver for HSI. Note that for the three locations that have the lowest crocodile HSI performance, there is almost no difference between alternatives, with Alts 3 and 4 performing nearly identically.

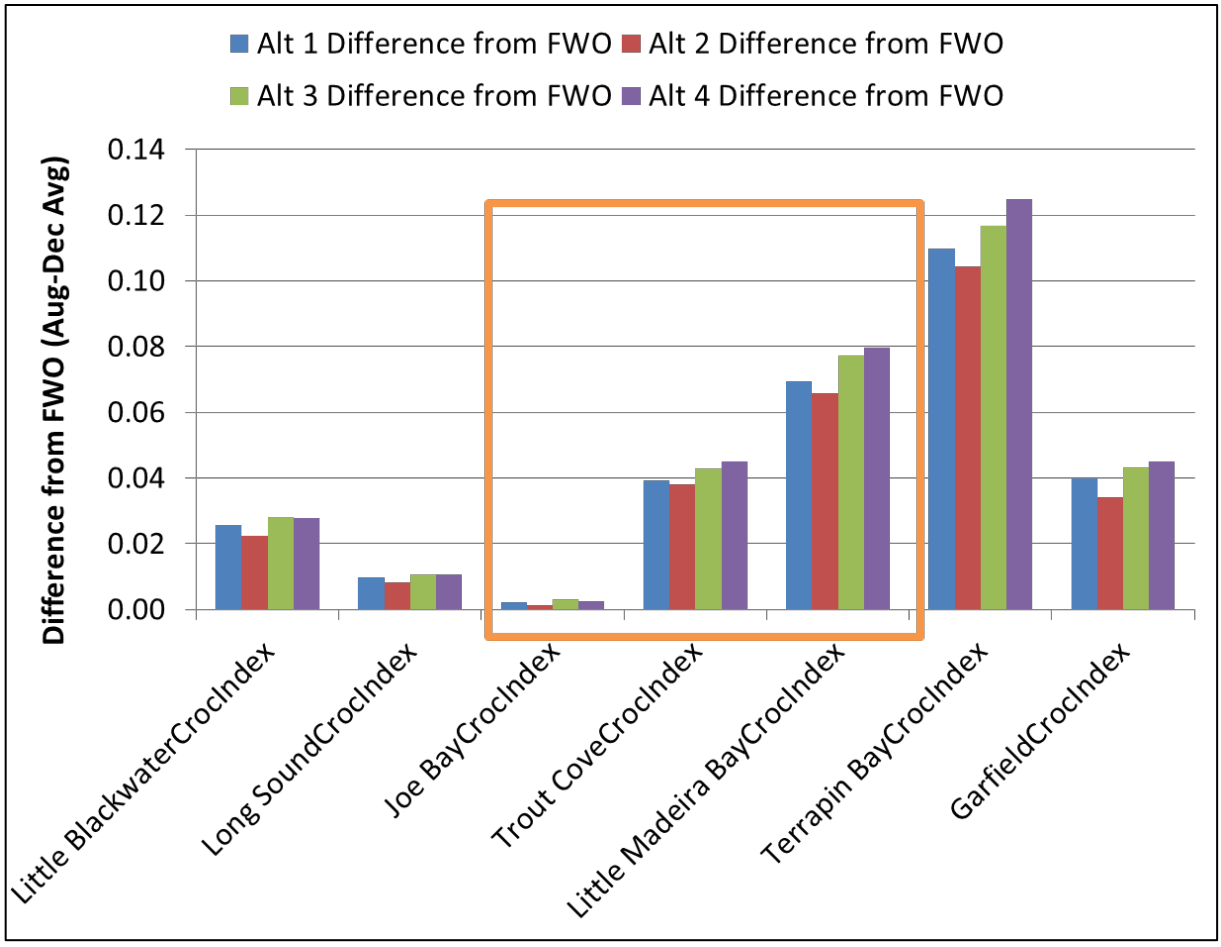

Figure C.2.1-43. Histogram showing the results of the juvenile crocodile HSI for 7 locations of known crocodile nesting areas. Index values show lift provided by action alternatives compared to FWO. (Brandt 2013)

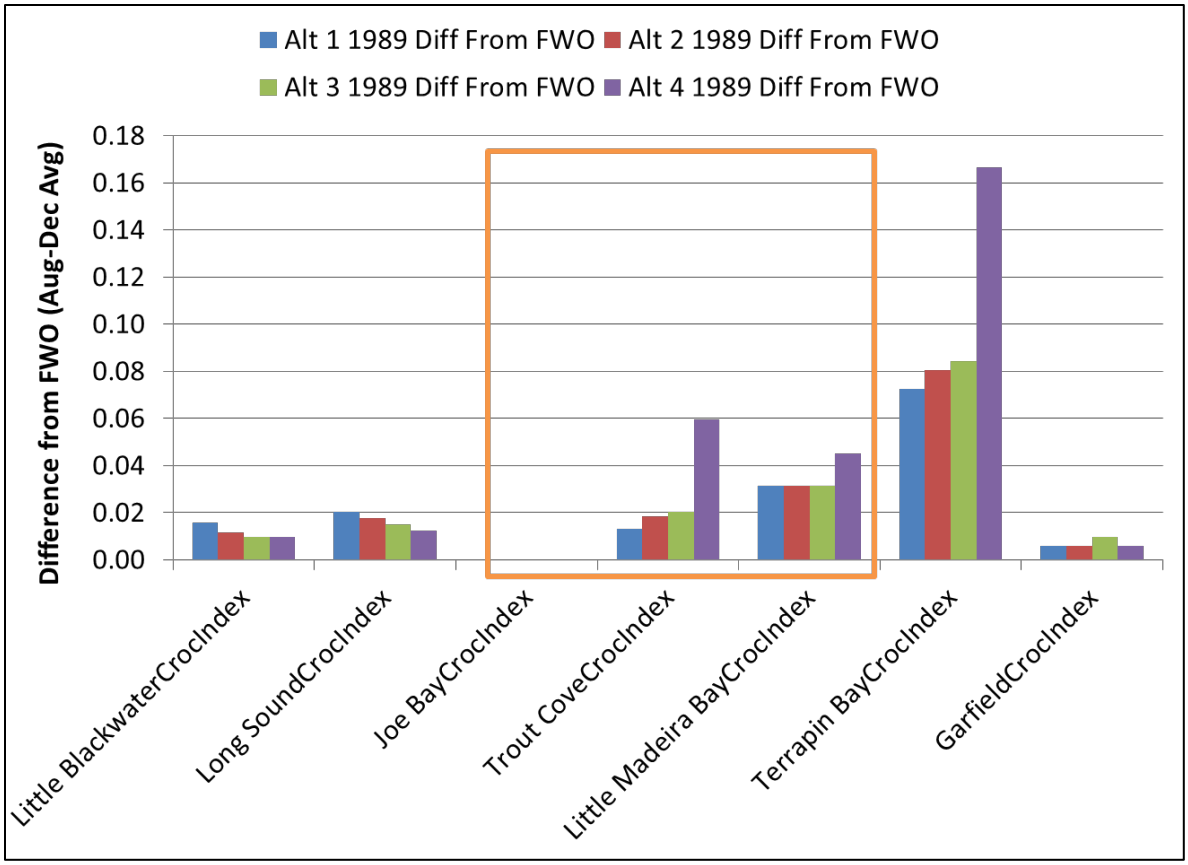

Figure C.2.1-44. Histogram showing the results of the juvenile crocodile HSI for 7 locations of known crocodile nesting areas during 1989 (very dry year). Index values show lift provided by action alternatives compared to FWO. (Brandt 2013)

Results of the juvenile crocodile HSI performance for an extremely dry (1989) year are shown in **Figure C.2.1-44**. For the three highest performing locations (Trout Cove, Little Madiera Bay, and Terrapin Bay), Alt 4 performed noticeably better than the other three alternatives. However, determination of any statistical significance between action alternatives is not possible. At sites with very low lift values (<0.02), differences between action alternatives was minimal (Brandt 2013). All action alternatives provide minor beneficial effects.

C.2.1.4.9 Smalltooth Sawfish

Implementation of the proposed project, the smalltooth sawfish may benefit from increased freshwater flows into the coastal wetlands adjoining Florida Bay, which would provide more natural and historic overland flows. All action alternatives have the potential to benefit the smalltooth sawfish by reducing excessive freshwater flows and improving the salinity regime throughout the Caloosahatchee estuary; and by increasing freshwater flows into the coastal wetlands adjoining Florida Bay, subsequently reducing the duration and occurrence of hypersaline conditions and provide minor beneficial effects.

Discharging large volumes of freshwater from Lake Okeechobee to the Caloosahatchee River during the wet season significantly reduces salinities and increases nutrient loading; all of which has a profound adverse effect on estuarine flora and fauna. As a result, the smalltooth sawfish may benefit from the

project's ability to reduce excessive freshwater flows by improving the salinity regime throughout the Caloosahatchee estuary.

C.2.1.4.10 Green Sea Turtle

The green sea turtle weighs approximately 150 kilograms and lives in tropical and sub-tropical waters. Areas that are known as important feeding areas for the green turtles in Florida include the Indian River Lagoon, the Florida Keys, Florida Bay, Homosassa, Crystal River and Cedar Key. Green turtles occupy three habitat types: high energy oceanic beaches, convergence zones in the pelagic habitat, and benthic feeding grounds in the relatively shallow, protected waters. Females deposit eggs on high energy beaches, usually on islands, where a deep nest cavity can be dug above the high water line. Hatchlings leave the beach and move in the open ocean. Green sea turtles forage in pastures of seagrasses and/or algae, but small green turtles can also be found over coral reefs, worm reefs, and rocky bottoms.

Although green sea turtles are expected to be found foraging in nearshore seagrass habitats within Florida Bay, the increased freshwater flows associated with all action alternatives may alter seagrass species composition but should have a negligible and less than significant effect on the overall biomass available for sea turtle feeding habits. Additionally, no green sea turtles would attempt to utilize areas for nesting purposes since there is no suitable habitat for nesting in the project area. With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction Conditions, the Corps has determined green sea turtle may be affected, but is not likely to be adversely affected, by the proposed project.

C.2.1.4.11 Hawksbill Sea Turtle

The hawksbill sea turtle is a small to medium-sized marine turtle weighing up to 15 kilograms in the United States. The hawksbill lives in tropical and sub-tropical waters of the Atlantic, Pacific, and Indian Oceans. Areas that are known as important feeding areas for hawksbill turtles in Florida include the waters near the Florida Keys and on the reefs off Palm Beach County. Hawksbill turtles use different habitat types at different stages of their life cycle. Post hatchlings take shelter in weed lines that accumulate at convergence zones. Coral reefs are the foraging habitat of juveniles, sub-adults, and adults. They are also known to inhabit mangrove-fringed bays and estuaries, particularly along the eastern shore where coral reefs are absent. Hawksbills feed predominantly on sponges and nest on low and high energy beaches, frequently sharing 94 the high-energy beaches with green sea turtles. Nests are typically placed under vegetation.

Although hawksbill sea turtles are expected to be found foraging near hardbottom habitats within Florida Bay, the increased freshwater flows associated with all action alternatives may reduce nearshore salinity concentrations but should have a negligible and less than significant effect on sponges or other food sources utilized by this species. Additionally, no hawksbill sea turtles would attempt to utilize areas for nesting purposes since there is no suitable habitat for nesting in the project area. With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction Conditions, the Corps has determined hawksbill sea turtle may be affected, but is not likely to be adversely affected, by the proposed project.

C.2.1.4.12 Leatherback Sea Turtle

The leatherback sea turtle is the largest living turtle and weighs up to 700 kilograms. The leatherback lives in tropical and sub-tropical waters. Habitat requirements for juvenile and post-hatchling leather-

backs are virtually unknown. Nesting females prefer high-energy beaches with deep unobstructed access. Leatherbacks feed primarily on jellyfish.

Although leatherback turtles are expected to be found foraging in nearshore habitats within Florida Bay, the increased freshwater flows associated with all action alternatives may reduce nearshore salinity concentrations but should have a negligible and less than significant effect on jellyfishes or other food sources utilized by this species. Additionally, no leatherback sea turtles would attempt to utilize areas for nesting purposes since there is no suitable habitat for nesting in the project area. With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction Conditions, the Corps has determined leatherback sea turtle may be affected, but would not likely be adversely affected, by the proposed project.

C.2.1.4.13 Kemp's Ridley Sea Turtle

The Kemp's ridley sea turtle is the smallest of all sea turtles and weighs up to 45 kilograms. This species is a shallow water benthic feeder consuming mainly algae and crabs. Juveniles grow rapidly. Juveniles and sub-adults have been found along the eastern seaboard of the United States and in the Gulf of Mexico. However, the major nesting beach for the Kemp's ridley sea turtle is on the northeastern coast of Mexico. This species occurs mainly in coastal areas of the Gulf of Mexico and in the northwestern Atlantic Ocean. The post-pelagic stages are commonly found dwelling over crab-rich sandy or muddy bottoms. Juveniles frequent bays, coastal lagoons, and river mouths. 95

Although Kemp's ridley sea turtles could be found foraging in nearshore habitats within Florida Bay, this species is not expected to be found within the direct area of influence associated with CEPP. Additionally, no Kemp's ridley sea turtles would attempt to utilize areas for nesting purposes since their main nesting location is on a single stretch of beach on the Gulf Coast of Mexico. With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction Conditions, the Corps has determined Kemp's ridley sea turtle may be affected, but would not likely be adversely affected, by the proposed project.

C.2.1.4.14 Loggerhead Sea Turtle

Loggerhead sea turtles inhabit the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian Oceans. Females select high energy beaches on barrier strands adjacent to continental land masses for nesting. Steeply sloped beaches with gradually sloped offshore approaches are favored. After leaving the beach, hatchlings swim directly offshore and eventually are found along drift lines. They migrate to the near-shore and estuarine waters along the continental margins and utilize those areas as the developmental habitat for the sub-adult stage. Loggerheads are predators of benthic invertebrates.

Although loggerhead sea turtles are expected to be found foraging in nearshore habitats within Florida Bay, the increased freshwater flows associated with all action alternatives may reduce nearshore salinity concentrations but should have a negligible and less than significant effect on crustaceans, mollusks or other invertebrate food sources utilized by this species. Additionally, no loggerhead sea turtles would attempt to utilize areas for nesting purposes since there is no suitable habitat for nesting in the project area. With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction

Conditions, the Corps has determined loggerhead sea turtle may be affected, but would not likely be adversely affected, by the proposed project.

C.2.1.4.15 State Listed Species

The CEPP project area contains habitat suitable for the presence, nesting, and/or foraging of 16 state-listed threatened and endangered species and 18 species of special concern. Threatened and endangered animal species include the Big Cypress fox squirrel (*Sciurus niger avicennia*), Florida mastiff bat (*Eumops glaucinus floridanus*), Florida black bear (*ursus americanus floridanus*), Everglades mink (*Mustela vison evergladensis*), Florida sandhill crane (*Grus canadensis pratensis*), snowy plover (*Charadrius alexandrius*), Southeastern American kestrel (*Falco sparveriuspaulus*), least tern (*Sterna antillarum*), white-crowned pigeon (*Columba leucocephalus*), and Miami black-headed snake (*Tantilla oolitica*). Species of special concern include the Florida mouse (*Podomys floridanus*), Shermans fox squirrel (*Sciurus niger shermani*), American oystercatcher (*Haematopus palliates*), brown pelican (*Pelecanus occidentalis*), black skimmer (*Rynchops niger*), burrowing owl (*Athene cunicularia*), limpkin (*Aramus guarauna*), reddish egret (*Egretta rufescens*), snowy egret (*Egretta thula*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), white ibis (*Eudocimus albus*), roseate spoonbill (*Platalea ajaja*), osprey (*Pandion haliaetus*), mangrove rivulus (*Kryptolebias marmoratus*), mangrove gambusia (*Gambusia rhizophorae*), gopher tortoise (*Gopherus polyphemus*), and the Florida tree snail (*Liguus fasciatus*).

Threatened and endangered plant species include the pine-pink orchid (*Bletia purpurea*), which frequents the edges of the farm roads just above wetland elevation; the lattice-vein fern (*Thelypteris reticulate*) which is found (*Anemia wrightii*) both found in the Frog Pond natural area; along with the Mexican vanilla plant (*Vanilla mexicana*) and Schizaea tropical fern (*Schizaea pennula*) located on tree islands in the upper Southern Glades region.

While small foraging or nesting areas utilized by many of these animal species may be affected by this project, Alts1-4 are not likely to adversely affect protected state species. Impacts to wading birds species will be similar to those affecting the wood stork. Overall, negligible and less than significant adverse impacts are anticipated to state listed species as a result of this project.

C.2.1.5 Fish and Wildlife Resources

A comparison of FWO and CEPP action alternatives and their potential effects on wildlife within the CEPP action area are summarized below. Effects to state and federally listed species are described in further detail in **Section C.2.1.4, Threatened and Endangered Species** and within **Annex A**. Changes in water quality also have the potential to affect prey forage base through altering of vegetation composition or structure. Implementation of CEPP action alternatives would significantly benefit fish and wildlife resources within the CEPP action area, particularly within the greater Everglades. These benefits are described in greater detail in the sections below. Water quality will continue to be monitored under CEPP; potential effects are largely uncertain at this time.

C.2.1.5.1 Invertebrates

Negligible and less than significant effects to the invertebrate community within Lake Okeechobee or EAA are anticipated under any CEPP action alternative. As compared with FWO, all CEPP action alternatives show a minor beneficial effect with performance improvement within the Northern Estuaries as indicated by fewer high volume flow months. Reductions in high volume discharges and salinity fluctuations would likely benefit oysters within the Northern Estuaries. Reduction in high flows and accompanying flow velocities would help lessen the current problem of flushing of oyster spat into

outer areas of the Northern Estuaries that experience high salinities levels during the dry season resulting in increased predation and disease in the oyster population. In the St. Lucie Estuary a minor adverse effect is expected due to increases in low flow violations during the dry season were indicated by the modeling effort. Recent oyster monitoring data during extended dry conditions in the area has shown an increase in oyster disease related to the duration and severity of high salinity conditions. Although these extreme dry spells are rare in the SLE, they can occur and therefore supplemental flows during dry times may be warranted and have been accounted for in the IRLS water reservation process. Delivery of those supplemental flows should ideally take place through the North Fork St. Lucie River.

Within the Greater Everglades aquatic invertebrates would rapidly colonize newly re-hydrated areas with implementation of any CEPP action alternative providing a moderate and significant beneficial effect, directly benefitting aquatic invertebrates within the action area. Increases in stages and hydroperiods within WCA 2, northern WCA 3A, WCA 3B and ENP would promote wetland vegetation transition through contraction of sawgrass marshes and expansion of wet prairies, and in deeper regions, sloughs. Submerged aquatic plants are commonly associated with sloughs providing structure for growth of periphyton, the main source of primary production within the freshwater Everglades (Gunderson 1994; Powers 2005).

Periphyton is a primary component of invertebrate diets, including apple snails. In addition to the potential for increased foraging opportunities, changes in vegetation resulting in expansion of wet prairie and increases in emergent vegetation would also provide habitat structure critical for apple snail aerial respiration and egg deposition (Turner 1996; Darby et al. 1999). Apple snails tend to avoid areas where water depths are greater than 50 centimeters (Darby et al. 2002). Avoidance of deeper depths may be related to the type and density of vegetation in deeper water areas, food availability or energy requirements for aerial respiration (van der Walk et al. 1994; Turner 1996; Darby 1998; Darby et al. 2002). Water-lily sloughs support lower apple snail densities as compared with wet prairies (Karunaratne et al. 2006). Limited food quality and lack of emergent vegetation in sloughs may account for the lower densities. Research indicates that apple snails depend upon periphyton for food (Rich 1990; Browder et al. 1994; Sharfstein and Steinman 2001), which may be limited within deeper water environments. Karunaratne et al. (2006) observed little or no submerged macrophytes and epiphytic periphyton in the sloughs they studied in WCA 3A. In contrast, species commonly encountered within wet prairie habitat (e.g. *Eleocharis* spp., *Rhynchospora tracyi*, *Sagittaria* spp.), along with sawgrass that grows within the ecotones between the two vegetative communities, support abundant populations of epiphytic periphyton (Wetzel 1983; Browder et al. 1994; Karunaratne et al. 2006). A reduction in the number of available emergent stems for egg deposition would also contribute to the observed lower snail densities within sloughs. Drying events are needed to maintain the emergent plant species characteristic of typical apple snail (Wood and Tanner 1990; Davis et al. 1994). As shown by Darby et al. (2008), apple snails can survive these events and it is the timing and duration of the dry down event that are critical determinants of apple snail survival and recruitment. All CEPP action alternatives provide increased opportunities for apple snails within northern WCA 3A; while Alts 3 and 4 provide greater potential for providing appropriate conditions for increased apple snail populations in ENP as compared with Alts 1 and 2 and a minor beneficial effect.

Crayfish are important components within the Everglades food web, serving as primary dietary components of higher trophic level species including fish, amphibians, alligators, wading birds and mammals such as raccoons and river otters (Kushlan and Kushlan 1979). Crayfish are particularly important forage resource for nesting white ibis (*Eudocimus albus*), therefore the availability of crayfish is an important component for recovery of this species. Crayfish species composition and abundance

within the Greater Everglades are linked to hydroperiod. Two species of freshwater crayfish are found within the Greater Everglades: Everglades crayfish (*Procambarus alleni*) and slough crayfish (*Procambarus fallax)*. Everglades crayfish is commonly found in marshes that dry seasonally, generally with a hydroperiod of less than 10 months. When surface water recedes, the Everglades crayfish burrows to escape drying conditions. The slough crayfish is commonly found in perennially flooded habitats. Both species have been found co-occurring in areas with hydroperiods ranging between 9 and 11 months, as well as in sites that remained flooded during the dry season.

Increases in hydroperiod associated with implementation of any CEPP action alternative would likely increase crayfish density with northern WCA 3A, WCA 3B and ENP, particularly within the marl prairies and provide a minor and significant beneficial benefit. Research by Acosta and Perry (2001) revealed that environmental changes associated with shortened hydroperiod have affected growth, survival, dispersal and productivity within Everglades marl prairies and within the rocky glades. Results from this study indicate that crayfish productivity would increase substantially if hydroperiods within marl prairies wetlands were extended by 3 to 4 months. Although none of the CEPP action alternatives would extend hydroperiods within marl prairies by this duration, all CEPP action alternatives, especially Alts 4 and 3 would increase hydroperiods within this region resulting in increased Everglades crayfish productivity.

Everglades crayfish biomass also declines during periods of extended high water. During extended periods of inundation, populations of large predatory fish species may increase, thereby increasing predation pressure on crayfish populations (Kushlan and Kushlan 1979). Under CEPP, areas in which hydroperiods will be extended sufficiently to support increases in large predatory fish (refer to **C.2.1.5.2**), there will likely be associated declines in Everglades crayfish biomass. In contrast, areas within southern WCA 3A that currently endure deeper water depths and extended hydroperiods due to ponding, may experience increases in Everglades crayfish biomass due to reduction in water depth and hydroperiods with implementation of any CEPP action alternative.

Within Florida Bay, a habitat suitability index model was employed to simulate growth, survival and potential harvest of a cohort of shrimp as a function of salinity and temperature (Browder et al. 1999; 2002). Results of the 41-year POR simulations of potential harvests from two representative Florida Bay basins, Whipray Basin in north central Florida Bay and Johnson Key Basin in western Florida Bay, are shown in **Figure C.2.1-45** and **Figure C.2.1-46**, respectively. Results show the lift above FWO (as percent of FWO) in potential harvests from each of the four action alternatives providing a minor beneficial effect. The equation for calculating lift as percent of FWO follows: $100 \times (ALT_x - FWO) / FWO$, where ALT_x is simulated potential harvest from a given alternative and FWO is simulated potential harvest from FWO salinity conditions. Each alternative provides substantial lift in potential harvest over FWO. The lift in each case is a small percentage of FWO (i.e., 1.05%, at most). In both areas, the lift provided by Alt 4 is greater than that of the other three action alternatives. Alternative 1 provides the least lift. Variation across alternatives in most years is less than inter-annual variation. (RECOVER 2013, **Annex E**).

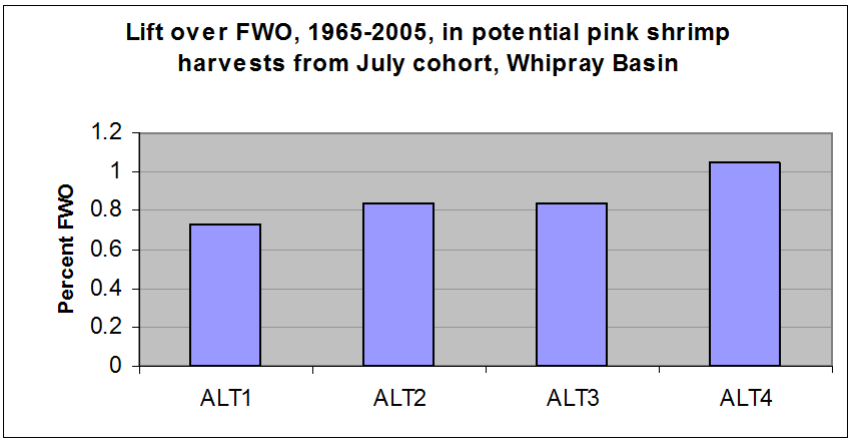

Figure C.2.1-45. Histogram showing the results of the potential pink shrimp harvest in Whipray Basin for the 1965-2005 period of record for model output.

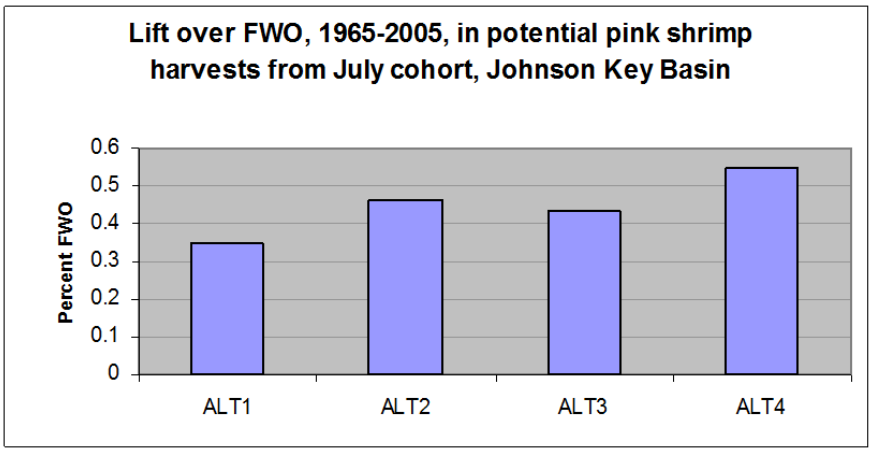

Figure C.2.1-46. Histogram showing the results of the potential pink shrimp harvest in Johnson Key Basin for the 1965-2005 period of record for model output.

In Biscayne Bay, Alt 2 was the only alternative that provided additional flows when compared to FWO and a minor beneficial effect. Alts 1, 3, and 4 all provided less water than FWO, in descending order and a minor adverse effect. Flows to the coast were not evenly distributed spatially with all alternatives showing positive benefits in the northern Biscayne Bay and negative effects in central and southern Biscayne Bay. Alternative 2 is likely to provide a benefit to the invertebrate population by providing additional flows to the coast, thereby lowering salinity levels and/or reducing the number of days salinities exceed 40 psu. Alternative 1 is likely to provide the same level of benefit as FWO and Alts 3 and 4 would likely result in a negative effect to the invertebrate population by increasing the likely hood of maintaining salinity conditions in Biscayne Bay above the preferred salinity range of the resident invertebrate population for longer periods of time than FWO. All alternatives generally show an unfavorable seasonal flow pattern with reductions in flows compared to FWO generally greater during the dry season. Refer to Annex E for Biscayne Bay Flow at Coastal Structures.

C.2.1.5.2 Fish

Implementation of any CEPP action alternative is expected to significantly improve conditions for fish species throughout much of the Greater Everglades and have a moderate and significant beneficial effect. The largest percent gains in daily average fish density were predicted within northern WCA 3A and NESRS. In these areas fish densities increased in excess of 30%, with extremes over 80%. Other areas within SRS also experienced appreciable gains in fish density due to increased flows. In comparison, all CEPP action alternatives resulted in lower fish densities within WCA 3A along L-67A. Regional percent changes in fish densities were highest in SRS (16-23%) and southern marl prairies (17-31%) as compared with FWO, with Alts 3 and 4 exhibiting the largest percent increases. Taylor Slough experienced negligible positive changes (<1%). (Catano and Trexler 2013, **Annex E**).

Introduction or expansion of non-native fish species due to changes in water distribution and increased connectivity within WCA 3A, WCA 3B and ENP is likely to occur; however, the extent of invasion is uncertain at this time providing a minor adverse effect. In contrast to FWO, new access points will be created under all CEPP action alternatives, with the highest connectivity achieved under Alts 3 and 4. Alternative 1 would provide the fewest number of new access points, thus limiting the potential for spread of invasive and or exotic fish species as compared with the other action alternatives.

Within Florida Bay, a habitat suitability index (HSI) was employed to predict responses of juvenile spotted seatrout (*Cynoscion nebulosus*) with implementation of any CEPP alternative and predict improvements in habitat suitability in comparison with FWO. The spotted seatrout HSI is a qualitative model that uses a logistic regression to assess how the frequency of occurrence of juvenile spotted seatrout varies in response to environmental parameters including turbidity, temperature, salinity, and spatial coverage and density of three species of seagrass (RECOVER 2013, **Annex E**). The model calculates the area of habitat suitable for juvenile spotted seatrout based on the above parameters. For this analysis, all parameters were held constant except for salinity. For juvenile spotted seatrout, there are five biologically relevant ranges for salinity as determined by the linear response in cumulative frequency of seatrout to salinity. HSI index scores were then calculated by taking the frequency of occurrence for each of these five ranges and dividing by the highest frequency of occurrence for any of the ranges. For example, the range from a salinity of 32 to 39 had the highest frequency of occurrence at 0.255 and received an SI=1 (0.255/0.255); however, the range from a salinity of 40 to 52 had a frequency of occurrence of 0.145 and an SI=0.57 (0.145/0.255).

The juvenile spotted seatrout HSI was run on monthly average salinities from May through November to coincide with spotted seatrout juvenile recruitment for all CEPP action alternatives. The HSI output from the salinity monitoring stations in Florida Bay was gridded to produce spatial distributions of HSI scores for each month. This allowed for the calculation of area of optimal juvenile spotted seatrout habitat in square kilometers. The mean area of optimal juvenile spotted seatrout for each scenario for the entire POR is shown in **Figure C.2.1-47.** The error bars reflect the standard error for the data set. The natural system model serves as the target for this analysis. It had the largest mean area of optimal juvenile spotted seatrout habitat at 368 km^2. All four CEPP action alternatives showed improvements over FWO providing a minor beneficial effect. A Mann-Whitney U-test was applied to conduct pair-wise comparisons among all of the scenarios. All four CEPP action alternatives had significantly higher areal extent of optimal habitat for juvenile spotted seatrout (α=0.1) compared to FWO. However, there were no significant differences among any of the action alternatives (α=0.1). (RECOVER 2013, **Annex E**)

To ease in the interpretation of the spotted seatrout data, the percent increase in area of optimal juvenile spotted seatrout relative to FWO is depicted in **Figure C.2.1-48**. The four CEPP action

alternatives showed increases from 44% for Alt 1 up to 65% for Alt 4. Alternatives 2 and 3 showed a 49% and 52% increase, respectively. The juvenile spotted seatrout analysis shows that all CEPP action alternatives showed statistically significant improvement over FWO. The differences among the alternatives were not statistically significant, but suggest Alt 4 has the highest potential to show the greatest gains for spotted seatrout in Florida Bay.

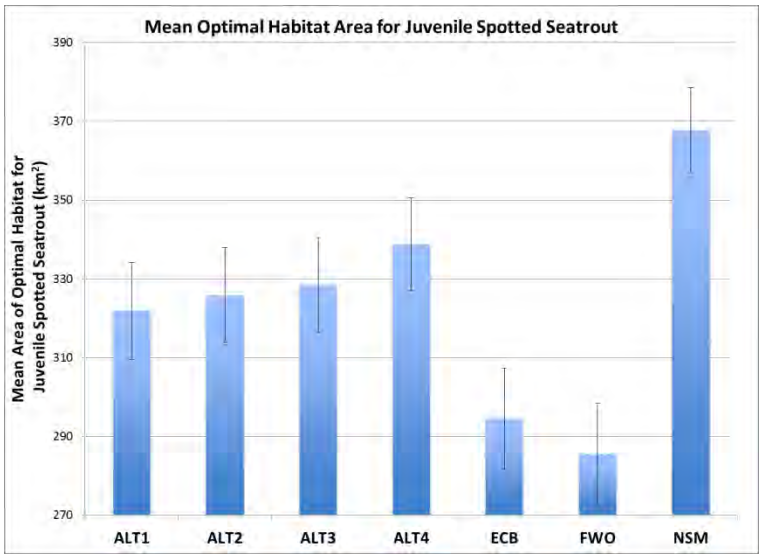

Figure C.2.1-47. Histogram showing the mean optimal habitat area of the juvenile spotted seatrout HSI for NSM (target), ECB, FWO and the four CEPP action alternatives. (RECOVER 2013, Annex E)

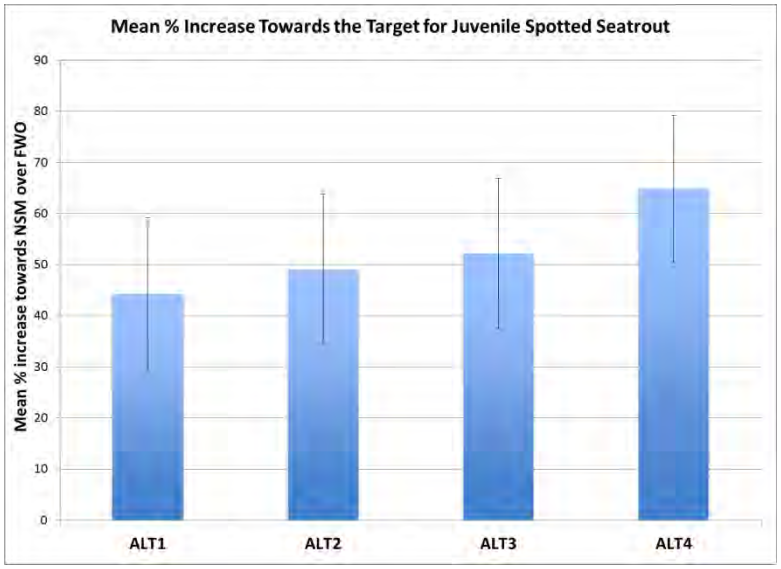

Figure C.2.1-48. Histogram showing the mean increase towards the target for the juvenile spotted seatrout HSI for the four CEPP action alternatives relative to FWO. (RECOVER 2013, Annex E)

In Biscayne Bay, Alt2 was the only alternative that provided additional flows when compared to FWO and minor beneficial effect. Alts 1, 3, and 4 all provided less water than FWO, in descending order and a minor adverse effect. Flows to the coast were not evenly distributed spatially with all alternatives showing positive benefits in the northern Biscayne Bay and negative effects in central and southern

Biscayne Bay. Alternative 2 is likely to provide a benefit to the fish population by providing additional flows to the coast, thereby lowering salinity levels and/or reducing the number of days salinities exceed 40 psu. Alternative 1 is likely to provide the same level of benefit as FWO and Alts 3 and 4 would likely result in a negative effect to the fish population by increasing the likely hood of maintaining salinity conditions in Biscayne Bay above the preferred salinity range of the resident fish population for longer periods of time than FWO. All alternatives generally show an unfavorable seasonal flow pattern with reductions in flows compared to FWO generally greater during the dry season. Refer to Annex E for Biscayne Bay Flow at Coastal Structures.

C.2.1.5.3 Amphibians and Reptiles

Minor beneficial effects to amphibian and reptile communities are anticipated under all CEPP action alternatives. All action alternatives showed improved conditions for amphibians within WCA 3 and ENP as compared with FWO. Rehydration within previously dry areas within northern WCA 3A would increase spatial extent of suitable habitat for aquatic amphibian species in this area. Similarly, increased hydroperiods within ENP would also benefit aquatic amphibian species. As hydrology improves within WCA 3 and ENP it is expected that amphibian species richness will also change. However, declines in some amphibian species will be offset by favorable habitat conditions for other species. Increase in forage prey availability (i.e. crayfish and other invertebrates, fish) in areas rehydrated by CEPP implementation will also directly benefit amphibian and reptiles species.

Introduction or expansion of non-native amphibian species due to changes in water distribution and increased connectivity within WCA 3A, WCA 3B and ENP is likely to occur; however, the extent of invasion is uncertain at this time and may have a minor adverse effect. In contrast to FWO, new access points will be created under all CEPP action alternatives, with the highest connectivity achieved under Alts 3 and 4. Alternative 1 would provide the fewest number of new access points, thus limiting the potential for spread of invasive and or exotic amphibian species as compared with the other action alternatives.

Submerged aquatic vegetation and algal communities are also common foraging areas for the green sea turtle. Reductions in high and low flow violations within the Northern Estuaries reduce stress on SAV and promote increases in seagrass shoots that have the potential to increase foraging opportunities for green sea turtles in this region. Similarly, increased freshwater flows to Florida Bay and the southwestern coastal estuaries resulting in lowered salinity levels that better encompass seagrass salinity tolerance ranges, would also increase foraging opportunities for green sea turtles. Alternative 4 provides the greatest benefit, followed by Alts 3, 1 and 2 (refer to **C.2.1.3.5.2, Seagrass Beds** for further information).

C.2.1.5.4 Birds

The freshwater wetlands of the Everglades are noted for their abundance and diversity of colonial wading birds. Nesting and foraging activities of resident bird species are anticipated to show a moderate beneficial effect with implementation of any CEPP action alternative. Impacts to the CSSS, snail kite, wood stork and wading birds are further discussed in **Section C.2.1.4, Threatened and Endangered Species** and within **Annex A**. Changes in water quality also have the potential to affect birds through alteration of vegetation composition or structure or impacts to their forage base. Water quality would continue to be monitored under CEPP and potential effects are largely uncertain at this time.

As predicted by the Trophic Hypothesis (RECOVER 2004) an increase in density of small fishes would directly benefit higher trophic level predators such as wading birds. Therefore, it is predicted that the action alternatives that provide the greatest benefit to small fishes as described in **Section C.2.1.5.2,**

Fish, would also perform best overall for wading birds. Crayfish are a particularly important forage resource for nesting white ibis (*Eudocimus albus*). Appropriate foraging conditions and crayfish densities within core foraging areas of nesting wading birds colonies can reduce foraging flight distance, thereby enhancing overall body condition. As indicated in **Section C.2.1.5.1, Invertebrates**, increases in hydroperiod associated with implementation of any of the CEPP action alternatives would likely increase crayfish density within northern WCA 3A, WCA 3B and ENP, particularly within the marl prairies.

The largest wading bird rookery within the Everglades ecosystem is Alley North. Under current and FWO conditions, a large dry area within northeastern WCA 3A creates a significant hazard for nesting birds due to egg predation by mammals. All CEPP action alternatives show significant hydrological improvement within northeastern WCA 3A. Associated increased depths, hydroperiods and sheetflow with Alley North decrease the potential for nest predation and provide a minor beneficial effect.

As compared with FWO, all CEPP action alternatives reveal the potential for short-term minor adverse effects to aquatic vegetation within Lake Okeechobee due to higher than preferred lake stages. As a result, temporary reductions in foraging habitat for shorebirds and short-legged wading birds could occur. However, these multiple day events in which Lake Okeechobee stage exceeded 15.0 feet NGVD occurred approximately 5% of the POR.

C.2.1.5.5 Mammals

As compared with FWO, potential minor beneficial effects to mammals within the CEPP action area are anticipated with implementation of any CEPP action alternative. Small mammals including raccoons and river otters would benefit from increased crayfish and small prey fish biomass in rehydrated areas within northern WCA 3A, WCA 3B, and ENP. Effects to state and federally listed species are described in further detail in **Section C.2.1.5, Threatened and Endangered Species** and within **Annex A**. Changes in water quality also have the potential to affect prey forage base through altering of vegetation composition or structure. Water quality would continue to be monitored under CEPP; potential effects are largely uncertain at this time. However, it is predicted that restoration of sheetflow will aid to remove nutrients within the water column.

CEPP implementation, however, could have a significant and adverse effect on mammals dependent upon upland habitat. Due to increased water flow and changes in water distribution it is anticipated that overdrained areas in northern WCA 3A would be rehydrated, triggering a vegetation transition from upland to wetland habitat. Although, mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades; there is an increased potential for this vegetation transition to negatively affect mammals utilizing upland habitat. This is a particular concern for deer populations within northern WCA 3A that utilize tree islands. However, as discussed in **Section C.2.1.4.4, Tree Islands**, no significant effects to tree islands within WCA 3A and ENP are anticipated to occur under any CEPP action alternative; but, lower elevation tree islands within WCA 3B may be adversely affected by CEPP implementation, with Alts 2 and 3 resulting in the greatest potential impact. Deer populations that utilize the lower elevation tree islands within WCA 3B may suffer from habitat loss. In addition, deer that utilize levees slated for removal (L-67C, L-29, L-67 Extension) also have the potential to be negatively affected. Loss of these levees may be offset by the construction of the Blue Shanty Levee in WCA 3B. Deer are highly mobile and would migrate to find suitable habitat. No significant negative effects on mammals in the remainder of the CEPP action area are anticipated under any CEPP action alternative.

C.2.1.6 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act, 16USC 1801 et seq. Public Law 104-208 reflects the Secretary of Commerce and Fishery Management Council authority and responsibilities for the protection of essential fish habitat (EFH). Federal agencies that fund, permit, or carry out activities that may adversely impact EFH are required to consult with the National Marine Fisheries Service (NMFS) regarding the potential effects of their actions on EFH. In conformance with the 1996 amendment to the Act, the information provided in this Integrated Environmental Impact Statement (EIS) will comprise the required EFH assessment and has been coordinated with NMFS.

Consultation for the Central Everglades Planning project (CEPP) was initiated on January 10, 2012 through a NEPA scoping letter. The NMFS has indicated that beneficial effects to fish resources and EFH may occur as a result of this project. The NMFS requested an evaluation of potential impacts to living marine resources, including mangroves, seagrasses, live bottom communities, and the marine/estuarine water column that may be impacted by activities or operations of the project action alternatives. The preparation of an EFH assessment will be contained within the project PIR/EIS, and submitted to the NMFS for coordination.

Essential Fish Habitat in the Project Area:

The project area includes three distinct regional estuarine and nearshore coastal systems: The southern estuaries including Biscayne Bay and Florida Bay; and the northern estuaries including the Caloosahatchee River and the St. Lucie Estuary.

The southern estuaries comprise Biscayne National Park and a large portion of Everglades National Park, and are a shallow estuarine system (average depth less than 3 feet). Florida Bay is the main receiving water of the greater Everglades, heavily influenced by changes in timing, distribution, and quantity of freshwater flows into the southern estuaries. Lake Okeechobee discharges into the two northern estuaries. The St. Lucie Canal feeds into the St. Lucie Estuary, and the Caloosahatchee Canal/River feeds into the Caloosahatchee Estuary to the west.

<u>Biscayne Bay and Florida Bay</u>

The southern estuaries contain essential fish habitat for corals; coral reef and live bottom habitat; red drum (*Sciaenops ocellatus*); penaeid shrimps; spiny lobster (*Panulirus argus*); other coastal migratory pelagic species and the snapper-grouper complex. Species generally present in the southern estuaries region include brown shrimp (*Penaeus aztecus*), pink shrimp (*Penaeus duorarum*), white shrimp, spiny lobster, stone crab, gulf stone crab, red drum, Spanish mackerel, and gray snapper (*Lutjanus griseus*). Essential fish habitat in the southern estuaries is comprised of seagrasses, estuarine mangroves, intertidal flats, the estuarine water column, live/hard bottoms, and coral reefs.

<u>Caloosahatchee River</u>

The Caloosahatchee River estuary contains essential fish habitat for juvenile brown shrimp (*Penaeus aztecus*), juvenile gray snapper (*Lutjanus griseus*), juvenile pink shrimp (*Penaeus duorarum*), adult and juvenile red drum, (*Sciaenops ocellatus*), adult and juvenile Spanish mackerel (*Scomberomorus maculatus*), and juvenile stone crab (*Menippe mercenaria*). Downstream habitats include oyster reefs and seagrass beds (submerged aquatic vegetation).

<u>St. Lucie Estuary</u>

The proposed project is within the jurisdiction of the South Atlantic Fishery Management Council (SAFMC) and is located in areas designated as EFH for wormrock, live bottom habitat, for the American

oyster (*Crassostrea virginica*); pink shrimp (*Penaeus duorarum*); white shrimp (*Penaeus* sp.) and brown shrimp (*Penaeus aztecus*); Florida red drum (*Sciaenops ocellatus*); grouper (*Epinephelus* spp.); gray snapper (*Lutjanus griseus*); white grunt (*Haemulon plumieri*); red porgy (*Pagrus pagrus*); spiny lobster (*Panulirus argus*); and the snapper-grouper complex. In addition, the nearshore hardbottom habitat outside of the St. Lucie Estuary is designated as Essential Fish Habitat-Habitat Areas of Special Concern (EFH-HAPC) for the snapper-grouper complex.

Assessments of Effects on Essential Fish Habitat:

Southern Estuaries

Project construction activities should have no effect on the nearshore communities or essential fish habitat downstream of the project areas in Biscayne Bay and Florida Bay. However, this project is expected to have a minor beneficial indirect effect by increasing overland flow into Eastern Florida Bay. The increased flow is anticipated to stabilize the water quality and salinities required to improve and sustain nearshore biological communities.

Seagrasses are expected to benefit from the re-direction and dispersion of fresh water across the wetland systems prior to entering Biscayne Bay and Florida Bay. Seagrass habitats are heavily utilized by both juvenile and adult fishes and invertebrates for feeding and shelter (SAFM 1998). Species that depend on seagrass habitats include the penaeid pink and brown shrimp, and spiny lobster (SAFM 1998). Seagrass performs as an important nursery habitat for red drum, snook (*Centropomus undecimalis*), bonefish (*Albula vulpes*), tarpon (*Megalops atlanticus*) and several species of snapper and grouper, and is critical to the health of Biscayne Bay, Florida Bay, and a number of commercial and recreational fisheries (SAFM 1998).

The restored hydrology provided by this project would also increase the periodic inundation of the downstream mangrove wetlands. Mangrove wetlands depend on this periodic inundation; the lack of freshwater from upstream sources contributes to their degradation (SAFM 1998). Mangrove habitats are important because they provide food and refuge to a large variety of species. These species include: spiny lobsters, pink shrimp, snook (*Centropomus undecimalis*), goliath grouper (*Epinephelus itajara*), tripletail (*Lobotes surinamensis*), leatherjack (*Oligoplites saurus*), gray snapper (*Lutjanus griseus*), dog snapper (*L. jocu*), sailor's choice (*Haemulon parra*), bluestriped grunt (*H. sciurus*), sheepshead (*Archosargus probatocephalus*), black drum (*Pogonias cromis*) and red drum (SAFM 1998).

The estuarine water column is typically characterized by four salinity categories: oligohaline (< 8 psu), mesohaline (8-18 psu), and polyhaline waters (18-30 psu) with some euhaline water (>30 psu) around inlets (SAFM 1998). Saline boundaries in the estuarine water column are variable, but are generally maintained by sea water transported through inlets by tide and wind mixing with fresh water supplied by land runoff' (SAFM 1998). This project will improve quantity, timing, and distribution of water delivered to Eastern Florida Bay. It is likely that this will result in an improvement to the salinity characteristics of the estuarine water column. This habitat is utilized by larvae of commercially important fishes for feeding, and is an important means of conveying organisms and nutrients from inland to offshore areas (SAFM 1998).

This project is not expected to have an effect on coral reef or hard bottom communities in the southern estuaries. There are no coral reefs or hard bottom communities located within the proposed project site or the nearshore waters affected by the project. Corals found within Florida Bay and Biscayne Bay are outside the area of potential effect.

Northern Estuaries

Aquatic habitats within the Caloosahatchee Basin have been altered through the channelization of the river. Nevertheless, the basin continues to support fishery resources of some recreational and commercial importance. Seagrass communities within the Caloosahatchee estuary provide critical refugia for juvenile fishes such as redfish, grouper, snook, and spotted seatrout. The decline in juvenile abundance and distribution of these and other species, along with an overall decrease in species richness may be related to the loss of seagrass habitat and/or a result of alterations in the salinity regime and the timing of the freshwater discharges from the S-79 structure. Implementation of the project would reduce the frequency of high volume freshwater discharges during the wet season, ultimately resulting in minor beneficial effects to essential fish habitat within the Caloosahatchee estuary.

Another primary goal of this project is to reduce high nutrient freshwater flows to the St. Lucie estuary. No direct impacts are anticipated, rather the restoration potential of seagrass beds, oyster reef, and the estuarine water column itself. Increases in seagrass and oyster reef would provide a large number of benefits to the essential fish habitat species. The proposed project significantly increases the acres of SAV, oyster, and healthy benthic habitat.

Conclusion:

Southern Estuaries

Previous water management operations have resulted in an inland migration of saline conditions in both groundwater and surface waters. This has caused the expansion of moderate to high salinity zones and has diminished the spatial extent of freshwater wetland habitats in the southern estuaries. Landward expansion of saltwater and mangrove wetlands, including low-productivity, sparsely vegetated dwarf mangrove communities typical of the hypersaline 'white zone' has also occurred in the southern estuaries.

The proposed project components would improve freshwater delivery to coastal wetlands and adjacent estuaries in Northern Biscayne Bay and Eastern Florida Bay. Implementation of the project would redistribute flow to salt water wetlands and nearshore bay areas and result in favorable changes to salinity levels. These changes may affect essential fish habitat, although the impacts to the aquatic resources are anticipated to be significant and beneficial.

Northern Estuaries

The Caloosahatchee and St. Lucie estuaries both receive excessive discharges from Lake Okeechobee as well as their local basins during wet years, and suffer from too little discharge on excessively dry years.

Restoration goals in the Caloosahatchee estuary include; re-establishment of a salinity range favorable to juvenile marine fish, shellfish, oysters and submerged aquatic vegetation (SAV), re-establishment of seasonally appropriate freshwater flows of favorable quality that maintain low salinities in the upper estuary and re-establishment of more stable salinities and ranges in the lower estuary. Restoration goals for the St. Lucie estuary include maintaining a salinity range favorable to fish, benthic invertebrates, oysters and SAV. This requires a reduction of high volume, long duration discharge events from Lake Okeechobee, the C-44, C-23 and C-24 watersheds.

In summary, CEPP may improve conditions for estuarine and marine resources throughout the Northern Estuaries by restoring more natural timing, volume, and duration of freshwater flows to the Caloosahatchee and St. Lucie estuaries and provide minor beneficial effects. It has the potential to

reduce excess nutrient loading and provide a more appropriate range of salinity conditions by reducing extreme salinity fluctuations and durations. The improvement of estuarine conditions will ultimately have a significant beneficial effect to essential fish habitat resources.

C.2.1.7 Hydrology

Hydrologic modeling simulations of the existing condition baseline (ECB) and the CEPP future without project condition (FWO) were developed with the RSM-BN and RSM-GL sub-regional modeling tools, to provide baseline conditions for plan formulation, the assessment of CEPP project benefits (comparisons against FWO), and the assessment of CEPP alternative performance for the level-of-service for flood protection and water supply (comparisons against ECB). The ECB was developed to represent the system-wide infrastructure and operations that were in place at the time CEPP plan formulation was initiated, approximately January 2012. The FWO for CEPP assumes the construction and implementation of currently authorized CERP and non-CERP projects, and other Federal, state or local projects constructed or approved under existing governmental authorities that occur in the CEPP study area. Selection of the TSP is conducted based on comparisons between the CEPP action alternatives and the CEPP FWO. The reader should refer to Section 2 of the CEPP PIR main report and Appendix C.1 for additional documentation of the ECB and FWO conditions.

The portion of the Greater Everglades within the CEPP project area includes WCA 1, WCA 2A, WCA 2B, WCA 3A, WCA 3B, and ENP. This overview of CEPP hydrological conditions is intended to provide a general overview of regional hydrological changes for the CEPP action alternatives compared to the CEPP FWO. RSM-BN and RSM-GL hydrologic modeling simulations for the CEPP final array of action alternatives were developed starting from the FWO modeling simulations. Since all of the components north of the red line are the same for the CEPP preliminary final array of action alternatives (Alts 1 through 4), a single RSM-BN simulation for Lake Okeechobee, the northern estuaries, and the EAA was completed to represent all of the action alternatives and provide boundary conditions to the RSM-GL modeling. Hydrologic performance within any specific spatial area is due to the combined effect of CEPP alternative components and operations identified throughout the project area. Deduction of cause-effect relationships between CEPP alternative components were conducted throughout the CEPP preliminary screening and alternative formulation effort (refer to Sections 3 and 4 of the CEPP PIR main report). For a more detailed assessment, the reader should refer to the complete suite of RSM-GL modeling results. A map of the RSM-GL gage locations is provided in **Figure C.2.1-49**.

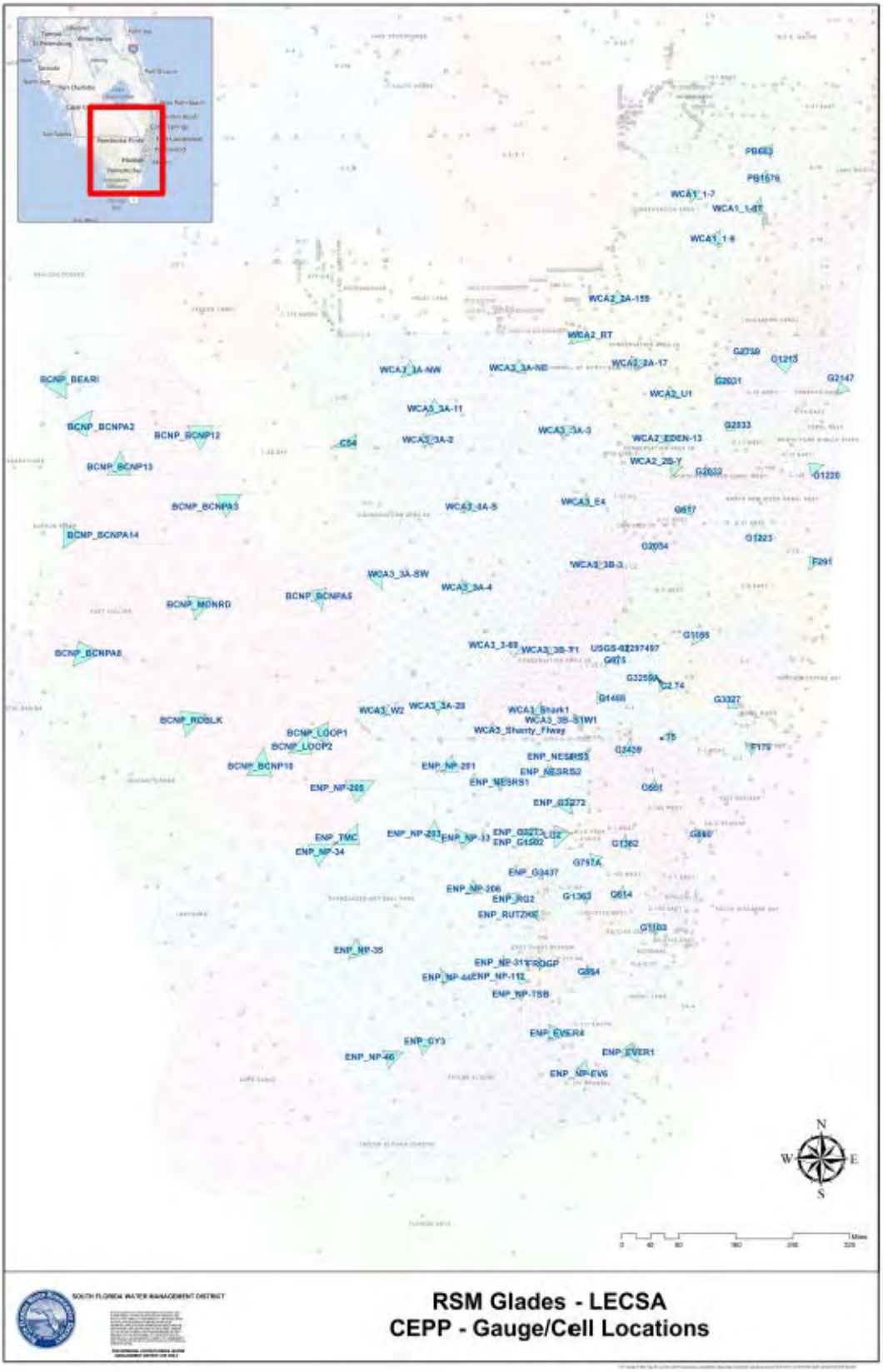

Figure C.2.1-49. Map of RSM-GL monitoring gage locations.

C.2.1.7.1 Lake Okeechobee and the Northern Estuaries

For the modeling of the final array of alternatives, operational changes to Lake Okeechobee were limited to changes within the flexibility of the Lake Okeechobee Regulation Schedule (LORS) 2008, with no adjustments to the defined LORS zones. Lake Okeechobee operational assumptions applied consistently for the final array modeling include changes to the decision tree outcome maximum allowable discharges dependant on Lake Okeechobee inflow forecasts, time of year (wet season or dry season), stage level (regulation zone), and/or stage trends (receding or ascending). The changes are all assumed to occur within the flexibility of LORS 2008 (Regulation Schedule zones unchanged), for the purpose of increasing CEPP potential benefits. Details pertaining to the proposed CEPP operations for Lake Okeechobee are separately addressed in the draft Preliminary Operations Manual (refer to **Annex C**).

Compared to the FWO, Lake Okeechobee stages are increased by 0.2-0.4 feet for the upper 60% of the stage duration curve, excluding extreme wet hydrologic conditions (**Figure C.2.1-50**). Peak lake stage increased from 17.50 feet NGVD in the FWO to 17.64 feet NGVD in the action alternatives. The number of days with stages above 16 feet NGVD is increased from 696 to 1096 during the 1965-2005 period of simulation.

For the Caloosahatchee Estuary, compared to the FWO, mean monthly flows above 2800 cfs and 4500 cfs are reduced by 13 and 2 months, respectively (16% and 6% reductions, respectively; **Figure C.2.1-51**). Mean monthly flows less than 450 cfs are reduced by 2 months (6%) (**Figure C.2.1-52**).

For the St. Lucie Estuary, compared to the FWO, mean monthly flows above 2000 cfs and 3000 cfs are reduced by 22 and 3 months, respectively (26% and 10% reductions, respectively; **Figure C.2.1-53**). Mean monthly flows less than 350 cfs are increased by 30 months (33%; **Figure C.2.1-54**). Note that the St. Lucie performance measures for the ECB and FWO base conditions were subsequently updated during development of the final array of alternatives, due to an identified error that the performance measure was not accounting for local groundwater flow contributions to the estuary. The correct St. Lucie estuary performance measure graphics are shown in **Figure C.2.1-53** and **Figure C.2.1-54**, although these graphics also include display of the subsequent CEPP action alternative 4R (discussed further in Appendix C.2.2).

Hydrologic effects to Lake Okeechobee and the Northern Estuaries would be the same for all action alternatives.

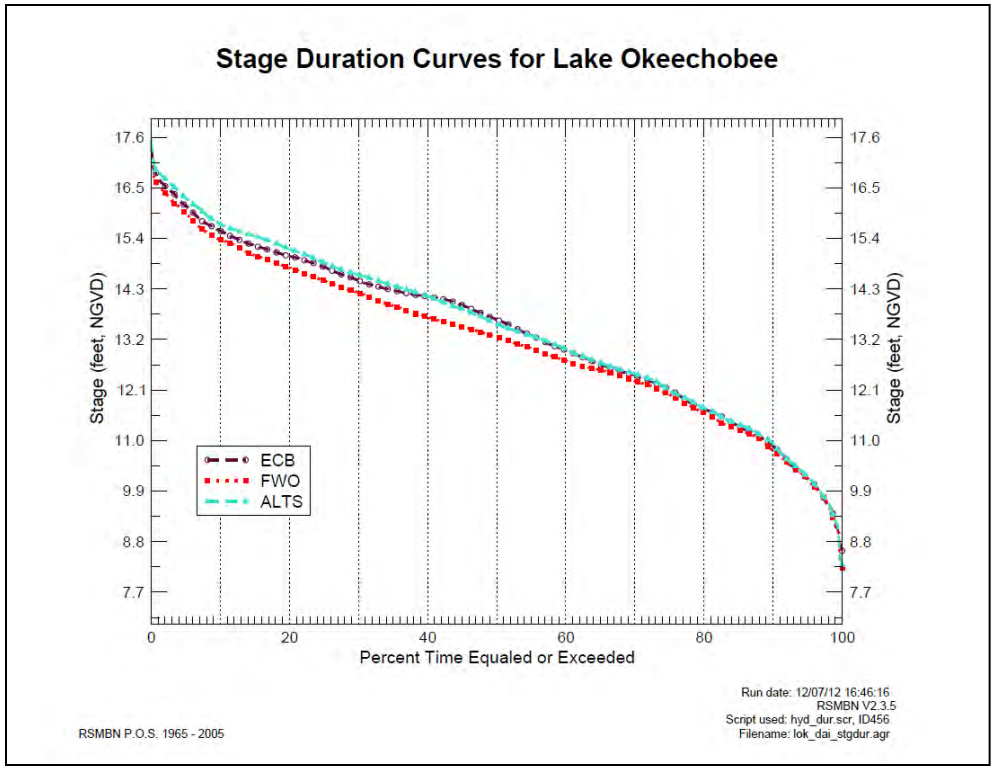

Figure C.2.1-50. Lake Okeechobee Stage Duration Curve for CEPP Action alternatives.

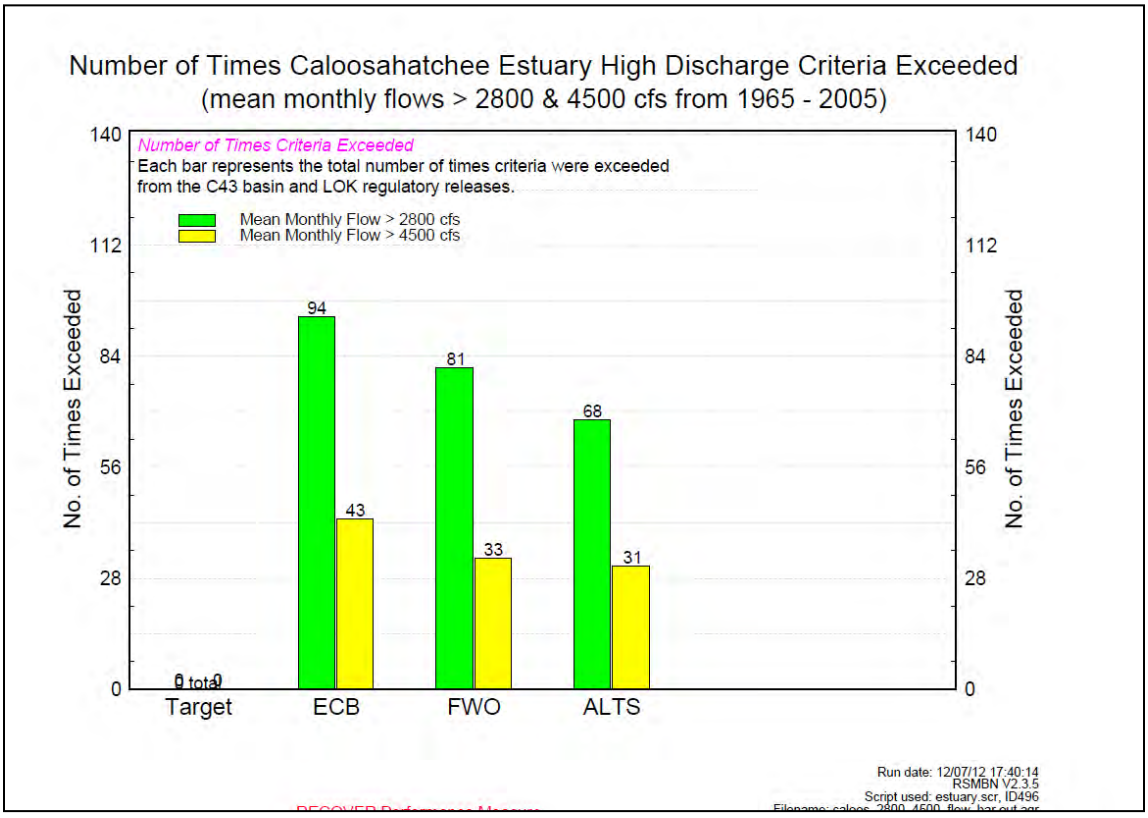

Figure C.2.1-51. Caloosahatchee Estuary High Discharge Frequency for CEPP Action alternatives.

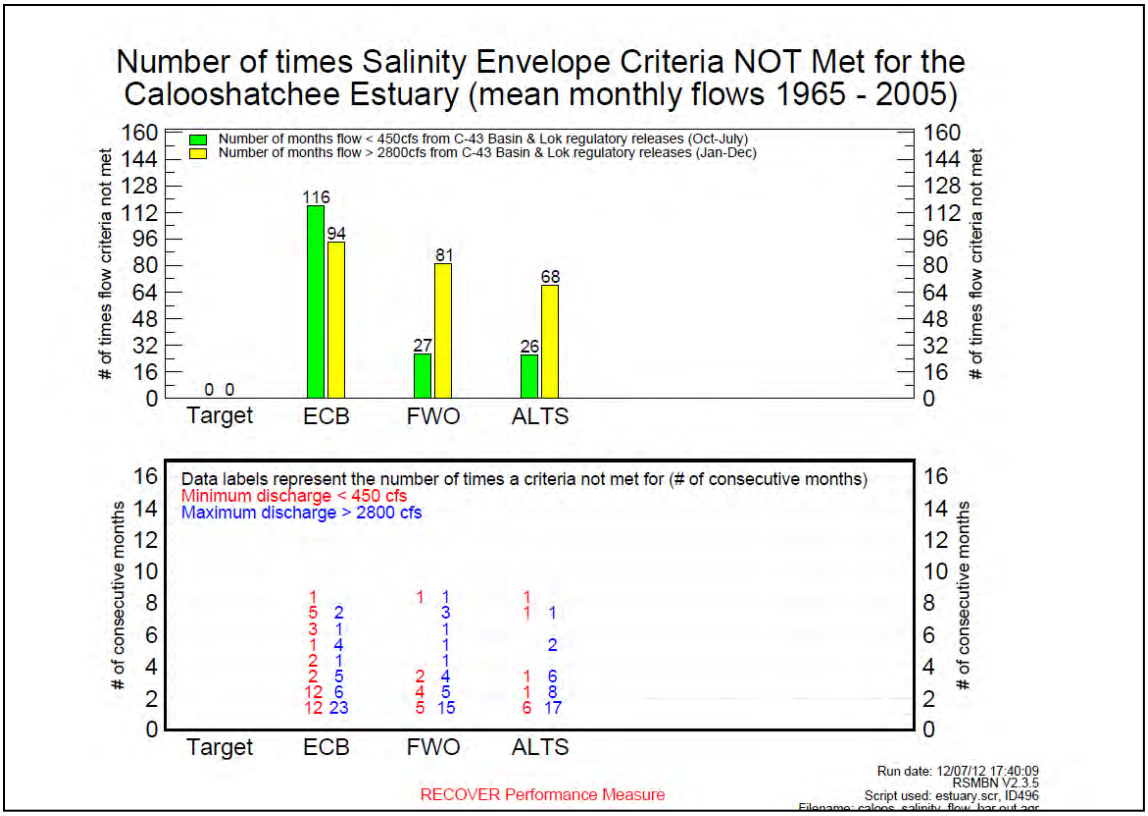

Figure C.2.1-52. Caloosahatchee Estuary Low Discharge Frequency for CEPP Action alternatives.

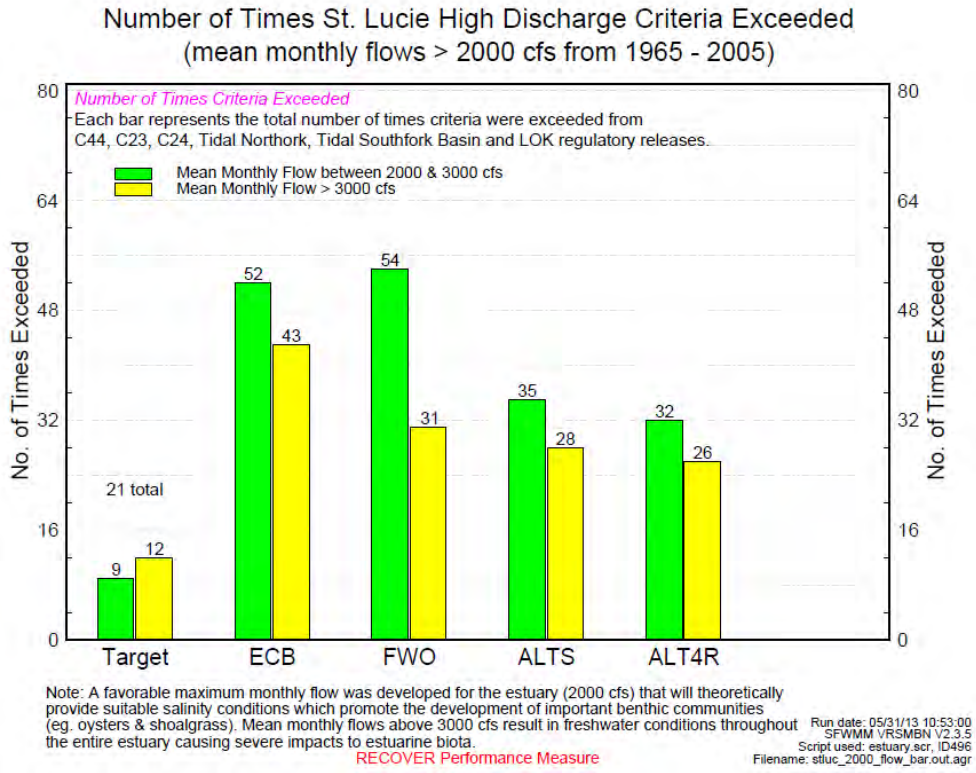

Figure C.2.1-53. St. Lucie Estuary High Discharge Frequency for CEPP Action alternatives.

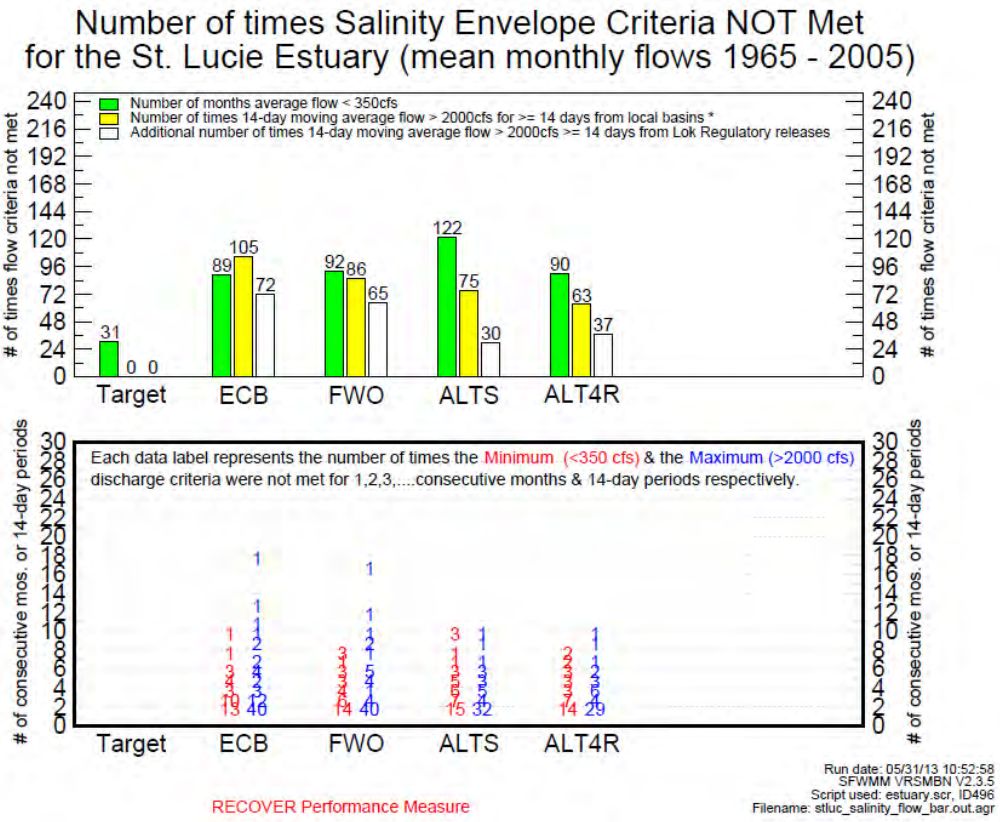

Figure C.2.1-54. St. Lucie Estuary Low Discharge Frequency for CEPP Baselines.

C.2.1.7.2 Everglades Agricultural Area

Minor changes to groundwater levels are expected adjacent to the proposed CEPP A-2 FEB (14,000 acres), compared to the FWO. The FWO condition and all action alternatives include the SFWMD Restoration Strategies A-1 FEB. The A-2 FEB design includes perimeter seepage collection canals and associated seepage pumps to limit potential impacts. Detailed CEPP assessments within the EAA are not available because the RSM-BN does not simulate groundwater within the EAA. Hydrologic effects to the Everglades Agricultural Area would be the same for all action alternatives.

C.2.1.7.3 Water Conservation Area 1

Compared to the FWO, no significant changes to WCA 1 stages are indicated with the action alternatives. Average annual regulatory releases from WCA 1 to WCA 2A via the S10 structures are slightly reduced from 268,000 acre-feet (268 kAF) to approximately 266 kAF with all action alternatives.

C.2.1.7.4 Water Conservation Area 2A and 2B

Compared to the FWO, WCA 2A stages are moderately decreased by 0.1-0.3 feet under all hydrologic conditions for Alts 1 through 4 (**Figure C.2.1-55**). Average annual inflows from STA 2 (including Compartment B) to WCA 2A are significantly decreased from 381 kAF to 218 kAF (a 43% decrease) with the assumed implementation of the L-6 diversion from WCA 2A to WCA 3A. The S-7 pump station also contributes inflows to WCA 2A; S-7 inflows are reduced from 77 kAF in the FWO to 16 kAF in Alts 1 through 4, due to operations to redirect a portion of STA-3/4 discharges away from WCA 2A to WCA 3A via the S-8 pump station. Average annual regulatory releases from WCA 2A to WCA 3A via the S11s are significantly decreased from 460 kAF to 287-288 kAF for Alts 1 through 4.

Compared to the FWO, stages within WCA 2B are significantly decreased by 0.50-0.75 feet under nearly all hydrologic conditions, excluding extreme wet conditions, for Alts 1 through 4 (**Figure C.2.1-56**). Changes within WCA 2B are directly related to the decreased stages within WCA 2A and decreased inflows from S-144, S-145, S-146, and seepage.

C.2.1.7.5 L-28 Triangle

The L-28 Triangle area is located entirely within the boundaries of the Miccosukee Tribe of Indians of Florida's Reservation and encompasses 7830 acres of Tribal lands and approximately 230 acres of BCNP. The L-28 Triangle area is confined on north by Interstate 75, the west by L-28 Interceptor Canal (L-28I) and the BCNP, and the east by the L-28 Canal.

The L-28 Interceptor Canal is bound by levees on both sides and maintains no direct connection to wetlands in the Triangle. Within the L-28 Triangle Area, the L-28 Canal is bound on the east side by a confining levee separating the wetlands of the L-28 Triangle from WCA 3A.Wetlands interior to the L-28 Triangle do maintain a connection to the L-28 canal along the west side of the L-28 canal. The L-28 canal terminates at the southern tip and is not connected to the L-28I canal. Historically the S-140 pump station maintained flood protection within the Triangle. A weir was installed in 2009, within the L-28 Canal and immediately south of Interstate 75, to restrict regional pumping and maintain water within the Triangle.

Alternative 1 includes removal of two segments of the L-28 Levee along the eastern boundary of the L-28 Triangle (9000 feet total) and complete backfill of the L-28 Canal segment located between the levee gaps, as shown in **Figure C.2.1-57**. By re-establishing a surface water hydrologic connection between WCA 3A and the L-28 Triangle, stages within the Triangle are generally increased by 0.2-0.5 feet during nearly all hydrologic conditions, excluding the driest 25% of hydrologic conditions, with no significant change to stages within the adjacent WCA 3A (**Figure C.2.1-58**). Although Alts 2 through 4 do not include modifications to the L-28 Levee or the adjacent canal, stages within the L-28 Triangle are slightly increased by 0.1-0.2 feet during normal to dry conditions, due to groundwater interactions with the down-gradient western WCA 3A marsh.

C.2.1.7.6 Big Cypress National Preserve

Stages within the BCNP, west of WCA 3A and Western Shark River Slough (ENP), do not change significantly between the CEPP FWO and the CEPP action alternatives.

C.2.1.7.7 Water Conservation Area 3A and 3B

The hydrologic effects of the CEPP action alternatives include the combined effects from implementation of the A-2 FEB, the L-6 Diversion, the northern WCA 3A hydropattern restoration components along L-4 (all action alternatives) and L-5 (Alts 2 through 4), the Miami Canal backfill (north of Interstate 75), and the proposed new or expanded WCA 3A outlet structures along L-67A, along with the associated operations. Compared to the FWO, average annual combined structural inflows to WCA 3A from STA 3/4, STA 5/ STA 6 (including Compartment C), and WCA 2A are significantly increased from 1,028 kAF to 1,274-1,275 kAF (a 24% increase) following implementation of the CEPP components. In order to avoid adverse increases to the frequency, duration, and peak stages of WCA 3A high water conditions with this net increase in WCA 3A inflows, average annual combined structural outflows from WCA 3A through S-151 (to WCA 3B), S-333 (to ENP NESRS), the S-12 structures (to ENP WSRS), and the S343/S344 culverts are also significantly increased from 1,190 kAF in the FWO to 1,303-1,482 kAF for Alts 1 through 4 (1,425 kAF for Alt 1; 1,482 kAF for Alt 2; 1,303 kAF for Alt 3; and 1,436 kAF for Alt 4).

Since WCA 3A covers approximately 752 square miles, hydrologic differences between the CEPP FWO and Alts 1 through 4 are characterized at representative gages throughout WCA 3A.

Within northwest WCA 3A, compared to the FWO, stages are generally significantly increased by 0.6-0.8 feet for Alt 1 and significantly increased by 0.5-0.7 feet for Alts 2 through 4 **(Figure C.2.1-59**). Stages within northeast WCA 3A are generally significantly increased by 0.4-0.7 feet for Alt 1 and significantly increased by 0.5-0.8 feet for Alts 2 through 4, with no significant change during extreme wet conditions and a slight increase in stage for extreme dry conditions (**Figure C.2.1-60**). Within east-central WCA 3A (3A-3), stages are generally significantly increased by 0.2-0.6 feet, with no significant change during the wettest 20% of conditions for Alts 1 through 4 (**Figure C.2.1-61**). Proceeding south within central WCA 3A (3A-4), stages are generally increased by 0.1-0.2 feet during average to dry conditions, with a slight depth reduction during the wettest 10% of conditions and no significant change during extreme dry conditions for Alts 1 through 4 (**Figure C.2.1-62**). Southern WCA 3A (3A-28) stages are decreased by 0.1-0.2 feet during the wettest 5% of conditions and slightly decreased during normal to dry conditions for Alts 1 and 4 (**Figure C.2.1-63**); for Alts 2 and 3, southern WCA 3A stages are decreased by 0.1-0.2 feet during the wettest 5% of conditions and decreased by 0.1-0.2 feet during wet, normal, and dry conditions.

The CEPP FWO includes the existing S-151 gated culvert as the sole structural inflow to WCA 3B (327 kAF average annual) and the existing S-355 A and B spillways as the only structural outflows from WCA 3B (<2 kAF average annual). By contrast, the CEPP action alternatives have between 1 and 4 new inflow structures to WCA 3B along L-67A (in addition to increased capacity at S-333), resulting in an additional WCA 3B inflow design capacity of between 750-2,000 cfs. The WCA 3B outflow configurations also incorporate a similar wide range of variability: the existing S-355s only (FWO, Alt 1); one additional 500 cfs western gravity structure (Alt 2); two additional 500 cfs pump stations (Alt 3); and additional removal of the L-29 Levee within the Blue Shanty flowway (Alt 4). Water budget maps with surface water flow vectors for Alts 1 through 4, focusing primarily on the structure flows (kAF average annual) and locations (levee seepage flux along L-30 and L-29 is also indicated), are provided in **Figure C.2.1-64** through **Figure C.2.1-67**. Only Alt 3 (with L-29 pumps) and Alt 4 (with the Blue Shanty flowway and L-29 Levee Gap) achieve any significant degree of north-to-south surface water flow directionality within WCA 3B, due to the CEPP prescribed limitations on WCA 3B high water stages (east of the Blue Shanty flowway only in Alt 4) and the increased down-gradient water stages in the L-29 Canal. Peak stages within central WCA 3B (Site 71) exceed 9.0 feet NGVD between 0-2% of the RSM-GL 1965-2005 period of simulation, and only Alt 2 results in WCA 3B stages above 8.0 feet NGVD for more than 20% or the period of simulation.

The WCA 3B hydrologic effects, resultant from the water budget differences, also vary significantly between the action alternatives. At Site 71 for Alt 1, WCA 3B stages are increased by 0.1-0.2 feet during the wettest 10% of conditions and during normal to dry conditions, compared to the FWO; for Alt 2, stages are significantly increased by 0.3-0.5 feet under all hydrologic conditions; for Alt 3, stages are significantly increased by 0.2-0.3 feet during the wettest 10% of conditions and during normal to dry conditions; for Alt 4, stages are slightly increased during the wettest 10% of conditions and increased by 0.1-0.2 feet during normal to dry conditions (**Figure C.2.1-68**). For Alt 4, the stage duration curves for stages within the interior of the Blue Shanty flowway and the down-gradient L-29 Canal stages are shown in **Figure C.2.1-69**; for Alt 4, the peak stage within the Blue Shanty flow-way is 9.73 feet NGVD and stages exceed 8.0 feet NGVD for approximately 45% of the period of simulation.

C.2.1.7.8 Northeast Shark River Slough

The CEPP action alternatives assume the L-29 Canal maximum operational limit at 9.7 feet NGVD (7.5 feet NGVD is used for the ECB and FWO) and removal of the G-3273 stage constraint (6.8 feet NGVD is used for the ECB and FWO). Total net structural inflows to NESRS (via the L-29 Canal; computed as the sum of S-333, S355A, S-355B, L-29SA, L-29PA, L-29PB, L29 Levee Gap, and S-356 minus S-334) are significantly increased compared to the CEPP FWO (94 kAF average annual): 736 kAF for Alt 1; 740 kAF for Alt 2; 797 kAF for Alt 3; and 717 kAF for Alt 4. Only Alt 3 (with L-29 pumps) and Alt 4 (Blue Shanty flowway and L-29 Levee Gap) deliver a significant portion of these NESRS deliveries through WCA 3B, with 52% and 23% respectively (Alt 1 – 1%; Alt 2 – 4%), due to the CEPP prescribed limitations on WCA 3B high water stages (east of the Blue Shanty flowway only in Alt 4) and the increased down-gradient water stages in the L-29 Canal.

Stage duration curves for the L-29 Canal are provided in **Figure C.2.1-70** and **Figure C.2.1-71** (upper 25% only) (note: for Alt 4, L-29 Canal stages are indicated west of the proposed L-29 divide structure). For the CEPP action alternatives, peak stages in the L-29 Canal range between 9.57-9.63 feet NGVD (the FWO peak stage is 8.43 feet NGVD). Based on the assumed operational constraints, the CEPP FWO L-29 Canal stage exceeds the maximum operational limit of 7.5 feet NGVD approximately 6% of the 1965-2005 RSM-GL period of simulation (due to direct rainfall); by contrast, the maximum operational limit prescribed for the CEPP action alternatives is not constraining during any period within the period of simulation, and L-29 Canal stages exceed 8.5 feet NGVD during only approximately 10-13% of the period of simulation.

Compared to the FWO, stages are significantly increased by 0.7-1.0 feet under all hydrologic conditions at NESRS-2 for Alts 1 through 4 (**Figure C.2.1-72**). Similar trends are also observed further south at the NESRS-1 monitoring gage. Changes to the average annual overland flow to NESRS across RSM-GL transect 18 are shown in **Figure C.2.1-74**; a reference map for the RSM-GL transects (which are consistent with the SFWMM model transects, adjusted for the RSM grid resolution) is provided as **Figure C.2.1-73**.

C.2.1.7.9 Western Shark River Slough

Western SRS (WSRS), located to the west of L-67 Extension Levee and bounded on the north by Tamiami Trail, is primarily influenced by rainfall and water management operations at the S-12 structures (A, B, C and D). Under ERTP, the utilization of the S-12 structures and the seasonal sequential closure periods beginning from the west at S-12A (November 1 – July 14) and S-12B (January 1 – July 14), respectively, is meant to move water from WCA 3A into SRS while providing conditions for Cape Sable seaside sparrow Subpopulation-A (CSSS-A) nesting and breeding. Modification to the ERTP seasonal closure periods for the S-12A and S-12B was not considered during CEPP preliminary screening and alternative formulation, based on USACE consideration of the USFWS Biological Opinion for ERTP.

Changes to the average annual overland flows to WSRS across RSM-GL transect 17 are shown in **Figure C.2.1-75**. Compared to the FWO, stages within northwest ENP (NP-201) are generally significantly decreased by 0.1-0.4 feet under all hydrologic conditions for Alt 1 (**Figure C.2.1-76**). For Alt 2 and Alt 3, NP-201 stages are slightly decreased during wet conditions, slightly increased during normal conditions, and decreased by 0.1-0.3 feet under normal to dry conditions; similarly, for Alt 4, NP-201 stages are slightly decreased during extreme wet conditions, increased by 0.1-0.2 feet during normal conditions, and decreased by 0.1-0.2 feet under normal to dry conditions. To the south and west, the NP-205 monitoring gage (used as an indicator for CSSS -A hydrology) indicates a potentially significant stage decrease of 0.1-0.2 feet under all hydrologic conditions for all action alternatives, compared to the FWO

(**Figure C.2.1-77**). Stages further south within Central Shark River Slough (P-33) are generally significantly increases by 0.2-0.6 feet under all hydrologic conditions for all action alternatives (**Figure C.2.1-78**). Stages within Central Shark River Slough demonstrate a combined hydrologic response to the hydrologic changes previously indicated for both NESRS and WSRS; the resultant combined average annual transect flows within Central Shark River Slough (Transect 27) are significantly increased compared to the FWO (average annual 594 kAF): 812 kAF for Alt 1 (37% increase); 786 kAF for Alt 2 (32%); 842 kAF for Alt 3 (42%); and 856 kAF for Alt 4 (44%) (**Figure C.2.1-79**).

C.2.1.7.10 Taylor Slough

Compared to the FWO, ENP stages along Taylor Slough (NP-TSB) are slightly increased by approximately 0.1 feet during the wettest 20% of hydrologic conditions for Alt 1 through 3 (**Figure C.2.1-80**). By comparison, for Alt 4, which includes the Blue Shanty flowway and the L-29 divide structure to direct surface water flows further west within NESRS, ENP stages along Taylor Slough are slightly decreased by approximately 0.1 feet during the wettest 30% of hydrologic conditions.

C.2.1.7.11 Lower East Coast Area

The LEC area is located to the east of the L-31N, L-31W, and C-111 canals. Under the FWO (ERTP), specified canal water levels/ranges are meant to provide flood protection, water supply, and prevention of saltwater intrusion for the LEC. For the CEPP final array of alternatives, the operations for the SDCS are changed from the FWO operations for G-211 and the coastal canals are utilized to convey seepage water to Biscayne Bay to offset for reduced flows caused by implementation of CEPP.

Observed stage changes within the LEC are separately discussed with the summary of flood control and water supply performance for the CEPP action alternatives, included in **Section C.2.1.8**.

C.2.1.7.12 8.5 Square Mile Area

The CEPP action alternatives modify the FWO operations of the S-357 pump station, in an effort to increase discharges from the 8.5 SMA detention cell to the C-111 South Dade North Detention Area and reduce the reliance on the S-331 pump station in L-31N to provide flood mitigation for the 8.5 SMA protected area. Details of the S-357 operations are provided with the documentation of the modeling assumptions for the CEPP action alternatives, located in Annex A-2 of the Engineering Appendix (Appendix A). The protected portion of the 8.5 SMA is represented by three model grid cells in the RSM-GL (**Figure C.2.1-81**), and the resolution of the RSM-GL is extremely limiting for adequate representation of the 8.5 SMA project features. Prior to implementation of CEPP, further technical investigations will likely be needed for the 8.5 SMA operations, and additional hydrologic/hydraulic modeling with a higher resolution model may be required.

Stages within the 8.5 SMA, located along the eastern boundary of ENP, are lowered by approximately 0.25 feet during wet conditions for RSM-GL grid cells 2965 and 2962, compared to the FWO (**Figure C.2.1-81**); within the resolution of the RSM-GL model, these grid cells represent northern and eastern 8.5 SMA respectively. However, stages within the southwest portion of the 8.5 SMA protected area, represented by RSM-GL grid cell 2749, are increased by approximately 0.3-0.6 feet under all hydrologic conditions.

C.2.1.7.13 Biscayne Bay

Combined total average annual surface water canal discharges to central and southern Biscayne Bay (S-336, S-338, S-194, S-196, S-197) are reduced by between 23-24 kAF for Alts 1 and 2, reduced by 44 kAF

for Alt 3, and reduced by 37 kAF for Alt 4. Average annual surface water canal discharges to northern Biscayne Bay (S-29, S-28, S-27), which are affected by the assumed operations of the CERP BCWPA project, are unchanged for Alt 1, increased by 14 kAF for Alt 2, slightly reduced by 3 kAF for Alt 3, and reduced by 7 kAF for Alt 4R2.

C.2.1.7.14 Florida Bay

For the CEPP action alternatives, average annual surface water transect flows from southeastern ENP towards Florida Bay are increased by 2-3 kAF (7-11%) for Craighead Basin (RSM-GL Transect 23-A), increased by 5 kAF (7%) from Taylor Slough (Transect 23-B), and increased by 0-2 kAF (<1%) for the Eastern Panhandle of ENP (Transect 23-C), resulting in a net increase of approximately 7-10 kAF for the action alternatives, compared to the FWO. The salinity effects within Florida Bay from this overall increase and changed spatial distribution of flows were also evaluated by the CEPP ecological sub-team (with additional RECOVER support), and additional information for the changes observed between the CEPP action alternatives and the FWO is discussed in **Appendix G, Environmental Benefits Model**.

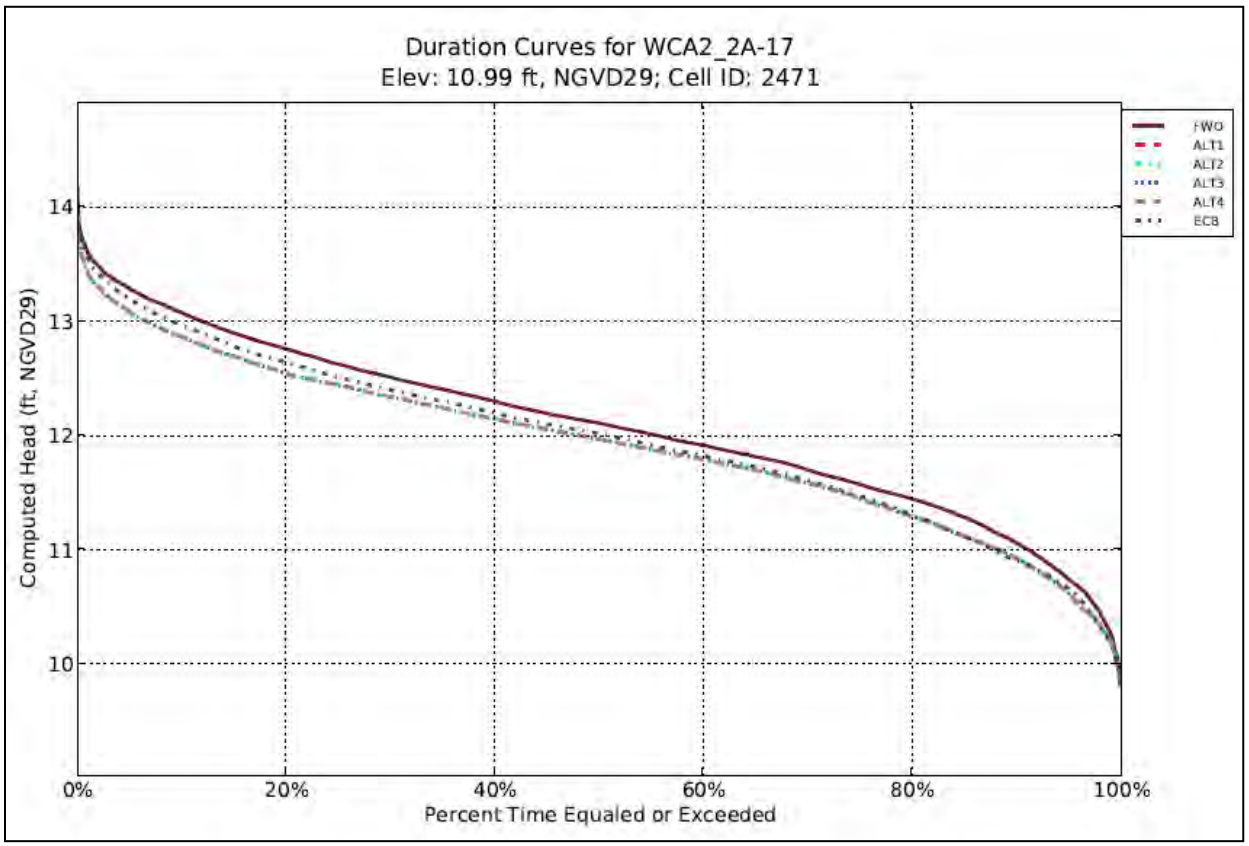

Figure C.2.1-55. Central WCA 2A Stage Duration Curve.

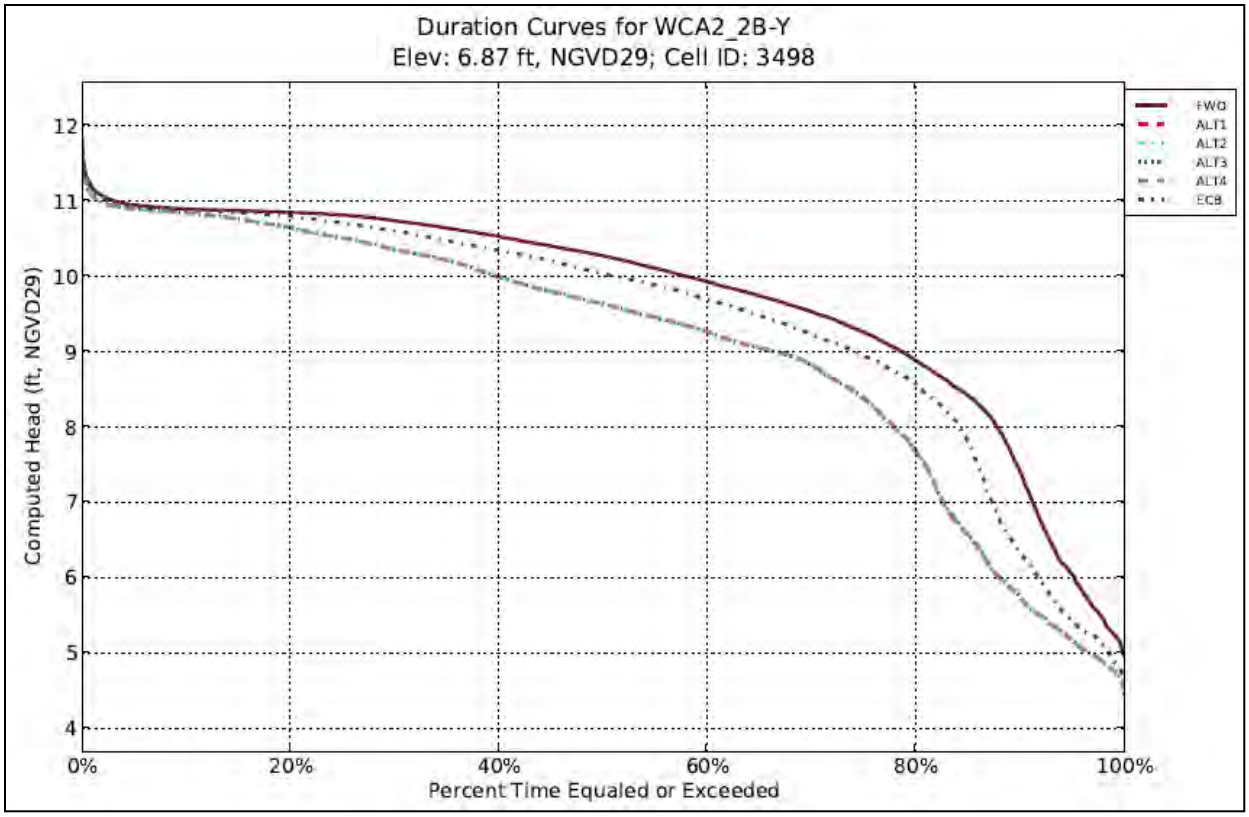

Figure C.2.1-56. Southern WCA 2B Stage Duration Curve.

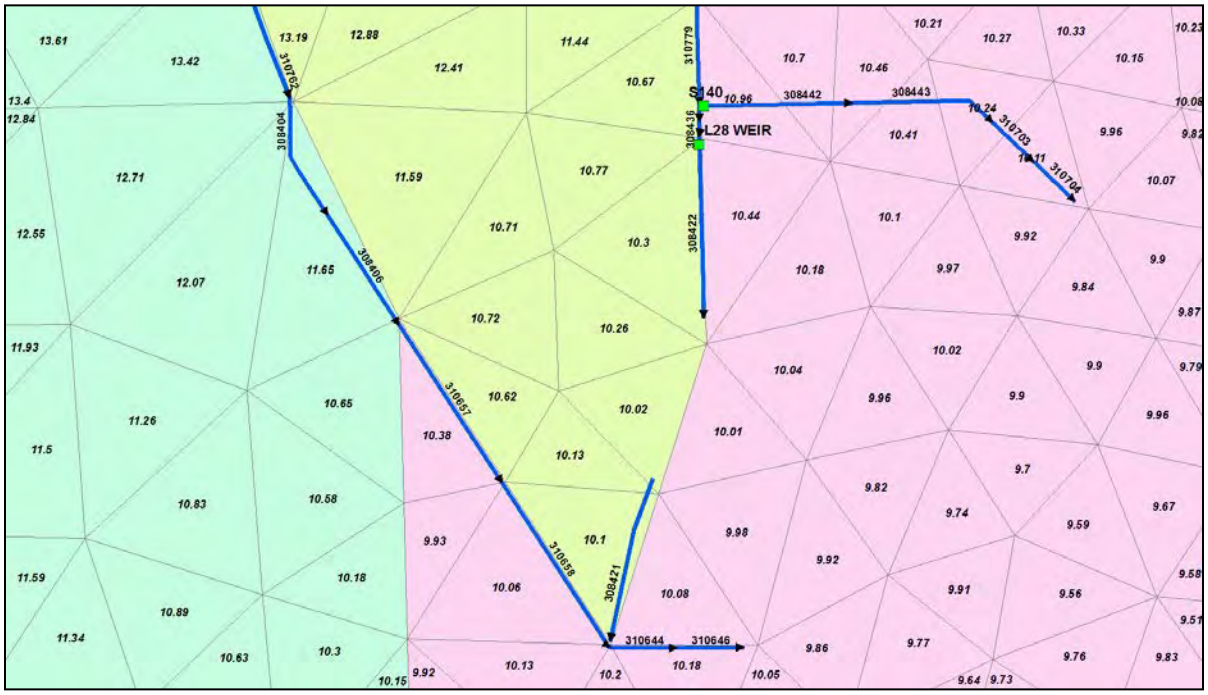

Figure C.2.1-57. L-28 Triangle Modification for Alt 1.

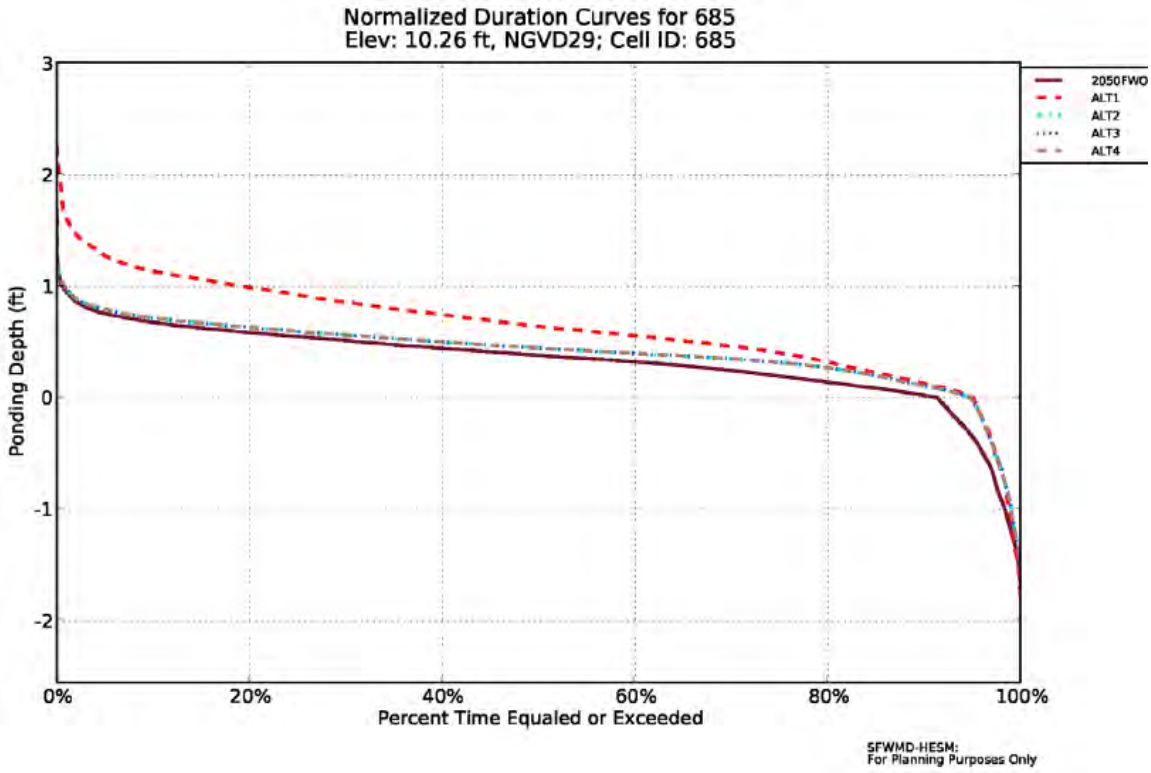

Figure C.2.1-58. L-28 Triangle Stage Duration Curve.

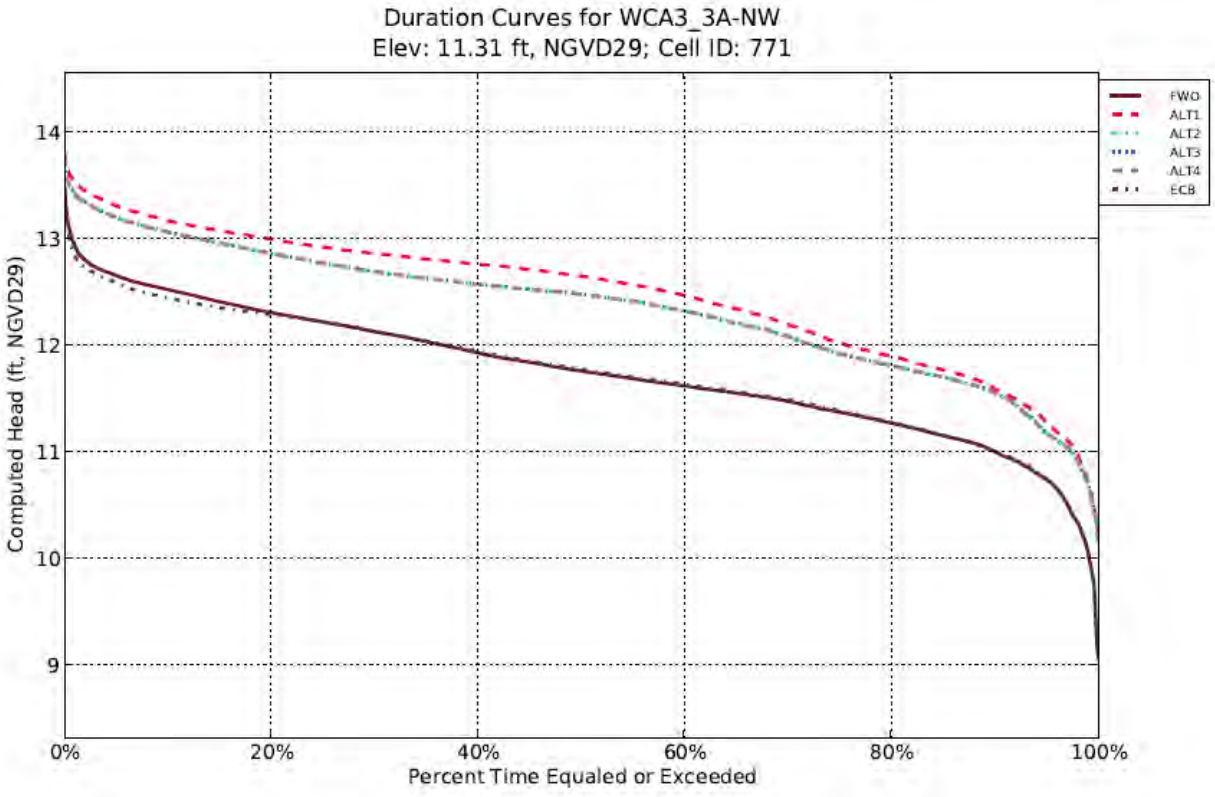

Figure C.2.1-59. Northwest WCA 3A Stage Duration Curve.

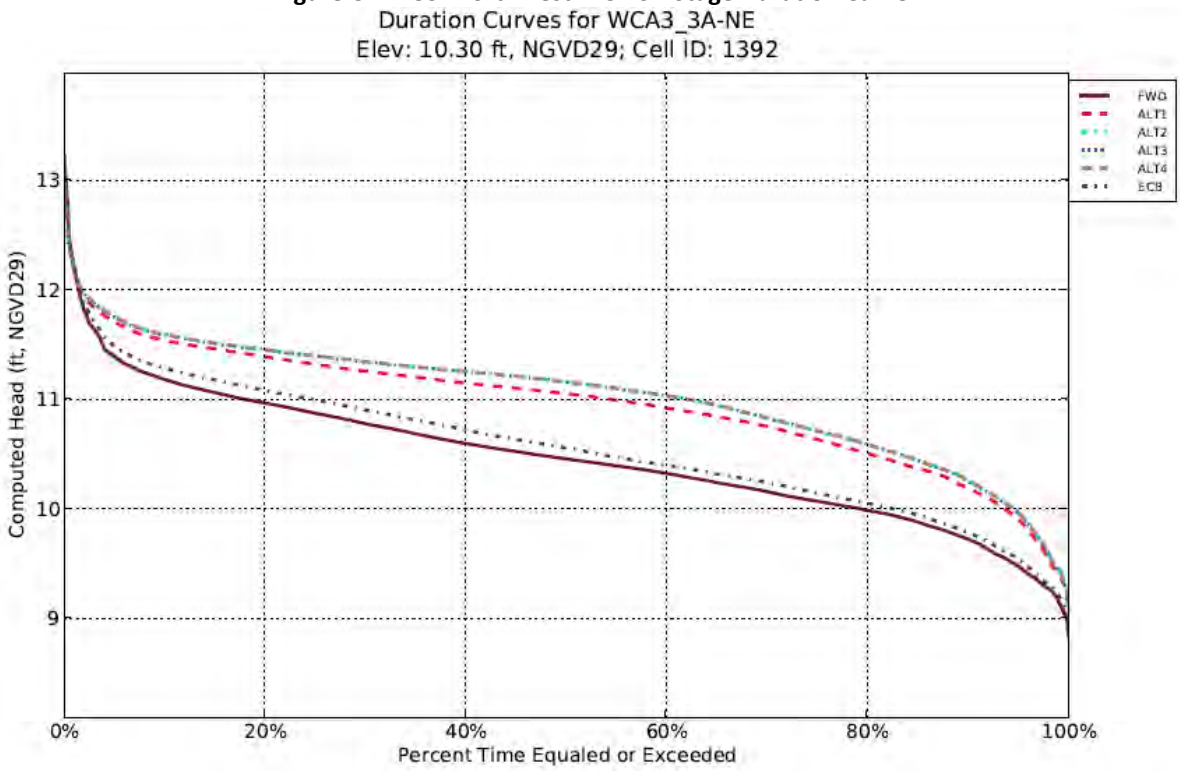

Figure C.2.1-60. Northeast WCA 3A Stage Duration Curve.

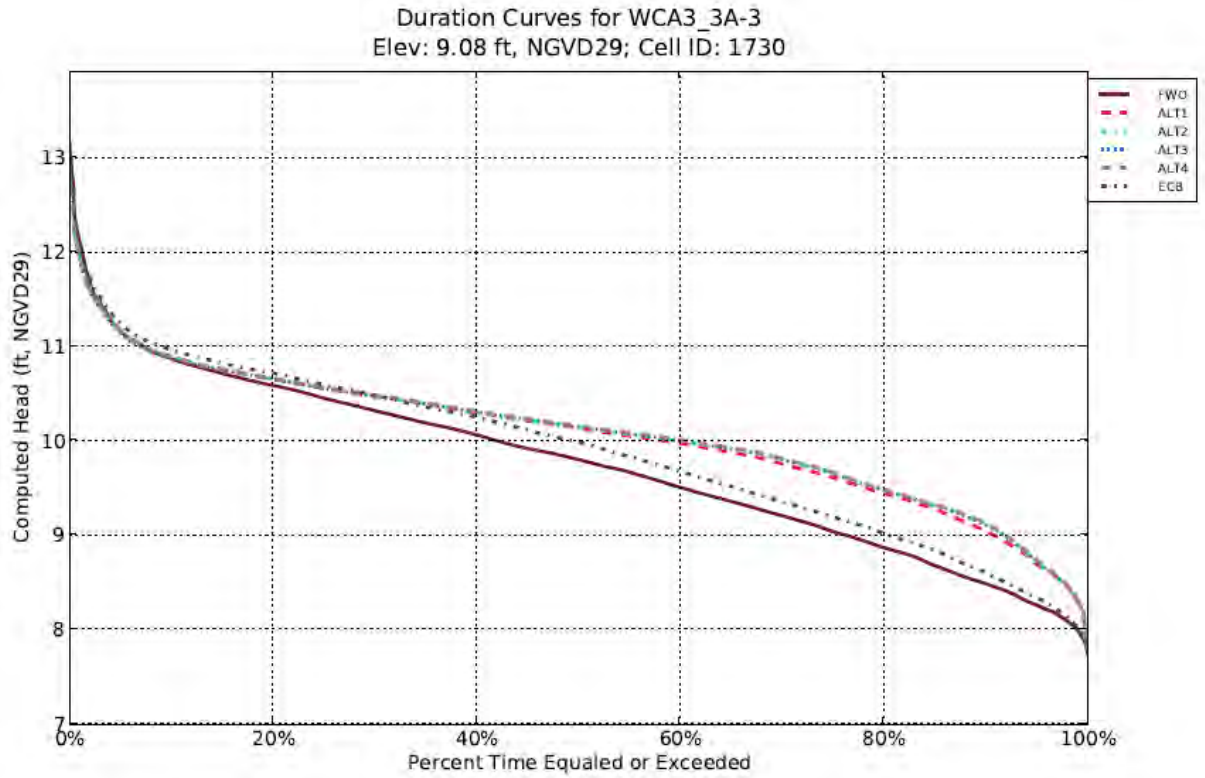

Figure C.2.1-61. East-Central WCA 3A Stage Duration Curve.

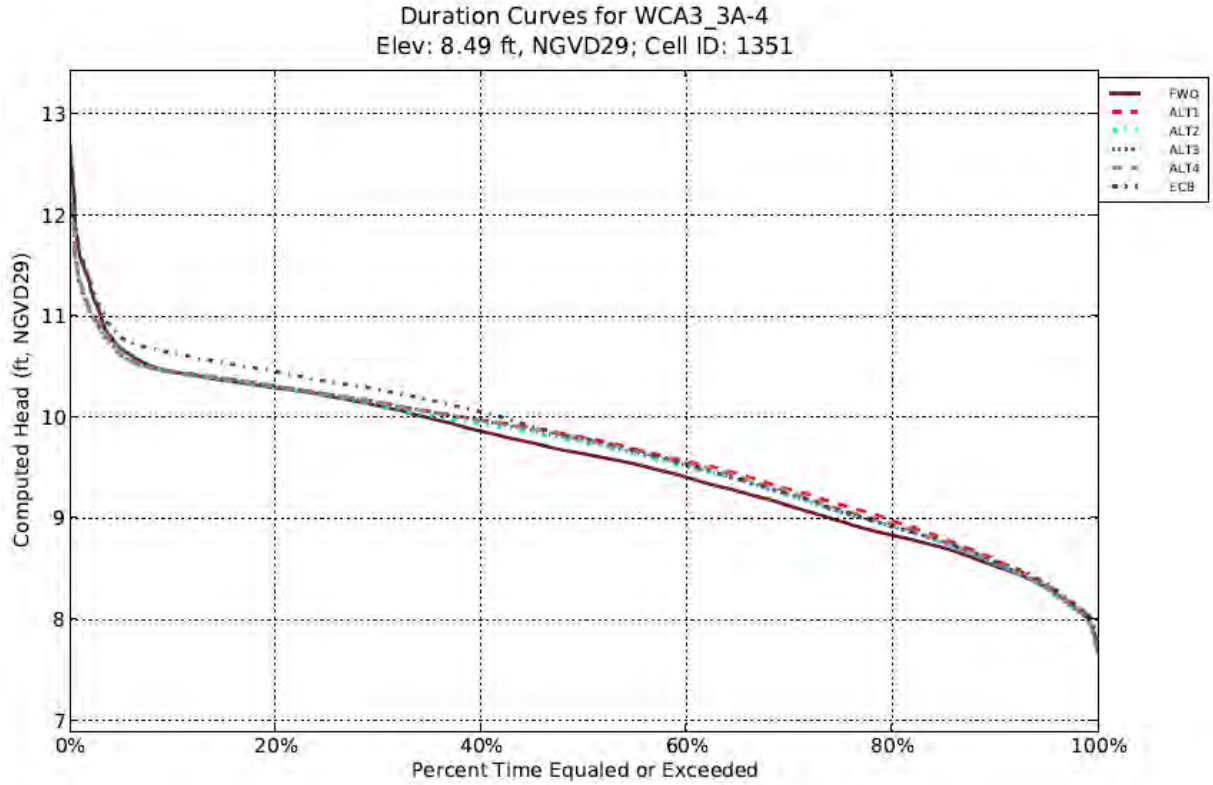

Figure C.2.1-62. Central WCA 3A Stage Duration Curve.

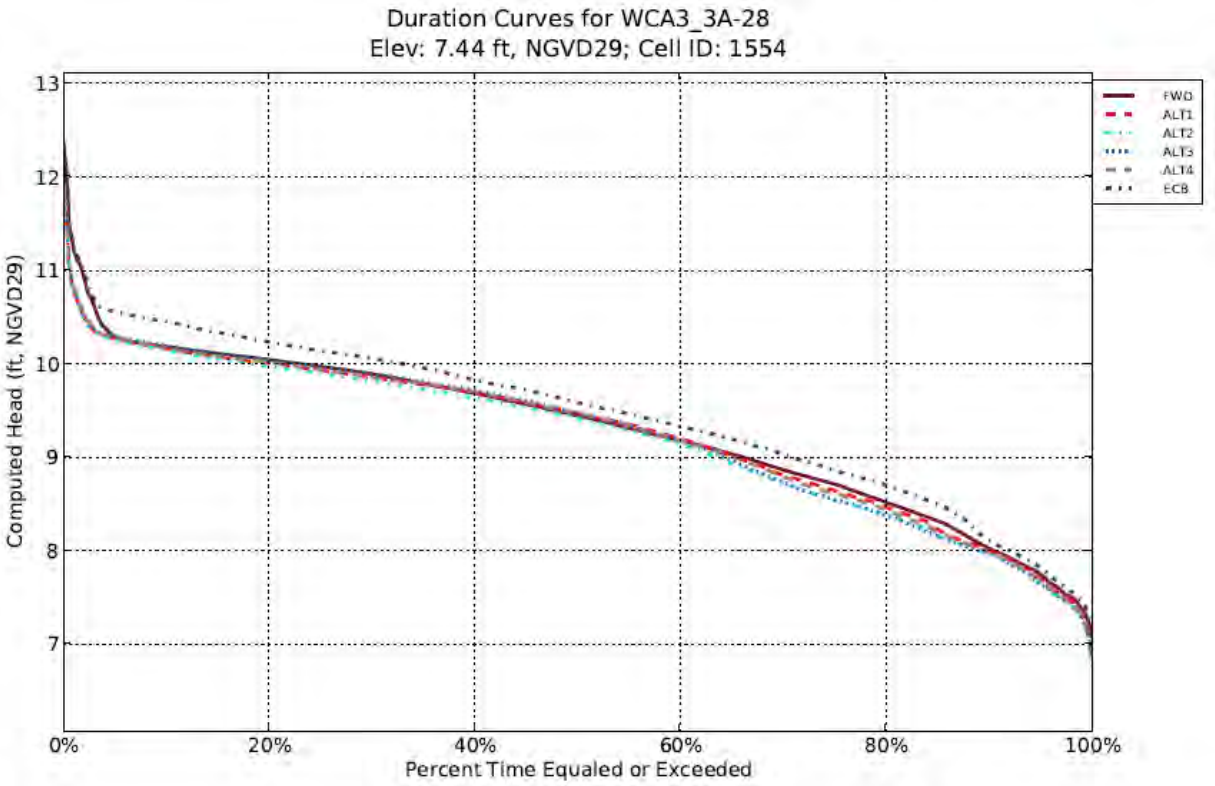

Figure C.2.1-63. South WCA 3A Stage Duration Curve.

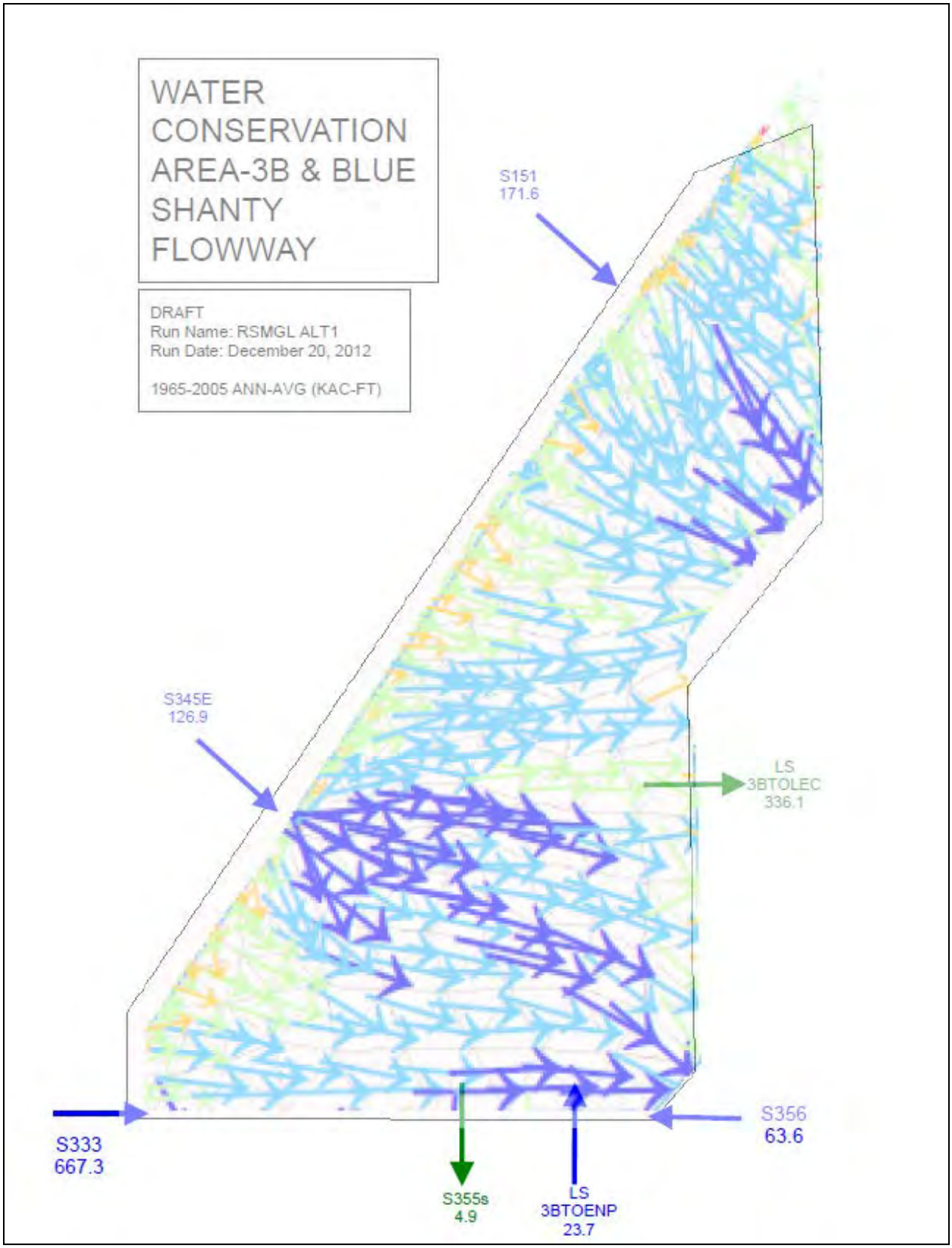

Figure C.2.1-64. WCA 3B Water Budget and Flow Vector Map for Alt 1.

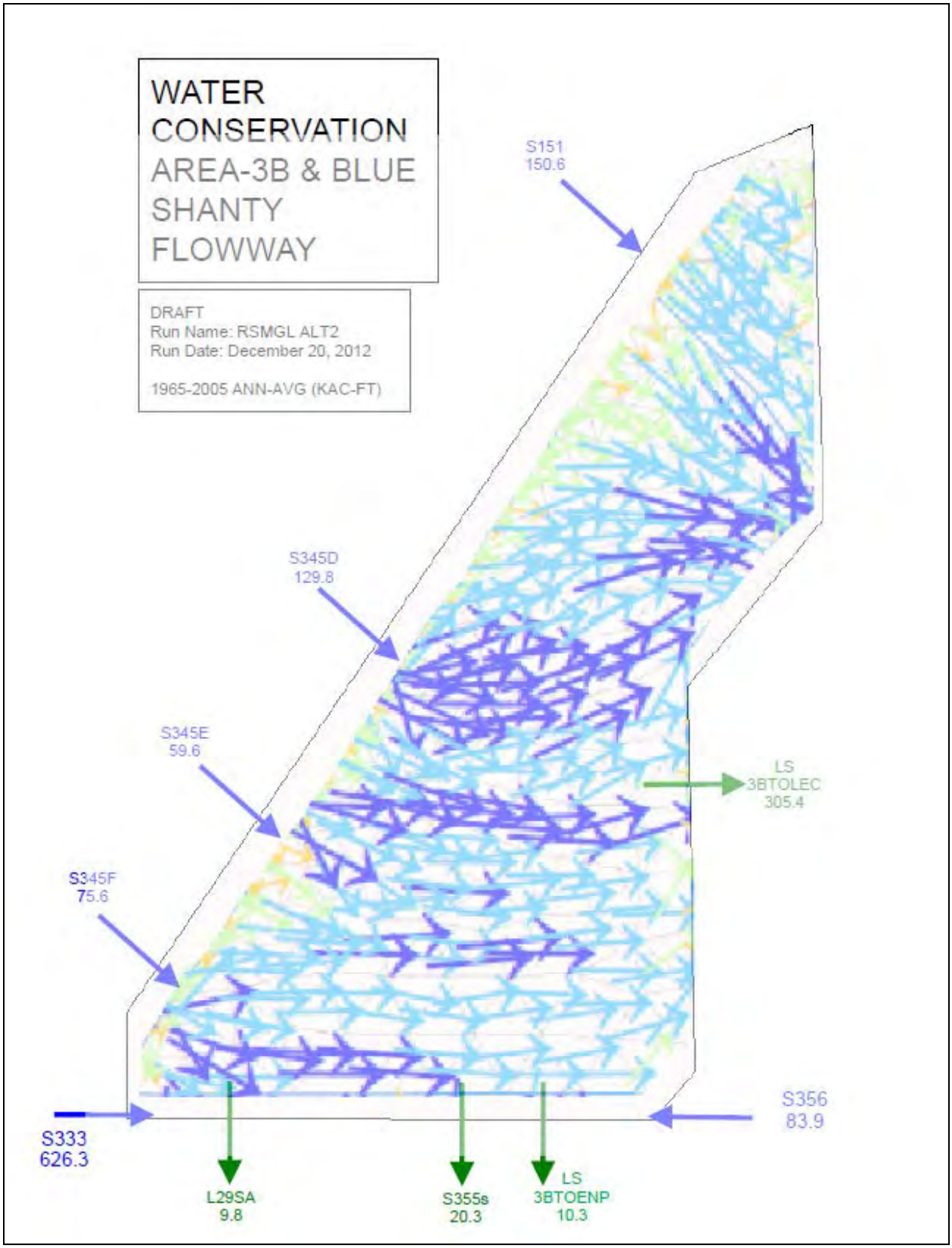

Figure C.2.1-65. WCA 3B Water Budget and Flow Vector Map for Alt 2.

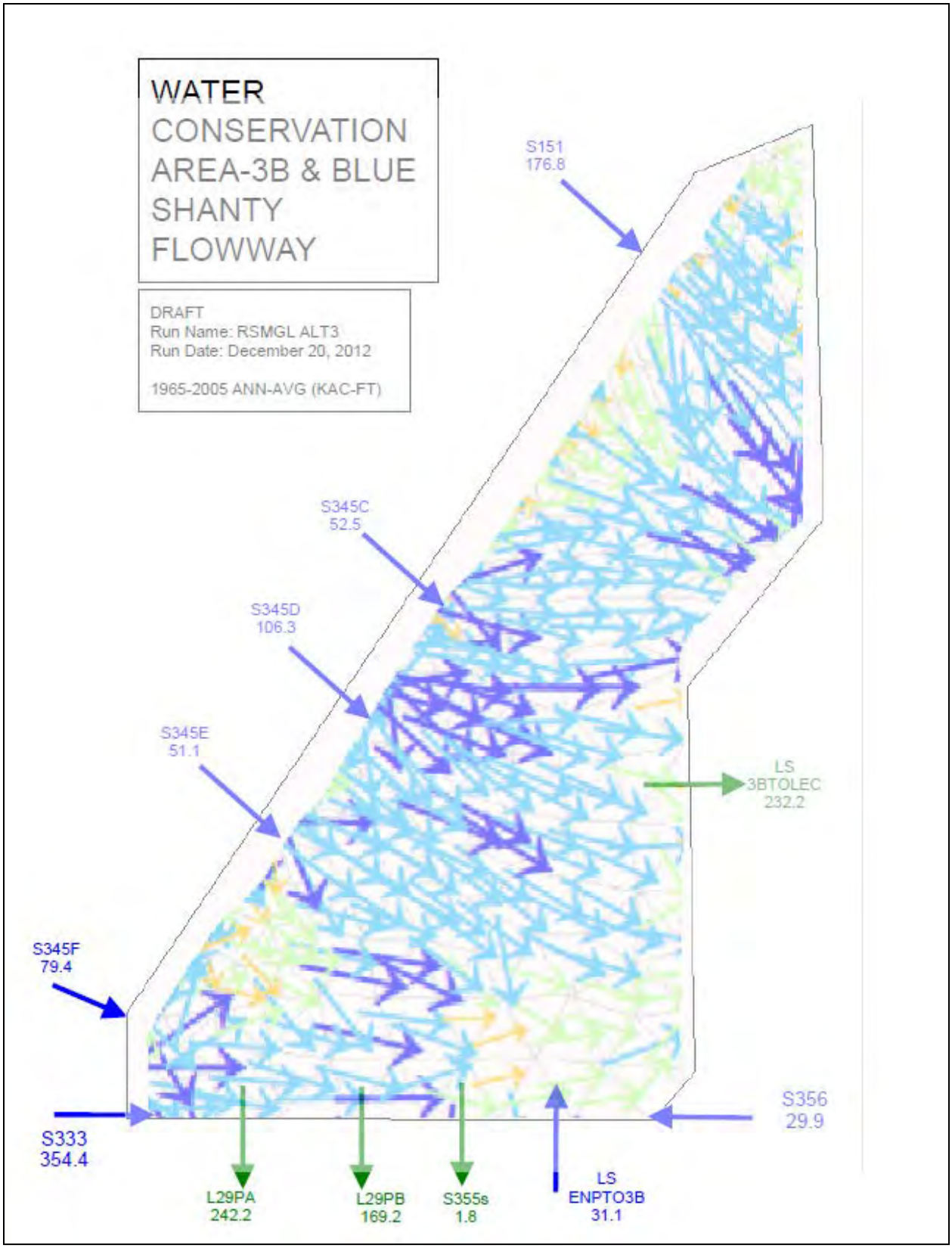

Figure C.2.1-66. WCA 3B Water Budget and Flow Vector Map for Alt 3.

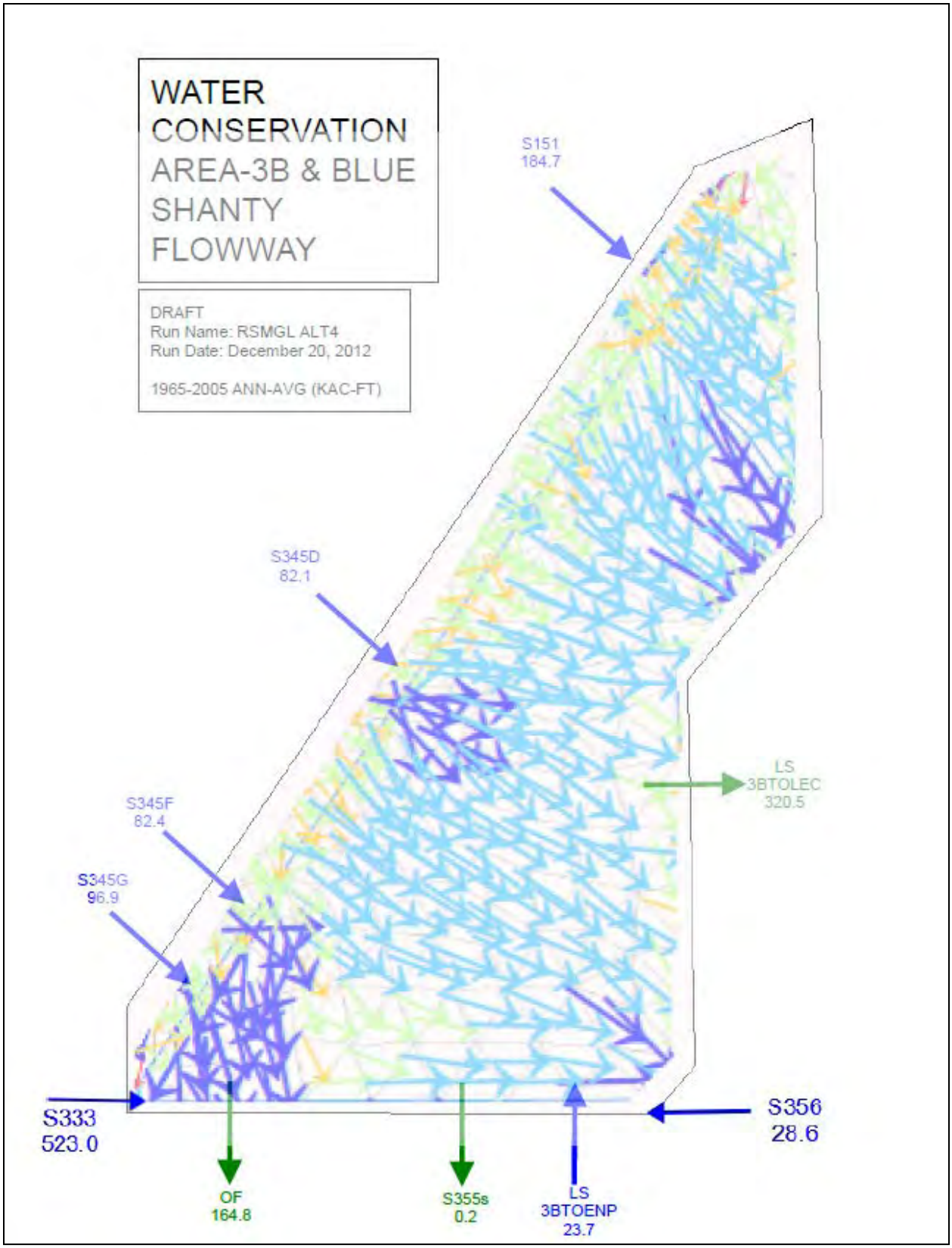

Figure C.2.1-67. WCA 3B Water Budget and Flow Vector Map for Alt 4.

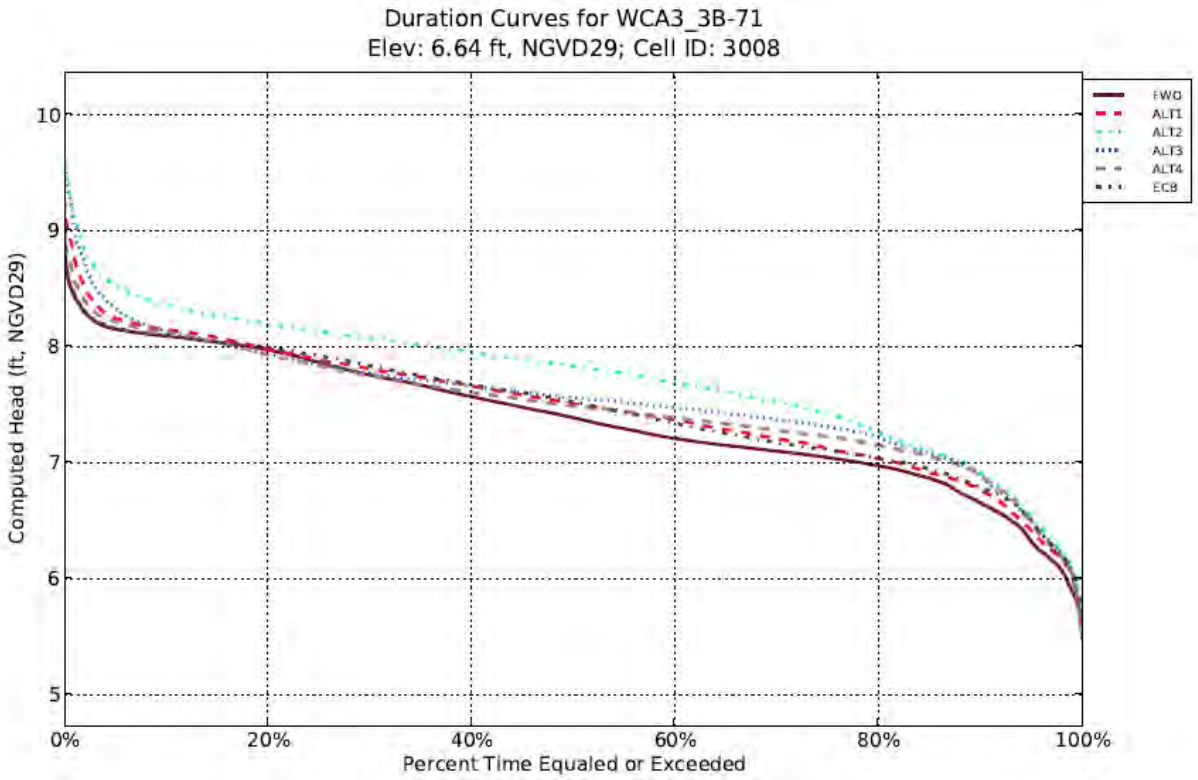

Figure C.2.1-68. Central WCA 3B Stage Duration Curve.

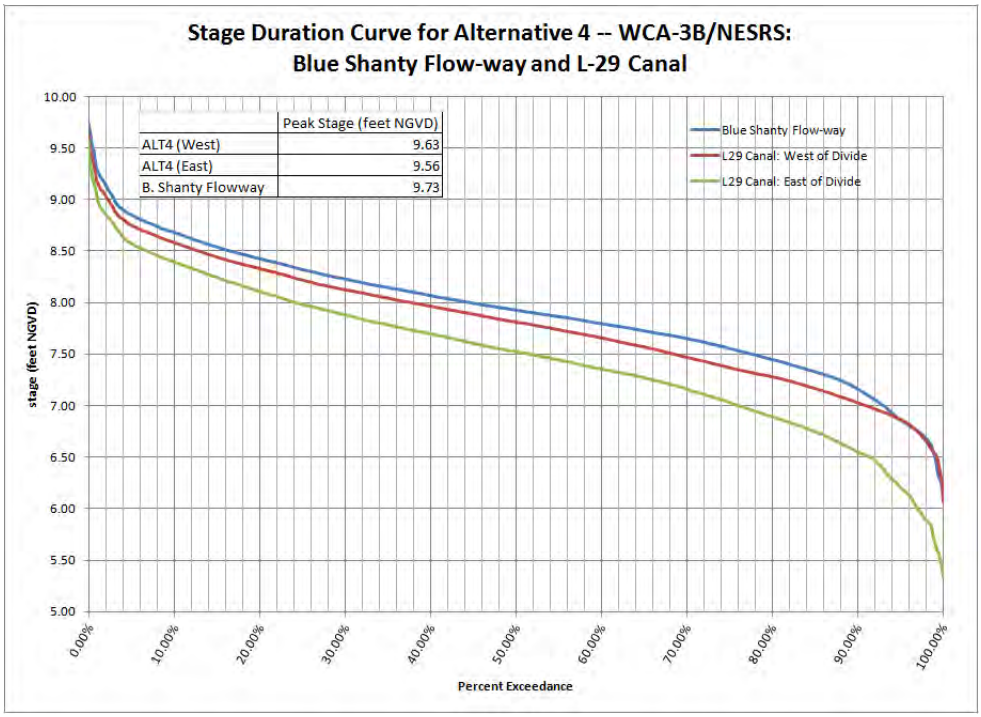

Figure C.2.1-69. WCA 3B Blue Shanty Flow-Way Stage Duration Curve (Alt 4).

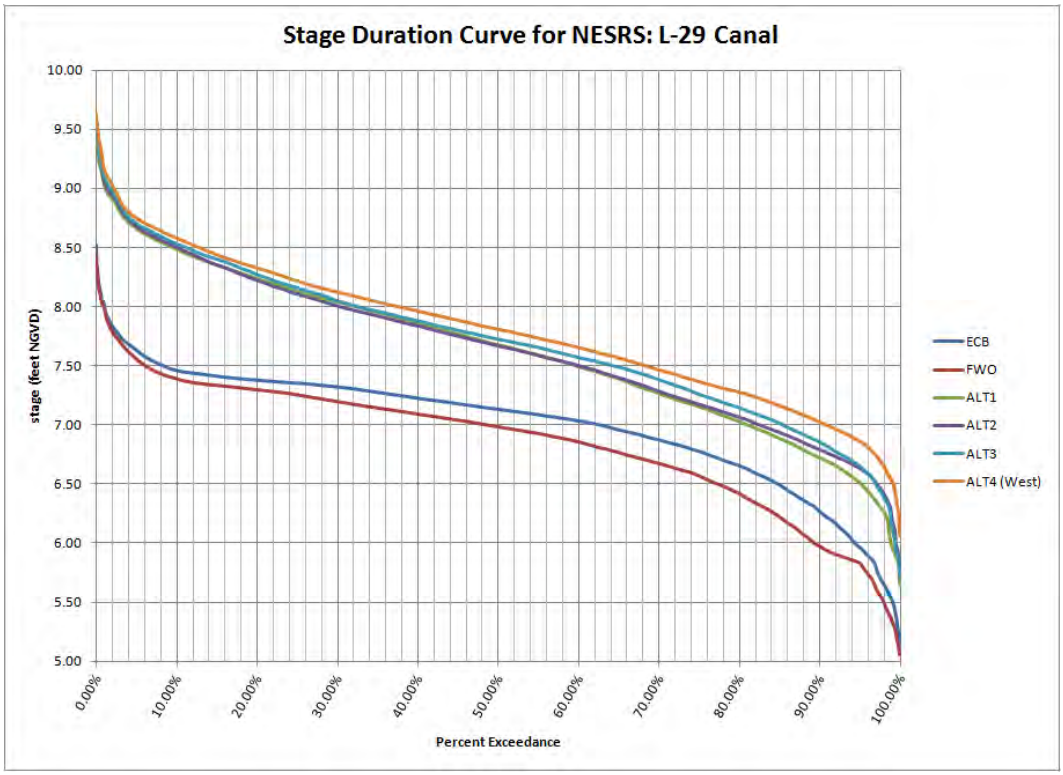

Figure C.2.1-70. L-29 Canal Stage Duration Curve.

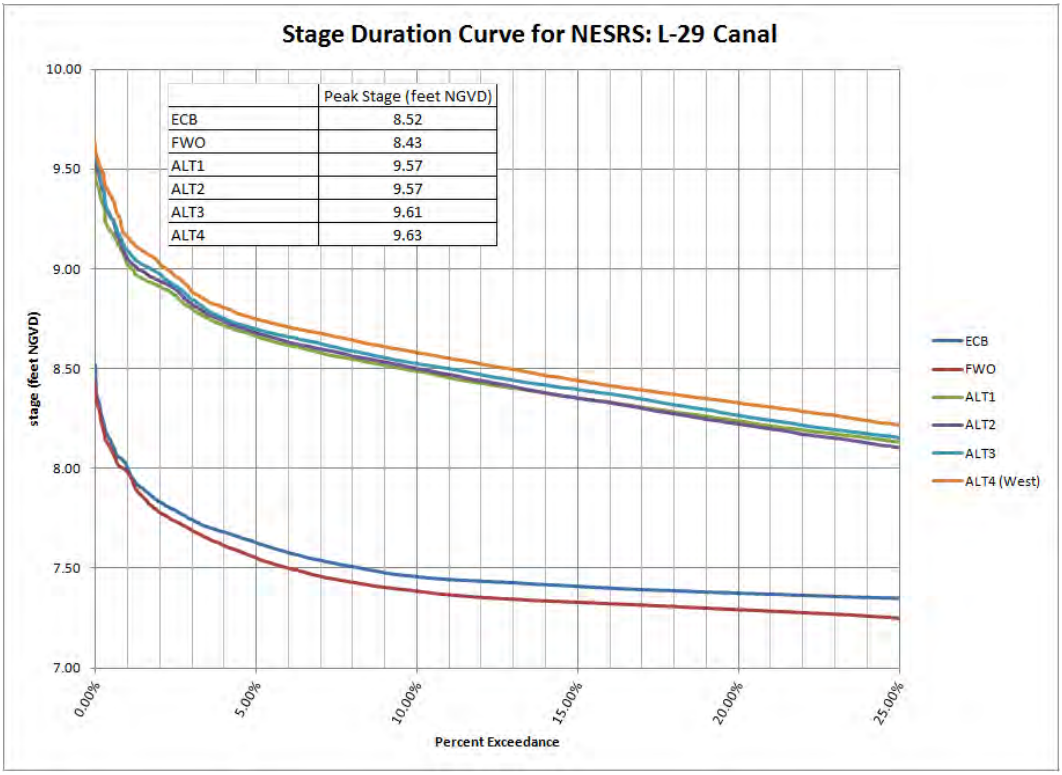

Figure C.2.1-71. L-29 Canal Stage Duration Curve (upper 25%).

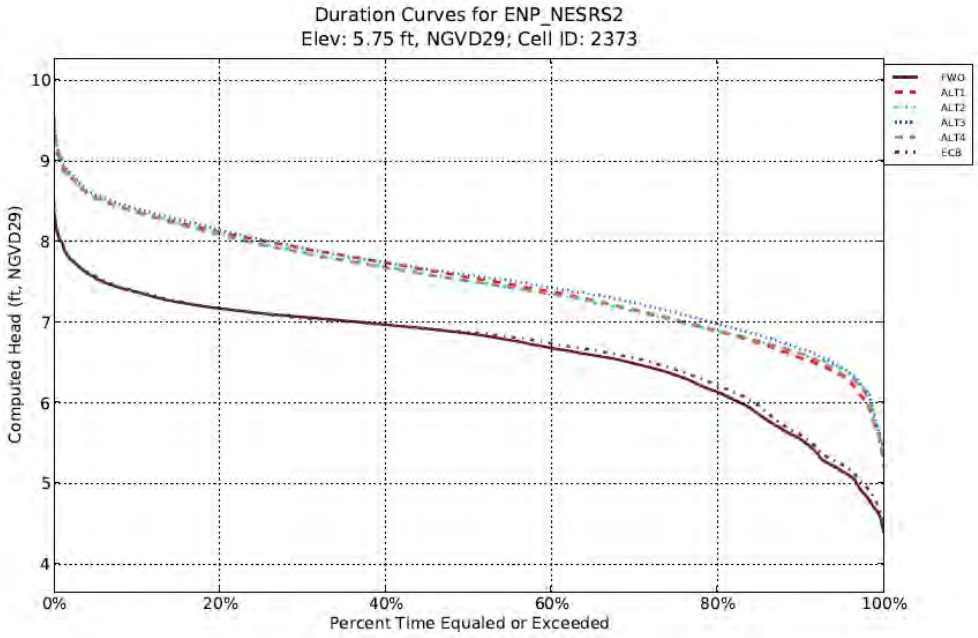

Figure C.2.1-72. Northeast ENP Stage Duration Curve.

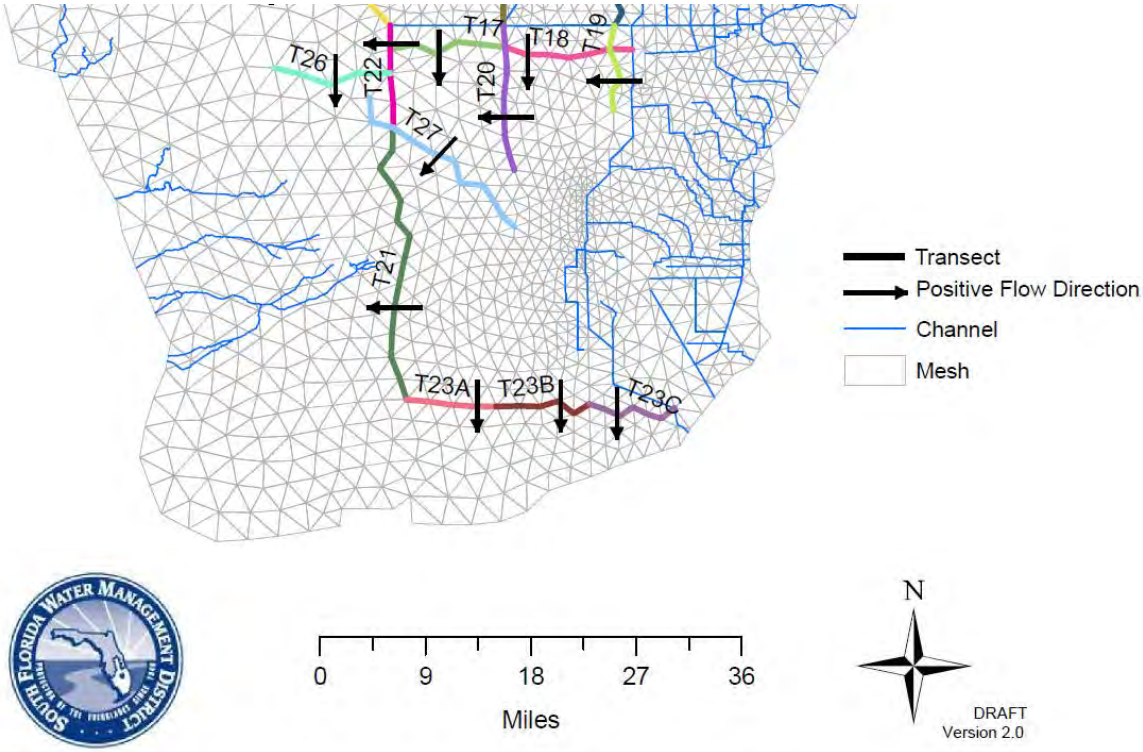

Figure C.2.1-73. RSM-GL Overland Flow Transects for ENP.

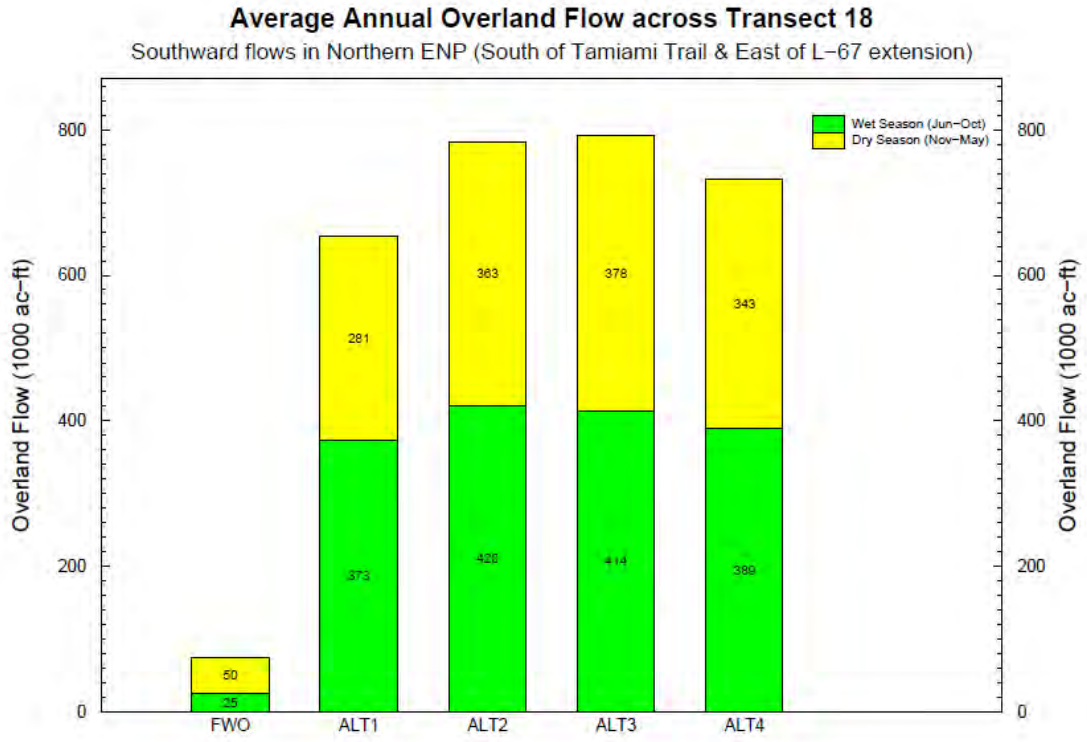

Figure C.2.1-74. Average Annual Overland Flow to NESRS.

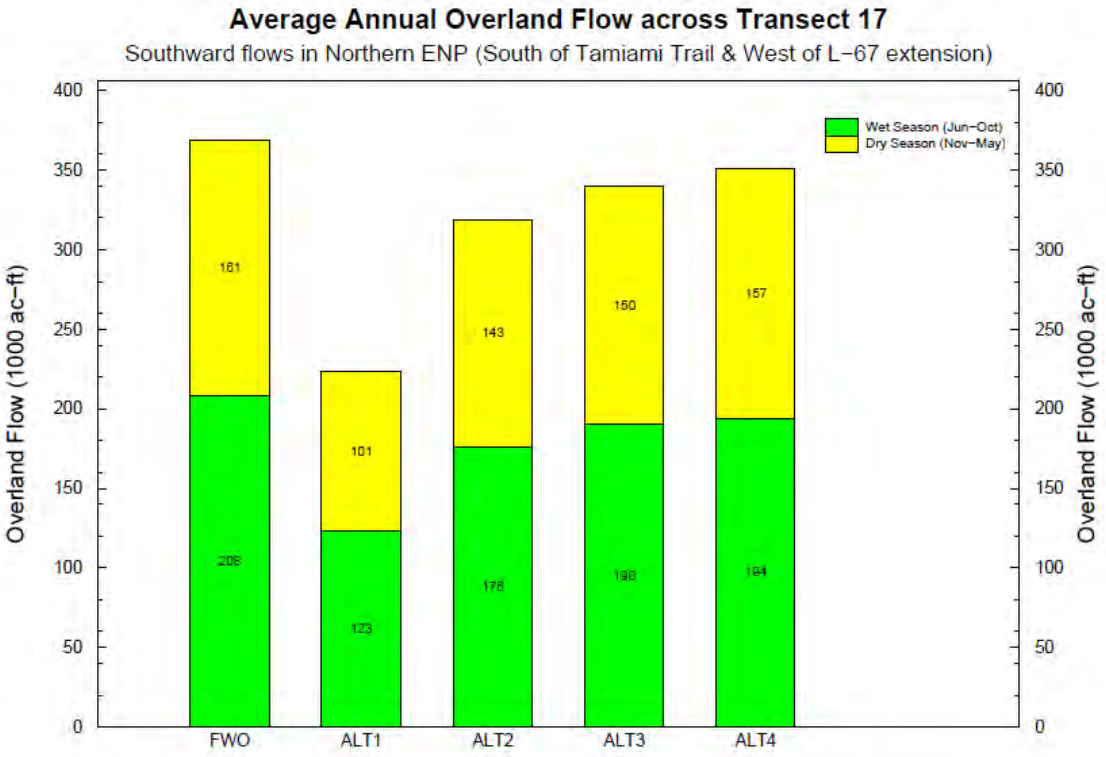

Figure C.2.1-75. Average Annual Overland Flow to WSRS.

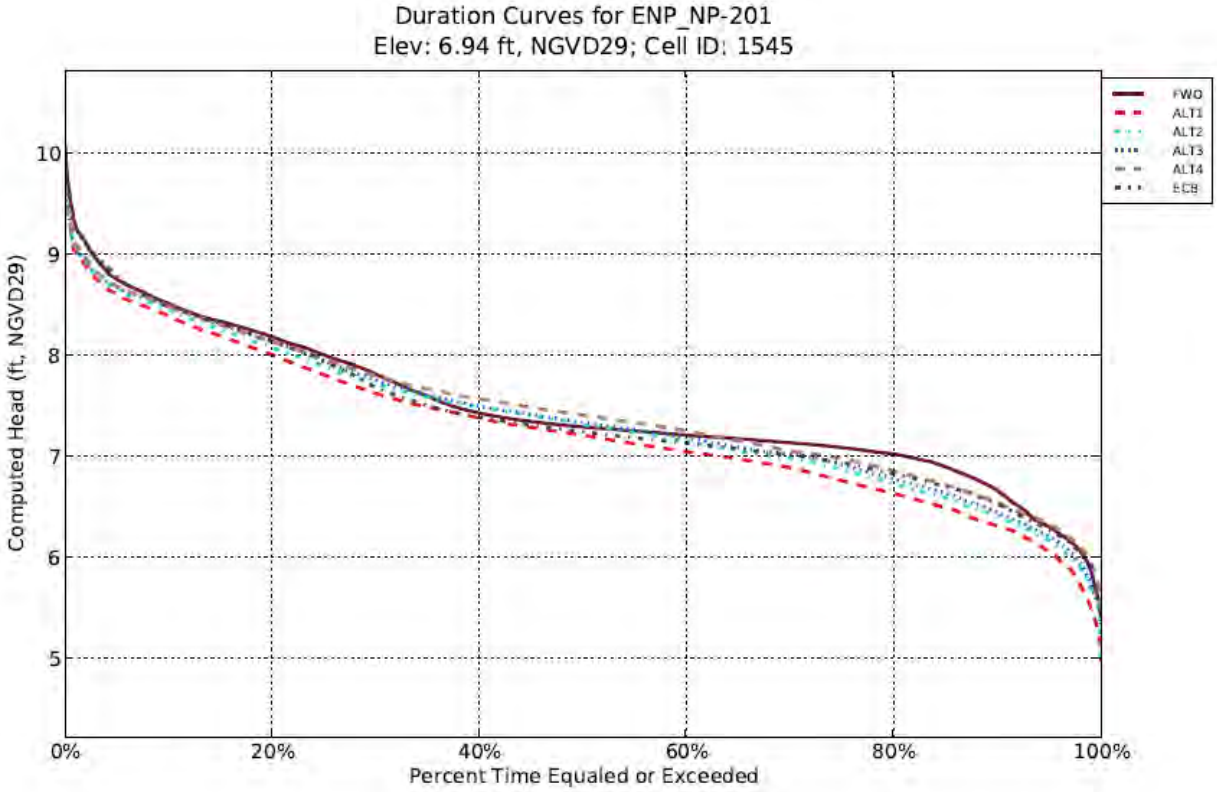

Figure C.2.1-76. Northwest ENP Stage Duration Curve (NP-201).

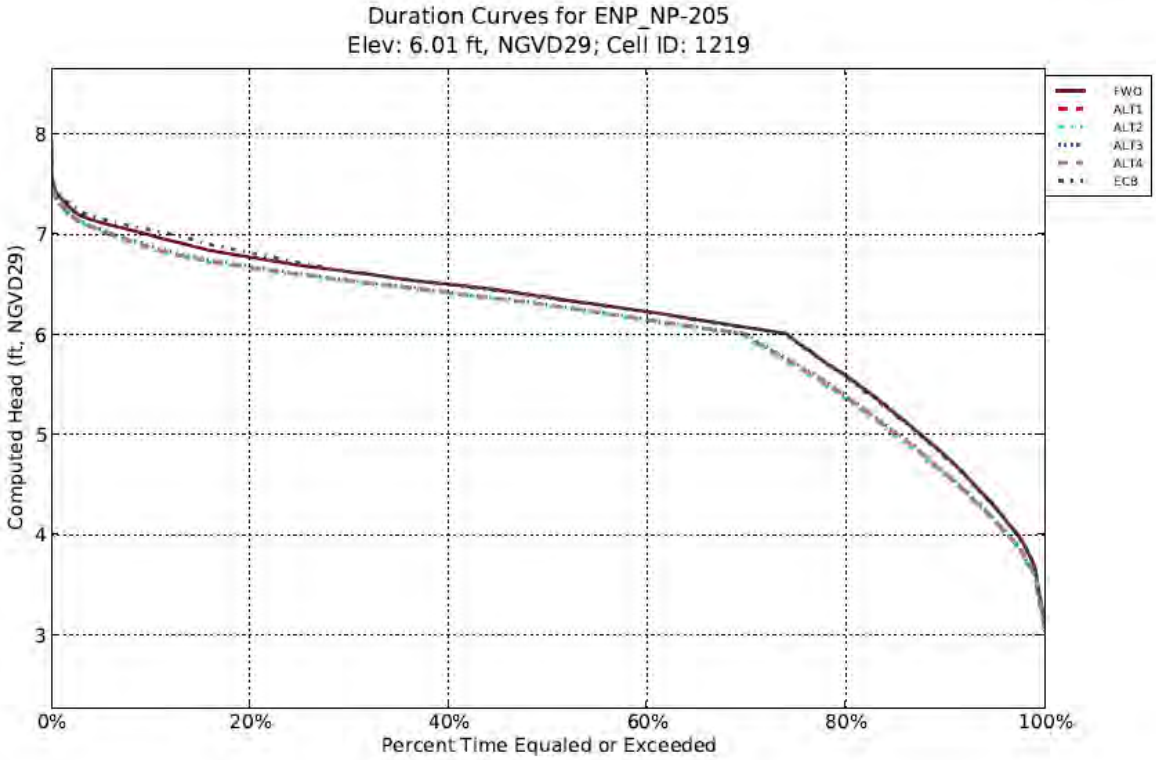

Figure C.2.1-77. Northwest ENP Stage Duration Curve (NP-205).

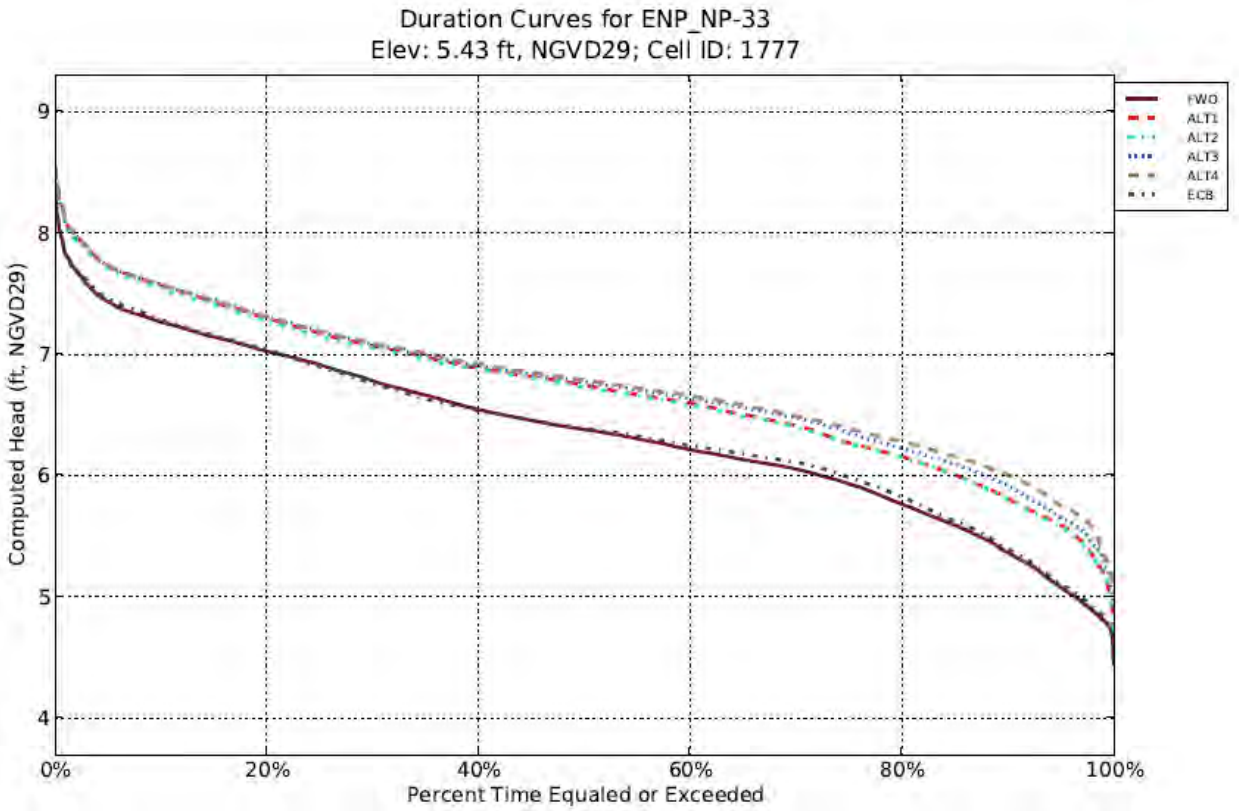

Figure C.2.1-78. Central ENP Stage Duration Curve.

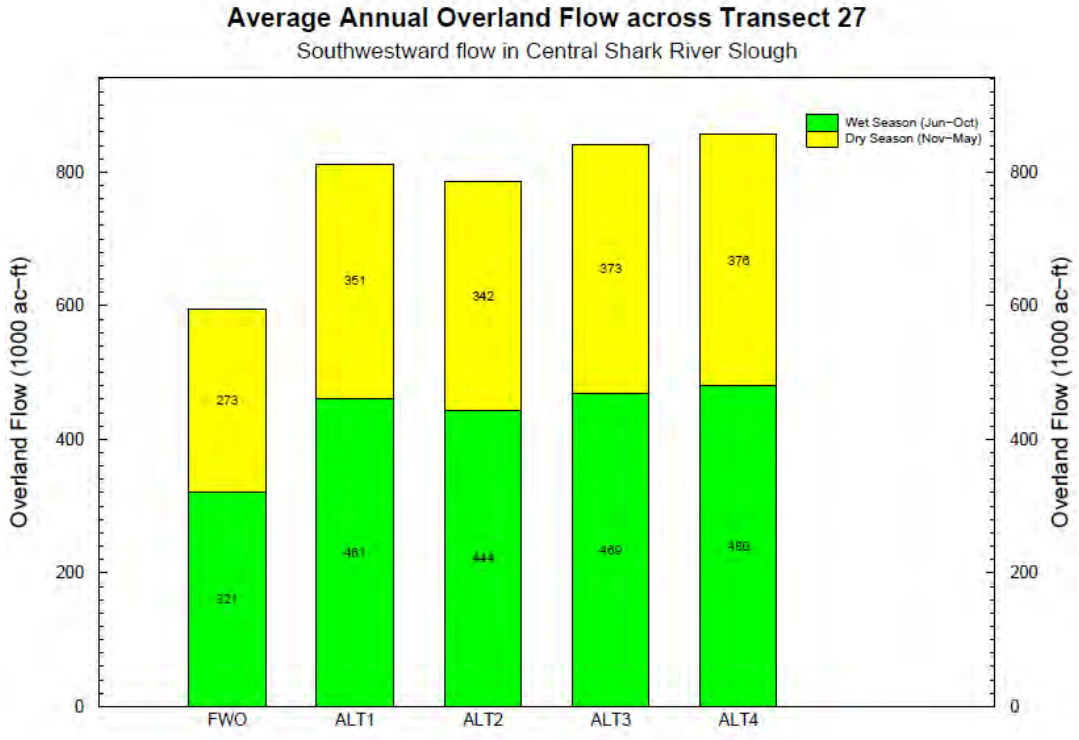

Figure C.2.1-79. Average Annual Overland Flow Transect for Central Shark River Slough.

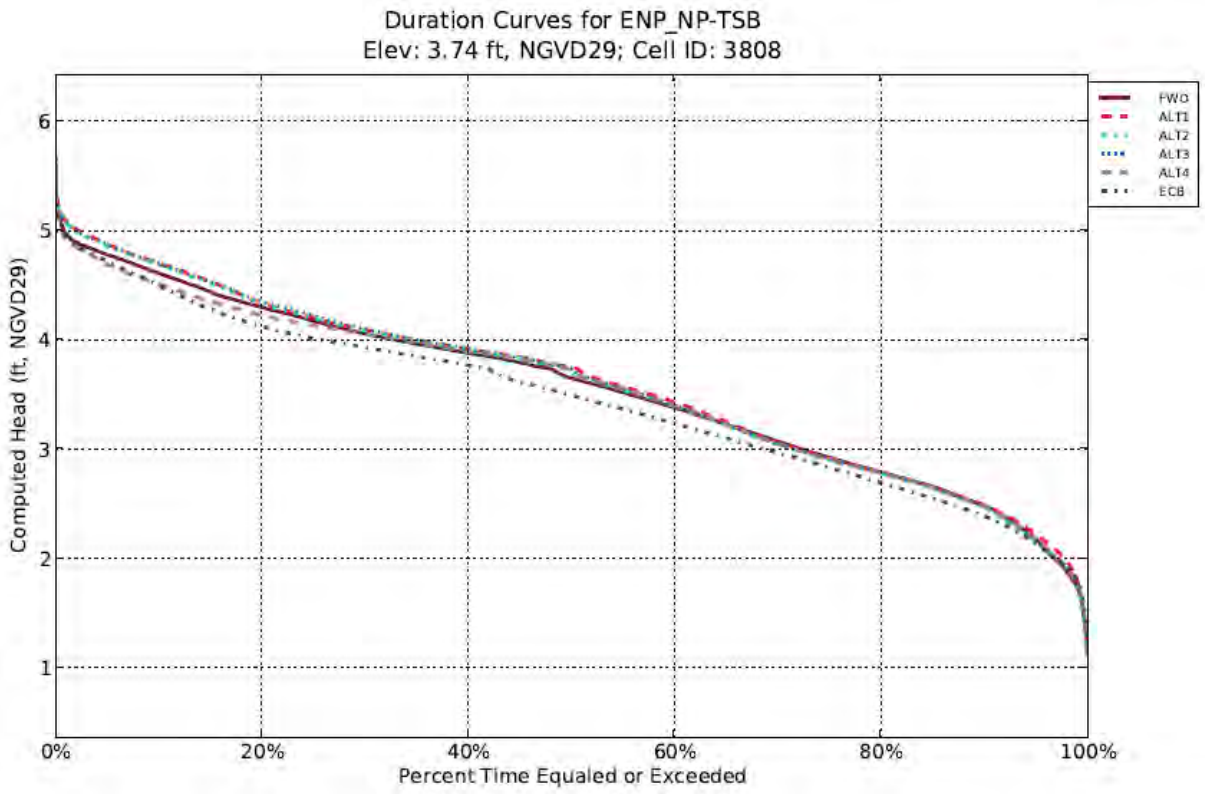

Figure C.2.1-80. ENP Taylor Slough Stage Duration Curve.

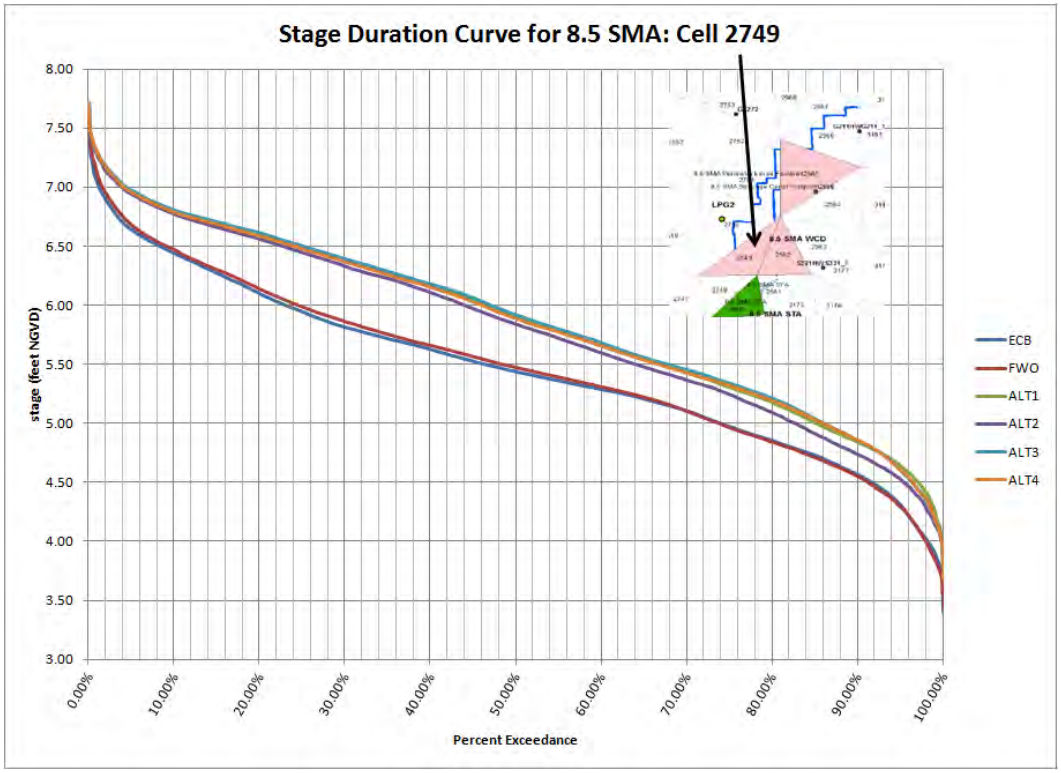

Figure C.2.1-81. Stage Duration Curve for Southwest 8.5 SMA.

C.2.1.8 Water Supply and Flood Control

Consistent with the Savings Clause requirements for CERP, each CERP project included in the CEPP FWO (Indian River Lagoon-South Project, Picayune Strand Restoration Project, Site 1 Impoundment Project, Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, Caloosahatchee River (C-43) West Basin Storage Reservoir, C-111 Spreader Canal Western Project) must independently demonstrate in the respective PIRs that implementation of these CERP projects would not adversely impact the existing legal sources for water supply or the levels of service for flood protection. Operations protocols for the first and second generation CERP projects were modeled in the CEPP FWO consistent with the draft Project Operating Manuals, as documented in the respective PIRs. Operations and components of the previously listed CERP projects are retained in the CEPP final array of alternatives, and the inclusion of the components is therefore implicit to the analyses within this section.

To address the Savings Clause requirements for CERP, the CEPP draft PIR/EIS includes a detailed and comprehensive analysis of potential effects of the CEPP recommended plan, where applicable, to existing legal sources for water supply and/or the levels of service for flood protection (refer to Annex B for the complete analysis and to Section 6.8 of the main report for summary information). The general hydrologic overview of water supply and flood control performance of the action alternatives in this section is separate and distinct from the content of the recommended plan Savings Clause analysis contained in Annex B and **Section 6.8**. Areas within the CEPP project area that are not specifically discussed in this section may be presumed to have insignificant impacts to water supply or flood control.

C.2.1.8.1 Lake Okeechobee

Based on the action alternative modeling, compared to the FWO, the frequency of water restrictions enacted by the SFWMD Governing Board due to Lake Okeechobee falling below the Water Shortage Trigger line as defined by LOWSM is projected to slightly decrease for the CEPP action alternatives: one fewer year with three or more months with restrictions for LECSA 1 (note: two additional years with restrictions, compared to the ECB); no change in the number of years with three or more months with restrictions for LECSA 2 (note: one fewer year with restrictions, compared to the ECB); and two fewer years with three or more months with restrictions for LECSA 3 (note: one additional year with restrictions, compared to the ECB).

Lake Okeechobee operational assumptions applied consistently for the final array modeling (note: a single RSM-BN simulation was completed for the CEPP action alternatives) include changes to the decision tree outcome maximum allowable discharges dependant on Lake Okeechobee inflow forecasts, time of year (wet season or dry season), stage level (regulation zone), and/or stage trends (receding or ascending). The changes are all assumed to occur within the flexibility of LORS 2008 (Regulation Schedule zones unchanged), for the purpose of increasing CEPP potential benefits. Details pertaining to the proposed CEPP operations are separately addressed in the draft Preliminary Operations Manual (refer to **Annex C**).

Based on the CEPP alternative modeling assumptions and the resulting moderate stage increase within Lake Okeechobee, the average annual percentage of water supply demand not met is projected to decrease for the EAA and the remainder of the LOSA (**Figure C.2.1-82**). For the eight years with the largest water supply cutbacks within the LOSA, the water supply cutback percentage is reduced for seven of the eight years and increased for one of the eight years (1981), compared to the FWO (**Figure C.2.1-83**).

Lake Okeechobee stage duration curves for the RSM-BN model representation of the CEPP ECB (LORS 2008), CEPP FWO (LORS 2008, plus additional CERP and non-CERP projects), and the CEPP final array of action alternatives (LORS 2008, additional CERP and non-CERP projects, and prescribed operational flexibility) are shown in **Figure C.2.1-84**. A single RSM-BN simulation was completed for all of the CEPP components north of the red line for the final array of alternative. The CEPP action alternatives indicate a slight stage increase of 0.1-0.2 feet for the upper 40% of the stage duration curve. Peak stages for the CEPP baselines and the CEPP final array of alternatives are summarized as follows: 17.54 feet NGVD for the ECB; 17.50 feet NGVD for the FWO; and 17.64 for the CEPP Alts 1 through 4. The CEPP baselines and CEPP action alternatives all show simulated stages above 17.25 feet NGVD: 18 days for the ECB; 9 days for the FWO; and 23 days for CEPP Alts 1 through 4 (note: 14,975 days in the RSM-BN 41-year period of simulation). The LORS 2008 EIS assessment recognized that minimizing the frequency of exceedance of the 17.25 feet elevation offers additional protection for public safety and the HHD, for the condition prior to completion of the current approved and planned HHD remediation measures, and this criterion was evaluated as a LORS project performance measure. Extreme high lake stages have also been documented to adversely impact the plant and animal communities, through processes which include the following: physical uprooting of emergent and submerged plants; reduced light levels in the water column due to increased suspended sediment; and littoral zone exposure to increased nutrient levels from the water column. The number of days with stages above 16 feet NGVD is increased from 696 to 1096 during the 1965-2005 period of simulation.

Following completion of the HHD remediation of Reaches 1, 2, and 3, the degree to which higher maximum lake stages and increased frequency and duration of high lake stages would be accepted, if at all, will be contingent on the conclusions identified in the USACE 2014 Dam Safety Modification Report (DSMR) for the Herbert Hoover Dike (HHD). Any changes to the Lake Okeechobee Regulation Schedule would be analyzed and coordinated with the public through the NEPA process.

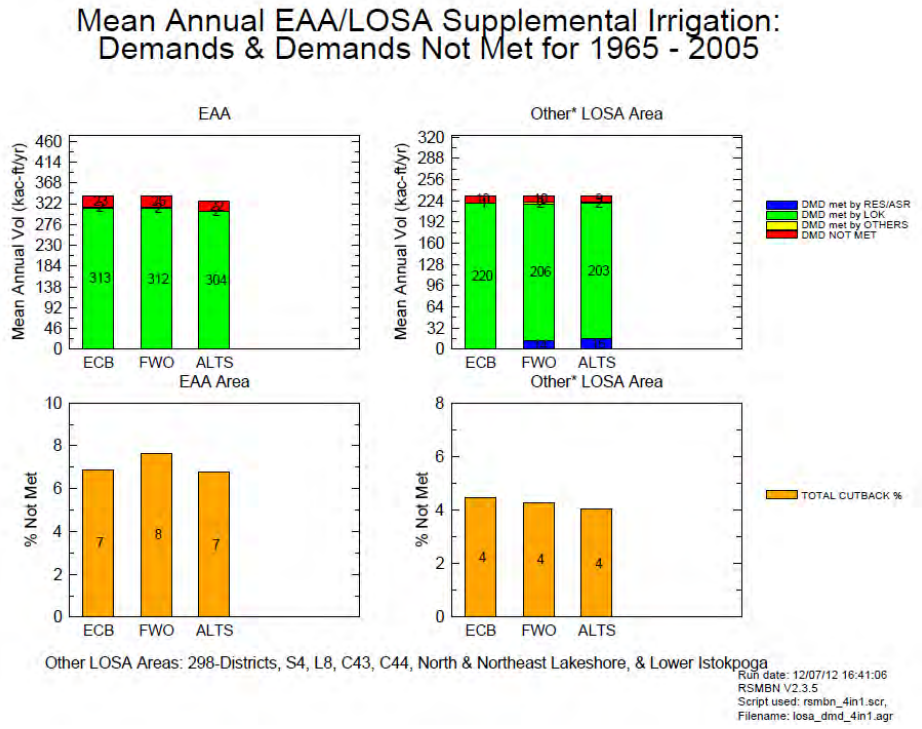

Figure C.2.1-82. EAA and LOSA Water Supply Performance.

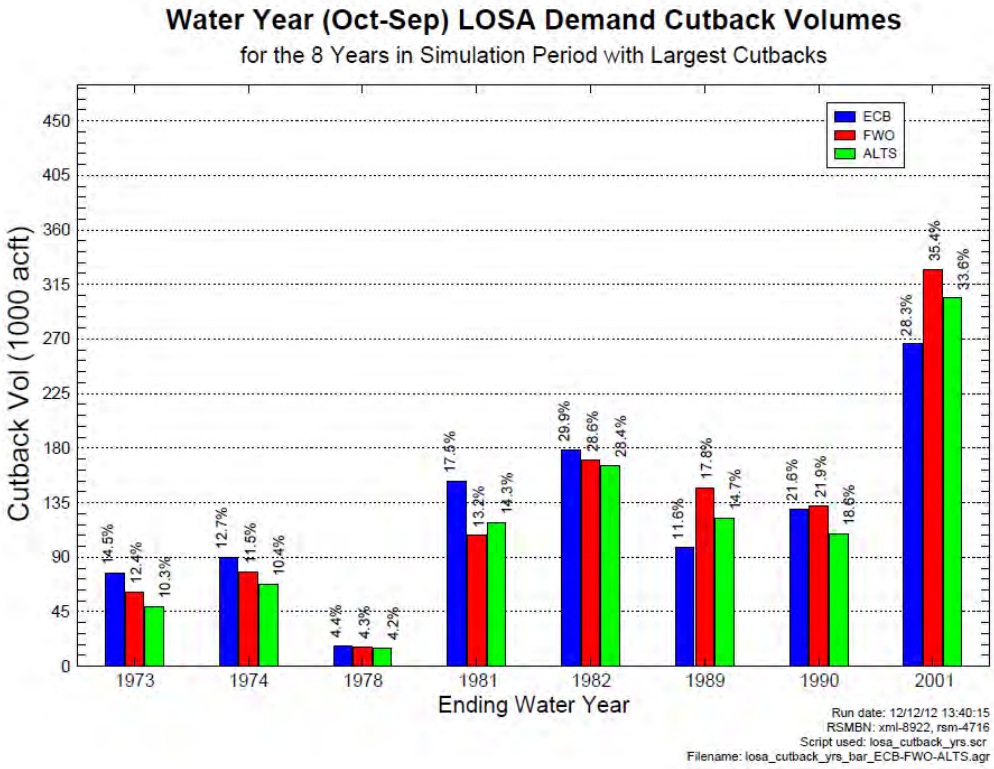

Figure C.2.1-83. LOSA Water Supply Performance for the Eight Largest Cutback Years.

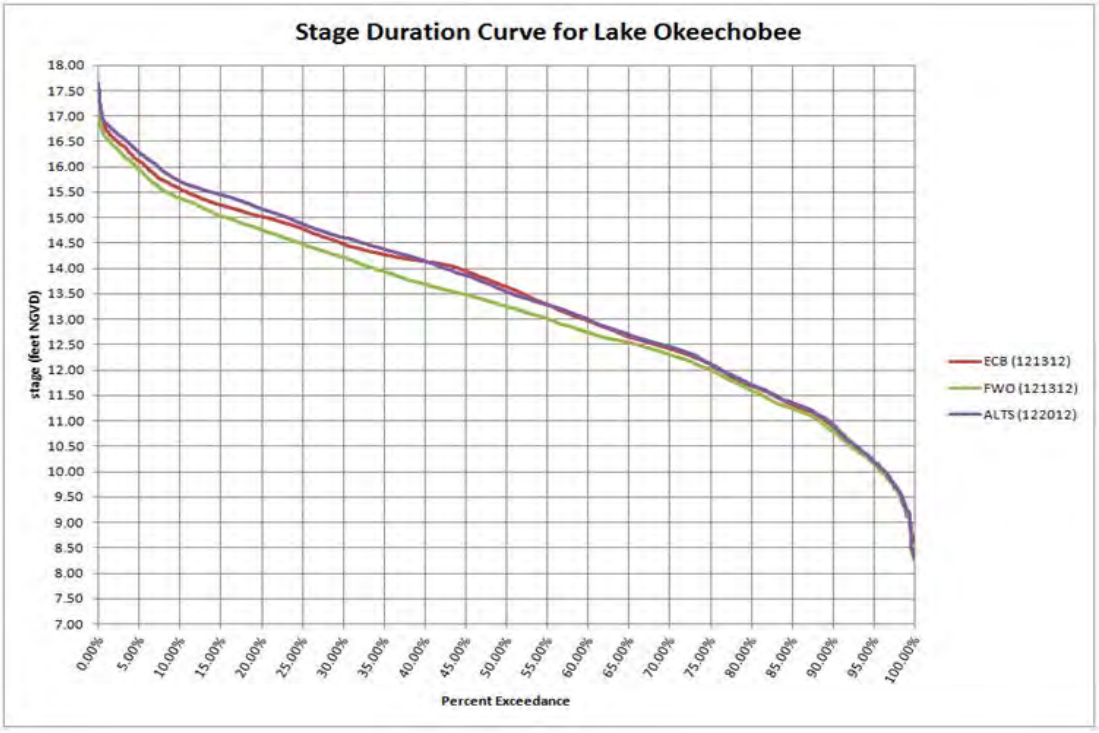

Figure C.2.1-84. Lake Okeechobee stage duration curves.

C.2.1.8.2 Seminole Tribe of Florida

Based on CEPP alternative modeling assumptions regarding Lake Okeechobee operational flexibility and the resulting moderate stage increase within Lake Okeechobee, the percentage of water supply demand not met for the Brighton Reservation is shown to slightly decrease by 0.4% compared to the FWO (**Figure C.2.1-85**) (note: demand not met is also 0.2% lower than the ECB). The percentage of water supply demand not met for the Big Cypress Reservation is shown to be slightly reduced by 0.2% (**Figure C.2.1-86**) (note: demand not met is also 1.0% lower than the ECB). The Seminole Tribe of Florida has surface water entitlement rights pursuant to the 1987 Water Rights Compact and subsequent entitlement provisions executed between the Seminole Tribe of Florida, the State of Florida, and the SFWMD. Impacts are not expected for the CEPP action alternatives based on the hydrologic modeling.

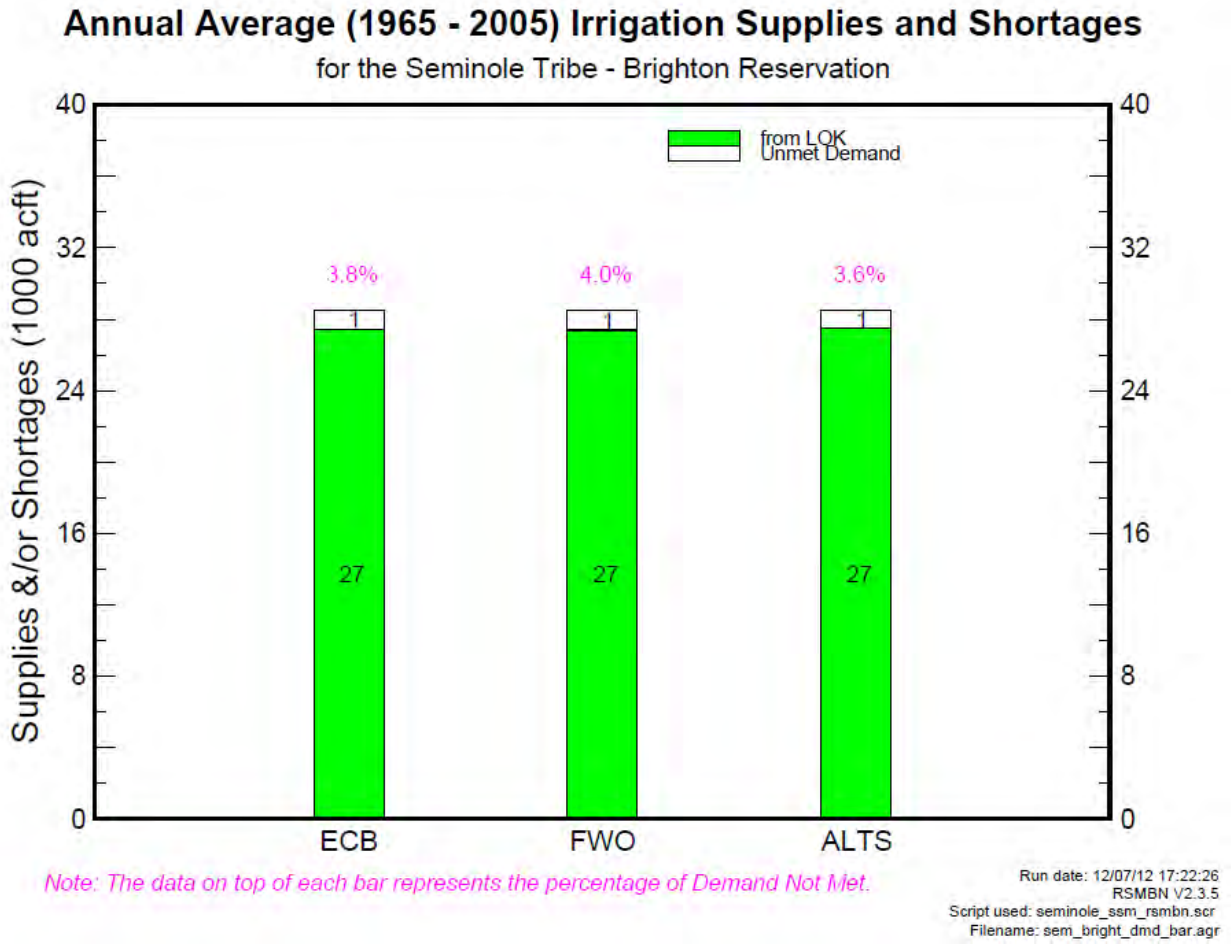

Figure C.2.1-85. Water Supply Demand for Seminole Tribe of Florida's Brighton Reservation.

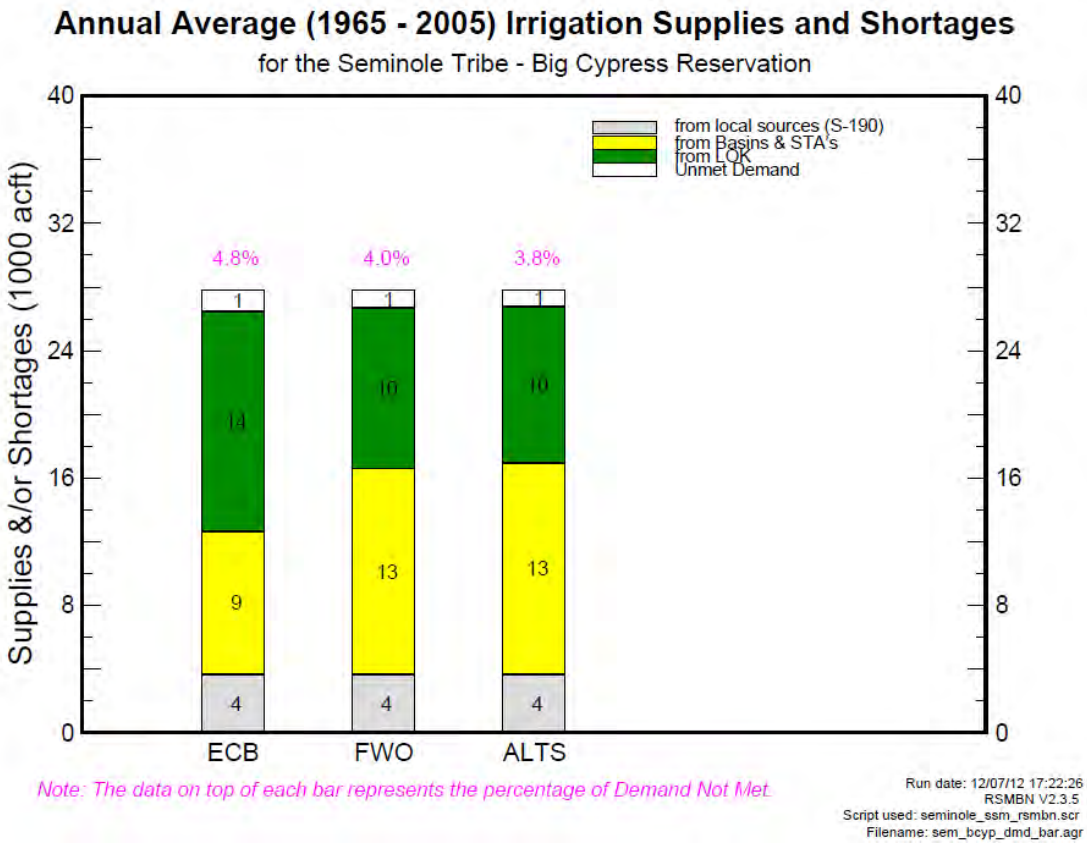

Figure C.2.1-86. Water Supply Demand for Seminole Tribe of Florida's Big Cypress Reservation.

C.2.1.8.3 Lower East Coast Service Areas

Based on the alternative modeling, compared to the FWO, the frequency of water restrictions enacted by the SFWMD Governing Board due to Lake Okeechobee falling below the Water Shortage Trigger line as defined by LOWSM is projected to slightly decrease for the CEPP action alternatives: one fewer year with three or more months with restrictions for LECSA 1 (note: two additional years with restrictions, compared to the ECB); no change in the number of years with three or more months with restrictions for LECSA 2 (note: one fewer year with restrictions, compared to the ECB); and two fewer years with three or more months with restrictions for LECSA 3 (note: one additional year with restrictions, compared to the ECB).

The CEPP modeling for Alts 1 though 4 also indicates no significant reductions to regional groundwater stages during dry conditions (assumed as a surrogate for water supply conditions for this discussion) for most portions within the LECSA, as compared to the CEPP FWO condition. No significant changes were indicated within LECSA 1, LECSA 2, and LECSA 3 that were prevalent through normal to dry hydrologic conditions, although some reduced stages were indicated during the driest 5-10% of hydrologic conditions for areas east of WCA 2A and WCA 2B (monitoring gages G2031, G2033, and G2032). Lowered regional groundwater stages during dry conditions that were apparent for the FWO when compared to the ECB are not further exacerbated by the CEPP action alternatives.

For the action alternatives, L-30 Canal stages (north of S-335) are generally observed to increase for normal to extreme dry conditions (**Figure C.2.1-87**): stages are moderately increased by 0.2-0.4 feet for Alt 1; significantly increased by 0.3-1.0 feet for Alt 2; significantly increased by 0.3-0.7 feet for Alt 3; and

slightly increased by 0.1-0.2 feet for Alt 4. L-30 Canal stages are highly correlated to hydrologic conditions within central and eastern WCA 3B. L-31N Canal stages (north of G-211) are increased by 0.3-0.5 during dry conditions for Alt 1; however, L-31N Canal stages are generally decreased under normal to dry conditions for the other Alternatives: Alternative 2 stages are lowered by 0.2-0.3 feet for normal to dry conditions; Alt 3 stages are lowered by 0.2-0.3 feet for wet, normal, and dry conditions, with a 0.1-0.2 increase in extreme dry conditions; and Alt 4 stages are lowered by 0.2-0.3 feet for wet, normal, dry, and extreme dry conditions (**Figure C.2.1-88**). No significant stage reductions within the C-111 Canal (between S-176 and S-18C) are indicated during normal to dry hydrologic conditions that would affect water supply deliveries (**Figure C.2.1-89**).

The modeling of Alts 1 through 4 indicates no significant increases to regional groundwater stages during wet conditions which would impact the levels of service for flood control within the LECSA, as compared to the CEPP FWO condition. No significant changes were indicated within LECSA 1, LECSA 2, and significant reductions were observed for portions of LECSA 3. The L-30 Canal stages (north of S-335) indicate a general moderate reduction of 0.2 feet to flood control stages within the wettest 10% of hydrologic conditions (**Figure C.2.1-87**), and the L-31N Canal stages (north of G-211) indicate a significant (up to 1.0 feet) reduction to flood control stages within the wettest 5% of hydrologic conditions (**Figure C.2.1-88**).

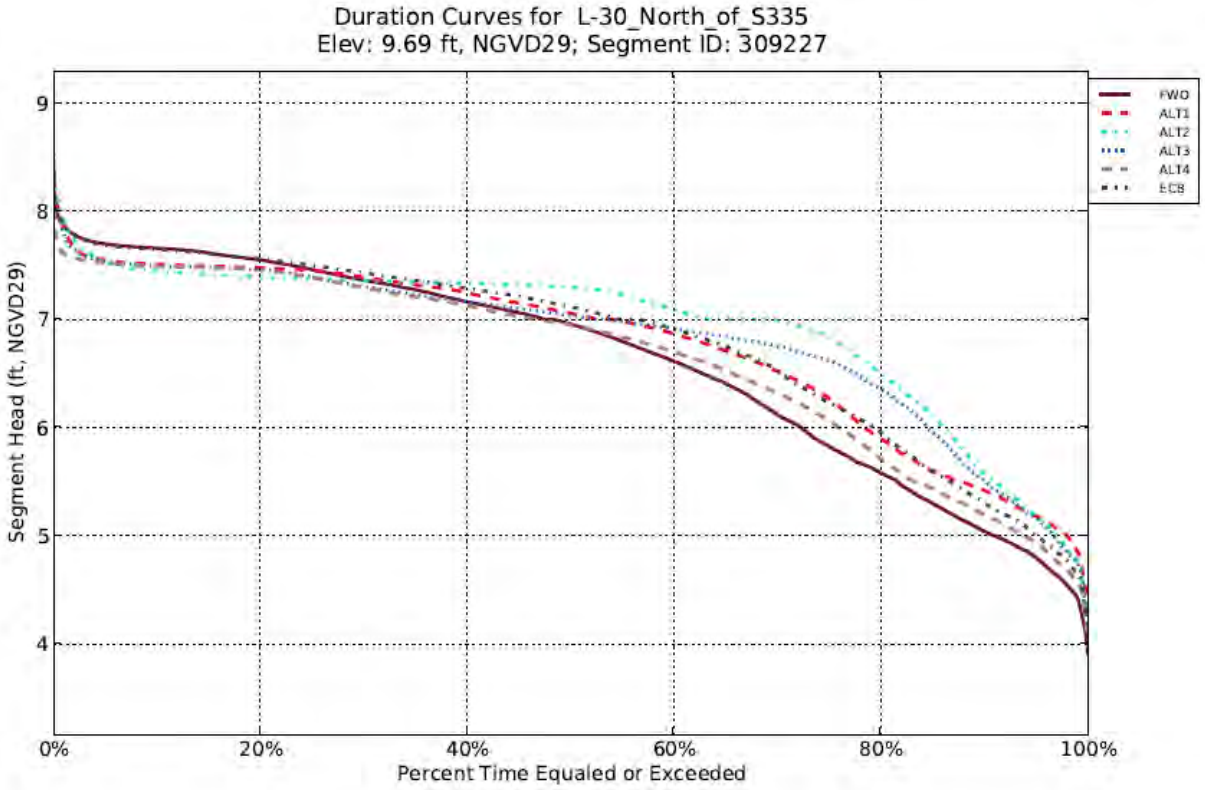

Figure C.2.1-87. Stage Duration Curve for L-30 Canal in LECSA 3.

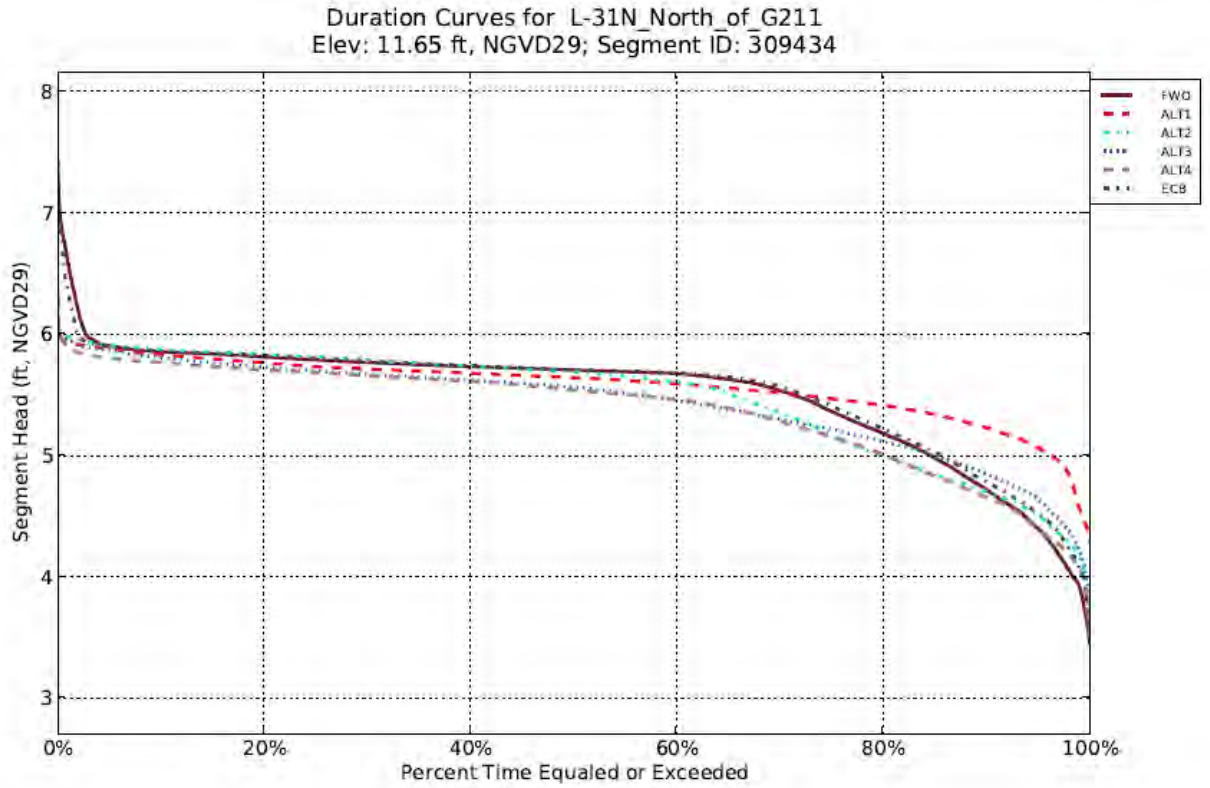

Figure C.2.1-88. Stage Duration Curve for L-31N Canal in LECSA 3.

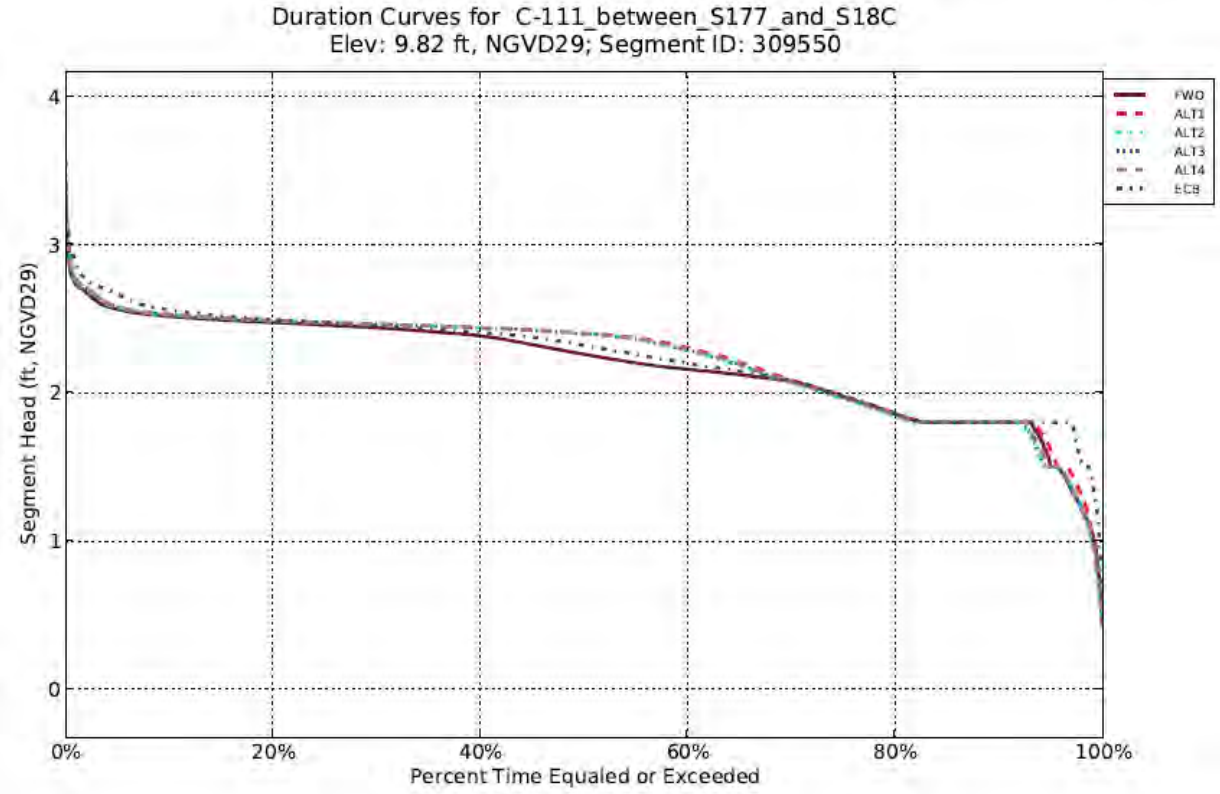

Figure C.2.1-89. Stage Duration Curve for C-111 Canal in LECSA 3

C.2.1.9 Water Quality

C.2.1.9.1 Lake Okeechobee

Relative to the FWO project, the with-project action alternatives will likely result in some improvement in Lake Okeechobee water quality as a result of reduced extreme lake stage events. However, the expected improvement in Lake Okeechobee water quality will likely not be very significant since nutrient loading conditions are not expected to differ significantly between the with- and without-project conditions. All with-project action alternatives are expected to result in the same water quality conditions since lake operations are nearly the same for all of them. As discussed in the existing conditions section for Lake Okeechobee, there is an existing TMDL for phosphorus. This TMDL requires a reduction in annual phosphorus loading from more than 500 metric tons per year to 140 metric tons per year. The average annual S-308 backflow phosphorus load is 2.6 metric tons per year under the existing condition and 4.6 metric tons/yr under the with-project condition. . The increase of 2 metric tons per year amounts to less than 1.5 percent of the phosphorus TMDL target of 140 metric tons/yr. The allocation of TMDL phosphorus loads will be addressed through revisions to the Lake Okeechobee Basin Management Action Plan. Specifically, the FDEP is in the process of developing a BMAP for Lake Okeechobee pursuant to Section 403.067, Florida Statutes. Potential water quality issues associated with S-308 loads will be addressed as part of the BMAP.

C.2.1.9.2 Northern Estuaries

Caloosahatchee: Improved salinity conditions within this estuary as a result of a reduction in the number of high flow events and a reduction in the number of extreme low flow events as characterized by flows through the S-79 structure. Nutrient and dissolved oxygen conditions should improve during the wet season within the estuary given the reduction in high flow events. The frequency of dry season algal events within the upper estuary may change as a result of increased dry season flows through the S-79 structure during the late spring.

St. Lucie Estuary: Improved salinity conditions within this estuary as a result of a reduction in the number of high flow as characterized by flows through the S-80 structure. Nutrient and dissolved oxygen conditions should improve during the wet season within the estuary given the reduction in high flow events. The number of months of flow less than 300 cfs increases which may alter the frequency of algal blooms during the later part of the dry season.

C.2.1.9.3 EAA

Relative to the FWO, the EAA nutrient loads should decrease somewhat due to the cessation of agricultural practices from the A-2 lands as well as other lands that will no longer be farmed in when CEPP is implemented. The with-project action alternatives all include the A-2 FEB integrated into the A-1 FEB and the same volume of additional Lake Okeechobee water distributed south of the EAA. Dynamic Model for Stormwater Treatment Areas (DMSTA) water quality modeling indicates that the with-project action alternatives will meet the 2012 Water Quality-based Effluent Limits (WQBEL). Construction of the A-2 FEB may cause a short-term release of methylated mercury; however, monitoring during the start of phase will minimize potential adverse impact to downstream biota.

C.2.1.9.4 Greater Everglades

C.2.1.9.4.1 WCA 1, WCA 2

Water quality conditions for WCA 1 are not expected to be significantly changed by any of the With-Project Action alternatives since none of them include features that influence flows and treatment within the eastern flow path. Nutrient and sulfate loading conditions in WCA 2 should improve somewhat given the reduction in hydrologic load sent to this water conservation area. Reduced sulfate loading could somewhat alter the areas where mercury methylation is problematic within WCA 2.

C.2.1.9.4.2 WCA 3A

Alternative 1 vs. FWO

Nutrient loading into the northern portion of WCA 3A is expected to increase relative to the FWO condition as a direct result of the increase in hydrologic loading; however, relative to the existing condition, nutrient loads into WCA-3A will decrease by approximately 30 and 25 percent for FWO and the Alt 1, respectively. Sulfate concentrations into the northern portion of WCA 3A are expected to decrease with Alt 1 as a result of the additional dilution of EAA runoff with Lake Okeechobee discharges which have sulfate concentrations roughly half that of the EAA runoff; however, the increase in flow will result in a slight increase (approximately 3 percent) in total sulfate load into the WCA 3A.

Figure C.2.1-90 shows the average annual flow across three transects in WCA 3A. Relative to the FWO condition, Alt 1 shows significant increases in flow crossing the northern and southern transects as a result of backfilling of a portion of the Miami Canal. Increased uptake in the northern portion of WCA 3A will likely result in reduced TP concentrations at the southern end of this WCA as compared with the FWO condition which has significant canal flows that provide less nutrient uptake than sheetflow across the marsh. It is likely that northern portions of the WCA 3A marsh that are adjacent and south of the L-4, and L-5 canals will experience higher TP loads as compared to the FWO. The effects of the with-project action alternatives on WCA 3A compliance with the four-part TP criterion defined in Section 62-302.540, F.A.C. are expected to be similar. A detailed discussion of phosphorus impacts to WCA3A due to CEPP are found in **Annex F**.

The methylmercury cycle is very complex with many factors affecting bioaccumulation in fish. Changes in hydrology can impact the formation of methylmercury. For instance, Alt 1 will reduce dryout/rewetting cycles in northern WCA 3A which will reduce sulfate and Hg remobilization due to soil oxidation. Project related changes to the timing, distribution, and loading of sulfate in WCA 3A will likely alter the locations where methylated mercury is found at high concentrations in the water column. This is illustrated in **Figure C.2.1-91** from the 2013 SFER report which projects the impact to mosquitofish mercury body burden of reducing by 50 to 100 percent the agriculturally sourced sulfate discharged into the Everglades Protection Area. This figure shows that significant decreases in sulfate loading would both increase and decrease mosquitofish mercury concentrations in WCA 3A depending upon location. A 100 percent reduction in non-marine sulfate exported from the EAA is projected to result in an overall reduction in average water column sulfate concentrations within the Everglades Protection Area from 2.4 mg/L to 0.78 mg/L; however, the average mosquitofish mercury concentration is estimated to be reduced from 85.7 ng/g to 80.0 ng/g which is a relatively insignificant change in proportion to the reduction in sulfate. Though these projections are for decreases in sulfate rather than increased sulfate loading, they are indicative of the relative insensitivity of mosquitofish methylmercury bioaccumulation to relatively small changes (<10 percent increase) in sulfate loading as contemplated with Alt 1.

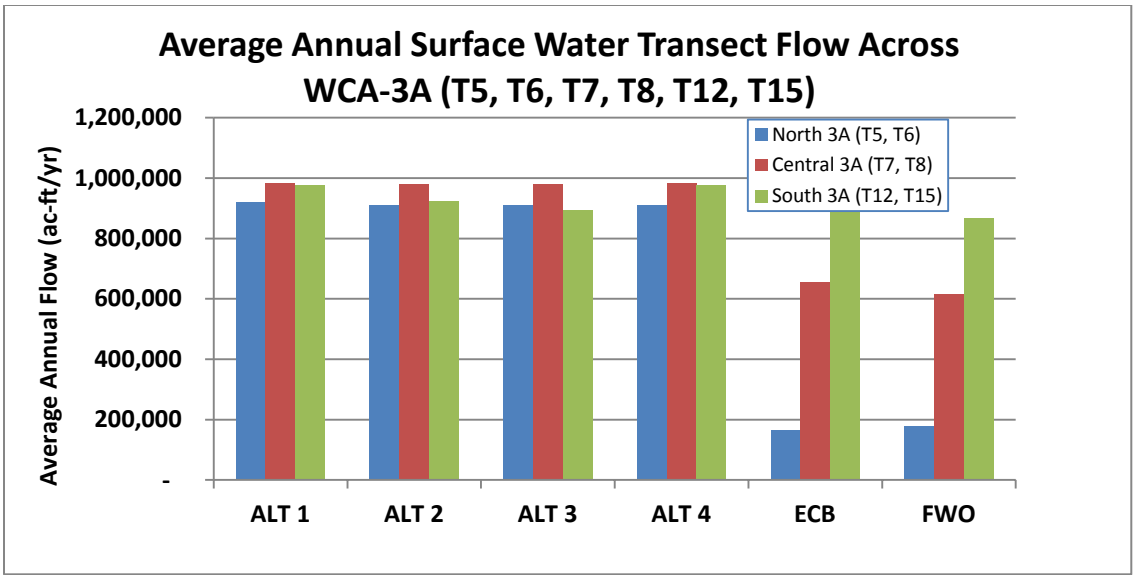

Figure C.2.1-90. Average Annual Surface Water Transect Flows for WCA 3A.

Given the complexity of the methylmercury cycle, It is not possible to predict with certainty the effect of CEPP related changes to sulfate timing, distribution, and loading within WCA 3A. It is likely that some areas of WCA-3A will see higher mosquitofish mercury concentrations while other areas will see lower mosquitofish mercury concentrations. Give the reduction in atmospheric mercury deposition over the last 15 years which is thought to be the cause of the reduction in bioaccumulated mercury observed in fish over this time period, it is likely that future methylation and bioaccumulation of mercury that occurs after implementation of Alt 1 will not exceed the peak concentrations seen 15 or so years ago unless atmospheric mercury loading increases.

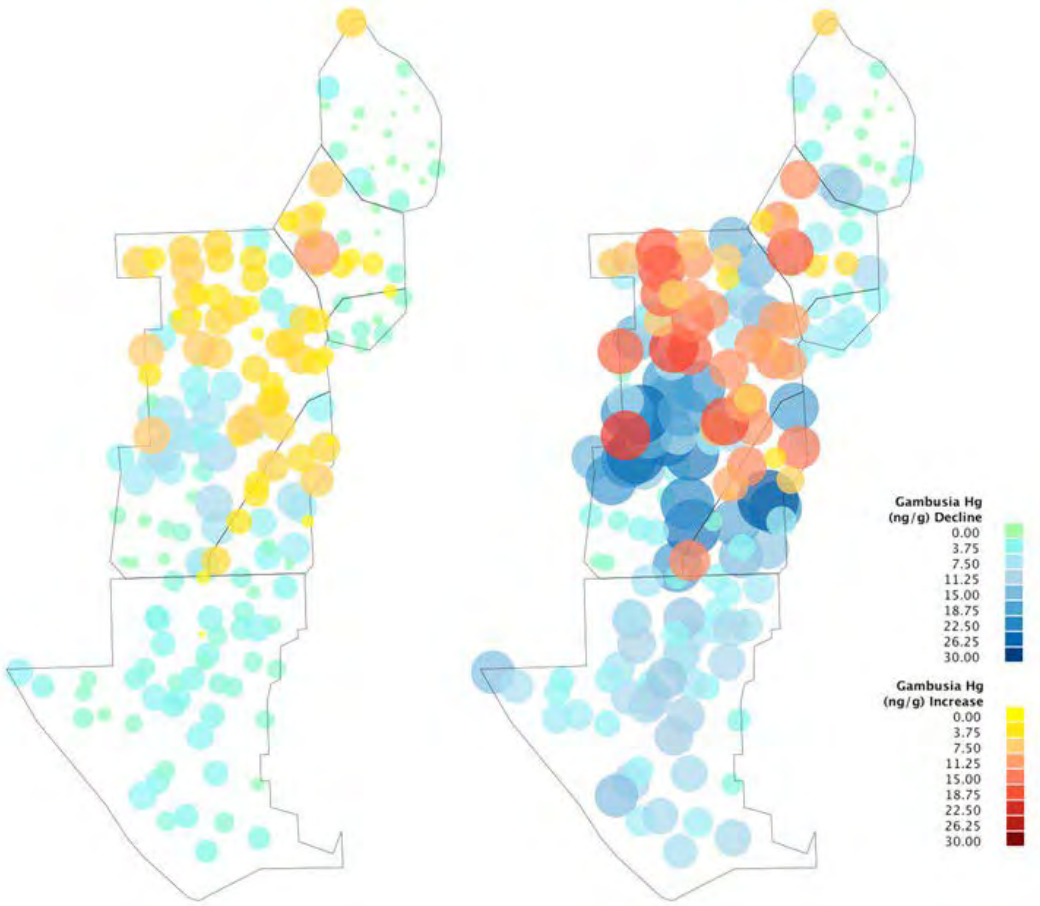

Figure C.2.1-91. Predicted changes in *Gambusia* Hg concentrations in response to 50 and 100 percent reductions in excess (non-marine) sulfate exported from the EAA (left and right, respectively) using R-EMAP Cycles 6 and 7 data. (from SFWMD, 2012)

Alternative 2 vs. FWO

Alternative 2 performs similarly to Alt 1 in WCA 3A for nutrients, sulfate, and other water quality constituents.

Alternative 3 vs. FWO

Alternative 3 performs similarly to Alt 1 in WCA 3A for nutrients, sulfate, and other water quality constituents.

Alternative 4 vs. FWO

For WCA 3A, this alternative performs very similar to Alt 1 for nutrients, sulfate, and other water quality constituents.

C.2.1.9.4.3 WCA 3B

Alternative 1 vs. FWO

Additional water flow into WC 3B will result from the breaches of the L-67A and L-67C levees. Relative to the FWO condition, flows through these breaches will be composed of more water that passes through the northern WCA 3A marsh and less water from the Miami Canal and the S-9 basin since these flows are reduced by approximately 50% at S-151 and 9% from S-9/S-9A pumps. Increased hydration of WCA 3B will reduce the risk for severe dry down and thus reduce fire risk relative to FWO. Water quality

degradation such as the release of TP into the water column and increased Methylmercury (MeHg) in the water column associated with fire events and their aftermath will be reduced. Additional flow into WCA 3B will increase nutrient loads relative to the FWO condition. **Annex F** includes a detailed discussion of the impact of CEPP on phosphorus within WCA 3B.

Like WCA 3A, sulfate loads are likely to increase in WCA-3B due to increased flows into this area relative to the FWO condition. Less frequent dryout/rewetting cycles within this area should reduce soil oxidation and the resulting recycling of sulfate and mercury back into the water column. The effects of additional sulfate on water column methylmercury concentrations and total mercury body burden in fish and birds in WCA-3B cannot be predicted with certainty. In light of this uncertainty, there is no reason to predict that the CEPP project will result in bioaccumulation that exceeds historic mercury concentration maximums unless atmospheric mercury deposition increases over present rates. The recent downward trends in measured water and tissue mercury concentrations in this area are encouraging.

Alternative 2 vs. FWO
This alternative's water quality performance is expected to be very similar to that provided by Alt 1 in WCA 3B.

Alternative 3 vs. FWO
This alternative's water quality performance is expected to be very similar to that provided by Alt 1 in WCA 3B.

Alternative 4 vs. FWO
This alternative's water quality performance is expected to be very similar to that provided by Alt 1 in WCA 3B.

C.2.1.9.4.4 Everglades National Park

C.2.1.9.4.4.1 Shark River Slough

Alternative 1 vs. FWO
Water entering Shark River Slough (SRS) from WCA 3 is likely to have lower concentrations of TP as compared with the FWO condition due to the backfilling of the Miami Canal which will result in more water passing through the marsh areas and less water flowing directly from upstream canal sources. Additional discussion of the effect of the CEPP project on total phosphorus concentrations in ENP is provided in **Annex F**.

Fish mercury concentrations within ENP have not decreased as much as that observed in WCA 3. The reasons for continued higher concentrations of bioaccumulated mercury in ENP fish are not well understood at this time due to the complexity of processes involved. The range of sulfate concentrations that maximize methylmercury formation in ENP may differ from that in the water conservation areas. The effects that small changes in sulfate in ENP would have on fish mercury are difficult to predict.

Sulfate loading into ENP under the Alt 1 condition is likely to decrease somewhat relative to the FWO condition primarily because most of the flows into northern ENP will have been routed through the WCA 3 marsh which is likely to remove more sulfate than the additional sulfate provided by the increased flow from Alt 1. The additional flow will increase stages within Shark River Slough by an average of 0.5 ft

which should significantly reduce areas that are subject to dryout and rewetting. Reduced dryout and rewetting will reduce the recycling of sulfate and mercury that exacerbates mercury bioaccumulation. The effects of Alt 1 on formation and bioaccumulation of methylmercury cannot be predicted with certainty since the mechanisms that affect mercury methylation rates in ENP are not fully understood at this time. However, if sulfate loads do not increase with Alt 1 and the additional flow reduces dryout/rewetting cycles, it is likely that future with-project mercury methylation conditions will not exceed the peak concentrations observed in ENP in 1999 unless atmospheric deposition of mercury increases in the future. Continued monitoring and scientific investigation of mercury within the Everglades Protection Area will provide more certainty regarding potential project impacts well before the additional flows from Alt 1 are realized.

Alternative 2 vs. FWO
This alternative's water quality performance is expected to be very similar to that provided by Alt 1 in WCA 3B.

Alternative 3 vs. FWO
This alternative's water quality performance is expected to be very similar to that provided by Alt 1 in WCA 3B.

Alternative 4 vs. FWO
This alternative's water quality performance is expected to be very similar to that provided by Alt 1 in WCA 3B.

C.2.1.10 Air Quality

Direct emissions from the proposed construction of the CEPP project features would be confined to exhaust emissions of labor transport equipment, and construction equipment (dump trucks, excavators, graders, bulldozers, etc.). Clean Air Act pollutants considered in this air quality assessment are SO_x; volatile organic compounds (VOCs); nitrogen oxides (NOx), CO, PM10, and PM2.5. Green house gas emissions are also considered. Volatile organic compounds, sulfur oxides, and nitrogen oxides are important since they are precursors to ozone generation. These criteria pollutants are generated by the construction and operational activities associated with the proposed action alternatives.

In Lake Okeechobee and the Northern Estuaries, population growth in the area is expected in the FWO condition relative to existing conditions baseline, this is an increase in air pollution. However, air quality compliance is expected. All action alternatives are expected to have no change relative to FWO conditions in Lake Okeechobee and the Northern Estuaries. In the Everglades Agricultural Area (EAA) no change in compliance with air quality standards is expected in the FWO compared to the baseline condition. For Alts 1-4, no change in air quality compliance is expected. Reduction in farming equipment use on A-2 FEB lands in FWO condition will be offset by increase in air pollutants from new pump stations. Particulate loading should be reduced since sugar cane cultivation will no longer done on FEB land and thus annual burning during harvesting will no longer be done. In the Greater Everglades, increased Lower East Coast (LEC) development in the FWO will result in air quality degradation relative to baseline conditions. Enforcement of the Clean Air Act should limit impacts. For Alts 1-4 a decrease in drying event severity relative to FWO condition should result in reduced fire incidence within wetlands which should improve air quality. No changes in air quality are expected in the FWO and Alts 1-4 in the Southern Estuaries. A detailed analysis of Air Quality impacts has been prepared for the recommended plan in **Section 6** and **Appendix C.2.2.10.** The air quality analysis done for the recommended plan is applicable for Alts 1-4 given their similarities to Alt 4R.

C.2.1.11 Hazardous, Toxic and Radioactive Waste

The FWO and with-project alternative conditions will have similar hazardous, toxic and radioactive waste (HTRW) conditions in the future with the exception of the lands used for the A-2 FEB. (See **Appendix C.1** for the expanded HTRW assessment and **Annex H** for HTRW reports and correspondence.) Under the FWO condition, the A-2 FEB lands will likely continue to be farmed which will result in the additional application of agricultural pesticides in the cultivated portions of this property and the inadvertent release of petroleum and pesticides in operation and maintenance areas. During the construction of project features, is possible that undiscovered HTRW contamination will be found. Per EC 1165-2-132, the non-federal sponsor will be required to remediate these sites at their sole expense. There is also the potential for HTRW release associated with the operation of project pump stations; however, with modern facilities and best management practices, this presents a minor risk to the environment.

C.2.1.11.1 Residual Agricultural Chemicals

All of the with-project action alternatives include the use of the A-2 FEB lands. Soil sampling has shown that residual agricultural chemicals are in the cultivated soils on the A-2 FEB lands. A discussion of residual agricultural chemicals on the A-2 FEB lands is found in **Appendix C.2.2**.

C.2.1.12 Noise

For the action alternatives there would be minor short term and less than significant increases in noise during construction activities. All CEPP action alternatives include additional pump stations which would result in long-term, localized increases in noise. Since Alt 4 adds the fewest number of pump stations (two), it would have the least effect with Alt 3 that adds 5 additional pump stations having the greatest effect.

C.2.1.13 Aesthetics

Aesthetic effects refer generally to impacts on the visual qualities of the environment. Restoration of the south Florida ecosystem is expected to result in a healthier environment that would support vigorous plant communities, larger fish and aquatic animal populations, large numbers of wading birds, alligators, and sustainable populations of wide-ranging mammals, in a natural setting, in perpetuity. Viewing wildlife, wetlands and open, relatively pristine spaces are valued by people, as supported by tourism statistics for south Florida. During construction of all features there will be a temporary short-term significant impact to aesthetic values in the construction areas. All action alternatives show a significant increase in aesthetic value over the FWO due to restoration of hydropatterns and sheetflow throughout the project area and provide a minor beneficial effect. The restoration of sheetflow provides additional habitat for native plants and animals and opportunities for wildlife viewing.

There would be negligible and less than significant effects due to CEPP in Lake Okeechobee. In the Northern Estuaries, the action alternatives would increase the aesthetic value due to decreased high flow events and provide minor beneficial effects. Reductions in high volume discharges to the estuaries would result in lower suspended solids, increased water clarity and the correct salinity envelope that maintain healthy SAV beds. These benefits could also and lead to an increase in wildlife viewing opportunities (Orth et al., 2006). Within the EAA, the existing aesthetic character of the A-2 footprint is similar to the EAA as a whole; the landscape is flat and has a predominantly uniform and organized appearance. For the action alternatives, wetland vegetation is anticipated to colonize the A-2 FEB increasing wildlife utilization and opportunities for wildlife viewing within the area, providing a significant and major beneficial effect. In the southern estuaries, the action alternatives provide minor beneficial effects would

increase the aesthetic value due to an increase in native plants and animals due to increased flows in Florida Bay providing an increase in potential wildlife viewing as well as providing a potential for the reduction in red tide occurrences.

Within the Greater Everglades, Alt 1 would produce minor increases in aesthetic value due to the removal of the L-4 levee by providing a more natural landscape view. Alternatives 3 and 4 had a greater potential negative effect on aesthetics as compared with Alts 1, 2 and FWO due to the addition of 2 pump stations along the L-29 levee in Alt 3 and the construction of a new levee (Blue Shanty levee) in Alt 4. For all action alternatives there would be temporary, short-term, localized effects to aesthetics during construction of all features. All action alternatives show a significant increase in aesthetic value over the FWO due to restoration of hydropatterns and sheetflow throughout the project area and provide minor beneficial effects. The restoration of sheetflow provides additional habitat for native plants and animals and increased opportunities for wildlife viewing. Restoration of flows within Florida Bay and the southwestern coastal estuaries that reduce extreme salinity ranges improves habitat within these regions, increase potential opportunities for wildlife viewing. All action alternatives include backfilling portions of the Miami Canal, thereby improving aesthetics due to removal of this unnatural landscape feature, providing minor beneficial effects.

For Alt 2, the removal of the L-4 levee and the construction of a spreader canal to the east of S-8 would provide a moderate increase in aesthetic value by providing a more natural landscape view over a larger area than Alt 1, however there would be an additional minor affect due to the addition of a pump station on the L-5 canal. The Miami Canal backfill for Alt 2 includes an additional 1.5 miles at the very northern portion adding a slight increase in aesthetic value as compared with Alt 1. There would be a moderate negative impact with the addition of a pump station on L-31N and a partial depth seepage barrier by adding man-made features in the natural landscape. The complete degradation of L-67 Extension levee provides a long-term increase in aesthetics due to the restoration of sheetflow increased native plants and animals and viewing potential.

The aesthetic effects of Alt 3 are the same as those for Alt 2 with respect to removal of L-4 and construction of a spreader canal, backfilling of the Miami Canal and the complete degradation of the L-67 Extension levee. Alternative 3 has a major negative aesthetic effect due to the addition of 2 pumps on L-29. Along the L-31N, Alt 3 would have a minor aesthetic effect due to a full and partial seepage barrier. The aesthetic effects of Alt 4 are the same as Alts 2 and 3 for L-4 removal and construction of a spreader canal, the backfilling of the Miami Canal and the complete degradation of L-67 Extension levee. The construction of the Blue Shanty Levee (~8 mile levee) in WCA 3B has a major negative effect on aesthetic value due to the addition of a levee within a wetland, however, it creates a flowway to the west that provides wildlife viewing opportunities and water flowing under Tamiami Trail. The seepage barrier in Alt 4 provides a significant and moderate negative effect to the aesthetics.

C.2.1.14 Socioeconomics

Effects are provided in the main report in **Section 5.1.5**.

C.2.1.15 Recreation

In Lake Okeechobee and the Northern Estuaries, FWO and Alts 1-4 have a negligible and less than significant effect on current recreation opportunities. . There will be no impacts to recreational navigation with this project. Alternatives 1-4 may provide enhanced fishing opportunities due to better salinity conditions in the Caloosahatchee and St. Lucie Estuaries. Reductions in high flows to the Northern Estuaries would enhance fish populations and subsequently improve related recreational opportunities such

as fishing, boating and kayaking. In the Everglades Agricultural Area (EAA), currently no recreation exists on the project site so any effects would be positive for public access meeting the identified needs according to Florida's Statewide Comprehensive Outdoor Recreation Plan (SCORP) for all action alternatives.

In the Greater Everglades, in the FWO condition recreational fishing would be affected little if at all. Hiking, biking and camping will not be affected directly. Any changes in recreation would be due to degraded quality of wetlands and the aesthetic values that could decrease as wildlife viewing and nature study would be degraded. In the Greater Everglades Alt 1 affects to recreation will be negative or positive depending on the activity and location. Recreational fishing by boat will have a significant and major adverse effect by back filling the Miami canal. This affects 13.5 of the 33 miles of the Miami canal in WCA 3. Bank Fishing opportunities would have a minor beneficial effect by addition of access points around proposed structures. Alternative 1 has the least negative effect on current Northern WCA 3A terrestrial mammal hunting opportunities. Terrestrial mammal hunting (deer, hog, rabbit, etc.) could have a short-term significant, adverse and unavoidable effect by increased hydration in areas that have been drier. In the long term if not better hydration peat loss to oxidation and fire would degrade current habitat further. Waterfowl hunting should improve with better hydration throughout the greater everglades during the early part of the dry season. This is good for bird watching as well. Improved access and designation of blue and greenway trails will be positive minor beneficial effect. Alternative 2 has similar effects to Alt 1 however; terrestrial mammal hunting (deer, hog, rabbit, etc.) could be affected negatively in the short term by increased hydration in areas that have been drier. In the long term if not better hydration peat loss to oxidation and fire would degrade current habitat further. Waterfowl hunting should improve with better hydration throughout the Greater Everglades during the early part of the dry season. This is good for bird watching as well. Improved access and designation of blue and greenway trails will be positive. Alternative 3 effects are similar to Alt 2. Alternative 4 effects to recreation will be negative or positive depending on the activity and location. Alternative 4's Blue Shanty Levee will bisect L67C. Recreational fishing by prop boat to the northern end of L67C canal would continue to be available from a new public boat ramp located in the northern end of L67C at the S151, providing a minor beneficial effect. Also at the S151 a new public boat ramp will allow access into the northern 5 miles of the Miami Canal south of S151 not previously served by a public boat ramp. Bank fishing opportunities could be positively increased by addition of access points around proposed structures. Terrestrial mammal hunting (deer, hog, rabbit, etc.) could be affected negatively in the short term by increased hydration in areas that have been drier. In the long term if not better hydration peat loss to oxidation and fire would degrade current habitat further. Waterfowl hunting should improve with better hydration throughout the greater everglades during the early part of the dry season. This is good for bird watching as well. Improved access and designation of blue and greenway trails will be positive.

In the Southern Estuaries there is no effect on recreation with the FWO. For Alts 1-4 access to the Southern Estuaries would not change based on CEPP, however, impacts to existing quality of recreation can be impacted negatively or positively depending on location and changes to fish habitat as identified above for the Greater Everglades, however additional flows to Florida Bay are expected to provide enhanced fishing opportunities and a minor beneficial effect. A Recreation Plan is included in **Appendix F**.

C.2.1.16 Land Use

C.2.1.16.1 Wetlands and uplands

Much of the future development within the study area is expected to occur on lands that were formerly in agricultural use. For all action alternatives, publically owned lands are being utilized. **Table C.2.1-7** summarizes the impacts to wetlands for the final array of alternatives. All action alternatives show a significant and major beneficial effect with an increase in wetland/upland habitat over the FWO as well as an increase in wetland function. Alternative 3 provides the greatest increase in acreage with 675 acres followed by Alt 2 with 671 acres, Alt 4 with 650 acres and Alt 1 provides the least with 531 acres. There is only about 144 acres difference between all the action alternatives and these are estimates at this time until detailed design is completed. The differences stem from different project features (lengths of backfilling, gaps, number of structures, etc) as detailed below. While there are some minor adverse effects due to the construction of features, most notably the Blue Shanty Levee in WCA 3B, the construction of other features, the degradation of levees and the backfilling of canals reconnects and adds wetland acreage providing the needed topography for sheetflow to restore the natural system.

In addition to gains in wetlands, all action alternatives shift approximately 13,800 acres of agricultural land use with wetland soils to a higher quality wetland with the construction of the A-2 FEB. The A-2 FEB would alter the land use from agriculture to an FEB that includes wetland habitat. The degradation of the L-4 levee adds ~35 acres due to the reconnection of the wetlands in northwestern WCA 3A. The backfilling of the Miami Canal would provide an additional 469 acres of wetlands for Alts 2, 3 and 4 and an additional 417 acres of wetlands for Alt 1. The difference in acreages is due to leaving the northern 1.5 miles open along the Miami Canal in Alt 1. The backfilling of the Miami Canal would restore the wetland habitat and reestablish sheetflow in northern WCA 3. For all action alternatives spoil mounds on both sides of the Miami Canal from S-8 to S-339 would be removed and 22 spoil mounds (the highest priority/highest functioning Florida Fish and Wildlife Conservation Commission (FWC) enhanced spoil mounds) would be maintained while the others will be removed. In addition to the removal of the selected spoil mounds in order to promote sheetflow across the backfilled Miami Canal, additional mounds (1.5 feet above the marsh surface) would be created every mile from S-8 to Interstate 75 to prevent hydraulic channelization of flow and provide upland animal habitat. This would provide an additional 49 acres of upland habitat for Alts 2, 3 and 4 and an additional 45 acres of upland habitat for Alt 1. Alternative 1 has one less mound due to starting the backfilling of the Miami Canal 1.5 miles south of S-8. This additional upland habitat provides refuge for terrestrial mammals during periods of high water. These mounds also align with the historic ridge habitat and there is the possibility that the placement of the mounds would help reestablish the ridge and slough pattern in WCA 3A.

In southern WCA 3A and WCA 3B, several features increase wetland habitat while other features remove/impact wetland habitat while connecting WCA 3A to WCA 3B and ENP. The proposed L-67A culverts will have a slight negative impact to the wetland of 4.5 acres/gated culvert. Due to the different number of culverts proposed in each alternative, the impact varies per alternative. Alternative 3 has the greatest loss of wetlands of 18 acres due to 4 culverts along the L-67A. Alternatives 2 and 4 have 3 culverts and a loss of 13.5 acres and Alt 1 has 1 culvert, thus a loss of 4.5 acres. However, the culverts are critical to connecting WCA 3A and WCA 3B and in conjunction with the gated culverts in L-67A levee, there are 6,000 foot gaps in the L-67C levee that will increase wetland habitat. Each 6,000 foot gap will provide an additional 9 acres of wetland habitat. Alternatives 1 and 4 provide 9 additional acres of wetlands. Alternative 4 has only one 6,000 foot gap because the other two gated culverts are included in the Blue Shanty flow way discussed below. Alternative 2 provides 27 acres of wetlands from its three gaps and Alt 3 provides 36 acres for its four gaps. The degradation of approximately six miles of the L-67C in Alt 4 provides an additional 49 acres of wetlands. The degradation of the L-29 levee provides an

additional 32 acres of wetlands in Alt 4 (approximately three miles). The construction of the Blue Shanty Levee to create the flow way between WCA 3B and ENP removes 84 acres of wetlands in WCA 3B in Alts 4 (approximately 6.25 mile levee). If the new levee is not constructed and water stages are not raised substantially within WCA 3B, then significant southward movement of water into NESRS from WCA 3B cannot be achieved by gravity flow alone due to higher wet season stages in the L-29 Canal associated with the implementation of the TTNS Project implementation; it must instead be driven by pumps. These pumps in turn would require additional dredging of former remnant agricultural ditches within southern WCA 3B to create expanded intake canals. The disturbance footprint would potentially be similar to that of the new levee. Focusing instead on Alt 4, we note that creation of the new levee enables the removal of a similar length of existing levee (L-67C).

In Everglades National Park, the backfill of the entire L-67 Extension canal provides an additional 104 acres of wetlands in Alts 2, 3 and 4. In Alt 1, only the southernmost 1.5 miles is backfilled, adding 29 acres of wetlands.

In addition to the benefit of increased wetland/upland acres, the wetland function increases as well due to the backfilling of the Miami Canal and the restoration of sheetflow across WCA 3A and 3B into ENP. The initial construction may have a temporary adverse affect on the wetland function in the construction areas, but once the project is complete, all alternatives would increase wetland function based on the acres of wetlands gained.

Table C.2.1-7. Impacts to Wetlands/Uplands (acres) for each project feature for each alternative.

Project Feature	FWO Acres of Wetland Gain (Loss)	Alternative 1 Acres of Wetland Gain (Loss)	Alternative 2 Acres of Wetland Gain (Loss)	Alternative 3 Acres of Wetland Gain (Loss)	Alternative 4 Acres of Wetland Gain (Loss)
L-4 Degrade	0	35	35	35	35
Miami Canal Backfill	0	417	469	469	469
Miami Canal Spoil Mounds	0	45	49	49	49
L-67A Culverts	0	(4.5)	(13.5)	(18)	(13.5)
L-67C Gaps	0	9	27	36	9
L-67C Flow Way Degrade	0	0	0	0	49
L-29 Degrade	0	0	0	0	32
Blue Shanty Levee	0	0	0	0	(84)
L-67 Extension Backfill	0	29	104	104	104
Total Net Change	**0**	**531**	**671**	**675**	**650**

C.2.1.16.2 Agriculture

The entire CEPP project area consists of lands currently under public ownership. 14,000 acres in the A-2 FEB footprint are currently in production for sugar cane. All action alternatives would convert 14,000 acres of agricultural lands to wetlands due to construction of the A-2 FEB. As described in **Section 5.1.8**, Hydrology, negligible changes were noted for water stages within the SDCS; therefore no indirect effects to agriculture within this region are anticipated. Coordination with the United States Department of

Agriculture (USDA) and National Resources Conservation Service (NRCS) to meet the requirements of the Farmland Protection Policy Act, is ongoing. When detailed design information that locates each of the plan components is completed, it can then be determined how many acres of unique farmland would be affected by the Project. (Refer to **Appendix C.4.12**).

C.2.1.17 Cultural Resources

The Everglades and associated ecosystems are a nationally significant resource and have been severely impacted by human activities for over a hundred years, primarily through drainage practices and agriculture. A review of the Florida State Master Site Files (FSMSF) indicate that there are 23,499 recorded cultural resource sites and resource groups within the CEPP study area that have a survey determination and/or State of Florida Historic Preservation Office (SHPO) evaluation of other than ineligible for listing with the National Register of Historic Places (NRHP). For this document, the use of the term cultural resources includes significant historic properties that are determined eligible or potentially eligible for NRHP listing and culturally significant sites. See **Section 10** in the Main Document for definitions of terms.

Avoidance of adverse effects to cultural resources is the Corps preference, therefore, throughout the planning process for CEPP, the project archaeologist, engineers, and plan formulators have worked closely to determine alternatives and features of alternatives that reduce or eliminate impacts to cultural resources. Pursuant to 36 CFR 800.1, where possible, the project design will be modified to avoid impacting significant historic properties and culturally significant sites. Where avoidance is not possible, other mitigation measures will be considered, which could include but are not limited to data recovery excavations. The mitigation measures will be developed in consultation with SHPO, tribal groups and other interested parties as established in implementing regulations for Section 106 of the NHPA.

In conjunction with the National Historic Preservation Act (NHPA), formal consultation was initiated with the Seminole Tribe of Florida's Tribal Historic Preservation Office (THPO); the Miccosukee Tribe of Indians of Florida's NAGPRA Representative; the SHPO; Everglades National Park's Chief of Cultural Resources (ENP); and the Florida Bureau of Archaeological Research. During formal consultation, a number of conclusions were drawn: 1. It was determined that additional surveys were needed to identify cultural resources within specific areas of potential effect. 2. It was decided that as the CEPP project progressed, additional surveys may be needed, specifically during the Pre-construction, Engineering and Design (PED) phase, when feature designs were finalized and construction staging areas were determined. 3. Section 106 compliance with the NHPA would be conducted separately from NEPA and would not be completed during the current feasibility phase of the project, however would be complete prior to construction of each feature. See Appendix C.5 for correspondence and/or consultation regarding cultural resources within the project area.

Engineering Regulation (ER) 1105-2-100 Appendix C, paragraph C-4(d)(6)(a) states that results of cultural resources investigations conducted during the feasibility phase and if needed, the PED phase will "serve as the basis for formulation of plans for management of historic properties prior to or during the construction and operational stages of projects". At which time, as required under ER 1105-2-100 Appendix C, paragraph C-4 (d)(6)(b) the USACE will determine effects to historic properties and any need "to mitigate adverse project effects on National Register and eligible properties" and to "serve as the basis for negotiation of a Memorandum of Agreement (MA) (if no MA has been previously prepared) with the SHPO/THPO and, if appropriate, the advisory council on Historic Preservation (ACHP) specifying

actions which will be taken by the Corps of Engineers prior to or during the project construction period to mitigate adverse effects on National Register and eligible properties."

This PIR/EIS meets cultural resources requirements as specified under NEPA. The CEPP will remain in compliance with the National Historic Preservation Act (NHPA) pre and post construction.

Area of Potential Effect

The area of potential effect (APE) for cultural resources differs greatly from the overall CEPP study area. For this project, the APE for cultural resources covers 1.5 million acres, which includes the EAA A-2 footprint, portions of the L-6 levee and associated canal, the L-5 levee and associated canal, the S-8 Pump Station Complex, portions of the L-4 levee and associated canal, the L-28 Triangle within the Miccosukee Tribe of Indians of Florida Alligator Alley Reservation, portions of the Seminole Tribe of Florida's Big Cypress Reservation immediately west of L-28 and north of I-75, portions of the Miami Canal, WCA 3A and 3B, L-67A and L67C levee, portions of the L-29 levee, the L-67 Extension levee and associated canal, portions of the Old Tamiami Trail, and portions of the L-31N levee, and Everglades National Park (see **Table C.2.1-7** in **Appendix C.1.16**).

Evaluation Criteria Specific to Cultural Resources Impacts to cultural resources vary by individual components within Alts 1 – 4. Therefore, impact evaluations were based on a review of the individual components of each Alt to determine if actions would potentially result in impacts to significant cultural resources (which include sites eligible or potentially eligible for NRHP listing), described below. Throughout the development and selection of the components, mitigation measures that would eliminate or lessen adverse cultural resource effects were utilized.

The following significance thresholds have been used in determining whether components proposed for each Alt would result in a significant impact to cultural resources. The use of the term cultural resources includes historic properties eligible or potentially eligible for NRHP listing and culturally significant sites. A cultural resource impact is considered significant if implementation of a component of an Alt would result in any of the following when compared to Future Without Conditions (FWO):

- Result in a change in the significance or eligibility for NRHP, including but not limited to any contributing elements, of a historical resource
- Result in an adverse change in the significance or eligibility for NRHP of a historic resource
- Disturb any human remains, including but not limited to those outside of formal cemeteries*
- Disturb memorials determined to hold public significance regardless of age
- Result in adverse changes to sites identified through consultation with the Seminole Tribe of Florida and/or the Miccosukee Tribe of Indians of Florida as having cultural significance.

* The Corps is currently drafting a new policy guidance memorandum to update and expand the 2008 CERP Policy on Human Remains that currently applies to the CEPP study area, to apply to all Civil Works and Regulatory actions within the respective jurisdiction of these Jacksonville District programs in the state of Florida. This document is an internal guidance memorandum designed to consolidate and clarify existing Corps documents regarding the treatment of human remains pursuant to Section 106 of the NHPA and the Jacksonville District's Federal Trust Responsibilities for the state of Florida.

Comparison of Proposed Action Alternatives 1 through 4 and Future Without Conditions

The project schedule (**Section 6.7 and 6.11.2.3**) allows for a phased approach to Section 106 compliance, in that each suite of features will be consulted on as they arise. This will ensure that the most up to date information will be considered in the determination of effect. Also, based on final designs or modifications of the project features, additional work may be required for compliance with

the NHPA. *While the Corps is currently in compliance with the procedural requirements of the NHPA, the Corps recognizes that additional consultation and other requirements are not yet complete, but the project will be in full compliance prior to construction.*

Consultation is currently ongoing with regards to the determination of effects and potential mitigation of effects listed below, and therefore should be considered preliminary. The effects associated with each Alt have been preliminarily considered for this feasibility study. A final determination of effects, as required under Section 106 of the NHPA, will not be made until the project is authorized and the subsequent PED phase begins.

For each component discussion below, the environmental effect is determined when compared to the future without conditions. For this document, the use of the term cultural resources includes significant historic properties that are determined eligible or potentially eligible for NRHP listing and culturally significant sites. See **Section 10** in the Main Document for definitions of terms.

C.2.1.17.1 Draft Preliminary Operations Manual (DPOM)

This component of CEPP involves the development of a draft preliminary operation plan for each component or feature of the project. More information about the draft preliminary operation plan is recorded in **Section 6.6.5**. It should be noted that currently there are approximately 350 significant or NRHP eligible cultural resource sites, including five districts and one World Heritage site (ENP) recorded within the APE for CEPP. There are also numerous culturally significant properties to both the Seminole Tribe of Florida and the Miccosukee Tribe of Florida within WCA 3 and Everglades National Park.

Two significant traditional cultural properties (TCP), Airboat Association of Florida (8DA6768A) and Coopertown (8DA6767A), associated with the modern Gladesmen culture group, and one Miccosukee Tribe of Indians of Florida residential camp (Osceola Camp) are located south of the L-29 levee. These properties are considered culturally significant. Also, three structures (8DA6768, 8DA11526, and 8DA115267) are located on and associated with 8DA6768A and are considered significant historic properties.

Effects: For this component of CEPP, there are many uncertainties, some of which are identical to those described in the ERTP EIS. Ongoing ERTP investigations center around uncertainties surrounding the effects fluctuating water would have on subsurface cultural material. Another uncertainty is the velocity that water will be flowing from the L-4 Spreader feature and from within the Blue Shanty flowway. Water velocity can cause erosional effects, which would be considered an major adverse long term effect to historic properties. Once a determination of effects of fluctuating water on cultural resources has been identified for ERTP (ca. 2016) and the CEPP enters into the PED phase and modeling information is refined, Section 106 consultation for the CEPP DPOM will continue.

Alternatives 2 – 4 could potentially affect the TCP 8DA6768A and associated historic properties 8DA6768, 8DA11526, and 8DA115267). Based on the Department of Interiors ongoing mitigation of Coopertown (8BD6767A) as part of Tamiami Trails Next Steps, there will be no effect.

During the PED phase and refinement of the DPOM, consultation with all interested parties will resume and an effects determination will be made prior to operation.

Mitigation of Effects: Mitigation for the TCP Airboat Association of Florida (8DA6768A) could potentially involve purchasing any necessary easements, which would reduce any adverse effect. Effect to

8BD6768A associated historic structures, could be reduced by potentially raising the structures. For the remainder of the effects caused by the DPOM, mitigation is unknown at this time.

North of the Redline

C.2.1.17.2 Lake Okeechobee

There are no changes from the future without conditions for this component of CEPP. Effects: There will be no effect to cultural resources for Alts 1 through 4.

C.2.1.17.3 Northern Estuaries

This component of CEPP proposes to redirect a percentage of water currently flowing from Lake Okeechobee into the eastern and western northern estuaries, south into the Miami Canal and the North New River Canal. Effects: This decrease of freshwater into the estuaries will have no effect to cultural resources for Alts 1 through 4.

C.2.1.17.4 EAA A-2 FEB

The EAA A-2 FEB consists of a perimeter levee to confine the water, potential grading within the interior of the FEB footprint, improvements to existing agriculture canals, and improvements to existing and/or constructing new structures or features. A cultural resource Phase I Survey of this project component was conducted specifically for CEPP in 2013 to identify and assess cultural resources within the FEB footprint. As a result, four historic sites were identified, two of which are considered significant (8PB16039, 8PB16040) under NEPA. Effects: Effects to cultural resources sites 8PB16039 and 8PB16040 for Alts 1 through 4 are considered major and long-term and adverse. Mitigation of Effects: Due to the lack of knowledge of prehistoric occupation sites within the area, Phase III Investigations are recommended for historic property 8PB16039, which would reduce the effect. Site 8PB16040 contains human remains and is therefore a culturally significant resource. Mitigation of effects are unknown at this time and will be determined through consultation once the project is implemented.

A new structure (S-623) associated with the operation of A- 2 FEB would be constructed along the NRHP eligible Miami Canal (8PB13369). Effects: There would be no effect to cultural resources for Alts 1 through 4. The proposed new structure would not alter either directly or indirectly the characteristics which make the Miami Canal (8PB13369) significant.

Existing structures G-373, G-372 and G-372HL are associated with the operations of STA 3/4 and date to the 1990's, and are therefore not significant. Effects: There would be no effect to cultural resources for Alts 1 through 4.

C.2.1.17.5 L-28 Triangle (levee and borrow canal)

The L-28 Triangle area is located entirely within the boundaries of the Miccosukee Tribe of Indians of Florida's Reservation and encompasses 7830 acres of Tribal lands. The L-28 Triangle area is confined north by Interstate 75, west by L-28 Interceptor Canal (L-28I), and east by the L-28 Canal or WCA 3A. Alternative 1 includes removal of two segments of the L-28 Levee along the eastern boundary of the L-28 Triangle (9000 feet total) and complete backfill of the L-28 Canal segment located between the levee gaps. Although Alts 2 through 4 do not include modifications to the L-28 Levee or the adjacent canal, stages within the L-28 Triangle are slightly increased by 0.1-0.2 feet during normal to dry conditions, due to groundwater interactions with the down-gradient western WCA 3A marsh. Effects: Effects to historic properties for Alt 1 is unknown. Through consultation with the NAGPRA representative to the Miccosukee Tribe of Indians of Florida, there are no known culturally significant sites within the area, and areas within the footprint of the L-28 levee and associated borrow canal are considered to have low

probability for historic properties. Based on previous research within the immediate area and/or similar areas ecologically, tree islands (either historic or modern) are considered to have a high potential for cultural resources. Therefore, cultural resource investigations will be conducted within high probability areas impacted by the original construction of the L-28 levee and canal. If significant historic properties are located within the area of potential effect, long-term, major adverse effect could occur as a result of degrading the levee. The L-28 Triangle is not a feature in Alts 2 through 4, therefore there would be no effect to cultural resources. Mitigation of Effects: If significant historic properties are located, adverse effect to sites could be reduced by avoidance. To avoid potential inadvertent discoveries, it is recommended that should the levee be removed within the historic footprint of tree islands, that degrading be terminated at tree island grade, not marsh grade. Previous research has shown that compacted spoil material can extend well below tree island grade. Additionally, a professional archaeologist should monitor construction activity to ensure that any discovery is recorded and assessed for significance.

South of the Redline

C.2.1.17.6 L-4 Levee and Canal

This component involves degrading the western 2.9 miles of the southern L-4 levee, resulting in the creation of a water spreader feature at the northwestern most boundary of WCA 3A. A pump station near the western terminus of the L-4 degrade would also be constructed. Exact placement of the pump station has not been determined. Although built in ca. 1957, the L-4 Levee and Borrow Canal (8BD5098) is considered a tertiary canal and not a part of the original reclamation/drainage activities of the early 20th century, which is considered by SHPO and USACE to be the period of significance for eligibility determination. Therefore, 8BD5098 is not considered eligible for the NRHP, nor significant under NEPA. Effects: There would be no effect to cultural resources for Alts 1 through 4 in the degrading of the southern L-4 levee, nor for the placement of the proposed L-4 Pump Station, regardless of location along the levee/canal.

C.2.1.17.7 S-8 Complex

This component of CEPP involves modifications to the S-8 Pump Station (8BD5092) and potentially other structures (G-357, G-404, and L-5-1 bridge) in the vicinity of the pump station to permit flows to the west. Further work is needed to determine if the S-8 Pump Station (8BD5092) is eligible for NRHP listing and therefore is significant under NEPA. The G-357 Gated Culvert, G-404 Pump Station, and L-5-1 bridge have been either constructed or replaced in the last 20 years and are not considered significant. Effects: A determination of eligibility is need for the S-8 Pump Station (8BD5092) prior to making a determination of effect. Mitigation of Effects: If the S-8 Pump Station is determined significant and adverse effect to any component of the S-8 Pump Station complex are unavoidable, a qualified architectural historian should conduct a Historic American Engineering Record (HAER) and/or Historic American Buildings Survey (HABS). This documentation packet will then be entered into the Library of Congress as well as Florida Master Site Files. These measures would reduce effects to this potentially historic property, if needed.

C.2.1.17.8 L-5 Levee , Canal and Spreader Feature

Alternative 1 of this component involves improvements to accommodate L-6 and STA 3/4 conveyances, by deepening the L-5 borrow canal and the placement of a gravity pump. The L-5 southern levee and associated borrow canal (8BD5099) are not significant. The L-5-1 bridge that joins the L-5 north levee to the L-5 south levee was replaced in the last 20 years and is not eligible for NRHP, nor is the bridge considered significant under NEPA. Effects: There will be no effects to historic properties for this component of Alts 1 through 4.

Alternatives 2 through 4 are similar in that they call for the same conveyance and improvement features as Alt 1, with the addition of a separate spreader feature constructed approximately 600 ft. south and parallel to portions of the existing L-5 south levee. Phase II Excavations were carried out specifically for the CEP Project on three previously recorded historic properties (8BD4836, 8BD4837, and 8BD4838) located within the APE of this project component. All three sites where recommended eligible for the NRHP and contained material culturally sensitive to the tribes. Effects: This component of Alts 2 through 4 will result in major long-term adverse effects to cultural resources 8BD4836 – 8BD4838. Mitigation of Effects: Effects to cultural resources for Alts 2 through 4 are potentially reduced by considering the placement of the spreader features (avoiding) and/or consideration of water velocity in relation to the significant site locations.

C.2.1.17.9 L-6 Levee and Canal

This component involves deepening and/or widening the L-6 borrow canal, replacement or redesign of the G-336G culverts and removal of the L-6 canal plug. The G-336G and the L-6 canal plug were originally constructed in association with WCA2 operations and are not historic. The L-6 borrow canal appears on historic aerial photographs (Armando Ramirez, personal communication 2013) and therefore would require additional work to determine significance or NRHP eligibility. Effects: Effects to historic properties for this component of the Alts are unknown. Cultural resource investigations would be needed to assess significance of the L-6 levee and associated borrow canal. Mitigation of Effect: If it is determined that the L-6 is a significant historic property, it is recommended that a Level I Historic American Engineering Record (HAER) document is written and submitted to the Library of Congress and the Florida State Archives. This action would reduce the effect.

C.2.1.17.10 Miami Canal (8BR4840/8BR5097)

To improve sheet flow throughout WCA 3A, a portion of the Miami Canal (8BR4840) would be backfilled using spoil material originally excavated during the construction and maintenance of the canal and dredged material from the L-5 modifications. The Miami Canal and associated features/structures have been investigated during seven separate surveys (FMSF Survey # 5844, 14404, 17583, 19090, 19276, 20328, and 20487). As a result, it has been determined that the Broward County reach of the Miami Canal (8BD4840) is eligible for the National Register of Historic Places (NRHP) and is therefore considered significant under NEPA. Effects: Effects to historic properties for Alt 1 are considered major long-term adverse effects to the Miami Canal (8BD4840). Effects to historic properties for Alts 2, 3, and 4 would be similar to the effects of Alt 1, with differences being a larger portion of the Canal would be adversely effected, including one additional potentially significant feature. Through consultation with the Tribes (**Appendix C.5**), it has been determined that the spoil mounds associated with the Miami Canal do not contain culturally significant sites (i.e., culturally significant flora and/or other culturally sensitive uses), therefore a determination of no effect to culturally significant sites is listed for the use of the spoil material. Mitigation of Effects: It is recommended that a Level I or II Historic American Engineering Record (HAER) document is written and submitted to the Library of Congress and the Florida State Archives. This would reduce the effects of the proposed action.

Greenline/Blueline

C.2.1.17.11 L-67A Levee and Canal

This component involves the placement of gated structure(s) within the L-67A levee and the removal of spoil material deposited during the original construction or maintenance of the L-67A borrow canal and will span approximately 0.5-miles on each side of the structure(s).

Three cultural resource surveys are listed with the State for WCA 3A, one conducted via aerial photographs (FMSF Survey # 602), a Phase I Survey conducted in 2011 (FMSF Survey # 20487) and a Phase I and Phase II Survey conducted in 2012 specifically for CEPP (FMSF Survey # 20328). During the 2011 survey, the L-67A levee and associated canal (8BD5100) was assessed and determined to be not significant. Results of the 2012 cultural resources survey conducted specifically for CEPP included testing portions of tree islands impacted by the original levee/borrow canal construction. In some cases this involved portions of tree islands with recorded sites that were identified during Survey # 602 using aerial photography. These sites have not been field verified. Only areas of potential effect for sites recorded during Survey # 602 were investigated for CEPP. It also should be noted that existing As-Built Plans for the L-67A and C show that the area immediately underneath the existing levee, and areas between the levee and borrow canal were degraded prior to construction. During the CEPP specific 2012 Survey (FMSF Survey # 20328), no significant cultural resources were identified.

Two culturally significant sites actively used by the Miccosukee Tribe of Indians of Florida are located on two of the spoil mounds west of the borrow canal. Effects: Potential effects to the culturally significant sites for Alts 1 through 4 are considered major to moderate long-term adverse effects. There will be no known effects to historic properties. Mitigation of Effects: Effects to the culturally significant sites could be reduced by avoiding the spoil mounds associated with the sites during the PED and construction phase of CEPP. Also, to avoid potential inadvertent discoveries, it is recommended that should spoil mounds be removed within the historic footprint of tree islands, that degrading be terminated at tree island grade, not marsh grade. Previous research conducted by Corps' archaeologist has shown that compacted spoil material can extend well below tree island grade. Additionally, a professional archaeologist should monitor construction activity within historic tree island footprints to ensure that any discovery is recorded and assessed for significance.

C.2.1.17.12 L-67C Levee and Canal

This project component involves degrading portions of the L-67C Levee, lengths of which are dependent upon the Alt.

Two surveys have been conducted to identify significant historic properties within WCA 3A, one conducted via aerial photographs (FMSF Survey # 602) and a Phase I and Phase II Survey conducted in 2012 specifically for CEPP (FMSF Survey 20328). For tree islands impacted by the original levee/borrow canal construction, only areas of potential effect were investigated. In some cases this involved portions of tree islands with recorded sites that were identified during Survey # 602 using aerial photography. These sites have not been field verified. Sites previously identified during Survey #602 were only investigated in the area of potential effect for this component of CEPP only. It should also be noted that existing As-Built Plans for the L-67 A and C, show that the area immediately underneath the existing levee, and area between the levee and borrow canal were degraded prior to construction. During the 2012 Survey (FMSF Survey 20328), no cultural resources were identified within the APE for this feature. Also the L-67C was built in 1968 and therefore does not meet the age criteria of 50-years required for accessing eligibility. Based on information gathered during the assessment of L-67A, once the age criteria is met, it is probable that the L-67C is not historically significant.

Effects: There would be no effect to significant cultural resources for Alts 1 through 4. However, to avoid potential inadvertent discoveries, it is recommended that should levee material be removed within the historic footprint of tree islands, that degrading be terminated at tree island grade, not marsh grade. Previous research has shown that compacted spoil material can extend well below tree island

grade. Additionally, a professional archaeologist should monitor construction activity within historic tree island footprints to ensure that any discovery is recorded.

C.2.1.17.13 L-29 Levee

This component involves degrading of portions of the L-29 Levee (Alt 4 only) and/or new structures (Alts 2-4) located east of S-333. This component is not applicable to Alt 1. The original construction of the L-29 impacted two large tree islands. Through consultation with the Cultural Resource Representative to the Miccosukee Tribe of Indians of Florida, these islands have been identified as being culturally significant. Multiple surveys have been conducted to identify cultural resources within WCA 3A and 3B, one conducted via aerial photographs (FMSF Survey # 602), Survey # 17032, Survey # 283, a Phase I Survey conducted in 2011 (FMSF Survey 20487), and a Phase I and Phase II Survey conducted in 2012 specifically for CEPP (FMSF Survey # 20328). With information gathered from these surveys and others in similar environments, it is highly probably that historic properties will also be located on these islands.

The ValuJet Flight 592 Crash Memorial is also located along the L-29 levee. Although the Memorial is not historic, it is frequently visited by those directly or indirectly affected by the accident. Therefore, the Memorial is considered culturally significant and should be preserved in place. If preservation is not viable, consultation with all family members of the victims, and local residents should occur prior to completion of the design-build phase.

There is also one Miccosukee Tribe of Indians of Florida residential camp (Tigertail Camp) located atop the L-29 levee. The Tigertail Camp is considered culturally significant.

Effects: Alternative 1 does not involve removal of the L-29 levee or placement of new structures, therefore would have no effect to significant cultural resources. Alternative 2 -4 could potentially have major long-term adverse effects to two culturally significant sites identified by the Miccosukee Tribe of Indians of Florida. Impact to portions of these two sites occurred during levee and borrow canal construction in the mid-late 1960's. Based on previous research, it is highly probable that these two tree islands could contain historic resources of unknown significance. It should be noted that cultural resources investigations on these islands would require further consultation with the Miccosukee Tribe of Indians of Florida prior to fieldwork. Based on preliminary design plans for Alternatives 2 through 4, there would be no effect to the Valujet Flight 592 Crash Memorial, or the Tiger Tail Camp. Mitigation of Effects: Avoid placing structures or degrading L-29 within known culturally significant sites, significant historic properties, currently occupied camps, and/or within the footprint of the Valujet Flight 592 Crash Memorial could reduce the determination of effect. Potential adverse effects to historic properties impacted by the original levee construction could be reduced to no effect by avoiding tree islands and/or by limiting the depth of levee removal to not exceed tree island grade. Additionally, a professional archaeologist should monitor construction activity within historic tree island footprints to ensure that any discovery is recorded

C.2.1.17.14 S-333 Modifications

This component of CEPP involves constructing an additional structure (S-333N) to increase the S-333 capacity and is a feature of Alts 1 - 4. The S-333N would be located just north of the S-333. Exact placement of the structure is preliminary.

There are no known high probability areas for cultural resource sites located within the APE. The ValuJet Flight 592 Crash Memorial is also located along the L-29 levee just east of the S-333 structure. Although the Memorial is not historic, it is frequently visited by those directly or indirectly affected by

the accident. Therefore, the Memorial is considered culturally significant and should be preserved in place. If preservation is not viable, consultation with all family members of the victims, and local residents should occur prior to completion of the design and build phase. Effects: Based on preliminary design plans for Alternatives 1 through 4, there would be no effect to the Valujet Flight 592 Crash Memorial.

C.2.1.17.15 L-67D Levee and Flow way within WCA 3B (Blue Shanty)

This component is a feature of Alt 4 only and involves constructing a levee within WCA 3B to connect the L-67A levee with the L-29 levee, thereby creating a flow way for water to pass from WCA 3A into Shark River Slough. Working closely with project engineers, areas of concern have been identified in an effort to avoid significant cultural resources or areas of high probability (i.e. tree islands and areas currently in use by the Miccosukee Tribe of Indians of Florida) within the footprint of the proposed levee. Based on the multiple surveys conducted within similar environmental areas (FMSF # 602, 286, 1616, 17032, 18093, 1615, 904, 1009, 1014, 1187, 1307, 6968, 7667, 20487 and the CEPP specific 2012 Survey (FMSF # 20328) and in conjunction with consultation with the Tribes, there is a high probability for significant cultural resources to be located within the flow way. Also, modeling results indicate that water depth could exceed current stages to the point that it could prove detrimental to lower elevated tree islands within the flow way that have not undergone a Phase I Survey. The exact footprint of this feature is unknown at this time. Effects: Alternatives 1 through 3 would have no effect. Alternative 4 effects are unknown. Once the footprint of the L-67D levee and the APE for the flow way is determined, and early in the PED phase, an integrated Phase I and Phase II Survey would be conducted to identify and assess significant cultural resources that may be located on high probability areas (tree islands) within the proposed flow way. Mitigation of Effects: Unknown at this time. It is recommended that the levee avoid impacting tree islands.

C.2.1.17.16 L-67 Ext. Levee Removal

This component involves the backfilling of the L-67 Extension borrow canal using associated levee material to varying degrees depending on the Alt. This component is located within ENP. In January 2013, USACE and ENP employees conducted a survey (FMSF # pending) of potential high probability areas impacted by the original construction of the L-67 Extension levee and associated borrow canal. The L-67 Extension levee and associated borrow canal (ca. 1967), and associated features S-347 (1987), and S-346 (1987) do not meet the age criteria of 50-years required for accessing NRHP eligibility, nor are these features eligible under Criteria G See SHPO to Corps letter dated 10-15-2013 in Appendix C.5. Based on information gathered during the research of other canals, levees, and features within the CEPP APE, it is highly probable that the L-67 Ext. and associated features are not eligible for NRHP listing and therefore will not be considered historically significant.. No significant cultural resource sites were located. Effects: There would be no effect to cultural resources for Alts 1 through 4. However, to avoid potential inadvertent discoveries, it is recommended that should levee material be removed within the historic footprint of tree islands, that degrading be terminated at tree island grade, not marsh grade. Previous research has shown that compacted spoil material can extend well below tree island grade. Additionally, a professional archaeologist should monitor construction activity within historic tree island footprints to ensure that any discovery is recorded.

Yellowline

C.2.1.17.17 L-31N Seepage Barrier / L-31N Pump Station(s)

This component involves the construction of a seepage barrier within the existing L-31N levee for all Alts and/or the construction of pumps for Alts 1 and 2. Three surveys have been conducted along the L-31N Levee (FMSF Survey # 11698, 16709, and 18093), which resulted in the identification of one site

recommended as potentially eligible for the National Register. The USACE concurs with this recommendation and considers 8BD2104 as eligible for NRHP listing. Effects: For Alts 1 through 4 seepage barrier, there would be no effect to cultural resources. There could potentially be major long-term adverse effects to the Levee Cut Site (8BD2104) dependent upon placement of the proposed structures for Alts 1 and 2. Mitigation of Effects: Consideration should be given to the placements of the proposed structures during the PED phase. If placement avoids direct or indirect impact to site 8DA2104, then a no effect determination would be made. The effect determination for 8DA2104 should be revisited once feature specific plans and specification for the project are developed.

C.2.1.17.18 S-356

This component involves changes to the S-356 Pump Station. Based on examination of historic aerial photographs, the original construction of the pump station did not impact any tree islands within the construction footprint. As previously stated, based on previous research, tree islands are considered high probability for cultural resource locations. Effects: The S-356 Pump Station is not a historic structure, nor did original construction impact areas of high probability areas. Regardless of the changes proposed to the S-356, there would be no effect to cultural resources for Alts 1 through 4.

C.2.1.17.19 G-211 Operational Refinements

This component involves the utilization of current coastal infrastructure (canals and associated features) to convey seepage south. Effects: For Alts 1 through 4, there would be no effect to cultural resources.

C.2.1.17.20 S-334 to S-335 Seepage Barrier

This component involves the construction of a seepage barrier within the existing levee between structures S-335 and S-334. This component is located adjacent to the Miccosukee Tribe of Indians of Florida lands and casino. Effects: This is not a feature of Alts 1, 3, and 4. For Alt 2, there would be no effect to cultural resources.

C.2.1.18 Invasive and Native Nuisance Species

Alternatives 1, 2, 3, and 4 have the potential and likelihood for establishment and spread of non-native invasive and native nuisance species. Proposed restoration activities may affect ecosystem drivers that directly or indirectly influence the invasiveness of non-native species. These factors may affect invasive species positively or negatively, depending on the unique characteristics of individual species and the environmental conditions for a given biological invasion (Doren et al. 2009). For example, shortened surface water drawdowns may reduce the recolonization rates of melaleuca in sawgrass marsh while increasing habitat suitability for Old World climbing fern on tree islands. Many of the areas where features are proposed are currently inhabited by non-native invasive and native nuisance species. Construction of the proposed features has the potential to spread the existing non-native invasive and native nuisance species on site as well as introduce new invasive species via contaminated equipment. Disturbed areas resulting from construction are likely to become established with non-native invasive and native nuisance species. New flows created by operations of the proposed features may serve as vectors to spread invasive and native nuisance species into new areas. The large number of existing and potential invasive plant and animal species and the often incomplete knowledge of invasive mechanisms for each species create moderate to high uncertainty in this evaluation. Long-term monitoring in an adaptive management framework is critical to ensure efficient management of the most threatening non-native invasive species in the restoration footprint.

C.2.1.18.1 Lake Okeechobee and the Northern Estuaries

Alternatives 1, 2, 3, and 4 would reduce freshwater flows from Lake Okeechobee to the Caloosahatchee and St. Lucie estuaries, allowing for slightly higher salinity levels in the estuaries. The reduced freshwater outflows are not expected to have an impact on non-native invasive or native nuisance species. Existing invasive species under active management are expected to persist at baseline levels if current funding levels are sustained (e.g., melaleuca). Existing species not under active management or which are ineffectively controlled are expected to increase in abundance and spatial extent (tropical American water grass). New invasions of non-native plant and animal species are expected but estimates of species number and severity of impacts are conjectural.

C.2.1.18.2 A-2 Flow Equalization Basin

Alternatives 1, 2, 3, and 4 include this feature. There are invasive and native nuisance species to consider with the proposed Flow Equalization Basin (FEB), to be called A-2. Species of concern include Brazilian pepper, torpedo grass, tropical American watergrass, water hyacinth, water lettuce, and hydrilla. The FEB lands currently are agricultural lands. Brazilian pepper exists along the agricultural canals. Once the FEB is operational, the water levels are likely to inhibit growth and recruitment of Brazilian pepper. All upland sites (e.g., levees) are expected to experience colonization of Brazilian pepper, torpedo grass, paragrass, and other invasive species common in ruderal sites. The proposed four-mile spreader canal would require continual maintenance of floating, emergent, and potentially, submersed plant species in order to maintain the function of the canal. It is expected that increased sedimentation immediately downstream of the spreader would result in succession to large stands of Carolina willow and cattail and this area may require maintenance to achieve target flow rates. In addition, the seepage canal would require continual maintenance to control both non-native invasive and native nuisance species. Due to eutrophic conditions and variable hydroperiods, many invasive species would aggressively invade and are likely to be costly and difficult to control. Therefore, control efforts focused at maintaining the primary functions of the FEB (e.g., conveyance capacity) are preferred over aggressive eradication efforts typically applied to natural areas. Invasive/nuisance species in this category include, but are not limited to torpedo grass, hydrilla, water hyacinth, and water lettuce. In all action alternatives, these species have the potential to interfere with surface water conveyance immediately upstream of water control structures. There are many species that could establish both in the FEBs and WCAs. Establishment of these species in the FEB could be part of an invasion pathway to natural areas downstream (i.e. WCA 3A/3B, ENP). For this reason, diligent monitoring and rapid response control measures for these species would need to be carried out during construction and operations phases. Examples of such species include tropical American watergrass, Wright's nutrush, West Indian marshgrass, Nile monitor, and bullseye snakehead.

There are two recreational access points proposed for the FEB. Access points provide opportunity for the introduction of invasive species, such as hydrilla and torpedo grass. Boats and trailers can serve as a vector for new species introductions.

C.2.1.18.3 Diversion of L-6 Flows and L-5 Improvements

This feature is proposed for Alts 1, 2, 3, and 4. Deepening of the L-5 has the potential to reduce productivity of various species of SAV (including hydrilla), but would not eliminate suitable habitat for their establishment and growth (Langeland 1996). All of the action alternatives may improve habitat for non-native tropical fish species which utilize deep water zones to avoid cold temperature events (Trexler et al. 2000).

C.2.1.18.4 L-4 / L-5 – Spreader Canal and Levee Degradation

The effects to invasive species with this feature would be similar for Alts 1, 2, 3, and 4. Northwest WCA 3A has dried out significantly since the area was compartmentalized. The vegetation has shifted from ridge and slough to woody shrubs and small trees including Carolina willow, wax myrtle, Brazilian pepper, and melaleuca. The flows provided by the spreader canal into northwest WCA 3A are expected to increase wet season stages and decrease duration of surface water draw downs in the northern portions of WCA 3A. This may reduce recruitment rates of some invasive or nuisance species, such as Carolina willow and Brazilian pepper, and may facilitate expansion of other invasive or nuisance species, such as cattail and paragrass. The proposed spreader canal would require continual maintenance of floating, emergent, and potentially, submersed plant species in order to maintain the function of the canal. It is expected that increased sedimentation immediately downstream of the spreader would result in succession to stands of Carolina willow and cattail and this area may require maintenance to achieve target flow rates. Similar areas in ENP are also invaded by Brazilian pepper and Old World climbing fern. The remaining portions of the levee would offer suitable habitat for Burmese pythons. Invasive species could be introduced into northern WCA 3A with the new flows from the spreader canal. The degraded levee area may be invaded by non-native invasive and native nuisance obligate wetland plant species.

Model output for WCA 3A suggests substantial decreases in dry out periods in the northern reaches of WCA 3A. This is likely to reduce the rate of spread for certain species, especially Brazilian pepper, Australian pine, torpedo grass, and Napier grass. Melaleuca recruitment would also continue but at a reduced rate. Other species more suited to longer periods of inundation may find conditions more favorable for establishment and spread. These include but are not limited to Old World climbing fern, Island apple snail, West Indian marsh grass, paragrass, and potentially Peruvian primrose willow. Diligent monitoring and control efforts would be recommended to minimize establishment of new plant species in these areas.

Continued maintenance of the remaining portions of the L-4 levee is assumed. If regular mowing is not carried out, this segment of levee would become invaded by a number of invasive plants and animals, such as Brazilian pepper, napier grass, bishopwood, cogongrass, Burmese pythons, feral hogs, and Nile monitors.

C.2.1.18.5 Miami Canal Backfill – S-8 to Interstate 75

The effects to invasive species would be the same for Alts 1, 2, 3, and 4. Backfilled portions of the Miami Canal may be invaded by non-native invasive and native nuisance wetland plant species. Invasion by paragrass, torpedograss, and cattail is expected if backfill operations result in elevated nutrient availability. Spoil mounds along the Miami Canal in WCA 3A currently supports high densities of Brazilian pepper and other invasive plants. Degradation of these spoil deposits would result in the removal of approximately 200 acres of Brazilian pepper. This will reduce an important seed source and lower bird dispersal to nearby tree islands. While there is uncertainty about the impacts of non-native fish species on native fauna (Trexler et al. 2000), backfilling the canal would reduce available deep water habitat for non-native fish species and could reduce further expansion.

Preserved planted tree islands and the proposed spoil island creation efforts would experience immediate and long-term susceptibility for biological invasion. Elevated nutrient regimes on the new islands would promote invasion of numerous invasive species, including Brazilian pepper, Napier grass, climbing cassia, Peruvian primrose willow, and torpedograss. These elevated areas are also expected to provide excellent habitat for Burmese pythons and Nile monitors.

C.2.1.18.6 L-28 Levee Degradation / Backfill

Continued maintenance of the remaining portions of the L-28 levee in Alts 1 is assumed. If regular operations and management (O&M) vegetation management is not carried out, fallow segments of levees are likely to be invaded by a number of invasive plants and animals, such as Brazilian pepper, napier grass, bishopwood, cogongrass, Burmese pythons, feral hogs, and Nile monitors. Backfilled portions and the degraded levee area may be invaded by non-native invasive and native nuisance wetland plant species.

C.2.1.18.7 Increase Capacity of S-333

Alternatives 1, 2, 3, and 4 propose increasing the capacity of the S-333 structure. The additional flows are expected to have a minimal effect on invasive species populations. Existing invasive species under active management are expected to persist at baseline levels if current funding levels are sustained (e.g., water hyacinth). Existing invasive species not under active management, or which are ineffectively controlled, are expected to increase in abundance and spatial extent (e.g. roundleaf toothcup). New invasions of non-native plant and animal species are expected but estimates of species numbers and severity of impacts are conjectural.

C.2.1.18.8 L-67A Gated Structures / Spoil Removal

Alternatives 1, 2, 3, and 4 include building one or more gated structures on the L-67A and spoil removal on the west side of the L-67A canal. The effects to invasive species would be same for Alts 1, 2, 3, and 4. The proposed gated structure(s) on L-67A has the potential to spread cattail, torpedograss, and non-native fish species downstream of the structure and into the gap between L-67A and L-67C. Cattail and torpedo grass are also expected to colonize spoil removal areas. It is expected that non-native fish species would establish at the outflow, where water levels are deeper. Existing non-native fish species could move from the canal into the gap, but they are not expected to maintain substantial populations in the marsh due to seasonal drawdowns. Many non-native fish are documented to move from canals to the marsh during the wet season, but do not venture too far from the canal and return to the canal as water levels recede (Trexler 2000). There is a potential for invasion by new aquatic species capable of tolerating seasonal drawdowns, but the number of species and severity is conjectural.

C.2.1.18.9 L-67C Levee Degradation

Alternatives 1, 2, 3, and 4 propose to degrade sections of the L-67C levee. Effects to invasive species due to this feature would be the same for all of the action alternatives. The proposed gap(s) would also provide a pathway for aquatic species currently present in the L-67C canal to spread into WCA 3B. Existing invasive species under active management in WCA 3B are expected to persist at baseline levels if current funding levels are sustained (e.g., melaleuca). Existing species not under active management or which are ineffectively controlled are expected to increase in abundance and spatial extent (Old World climbing fern). New invasions of non-native plant and animal species are expected but estimates of species numbers and severity of impacts are conjectural. The proposed 6,000-foot gap(s) in the L-67C levee would provide an open pathway for cattail spread into WCA 3B. The extent of spread is uncertain.

C.2.1.18.10 Outflow structures out of WCA 3B

Outflow structures are proposed in Alts 1, 2, 3, and 4. Agricultural canals in WCA 3B currently release water into the L-29. There is potential for new non-native invasive species to be transferred from WCA 3A or L-67A through the new culverts and levee degrade area into WCA 3B, L-29 and eventually into ENP.

C.2.1.18.11 Build North-South Levee in WCA 3B

This feature is only proposed for Alt 4. The construction of a north-south levee in WCA 3B would cause significant disturbance within the construction footprint and adjacent marsh. Regular maintenance would be required to ensure non-native invasive plant species do not establish along the levee. Cattail is likely to establish along the entire eastern side of the levee. Existing invasive species in the affected area that are under active management should persist at baseline levels if current funding levels are sustained (e.g., melaleuca). Existing species not under active management or which are ineffectively controlled are expected to increase in abundance and spatial extent. New invasions of non-native plant and animal species are expected but number of species and severity of impacts are undetermined.

C.2.1.18.12 L-67 Extension – Levee Degradation / Backfill

Alternatives 1, 2, 3, and 4 include some degree of degrading the L-67 Extension levee. This canal and levee system extends south into ENP. This area is now invaded by numerous non-native invasive plants and also serves as habitat for Burmese pythons and feral hogs. Removal of the L-67 Extension levee would remove suitable habitat for Brazilian pepper, napier grass, climbing cassia, torpedo grass, guava, and Australian pine. Removal of the L-67 Extension levee would also reduce habitat for the Burmese python, feral hogs, and potentially, the Argentine black and white tegu. Island apple snails may find the degradation footprint as suitable habitat if final grade is lower than the surrounding marsh.

C.2.1.18.13 L-29 Levee Degradation

Alternative 4 proposes some degree of degradation of the L-29 levee. This feature would open surface water connectivity between the L-29 canal and WCA 3B (Blue Shanty flowway). This is likely to promote the expansion of several invasive species currently limited to the L-29 canal, particularly roundleaf toothcup, island apple snail, and numerous non-native fish species. There is uncertainty whether these species would be able to persist far from the canal since many are unable to tolerate conditions during dry season drawdowns.

C.2.1.18.14 Divide Structure on L-29

This feature applies only to Alt 4. This feature is expected to have minimal effect on invasive species. Maintenance of submersed and floating vegetation would be required to ensure operational functionality of the structure.

C.2.1.18.15 Increase S-356 Capacity to 1,000 cfs

Alternatives 1, 2, 3, and 4 propose to increase the capacity of the existing S-356 structure. The additional flows may slightly reduce recruitment rates of melaleuca and other invasive plants in northern portions of ENP.

C.2.1.18.16 L-31N – New Pump Stations

Alternatives 1 and 2 propose two 250-cfs pumps on the L-31N. The two proposed 250 cfs pumps have high a probability of promoting cattail expansion and introducing non-native aquatic species downstream of the structure and into northeast Shark River Slough. It is likely that non-native fish species would establish at the outflow, where water levels are deeper. The addition of these structures along with new water flow would cause changes in vegetation composition immediately downstream. It is likely growth of Carolina willow and cattail would occur downstream of the structures. Brazilian pepper and Old World climbing fern may also establish if vegetation succeeds to willow swamp.

C.2.1.18.17 G-211 Operational Modifications / Coastal Canals Conveyance

This feature is proposed for Alts 1, 2, 3, and 4, and is expected to have minimal effects on non-native invasive and native nuisance species. Existing invasive species under active management are expected to persist at baseline levels if current funding levels are sustained (e.g., hygrophila). Existing species not under active management, or which are ineffectively controlled, are expected to increase in abundance and spatial extent (e.g., roundleaf toothcup). New invasions of non-native plant and animal species are expected but number of species and severity of impacts are undetermined.

C.2.1.18.18 Penetrating Seepage Barrier

This feature is proposed for Alts 2, 3, and 4. The depth and duration of surface water drawdowns in north eastern ENP are expected to decrease with Alts 2, 3, and 4. These changes in hydroperiods are expected to reduce recruitment rates of Australian pine, Brazilian pepper, and to a lesser extent, melaleuca. These changes may improve conditions for other invasive plant species such as tropical American water grass, West Indian marsh grass, and roundleaf toothcup.

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APPENDIX C.2.2

EFFECTS OF THE RECOMMENDED PLAN

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C.2.2 EFFECTS OF THE RECOMMENDED PLAN

Analysis of Alternatives 1-4 identified Alt 4 as cost effective and the National Ecosystem Restoration (NER) plan to be carried forward for further analysis. This appendix provides a detailed discussion of the potential environmental effects, which can be either positive or negative, that could result from implementation of Alternative (Alt) 4R and Alt 4R2, the recommended plan. The evaluation of alternatives 1 through 4 identified the need to revise the operations of Alt 4 to ensure the project savings clause constraints are met, to minimize localized adverse ecological effects, and to identify additional opportunities to provide for other water related needs. Alternative 4 was initially refined with operational changes to avoid potential impacts to water supply levels of service in the LOSA and LEC, resulting in Alt 4R. Alt 4R was then refined further to determine if water supply cutbacks to the LOSA could be further reduced and to determine the quantity of additional LECSA 2 and LECSA 3 public water supply able to be provided while maintaining the natural system performance realized for Alt 4R. Due to these changes in operations, Alts 4R and 4R2 were no longer comparable to Alts 1-4. Because they are not comparable, they were separated and placed in different matrices. Alternatives 4R and 4R2 were compared to and evaluated against the FWO to describe changes to existing conditions with implementation of each Central Everglades Planning Project (CEPP) action alternative. The evaluation of the effects was based on results of modeling simulations, current information including scientific literature, direct observation, project design reports, reasonable scientific judgment, the scoping process, and other environmental impact statement (EIS) documents for similar projects. The No Action Alternative (for consistency of the report the **No Action Alternative** is referred to as the **Future Without [FWO]** for the remainder of the report), considers the environmental conditions in the affected regions without the Proposed Action and is fully discussed in **Appendix C.1.2**.

The features of the recommended plan are described in **Section 6.1 Description of the Plan** with specific features located in **Figures 6-1** through **6-4**. The recommended plan would decrease the large pulses of Lake Okeechobee water that currently are sent east to the St. Lucie and west to the Caloosahatchee estuaries and send this water southward through Everglades Agricultural Area (EAA) canals to flowage equalization basins (FEB). The FEBs would provide storage capacity, attenuation of high flows, and limited pre-treatment prior to delivery of this redirected water to existing stormwater treatment areas (STAs), which would reduce phosphorus concentrations in the water to meet required water quality standards. The treated water would be distributed across the northwestern boundary of Water Conservation Area (WCA) 3A to flow through and help restore more natural quantity, timing and distribution of waters to WCA 3A, WCA 3B, Everglades National Park (ENP), and Florida Bay. Several existing levees, canals, culverts, and pump stations would be constructed, modified, or removed to improve the flow of water through the system and provide for other water related needs. The recommended plan is referenced throughout the document as Alternative 4R2 (Alt 4R2).

Environmental impacts include both direct and indirect effects. Under the Council on Environmental Quality (CEQ) regulations, direct effects are “caused by the action and occur at the same time and place,” while indirect effects are “caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems” (40 CFR 1508.8).

C.2.2.1 Climate

The historic climate conditions used in the period of record are assumed to be representative of future scenario climate conditions. South Florida was in a much drier regime from 1965 to the early 1990s

when the Atlantic Multidecadal Oscillation (AMO) transitioned from the cool phase to the warm phase. South Florida experienced more droughts and dry weather during the cool phase, with high-water events (some extreme) being more frequent during the current warm phase. South Florida has been in a "wetter" regime since the early 1990s mostly due to the AMO. With AMO phases lasting typically 20-40 years, the current AMO warm phase has likely peaked. Thus, the generally wetter than normal conditions that Florida has experienced since the early 1990s should begin to slowly decline. After the peak, the warm phase wave will begin its gradual decline where we will see continually cooler anomalies over the next 10-20 years. As we approach the end of the cycle, Florida will experience an increase in dry years compared to wet years. Given the temporal stage of the current phase, conditions will continue to remain wetter than average for the next 10-20 years, but with a slow and gradual decline in intensity until this phase ends and a cool phase begins. However, low frequency dry years can still occur due to other events such as La Niña, which can occur on an average of every 2-7 years. Features of Alts 4R and 4R2 are the same. Implementation of Alts 4R and 4R2 would have a negligible effect on climate within the action area. Minor, localized and less than significant effects to microclimate may occur as a result of redistribution of water and shifts in vegetation. Potential effects may include localized increases in evapotranspiration and temperature changes.

C.2.2.2 Geology and Soils

Features of Alts 4R and 4R2 are the same. On the A-2 footprint, there would be minor and less than significant geologic impacts within the project area from the removal of surface cover (e.g. vegetation and soil), of the caprock from blasting, and removal of limestone to obtain material for construction of levees, canals and roads. Alternatives 4R and 4R2 would result in conversion of relatively flat, uniform agricultural lands to a Flow Equalization Basin (FEB; 4 feet maximum operating depth) and exterior levees up to 10 feet above existing grade (NGVD29).

Improved hydroperiods and sheetflow in Water Conservation Area (WCA) 3A, WCA 3B, and Everglades National Park (ENP) reduce soil oxidation, which promotes peat accretion necessary to rebuild the complex mosaic of habitats across the landscape. On the A-2 footprint, Alts 4R and 4R2 would result in conversion of relatively flat, uniform agricultural lands to a FEB (4 feet maximum operating depth) and exterior levees up to 10 feet above existing grade. Alternatives 4R and 4R2 show an increase in inundation duration over the FWO that will significantly decrease soil oxidation, subsidence and peat fires, providing a minor beneficial effect. Alternatives 4R and 4R2 improve hydrologic conditions in northern WCA 3A in comparison to the FWO by increasing stages and resulting hydroperiods within the area (refer to **Appendix G**, **Table G-22** and **Table G-24**). Inundation duration for Alts 4R and 4R2 ranged from 76% of the period of record to 96% of the period of record in northern ENP (Zone ENP-N) and from 91% to 93% in southern ENP (ENP-S). Inundation duration for the FWO within this same region varied from 78% to 83% of the period of record in northern ENP (Zone ENP-N) and from 86% to 91% in southern ENP (ENP-S). Alternatives 4R and 4R2 produced significantly higher depths than the FWO as depicted by the normalized weekly stage duration curve for IRs 129 (**Figure G-38**) and IR 130 (**Figure G-39**); example IRs for northern (Zone ENP-N) and southern (Zone ENP-S) ENP. Alternatives 4R and 4R2 also consistently improved the number and duration of dry events in Northeast Shark River Slough (NESRS) in comparison to the FWO (**Table G-31**).

C.2.2.3 Vegetation

C.2.2.3.1 Lake Okeechobee

Negligible and less than significant effects to vegetation within Lake Okeechobee's extensive littoral zone are anticipated as a result of implementation of Alts 4R and 4R2. As compared with FWO, Alts 4R

and 4R2 reveal the potential for short-term minor adverse effects to aquatic vegetation due to higher than preferred lake stages. However, the days in which Lake Okeechobee stage exceeded 15.0 feet NGVD occurred approximately 25% of the Period of Record (POR, 1965-2005) in comparison with FWO which occurred approximately 20% of the POR (**Figure C.2.2-52**).

C.2.2.3.2 Northern Estuaries

Currently, many submerged aquatic vegetation (SAV) beds are stressed and have been reduced or eliminated from their former areas by extreme salinity fluctuations, increased turbidity, sedimentation, dredging, damage from boats, and nutrient enrichment which causes algal blooms that, in turn, restrict light penetration. As compared with FWO, Alts 4R and 4R2 show a slight performance improvement within the Northern Estuaries as indicated by fewer high volume flow months and provides a minor beneficial effect. Reduction in high flows and accompanying flow velocities would result in lower suspended solid loading and decreased concentration of colored dissolved organic material, thereby allowing greater light penetration to promote growth of SAV. In addition, reduction in high volume discharge events from Lake Okeechobee would reduce extreme salinity fluctuations associated with such events. Although some seagrasses are tolerant of a wide range of salinity levels, a reduction in high volume discharge events would reduce stress to SAV and aid in long term health of estuarine habitat and biota. Implementation of Alts 4R and 4R2 would help to maintain the target frequency and duration of water releases to the Northern Estuaries and would help curtail continued habitat loss and allow the recovery of more desirable vegetative communities.

C.2.2.3.2.1 Caloosahatchee River Estuary

Alts 4R and 4R2 performed better than FWO, having a fewer number of times flow criteria were not met which would help to re-establish a salinity range favorable to SAV and provides minor beneficial effects. In comparison to FWO, the number of times high flow criteria (>2800 cfs [cubic feet per second]) were not met decreased from 81 for FWO to 70 for Alts 4R and 4R2. The number of times low flow criteria (<450 cfs) were not met decreased from 27 for FWO to 24 and 23 for Alts 4R and 4R2.

C.2.2.3.2.2 St. Lucie Estuary

Compared to FWO, Alts 4R and 4R2 had a fewer number of times flow criteria were not met, which provide minor beneficial effects and benefit oysters and SAV within the estuary and Indian River Lagoon. The number of times high flow criteria were not met (> 2000 cfs) decreased from 65 for FWO to 37 and 36 for Alts 4R and 4R2. The number of times low flow criteria (<350 cfs) were not met decreased from 92 for FWO to 90 for Alt 4R and 65 for Alt 4R2.

C.2.2.3.3 Everglades Agricultural Area

Negligible and less than significant effects to vegetation within the EAA are anticipated as a result of implementation of Alts 4R and 4R2. As all of the property that will be used to construct the A-2 Flow Equalization Basin (FEB) is considered to be atypical jurisdictional wetlands based on hydric soils and hydrology; wetland vegetation is anticipated to return to the site once construction of the A-2 FEB is complete. During construction, temporary short-term adverse effects are expected to vegetation within the construction area, however, these are considered to be minor as the land was formerly used for agriculture.

C.2.2.3.4 Greater Everglades

Due to changes in the quantity, quality, distribution and timing of water entering the Greater Everglades ecosystem, significant effects on wetland hydrology and vegetation would potentially occur with implementation of Alts 4R and 4R2. The primary factors influencing the distribution of dominant freshwater

wetland plant species of the Everglades are soil type, soil depth, nutrients and hydrological regime (FWS 1999). In the Greater Everglades, improved hydroperiods and sheetflow in WCA 2A, WCA 3A, WCA 3B, and Everglades National Park (ENP) result in reduced soil oxidation, promoting peat accretion necessary to rebuild the complex mosaic of habitats across the landscape providing a moderate beneficial effect. Alternatives 4R and 4R2 provide moderate improvements in hydroperiods in WCA 2A compared to FWO. However, Alt 4R had a moderate adverse effect in WCA 2B by significantly decreasing stages compared to FWO, while Alt 4R2 had a minor to moderate adverse effect compared to FWO. In the L-28 Triangle, Alts 4R and 4R2 showed an improvement in hydroperiod over FWO. Slight differences in hydrologic performance among Alts 4R and 4R2 were found within northern WCA 3A, central WCA 3A, WCA 3B and southeastern ENP. Restoration of sheetflow and historic hydropatterns within WCA 2A, WCA 3 and ENP will result in beneficial shifts in vegetation communities, landscape patterns, and animal populations. Implementation of Alts 4R and 4R2 would provide greater project benefits to those areas located in WCA 2A, northern WCA 3A and ENP. Central and southern WCA 3A would remain largely unaffected by the project.

As a result of reduced freshwater inflow and drainage by the Miami Canal, northern WCA 3A is currently dominated largely by mono-specific sawgrass stands, with large areas of shrub and monotypic cattail (*Typha* spp.) stands and lacks the diversity of communities that exists in central and portions of southern WCA 3A. Alts 4R and 4R2 include features to distribute water through spreader canals in the L-4 across northern 3A and backfill portions of the Miami Canal north of Interstate 75, thereby increasing hydroperiods and depths within this area. Implementation of the CEPP is expected to rehydrate much of northern WCA 3A by providing a means for redistributing treated STA discharges from L-4 in a manner that promotes sheetflow and by removing the drainage effects associated with the Miami Canal, thereby providing moderate beneficial effects. Resumption of sheetflow and related patterns of hydroperiod and water depth will significantly help to restore and sustain the microtopography, directionality, and spatial extent of ridges and sloughs and improve the health of three islands in the ridge and slough landscape.

Alts 4R and 4R2 generally produced improved inundation patterns in northwestern WCA 3A, providing minor beneficial effects. Implementation of Alts 4R and 4R2 would achieve 77% of the target HUs for Zone 3A-NW and 70% of the target HUs for Zone 3A-MC. Alt 4R would achieve 75% of the target HUs for Zone 3A-NE. Alt 4R2 would achieve 74% (Refer to **Appendix G**). As compared to Alt 4R, Alt 4R2 produced slightly lower depths during average hydrologic conditions in northeastern WCA 3A. Observed depths for Alt 4R2 in northeastern WCA 3A may be more conducive to shorter hydroperiods sawgrass marshes relative to Alt 4R. Neither Alt 4R nor 4R2 would provide the necessary inundation pattern for slough vegetation restoration; however CEPP implementation of Alts 4R and 4R2 would act to rehydrate northern WCA 3A promoting peat accretion, reducing the potential for high intensity fires and promoting transition from upland to wetland vegetation.

Rehydration of previously dry areas within northern WCA 3A has the potential to temporarily mobilize nutrients within the water column; however, this is not expected to be a significant issue since portions of WCA 3A north of I-75 experience annual dryout and rehydration with no significant downstream impact. One notable concern would be the introduction of phosphorus into previously unimpacted areas (i.e. central and southern WCA 3A) potentially resulting in vegetation shifts, providing a minor adverse effect. Chaing et al. (2000) suggested that phosphorus loadings alter the Everglades plant communities through increased plant productivity, tissue phosphorus storage, soil phosphorus enrichment and shifts in plant species composition. Substantial vegetation changes may result from elevated phosphorus concentrations. Previous studies have shown that slough and sawgrass

communities have been replaced by cattail-dominated communities (Davis et al. 1994; Rutchey and Vilchek 1994; Newman et al. 1998). However, Craft et al. (1995) and Chaing et al. (2000) observed no significant change in macrophyte species diversity or expansion of cattails in study plots receiving nutrient additions during the two years and four years, respectively, of their studies. Vegetation that can assimilate nutrients directly from the water column appears to be the most sensitive to nutrient enrichment and include periphyton and floating-leaved plants, such as spatterdock and water lily (Chaing et al. 2000; Newman et al. 2004). The periphyton-*Utricularia* complex may be quite sensitive to increased phosphorus, as illustrated by the disappearance of this complex from enriched study plots after the third year (Chaing et al. 2000).

Many areas of WCA 3A, particularly within central WCA 3A still contain good quality wetland habitat consisting of a complex of tree islands, sawgrass marshes, wet prairies, and aquatic sloughs. Vegetation and patterning in the central portion of WCA 3A resembles pre-drainage conditions most closely and represents some of the best examples of remnant Everglades habitat in south Florida. As compared to Alt 4R, Alt 4R2 produced slightly higher depths during average hydrologic conditions in central WCA 3A. These areas remain largely unaffected by Alts 4R and 4R2. Increases in depth within central WCA 3A were not as significant as increases in observed depths in northern WCA 3A; however maintenance of existing conditions within this region of the project area is desirable as ridge and slough habitat is well conserved, providing a negligible effect.

In southern WCA 3A, high water levels during the wet season are important in maintaining quality wet prairie and emergent slough habitat (FWS 2010). However, prolonged high water levels (i.e. during both wet and dry season) and extended hydroperiods have resulted in vegetation shifts within southern WCA 3A, negatively impacting tree islands and fragmenting sawgrass ridges, resulting in the loss of historic landscape patterning. Neither Alts 4R, 4R2 nor the FWO would provide significant benefits to southern WCA 3A through reduction in high water levels or duration, therefore, significant shifts in vegetation are not anticipated within this region, providing a negligible effect.

Typical Everglades vegetation, including tree islands, wet prairies, sawgrass marshes, and aquatic sloughs also occur throughout WCA 3B. However, within WCA 3B, the ridge and slough landscape has been severely degraded by the virtual elimination of overland sheetflow due to the L-67 Canal and Levee system. WCA 3B experiences very little overland flow and has become primarily a rain-fed system predominated by shorter hydroperiod sawgrass marshes with relatively few sloughs or tree islands remaining. Loss of sheetflow to WCA 3B has also accelerated soil loss reducing elevations of the remaining tree islands in WCA 3B and making them vulnerable to high water stages.

Improved hydrologic conditions in comparison to FWO within WCA 3B are anticipated through increasing stages and resulting hydroperiods within the area, providing a minor beneficial effect. Increases in stages and hydroperiods would promote wetland vegetation transition, through contraction of sawgrass marshes and expansion of wet prairies, and in deeper regions, sloughs. Plant species diversity will likely increase in WCA 3B with species composition in wet parries determined largely by peat depth and substrate type (Powers 2005). Submerged aquatic plants are commonly associated with sloughs providing structure for growth of periphyton, the main source of primary production within the freshwater Everglades (Gunderson 1994; Powers 2005). As compared to Alt 4R, Alt 4R2 produced slightly higher depths during average hydrologic conditions in northern WCA 3B. Although Alts 4R and 4R2 did not meet the desired dry and wet season water depths for slough vegetation in WCA 3B, CEPP implementation would improve inundation patterns within WCA 3B and slightly improve conditions for slough vegetation relative to the FWO.

Alts 4R and 4R2 include conveyance features and levee removal within L-67A and C, thereby providing new point source discharges of water into WCA 3B and a minor adverse effect. However, it is anticipated that Broward County Water Preserve Areas (BCWPA) CERP Project would be constructed prior to CEPP implementation, thereby reducing discharges from S-9 into L-67A. Currently, Total phosphorous (TP) within L-67A ranges between 10 and 20 ppt, depending upon the time of year. With completion of the BCWPA CERP Project, it is anticipated that TP within L-67A will be greatly reduced and therefore minimal effects to vegetation due to changes in water quality are anticipated within WCA 3B. Cattail expansion will be monitored as outlined within **Annex D**, **Project Monitoring and Adaptive Management Plan**. Tree islands contain extraordinarily high levels of TP in their soil suggesting that they may play a major role in the biogeochemical cycles of nutrients in the Everglades (Sah 2004; Troxler and Childers 2010; Troxler and Richards. 2009; Wetzel 2002; Wetzel et al. 2009, 2011). Wetzel et al. (2011) found that soil TP levels within WCA 3A and WCA 3B tree islands were approximately 4 times higher than the surrounding marsh TP levels. Tree islands within WCA 3B may help to capture and focus nutrients, assisting to minimize potential effects on sawgrass and wet prairie communities within this region (Wetzel et al. 2011).

Flows through SRS under current system compartmentalization and water management practices are greatly reduced when compared with pre-drainage conditions. The result has been lower wet season depths and more frequent and severe dry downs in sloughs and reduction in extent of shallow water edges. Over-drainage in the peripheral wetlands along the eastern flank of Northeast Shark River Slough (NESRS) has resulted in shifts in community composition, invasion by exotic woody species, and increased susceptibility to fire. Implementation of Alts 4R and 4R2 is expected to rehydrate much of NESRS by providing a means for redistributing flows from WCA 3B to ENP, providing minor beneficial effects. Resumption of sheetflow and related patterns of hydroperiod will significantly help to restore pre-drainage patterns of water depths and the complex mosaic of Everglades' vegetation communities.

As compared with the FWO, Alts 4R and 4R2 produced significantly higher depths and inundation durations in ENP (refer to **Appendix G**, **Figure G-38** and **Figure G-39**). Within northern ENP, performance of Alts 4R and 4R2 was similar with each alternative reducing the number of dry events within Shark River (SRS) and extending average hydroperiods by 35 to 90 days depending upon location. Reduction in number and duration of dry events and extended hydroperiods will reduce soil oxidation, decrease fire potential, promote peat accretion and aid in restoration of historic wetland vegetation communities, providing minor beneficial effects. Improved inundation patterns produced by Alts 4R and 4R2 in northern ENP resulted in better suitability for slough vegetation. Although none of the alternatives met the desired dry and wet season water depths for slough vegetation in northern ENP; Alts 4R and 4R2 would provide benefits as compared with the FWO by increasing water depths in both the wet and dry season within this region. As compared to Alt 4R, Alt 4R2 produced slightly lower depths during average hydrologic conditions in southeastern ENP and decreased overland flow through Taylor Slough. Areas within the eastern marl prairies along the boundary of ENP suffer from over-drainage and reduced water flow.

Alts 4R and 4R2 include increasing capacity at S-333 from 1350 cfs to 3000 cfs. With an increase in S-333 flow, there is a likelihood of increased total phosphorus load entering NESRS. Potential changes in water quality due to implementation of Alts 4R and 4R2 have the potential to have a minor adverse effect on vegetation within ENP. The Everglades, a phosphorus-limited system, historically received most inputs of phosphorus through rainfall, with average TP concentrations of less than 0.01 milligrams per liter (mg/L) (McCormick et al. 1996, Newman et al. 2004). However, more recently, areas within ENP, including NESRS, have been exposed to TP concentrations at or in excess of 0.10 mg/L (SFWMD

2010). These concentrations and any additional inputs resulting from implementation of any of the CEPP alternatives (refer to **Section 5.2.9, Water Quality** for details), have the potential to result in vegetation changes within NESRS. Vegetation that can assimilate nutrients directly from the water column appears to be the most sensitive to nutrient enrichment and include periphyton and floating-leaved plants, such as spatterdock and water lily (Chaing et al. 2000; Newman et al. 2004). Chaing et al, 2000 demonstrated that the periphyton-*Utricularia* complex may be quite sensitive to increased phosphorus, as illustrated by the disappearance of this complex from enriched study plots after the third year. Potential effects to vegetation and species community composition within NESRS and ENP cannot fully be determined at this time. Water quality within the CEPP action area will continue to be monitored, as described in **Annex D**, to determine any associated changes.

Non-native and invasive plant infestations in the action area may be exacerbated by soil disturbance, increased nutrients, and hydrological modification. Many non-native and invasive species are flourishing in a variety of habitats and are negatively affecting the ecology throughout the Everglades. Non-native and invasive plant species are most frequently encountered in disturbed areas and areas where water quality has been impacted by increased nutrient loads. Construction and hydrological modification under Alts 4R and 4R2 will likely influence the spread and establishment of invasive and native nuisance plant species within the CEPP action area, providing a minor adverse effect. Refer to **Section 5.2.17** and **Appendix C, Section C.2.2.18** for additional information.

The Everglades Landscape Vegetation Succession model (ELVeS) was employed to predict vegetation community change over time in response to changes in environmental conditions (South Florida Natural Resources Center 2013c). The model uses empirically-based probabilistic functions of vegetation community niche space and temporal lags to evaluate expected community response within the model's domain. For this CEPP evaluation, ELVeS was run with nine freshwater marsh/wet prairie communities: (1) open water, (2) open marsh, (3) floating emergent marsh, (4) sawgrass, (5) spikerush, (6) marl prairie, (7) cattail, (8) pineland, and (9) wet scrubland. Results of this analysis are illustrated in **Figure C.2.2-1**. **Figure C.2.2-1** displays the dominant vegetation communities selected by ELVeS at the end of the 41-year POR (2005). At the broad landscape scale there are few large community changes in most of CEPP regions. The largest change is in 3A-NW where increased water deliveries to northern WCA 3A result in a decreased wet scrubland community and subsequent increase in sawgrass. Effects of the Blue Shanty flowway in WCA 3B and NESRS (ENP-N) are evident in the replacement of sawgrass with floating emergent marsh and open marsh. A modest expansion of the marl prairie community occurs within the northwestern portion of ENP (ENP-N). Deeper water vegetation communities area expected to expand in WCA 3A along the L-67 and L-29 canals (South Florida Natural Resources Center 2013c). Differences between Alts 4R and 4R2 appear relatively negligible. **Figure C.2.2-2** presents the acreage change between the FWO and Alt 4R for each community type.

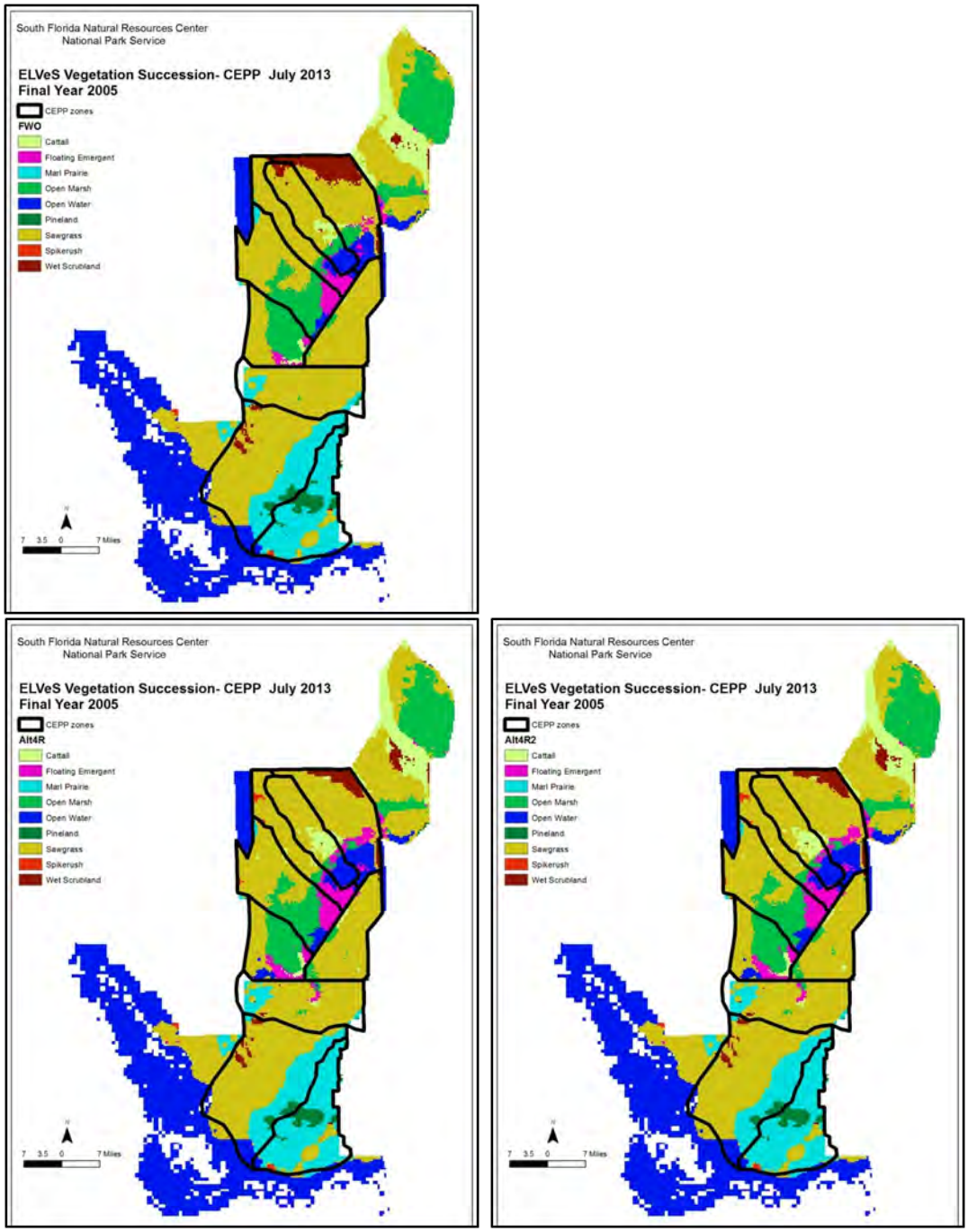


Figure C.2.2-1. Modeled dominant vegetation communities in 2005 as predicted by the Everglades Landscape Vegetation Succession model (ELVeS). The No Action Alternative (FWO) is depicted in the upper panel and Alternatives 4R and 4R2 in the lower panel. (South Florida Natural Resources Center 2013c).

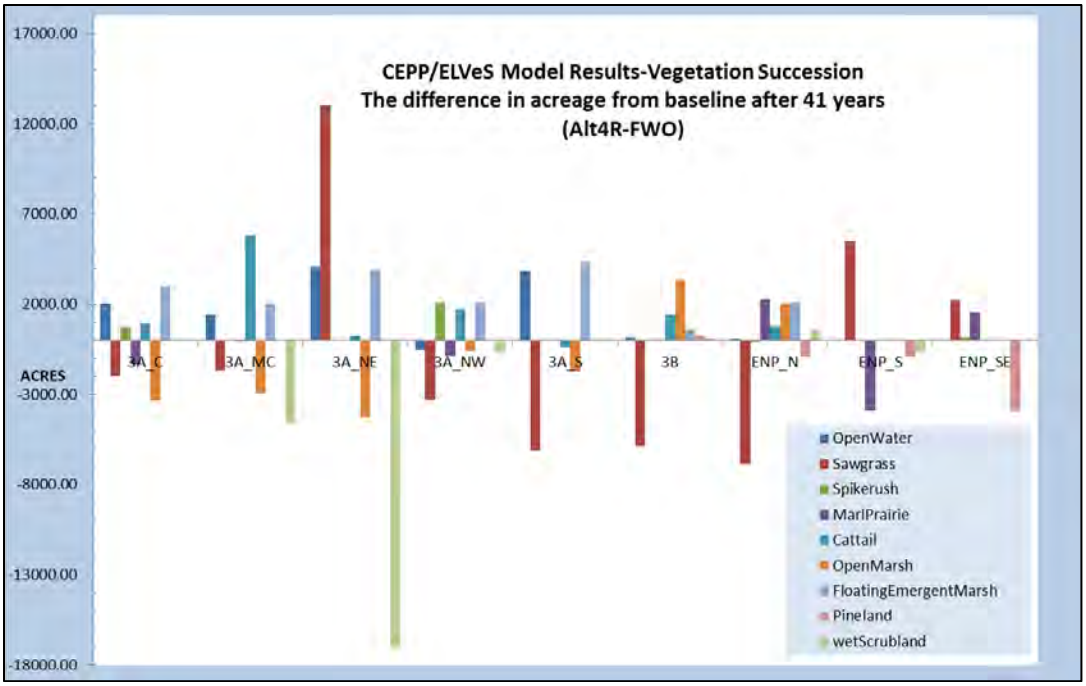


Figure C.2.2-2. Acreage differences (Alternative 4R – No Action Alternative [FWO] for each modeled vegetation community as predicted by Everglades Landscape Vegetation Succession model (ELVeS). (South Florida Natural Resources Center 2013c).

C.2.2.3.4.1 Slough/Open Water Marsh

Deep slough communities formerly occurred throughout the pre-drainage Ridge and Slough region of the Everglades (McVoy et al. 2011). Sloughs within the Greater Everglades have been degraded by compartmentalization resulting in reduced sheetflow, depths and inundation durations, altering vegetation community structure and resulting in expansion of wet prairie and sawgrass marsh communities. Overland sheetflow has been virtually eliminated from WCA 3B due to the L-67 Canal and Levee system, resulting loss of deep water sloughs and dominance of shorter hydroperiod dense sawgrass marsh. Vegetative trends within ENP have also included the conversion of slough/open-water marsh communities to shorter hydroperiod sawgrass marshes (Davis et al. 1994, Davis and Ogden 1997; Armentano et al. 2006). Alts 4R and 4R2 provide significant increases in sheetflow and hydroperiod. As a result of increased flows, depths and durations, it is expected that shorter hydroperiod sawgrass marshes will transition to wet prairie and slough/open water marsh communities providing minor beneficial effects. Shifts from one vegetation type to another may occur in a relatively short time frame (1 to 4 years) following hydrological alteration (Armentano et al. 2006; Zweig 2008; Zweig and Kitchens 2008; Sah et al. 2008). Although Alts 4R and 4R2 do not meet desired dry and wet season water depths for slough vegetation within WCA 3B and ENP; Alts 4R and 4R2 slightly improved conditions for slough vegetation by increasing water depths in both the wet and dry season within these regions.

C.2.2.3.4.2 Sawgrass Marsh

As a result of increased flows, depths and inundation durations, it is expected that shorter hydroperiod sawgrass marshes will transition to slough/open water marsh communities. Increased flow within northern WCA 3A and WCA 3B will aid to reduce dense sawgrass stands and help to promote a mosaic of wetland vegetation types within this area. As compared to Alt 4R, Alt 4R2 produced slightly lower depths during average hydrologic conditions in northeastern WCA 3A. Observed depths for Alt 4R2 in

northeastern WCA 3A may be more conducive to shorter hydroperiods sawgrass marshes, providing minor beneficial effects.

C.2.2.3.4.3 Wet Marl Prairies

Areas within the eastern marl prairies along the boundary of ENP suffer from over-drainage, reduced water flow, exotic tree invasion and frequent human-induced fires (Lockwood et al. 2003; Ross et al. 2006). To alleviate the perpetual drier conditions and its associated problems, increased water flows within this area are required. Alts 4R and 4R2 provide more water to SRS and the southern marl prairies providing minor beneficial effects. Increased hydroperiods within the eastern marl prairies may act to alleviate some of the problems associated with drier conditions and promote a shift in species community composition.

A HSI for marl prairie habitat was employed to predict potential effects of implementation of CEPP Alts 4R and 4R2. The Marl Prairie Indicator is a temporally and spatially explicit modeling tool that simulates hydrologic suitability of marl prairie CSSS habitats based on CSSS survey presence data threshold ranges (Pearlstine et al. 2013). The Marl Prairie Indicator evaluates marl prairie hydrologic suitability with four metrics: (1) average wet season water depths (June – October), (2) dry season water depths (November – May), (3) discontinuous annual hydroperiod (May – April of the next year), and (4) maximum continuous dry days during the nesting season (March 1 – July 15). Suitability for marl prairie habitat for Alts 4R and 4R2 trend similarly. Differences between alternatives within the project area are negligible.

Locations of CSSS subpopulations are depicted in **Figure C.2.2-11**. **Figure C.2.2-3** and **Figure C.2.2-4** display Marl Prairie Indicator results for the following RSM simulations: existing conditions (2012EC), future without CEPP (FWO), CEPP recommended plan (Alt4R2), and CEPP alternative Alt4R. Considered at the scale of all potential sparrow habitats within each subpopulation or habitat area, there were negligible differences between the Alt 4R and Alt 4R2, and we do not discuss these differences further in this document. Hydrologic suitability for marl prairie habitat will transition throughout the southern Everglades, substantially improving in localized regions while notably declining in other regions (**Figure C.2.2-3** and **Figure C.2.2-4**). Alt 4R2 has an overall moderate impact to marl prairie hydrologic suitability in the southern Everglades relative to FWO (**Figure C.2.2-3** and **Figure C.2.2-4**) because of the substantial transitional shifts expected to occur throughout the spatial extent of the southern Everglades. These local differences in performance may warrant further consideration because they illustrate where within the southern Everglades that changes to marl prairie hydrologic suitability are anticipated.

The overall impact to marl prairie hydrologic suitability, when comparing the combined spatial region scores of Alt 4R2 relative to FWO, in Subpopulation A appears relatively neutral. However, there are spatial regions within Subpopulation A where substantial benefits to marl prairie hydrologic suitability occur as well as negative impacts. Hydrologic suitability declines within southeastern and south-central Subpopulation A with Alt 4R2 as well as within the spatial regions flanking the southeastern regions of A. (**Figure C.2.2-4**). Benefits are anticipated within northeastern Subpopulation A and the spatial regions flanking the northeastern and northern region east of Subpopulation A due to the improved distribution of water deliveries across the Tamiami Trail associated with Alt4R2 (**Figure C.2.2-4**). **Figure C.2.2-4** illustrates the projected hydrologic unsuitability of habitat in western and most southern portions Subpopulation A, regardless of the alternative being observed. These areas bring down the overall average habitat scores for Subpopulation A.

The overall impact to marl prairie hydrologic suitability of the combined spatial regions within designated Subpopulation B critical habitat with Alt 4R2 relative to FWO appears relatively neutral.

However, there is a limited spatial region within Subpopulation B where there are limited benefits and one spatial region (one RSM cell) where there are limited negative impacts. Limited negative effects also occur between subpopulations B and E with Alt 4R2 due to the increased flow deliveries (**Figure C.2.2-4**).

Substantial benefits to marl prairie hydrologic suitability appear relatively neutral when comparing Alt4R2 to FWO within Subpopulation C (**Figure C.2.2-4**). The overall impact to marl prairie hydrologic suitability of Alt 4R2 relative to FWO of the combined spatial regions within designated Subpopulation D critical habitat appears relatively neutral. However, there are limited spatial regions throughout Subpopulation D where there are negative impacts (**Figure C.2.2-4**).

The overall impact to marl prairie hydrologic suitability of Alt 4R2 relative to FWO of the combined spatial regions within designated Subpopulation E critical habitat appears relatively neutral. However, there are spatial regions within Subpopulation E where there are substantial negative impacts to marl prairie hydrologic suitability. Beneficial effects occur in the southeastern portion of E due to the increased water deliveries that occur in this region with Alt 4R2 (**Figure C.2.2-4**). Declines in hydrologic suitability are pronounced along the regions of E that abut Shark River Slough due to the increased water deliveries that occur in this region with Alt 4R2. However, these shifts within the critical habitat are accompanied by substantial areas of hydrologic improvements to habitat between subpopulations E and C.

The overall impact to marl prairie hydrologic suitability of Alt 4R2 relative to FWO of the combined spatial regions within designated Subpopulation F appears relatively neutral. However, there are spatial regions within Subpopulation F where there are substantial negative impacts as well as other regions with notable improvements in marl prairie hydrologic suitability. Negative effects are projected in the regions between E and F due to the increased water deliveries that occur in this region with Alt 4R2 (**Figure C.2.2-4**). However, the projected habitat in interior regions of F is notably improved with Alt 4R2. Hydrologic suitability for habitat between F and C also improves with Alt 4R2.

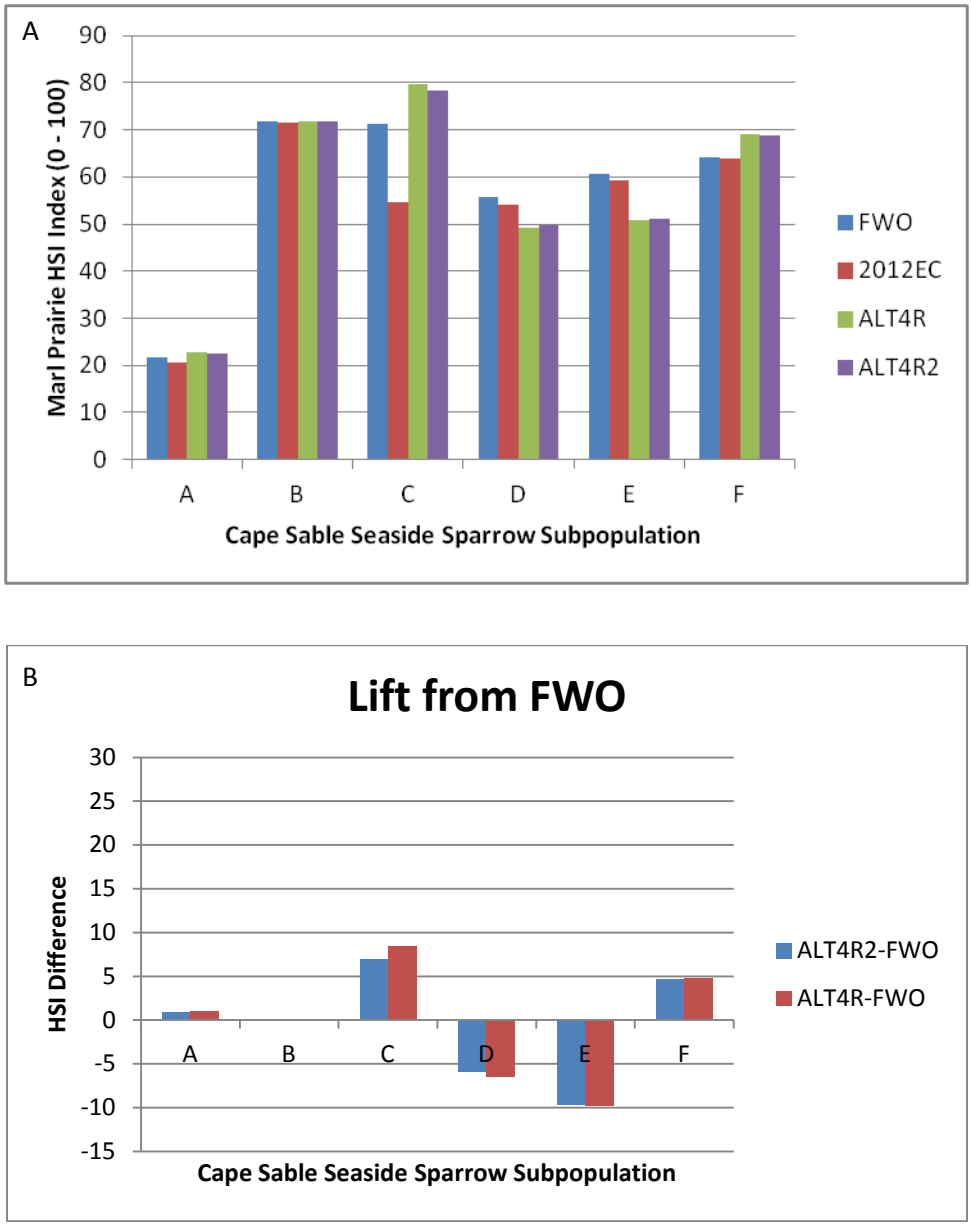


Figure C.2.2-3. A. Average marl prairie habitat suitability index scores (1965-2005) for the No Action Alternative (FWO), existing conditions (2012EC) and Alternatives 4R and 4R2 within CSSS subpopulations A-F. B. Alt4R and Alt4R2 suitable marl prairie habitat (1965-2005) lift from FWO within each CSSS subpopulation. A maximum lift of 100.0 is possible if FWO has an averaged suitability score of 0.0 and the alternative has an averaged suitability score of 100.0.

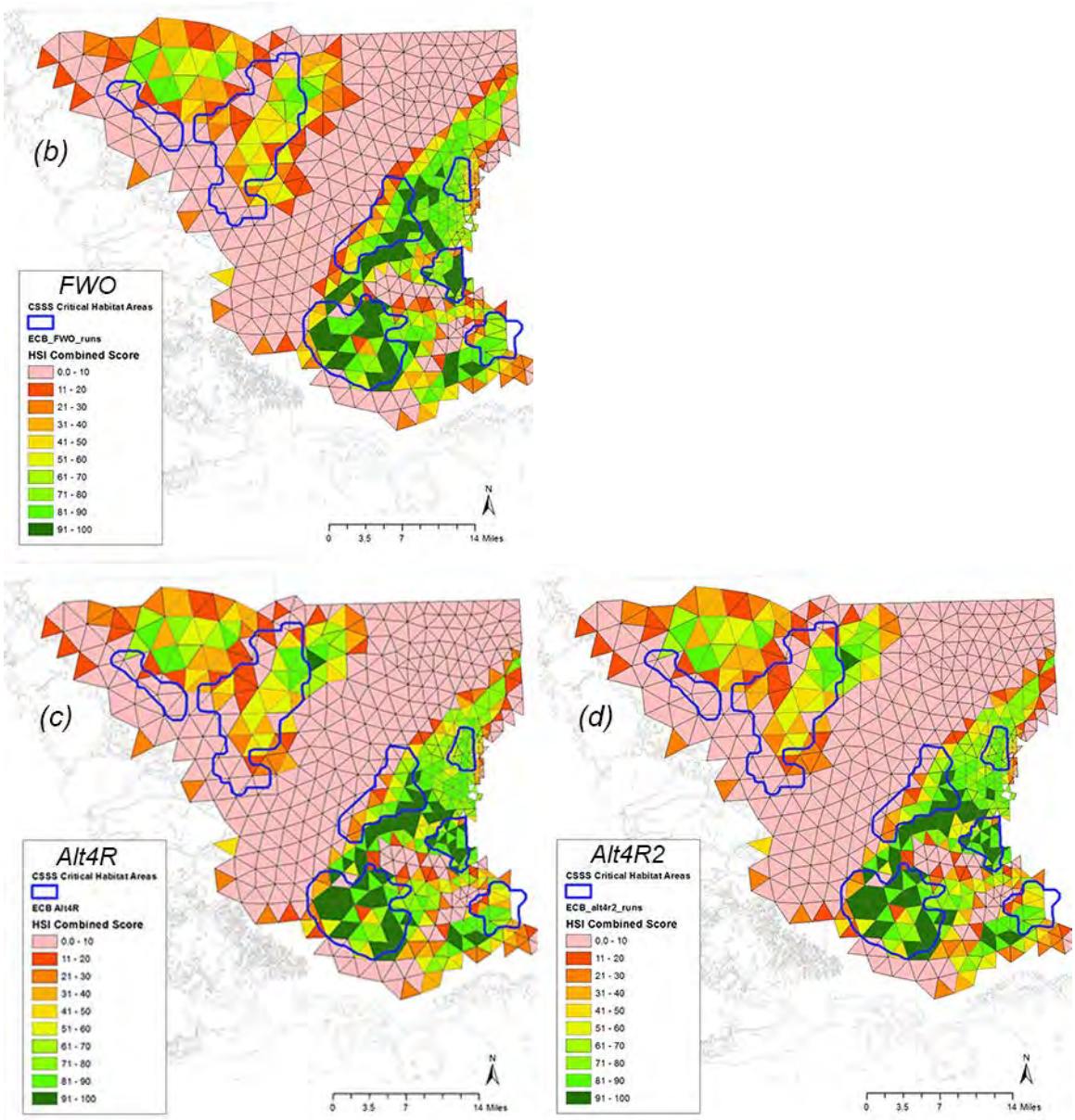


Figure C.2.2-4. Marl prairie habitat suitability for the combined marl prairie indicator scores at each RSM-GL cell for the No Action Alternative and Alternatives 4R and 4R2. Scores range from 0.0 (Not Suitable) to 100 (Most Suitable). CSSS subpopulations are outlined in blue.

C.2.2.3.4.4 Tree Islands

The hydrological and ecological responses of the Greater Everglades to the recommended plan are only slightly different from Alt 4R scenario upon which Alt 4R2 is based. These differences are easily seen when the figures below are compared to their counterparts in **Appendix C.2.1.3.4.4**. Starting in the Northeast section of WCA 3A where there is concern that hydrologic restoration might be stressful for the sawgrass plain and tree islands, the duration curve for ponding depths indicates a significant increase in hydroperiods and depths (**Figure C.2.2-5**). Alts 4R and 4R2 do not alter the extreme high ponding depths that can occur due to extreme meteorological events. Instead it prevents this region from being dry 40% of the time (it will now be dry 15% of the time) and it adds, on average between 0.25 ft. and 0.65 ft. of ponding depth to the stage duration curve, providing minor beneficial effects.

Since water depths on the marsh surface is predicted to be 1.0 ft or less, 80% of the time, this is not considered to be harmful to existing tree islands, Miami Canal islands that will be created, or ghost tree islands that have the potential to be restored by CEPP.

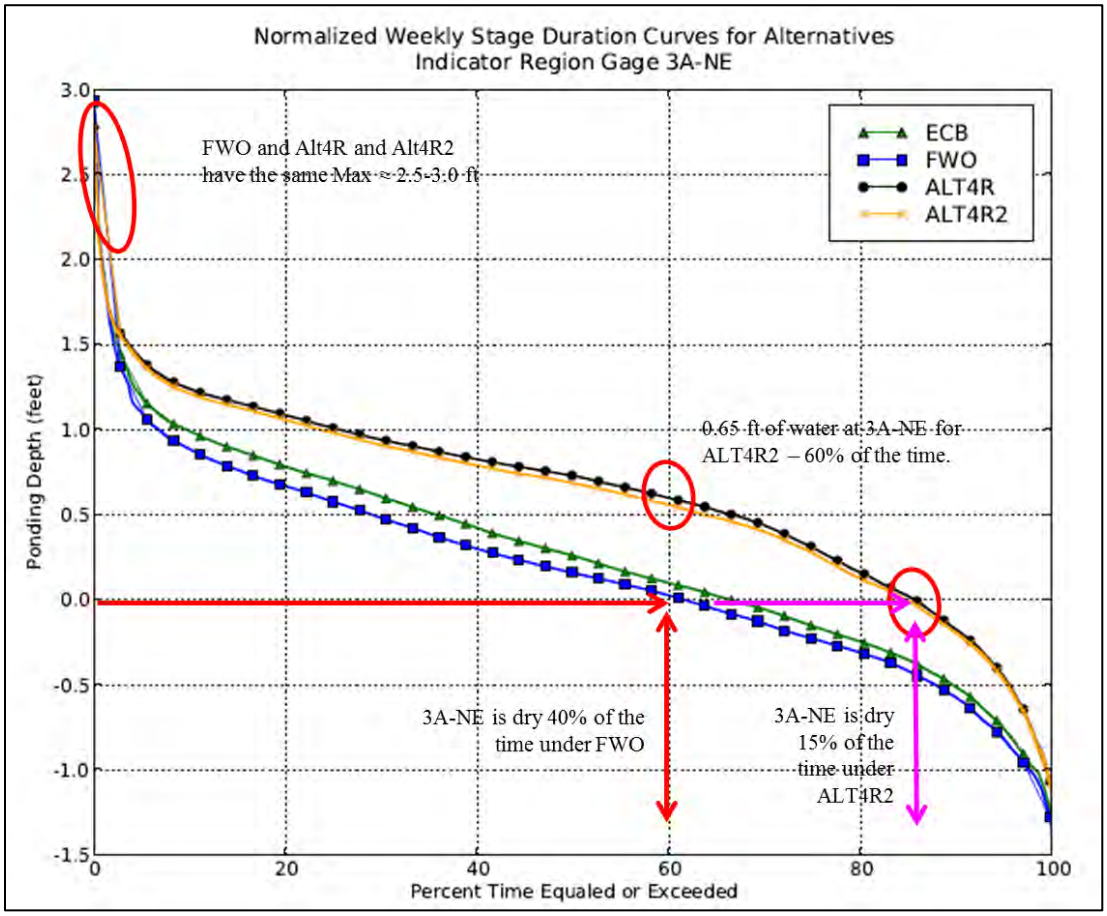


Figure C.2.2-5. The rehydration of Northeastern WCA 3A due to Alt 4R and Alt 4R2.

Moving down through WCA 3A, the central and southern regions are expected to respond similarly. As was seen for the Alts 1-4 evaluations in Southern WCA 3A (Indicator Region 124), Alt 4 managed to lower the ponding depths in comparison to the ECB and improve the ecological condition of trees islands in this region. However, Alts 4R and 4R2 only slightly improve hydrologic conditions for tree islands in comparison to FWO. This was due to the inclusion of the new ERTP schedule in FWO, and that ERTP effectively lowers the potential of flooding stress of trees on trees islands in the most southern reaches of WCA 3A.

Moving into WCA 3B (not including the Blue Shanty Flowway); Alts 4R and 4R2 make significant improvements to the hydroperiods in comparison to the FWO (**Figure C.2.2-6**). Unfortunately, Alts 4R and 4R2 do not do anything to reduce the extreme high ponding depths associated with the FWO. Instead, to prevent soil oxidation on tree islands and in sloughs, Alts 4R and 4R2 increase the hydroperiod in WCA 3B by 10% by adding between 0.2 ft. and 0.5 ft. of ponding depths to the marsh when ponding depths drop below 1 ft, providing minor beneficial effects.

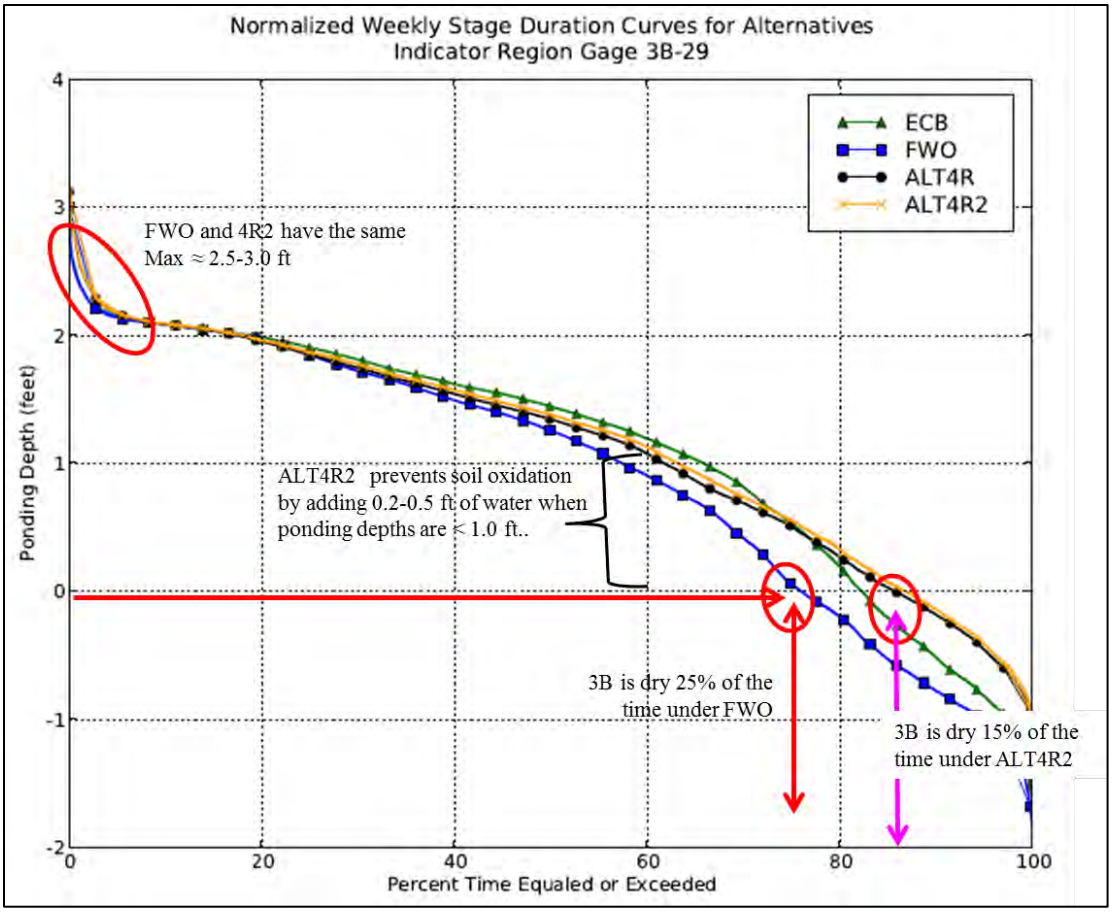


Figure C.2.2-6. The rehydration of WCA-3B due to Alts 4R and 4R2.

Shark River Slough (SRS)

Finally, looking at SRS where tree islands rise high above the surrounding marsh, their potential for flooding stress is practically non-existent. Instead, ENP is faced with a reduction in islands due to intensive fires that migrate across the marshes and burn tree island peat soils so that all that is left are rocky outcroppings. Here the objective of Alts 4R and 4R2 is to prevent extensive dry-downs and create extended hydroperiods. **Figure C.2.2-7** shows a FWO marsh surface hydrology that is shallow and for the most part, is less than 1.0 deep. For tree islands that are 1-2 ft higher than the marsh, this means that they are dry for most of the year. By adding 0.4 ft. of depth to the duration curve in SRS, Alts 4R and 4R2 decrease the probability of peat oxidation on these tree islands by increasing their hydroperiod by 30-40%.

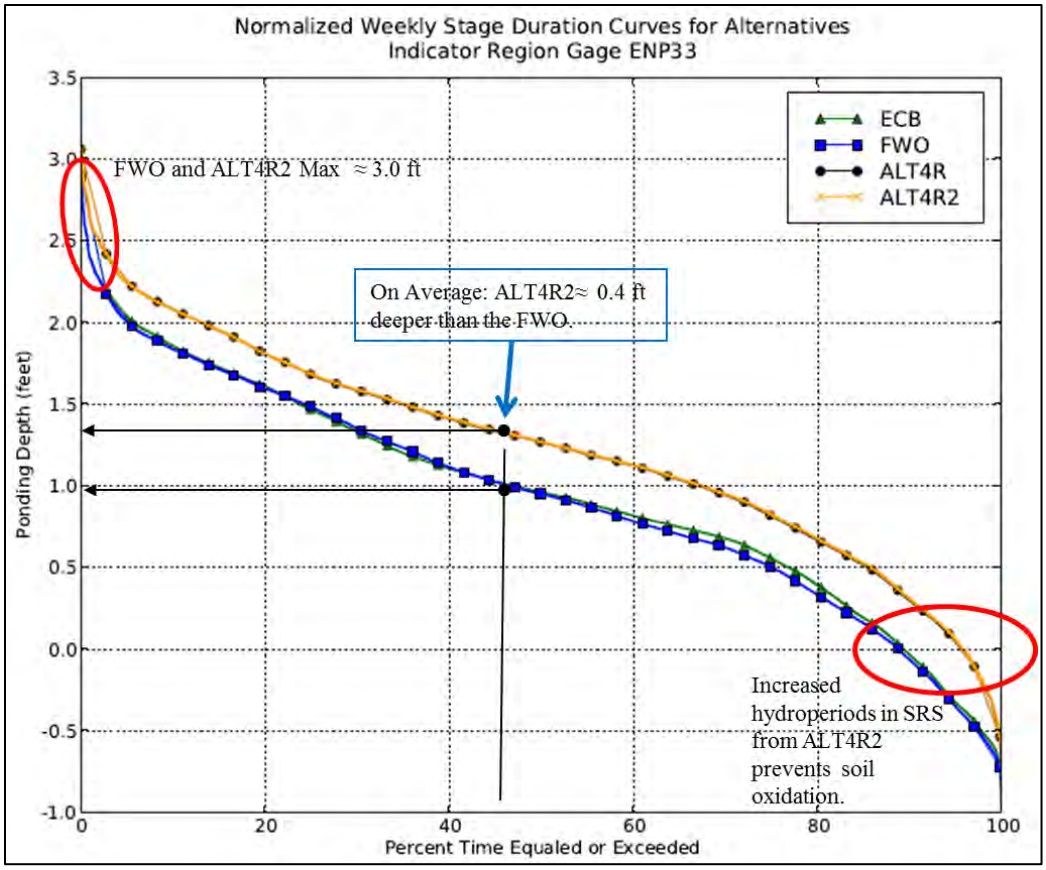


Figure C.2.2-7. Tree islands in SRS will significantly improve with Alts 4R and 4R2 in comparison to the FWO because the recommended plan adds about 0.4 ft. of ponding depths to the entire stage duration curve and because it increases the marsh hydroperiod by about 10%.

Changes in tree island vegetation are possible with Alt 4R2, however, tree island vegetation changes naturally over time and would continue to change under existing conditions or the recommended plan. Such changes are sometimes referred to as 'ecosystem succession' or 'forest dynamics', which are ecological terms that refer to plants colonizing an area or an island and completing their life cycle there while additional species of plants or the next generation of plants compete for space in the same area. This process is accelerated when some of the plants die or topple over, such as when wind storms topple trees which creates openings for seedlings and young plants to grow. Tree falls are a natural and important component of forest dynamics and can happen due to age, wind, trees growing in a site where they are ill-suited, and insect infestation. In the present day Everglades, canal construction and drainage have led to increased drought intensity and a resultant loss of peat soils. Reducing total water quantity stored by the ecosystem has lengthened the dry seasons and increased the frequency and duration of dry down events resulting in increased rates of organic soil loss. Peat loss can contribute to tree falls as a result of poor rooting conditions. It is possible that CEPP hydrology, which is expected to change flows and hydroperiods to be more like the pre-drainage Everglades and more like restoration conditions envisioned in CERP, will stress the root systems of plant species that are not well-suited to live in the restored conditions but are present currently due to drier post-drainage conditions. To address this possibility, CEPP aims for incremental hydrology targets to provide opportunities for the ecosystem, including plant and tree species, to transition to the restored conditions. Monitoring is described in the Adaptive Management and Monitoring Plan (**Annex D**) to check the survival and transition of plant species in key areas in the Everglades and report the results to decision makers.

It should be noted that south Florida's forest dynamics are driven significantly by hurricanes and wind storms. Damage to tree island species can be caused by hurricanes, depending on many factors: the location of tree islands in relation to a hurricane's center, sustained winds and wind gusts speed, soil conditions and types of vegetation. The intensity of a hurricane including duration and precipitation immediately prior to and during the event affect the stability of trees. If winds exceed the resistance of root/soil systems, trees uproot (Mitchell 2013). "In general, taller and larger trees are more susceptible to wind damage than shorter, smaller trees (Merry et al. 2011)." Also, tree species type affects vulnerability to damage (Barry et al., 1998). Therefore while CEPP hydrologic conditions may incrementally stress some plant species it is expected that the natural changes of forest dynamics, especially those associated with Florida's storms, would take place in the future with or without the recommended plan. In addition it is expected that the incremental restoration targets of CEPP and the monitoring feedback that will be provided by the Adaptive Management and Monitoring Plan (**Annex D)** will provide a double-check to ensure that vegetation is adapting to restoration conditions.

C.2.2.3.4.5 Rockland Pine Forest

Negligible and less than significant effects are predicted within Rockland pine forest as a result of CEPP implementation.

C.2.2.3.4.6 Tropical Hardwood Hammock

Tropical hardwood hammocks on the Miami Rock Ridge have been affected by a lowered water table associated with the reduction of freshwater flow through the Everglades. Since Alts 4R and 4R2 provide increased flow through the Greater Everglades, it is anticipated that tropical hardwood hammocks would show a minor beneficial effect from CEPP implementation. As with other vegetative communities, Alts 4R and 4R2 would provide rehydration benefits to ENP as compared with the FWO.

C.2.2.3.5 Southern Coastal Systems

C.2.2.3.5.1 Mangroves

The estuarine communities of Florida Bay have been affected by upstream changes in freshwater flows through the Everglades. A reduction in freshwater inflows into Florida Bay and alterations of the normal salinity balance have affected mangrove community composition and may have contributed to a large-scale die-off of seagrass beds (FWS 1999). Mangrove communities occur within a range of salinities from 0 to 40 practical salinity units (psu).

Florida Bay experiences salinities in excess of 40 psu on a seasonal basis. As compared with FWO, Alts 4R and 4R2 provide increased freshwater flows to Florida Bay and the southwest coastal estuaries, thereby aiding to lower salinities levels within these areas to better encompass mangrove salinity tolerance range and providing minor beneficial effects. Alt 4R2 provides slightly improved salinity conditions in Florida Bay in comparison to Alt 4R and a significant effect.

In Biscayne Bay, Alt4R provided less water while Alt4R2 provided additional flows when compared to FWO. Alt4R flows to the coast are not evenly distributed showing positive benefits in the very northernmost reach of Biscayne Bay and negative effects from the mid-section of the northern portion to the south. Alt4R2 provides additional flows throughout the bay and is likely to provide a minor beneficial effect to the mangrove communities by providing additional flows to the coast, thereby lowering salinity levels and/or reducing the number of days salinities exceed 40 psu. Alt4R would likely result in a minor adverse effect to the mangrove communities by increasing the likely hood of maintaining salinity conditions in Biscayne Bay above the preferred salinity range of mangroves for

longer periods of time than FWO. Alternative 4R shows an unfavorable seasonal flow pattern with reductions in flows compared to FWO generally greater during the dry season. Alt4R2 shows slightly increased flows patterns for both seasons compared to FWO.

C.2.2.3.5.2 Seagrass Beds

Seagrasses within Florida Bay have long suffered from high salinities due to long-term reductions of freshwater flow. Seagrasses have an optimum salinity range of 24 to 35 psu, but can tolerate considerable short-term salinity fluctuations.

As compared with the FWO, Alts 4R and 4R2 provide increased freshwater flows to Florida Bay and the southwestern coastal estuaries, thereby aiding to lower salinities levels within these areas to better encompass seagrass salinity tolerance range and providing minor beneficial effects. Alt 4R2 provides slightly improved salinity conditions in Florida Bay in comparison to Alt 4R.

In Biscayne Bay, Alt4R provided less water while Alt4R2 provided additional flows when compared to FWO. Alt4R flows to the coast are not evenly distributed showing positive benefits in the very northernmost reach of Biscayne Bay and negative effects from the mid-section of the northern portion to the south. Alt4R2 provides additional flows throughout the bay and is likely to provide a significant benefit to the seagrass beds by providing additional flows to the coast, thereby lowering salinity levels and/or reducing the number of days salinities exceed 40 psu having a minor beneficial effect. Alt4R would likely result in a negative effect to the seagrass beds by increasing the likely hood of maintaining salinity conditions in Biscayne Bay above the preferred salinity range of seagrass for longer periods of time than FWO. Alternative 4R shows an unfavorable seasonal flow pattern with reductions in flows compared to FWO generally greater during the dry season. Alt4R2 shows slightly increased flows patterns for both seasons compared to FWO.

C.2.2.4 Threatened and Endangered Species

Regional Simulation Model – Glades Lower East Coast Service Area (RSM-GL) model results were used to compare performance of Alts 4R and 4R2 in relation to the ERTP PMs and ETs on species (discussed in Section 5 and C.2.1) the Corps has determined may be affected by the project. Microsoft Excel 2007 was used to analyze RSM results and create bar graphs to graphically compare Alts 4R, 4R2 and FWO. All calculations are based upon the RSM 41-year POR from 1965 through 2005. A detailed comparison between the Existing Conditions Baseline (2012), the FWO, and Alternative 4R2 (recommended plan) is contained within the Corps CEPP Biological Assessment, located in **Annex A**. A detailed discussion of species under the NMFS purview is contained within the Corps CERP Programmatic Biological Assessment prepared for NOAA NMFS, located in Annex A. A Programmatic Biological Opinion was prepared by USFWS. The Corps entered formal consultation with USFWS on the Everglade snail kite (*Rostrhamus sociablis plumbeus*), and its designated critical habitat, Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*), (CSSS) and its designated critical habitat, wood stork (*Mycteria americana*) and eastern indigo snake (*Drymarchon corais couperi*). The preliminary conclusion is that the proposed project is not likely to jeopardize the continued existence of the species listed above and are not likely to adversely modify critical habitat, where designated. The Programmatic Biological Opinion concurred on the Corps' determination of may affect, but not likely to adversely affect the Florida panther (*Puma concolor coryi*), West Indian manatee (*Trichechus manatus*), and its critical habitat, American crocodile (*Crocodylus acutus*) and its critical habitat, deltoid spurge (*Chamaesyce deltoidea* ssp. *deltoidea*), Garber's spurge (*Chamaesyce garberii*), Small's milkpea (*Galactia smallii*), and tiny polygala (*Polygala smallii*). Furthermore, the Service concurred with all the "No Effect" determinations made by the Corps in regard to the applicable threatened or endangered species that

are found in the action area. The National Marine Fisheries Service (NMFS) provided a Programmatic Biological Opinion for the Comprehensive Everglades Restoration Plan to the Corps on 17 December 2013 and concurred with the "No Effect" determinations for CEPP for the species under their purview.

C.2.2.4.1 Everglade Snail Kite

Evaluation of potential effects to Everglade snail kites within the CEPP project area included adaptations of ERTP PMs, including depth and recession rate requirements for apple snails (FWS MSTS WCA 3 gages **Figure C.2.2-8**), along with the Apple Snail Population Model (SFNRC 2013b). The USACE believes the snail kite metrics (PM-B) are too restrictive, thus deferring to only the apple snail PM as an appropriate assessment that is based upon published literature (Darby 1998-2008).

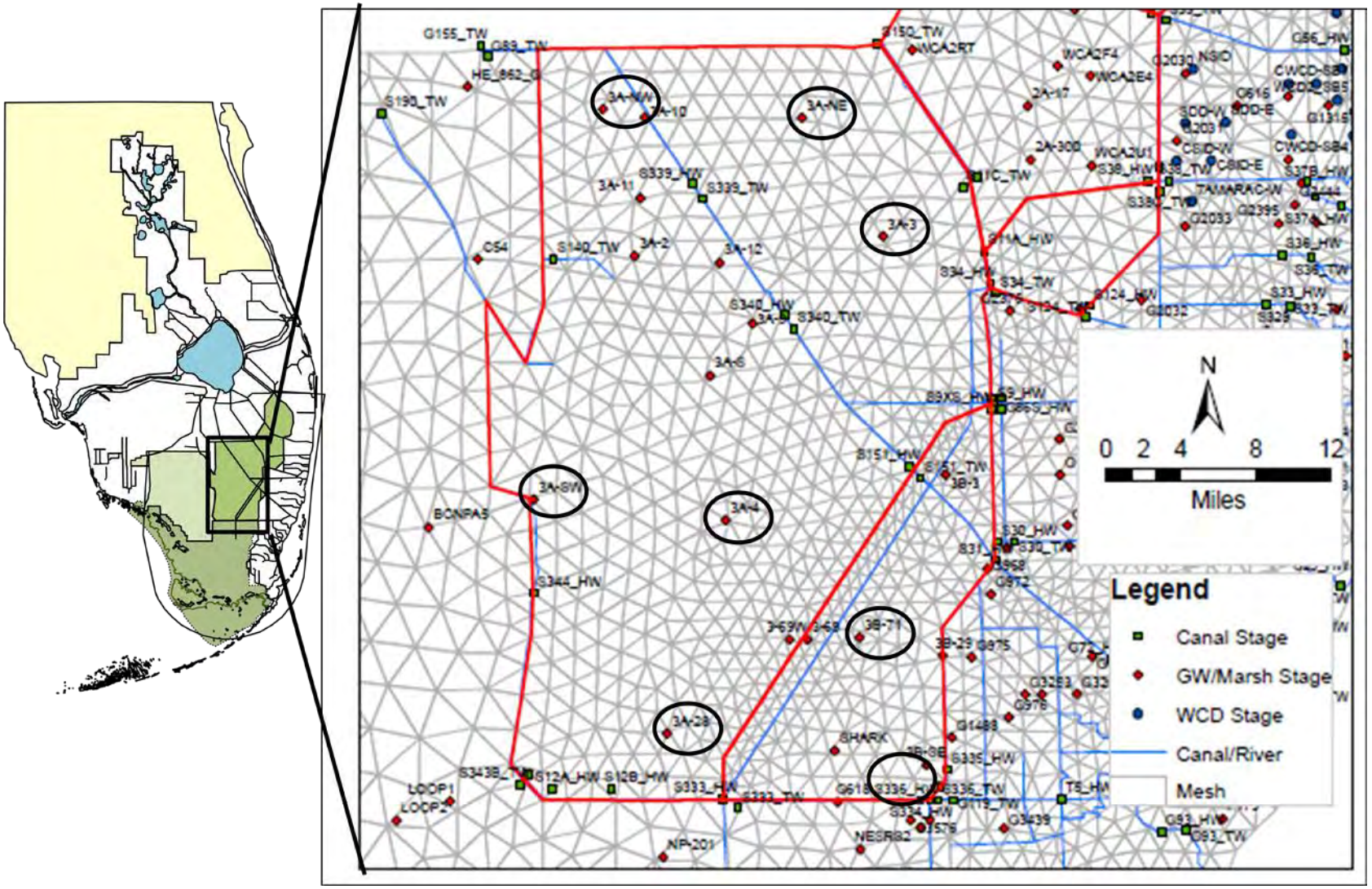


Figure C.2.2-8. WCA 3 Gage Locations for Snail Kite and Apple Snail Performance Measures

As compared to the FWO, rehydration and vegetation shifts within northern WCA 3A and increased hydroperiods within WCA 3B and ENP would increase suitable habitat for apple snails, thereby increasing the spatial extent of suitable foraging opportunities for snail kites, providing a moderate beneficial effect (**Table C.2.2-1.**). Alternatives 4R and 4R2 substantially increased the number of years met over the FWO between May and June except at 3A-28. However, there was not much change between Alternatives 4R and 4R2 and FWO for the December 31 pre-breeding except at 3A-NW.

Table C.2.2-1. Number of years water depths at WCA 3 gages are within the FWS MSTS recommended apple snail depth ranges (PM C).

	31-Dec			May 1- June 1		
	ALT-4R	ALT-4R2	FWO	ALT-4R	ALT-4R2	FWO
Gage	3A-NE					
# years met	0	0	0	21	20	2
Gage	3A-NW					
# years met	17	16	0	17	19	4
Gage	3A-3					
# years met	10	10	11	21	20	7
Gage	3A-4					
# years met	24	22	22	23	23	18
Gage	3A-28					
# years met	4	4	5	17	15	19
Gage	3A-SW					
# years met	0	0	2	31	31	37
Gage	3B-71					
# years met	6	6	5	28	28	5
Gage	3BS1W1					
# years met	24	21	18	17	17	13
Total	**85**	**79**	**63**	**175**	**173**	**105**

An apple snail population model was developed by Phil Darby (University of West Florida), Don DeAngelis (USGS), and Stephanie Romañach (USGS) and is being used as an Ecological Planning Tool for the CEPP. The purpose of the model is to describe the dynamics of the apple snail population a function of hydrology and temperature. The numbers and size distribution of the snails are simulated and can be calculated for any day of a year with input data. Information regarding the size-structured population model was used to simulate the response of apple snails for Alt 4R with FWO and Alt 4R2 with FWO (**Figure C.2.2-9** and **Figure C.2.2-10**, respectively). Conditions are presented for a dry year for each model run (Alt 4R and FWO, and Alt 4R2 and FWO), because dry years are typically when restoration projects are likely to have the biggest impact, given that the system is largely rainfall driven in the wet season. Results are also shown for adult snails (> 20 mm) during the spring of a dry year, before that years' reproductive period. Adult snails during a given year are a product of egg production, and thus environmental conditions, from the previous year. End of spring results are shown as the population of snails of the size class consumed by the endangered Everglades snail kites. Based upon the results of this

analysis, Alt 4R and Alt 4R2 provide better conditions for apple snail populations as compared to the FWO, particularly in WCA 3A, WCA 3B, and ENP and provide a moderate and significant beneficial effect.

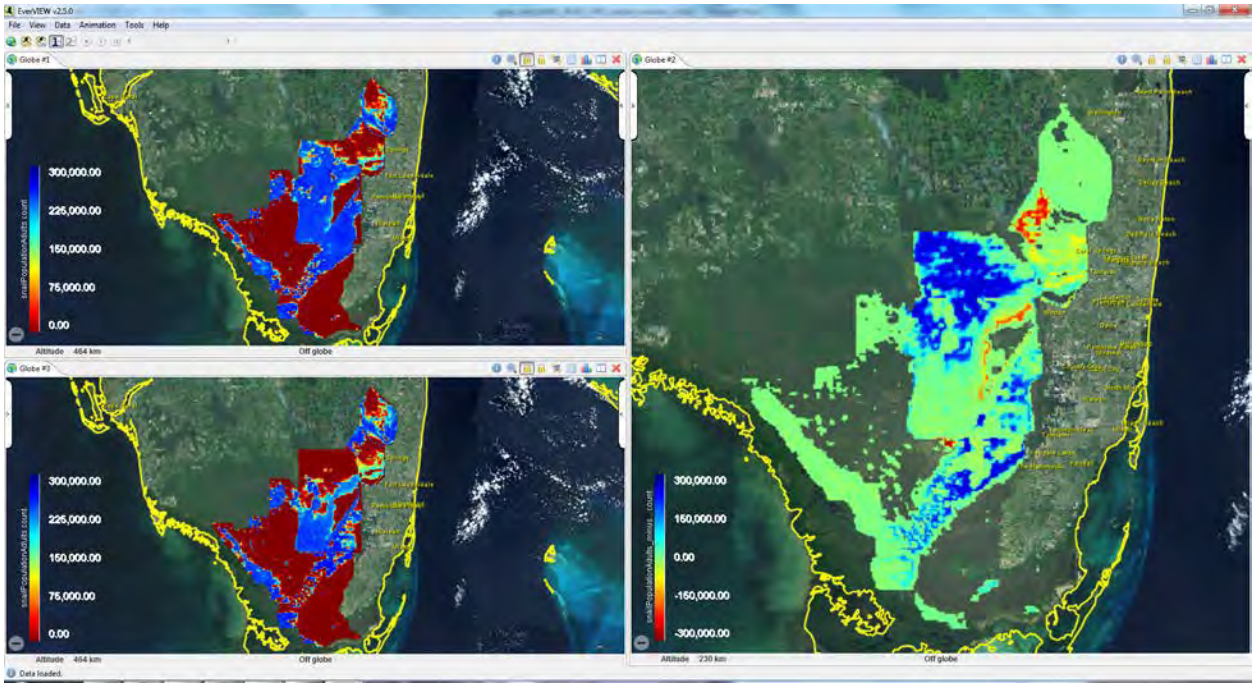


Figure C.2.2-9. Adult snail (> 20 mm) population size as a result of Alt 4R (top left) vs. FWO (bottom left), and a difference map (right map panel) of Alt4R minus FWO. (ENP 2013)

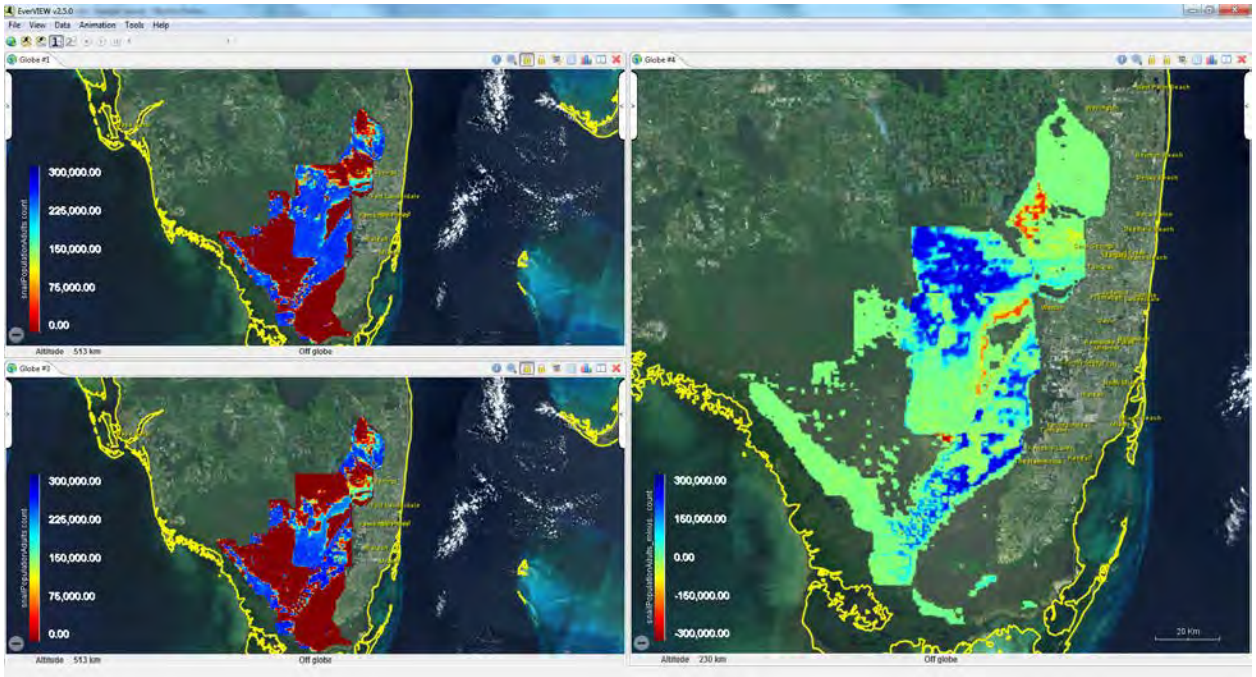
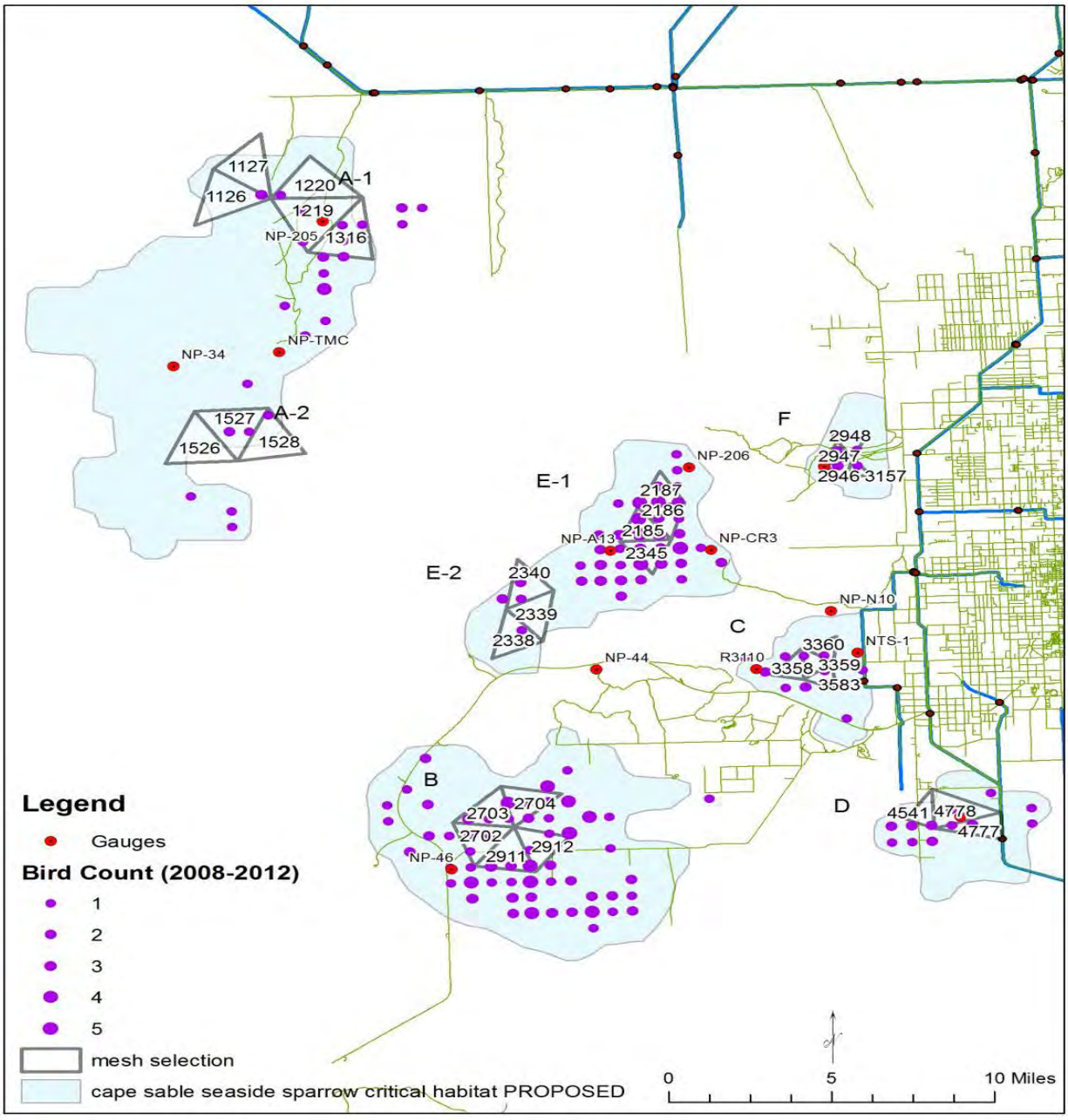


Figure C.2.2-10. Adult snail (> 20 mm) population size as a result of Alt 4R2 (top left) vs. FWO (bottom left), and a difference map (right map panel) of Alt4R2 minus FWO. (ENP 2013).

C.2.2.4.2 Cape Sable Seaside Sparrow

Presently, the known distribution of the CSSS is restricted to two areas of marl prairies east and west of SRS in the Everglades region (within ENP and BCNP) and the edge of Taylor Slough in the Southern Glades Wildlife and Environmental Area in Miami-Dade County. CSSS surveys resulted in a range map that divided the CSSS into six separate subpopulations, labeled as A through F (**Figure C.2.2-11**), with CSSS-A as the only subpopulation west of SRS (Curnutt et al. 1998).

Effects of Alternatives 4R and 4R2 on the CSSS are discussed below based on the appropriate PM and ET.



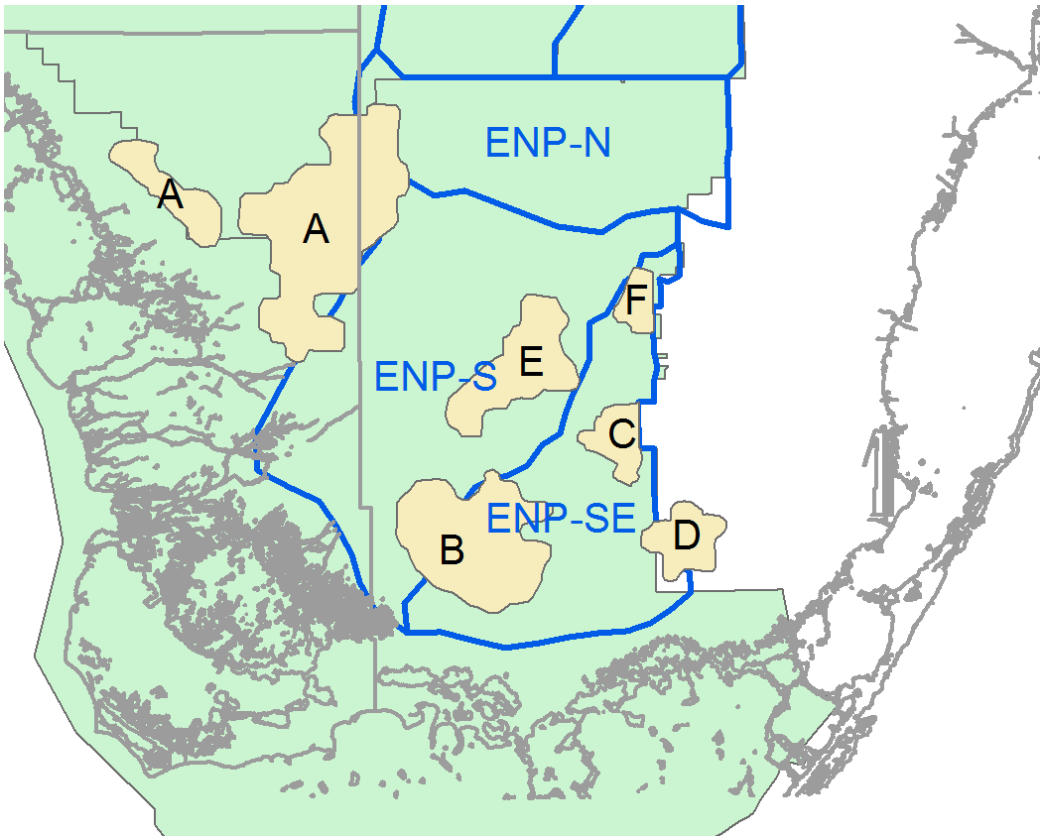


Figure C.2.2-11. Range of CSSS sub populations.

PM-A NP-205 (CSSS-A): Provide a minimum of 60 consecutive days at NP-205 below 6.0 feet, NGVD beginning no later than March 15.

Cape Sable seaside sparrows build nests low to the ground around 14-17 cm. Male CSSS call for mates and set up territories when water levels drop below ground surface. Breeding behavior can be interrupted when water levels rise above ground surface. That is why it is important to maintain water levels below the ground surface for at least 60 days during the nesting season from March 1 to July 15. In order to compare alternatives in relation to PM-A, the RSM-GL simulated NP-205 daily stage was utilized. From this data, the annual discontinuous hydroperiod (number of days inundated), was calculated and the number of consecutive dry days within the CSSS nesting window of March 1 through July 15 counted. **Table C.2.2-2** and **Figure C.2.2-12** compare Alternatives 4R and 4R2 with FWO for 60 consecutive dry days at NP-205 between March 1 and July 15. Alternatives 4R and 4R2 perform better than the FWO in the northern subpopulation A (22 years met compared to 20 in FWO) and show a minor beneficial effect. Alternatives 4R and 4R2 perform the same as the FWO in subpopulations B, C and F and show a negligible effect. Alternatives 4R and 4R2 perform worse than the FWO in the southern Sub population A (26 years met in Alt 4R and 25 years met in Alt 4R2 compared to 33 in the FWO), in subpopulation D (20 years met in Alts 4R and 4R2 compared to 22 in FWO) and subpopulation E (33 years met in Alts 4R and 4R2 compared to 36 in FWO) and show a minor adverse effect.

Table C.2.2-2. PM-A number of years there is a minimum of 60 consecutive days at NP-205 below 6.0 feet, NGVD beginning no later than March 15.

Subpopulation	Gage/Cell	Alt 4R	Alt 4R2	FWO
A	IR-A1	22	22	20
	IR-A2	26	25	33
	P34	29	29	29
	TMC	29	29	32
B	CY3	40	40	40
C	R3110	39	39	39
	E112	38	38	38
D	EVER4	20	20	22
E	NE of NPA13	33	33	36
F	NE of RG2	33	33	33

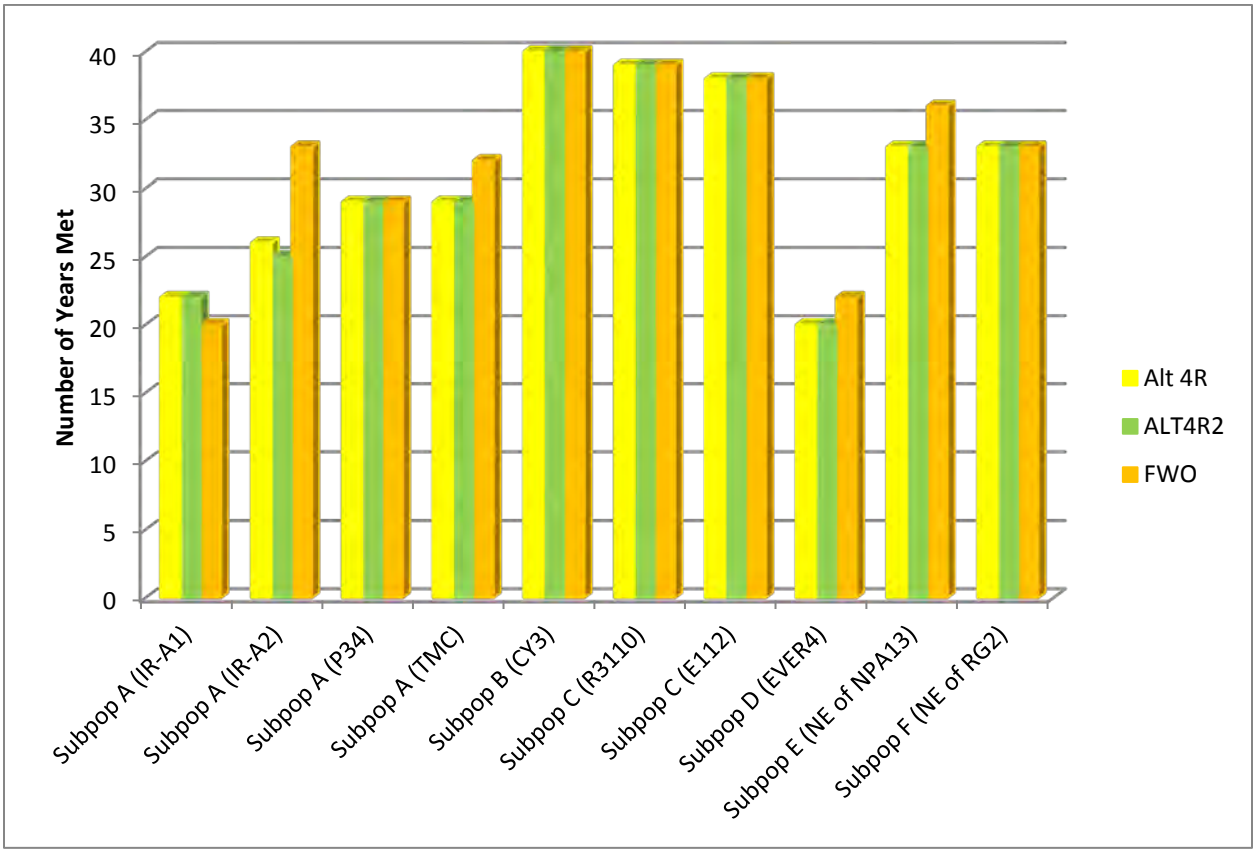


Figure C.2.2-12. PM-A: number of years a minimum of 60 consecutive days at NP-205 below 6.0 feet, NGVD beginning no later than March 15 is met out of the 40 year period of record.

Cape Sable seaside sparrows are largely sedentary, occupy the prairie habitats year-round and are completely dependent on the condition of the prairies. The CSSS have a short life expectancy of two to three years. This short life expectancy range identifies that for the population to sustain itself, there must not be three or more years in a row where water depths are not suitable for nesting. This means that there should not be three consecutive years in a row where the minimum of 60 consecutive dry days during the nesting season is not met. Additional analysis shows the number of consecutive dry days during the nesting season over the POR with the red line indicating 60 days (**Figure C.2.2-13** through **Figure C.2.2-19**). The target is 60 or more consecutive dry days during the nesting season (March 1-May 15) for Alts 4R, 4R2 and FWO and no more than two years in a row. The northern sub population A (A-1), sub population B and sub population C show very little difference between Alt 4R, 4R2 and FWO over the POR (**Figure C.2.2-13**, **Figure C.2.2-15** and **Figure C.2.2-16**). The southern sub population A (A-2) shows three times over the POR where Alts 4R and 4R2 are below the target of 60 consecutive dry days during the nesting season for three years in a row, whereas FWO does not go below the target for three consecutive years over the POR (**Figure C.2.2-14**). Sub population D shows three times over the POR where Alts 4R and 4R2 are below the target of 60 consecutive dry days during the nesting season for three years in a row, whereas FWO is below the target for three consecutive years one time over the POR (**Figure C.2.2-17**). In sub pop E, Alts 4R and 4R2 drop below the target of 60 consecutive dry days during the nesting season more times than the FWO, however neither the Alts nor FWO are below the target for three consecutive years over the POR (**Figure C.2.2-18**). In sub pop F, Alts 4R and 4R2 perform better than the FWO and do not go below the target of 60 consecutive dry days during the nesting season for three years in a row, whereas FWO goes below the target range for three years in a row over the POR (**Figure C.2.2-19**).

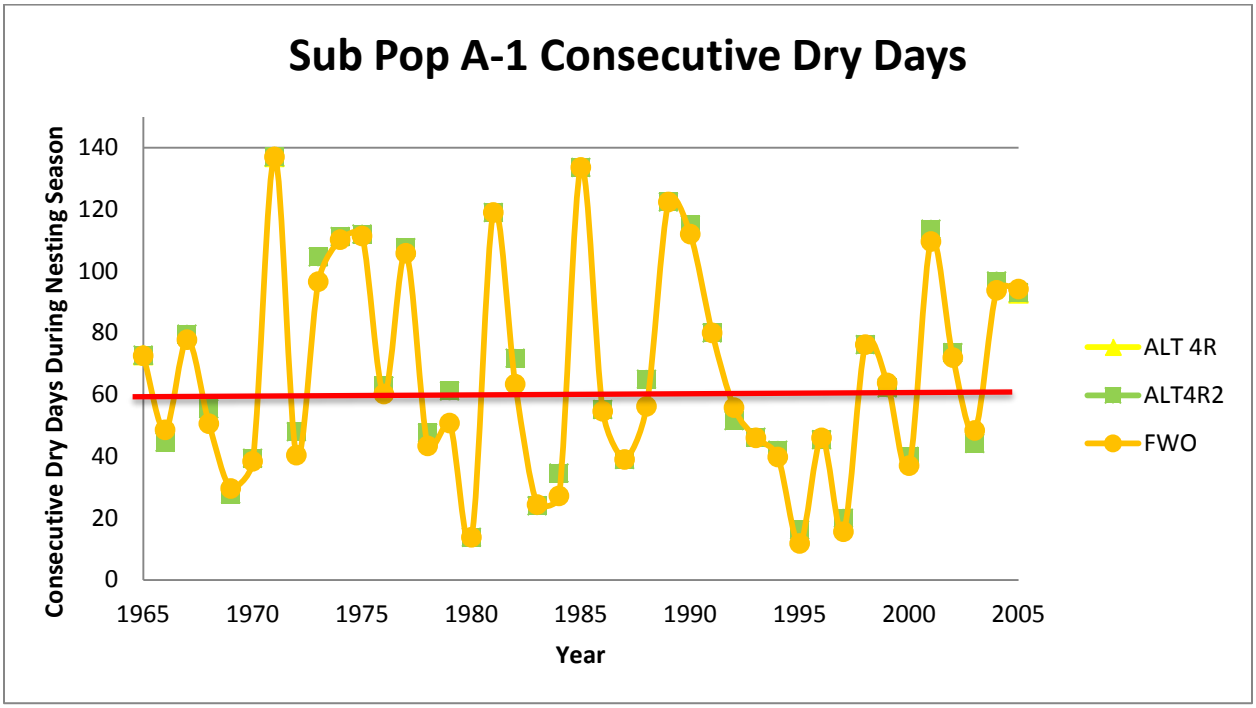


Figure C.2.2-13. Duration of consecutive dry days for the northern region of CSSS-A (IR-A1) between March 1 and July 15.

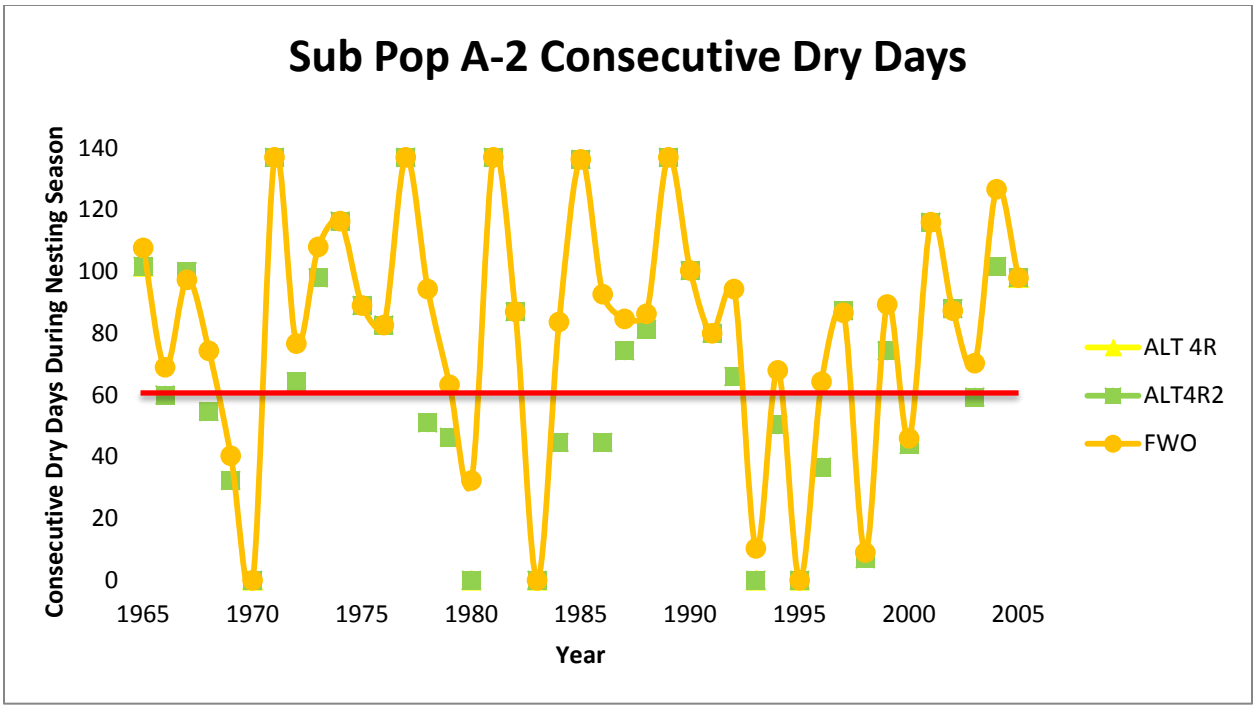


Figure C.2.2-14. Duration of consecutive dry days for the southern region of CSSS-A (IR-A2) between March 1 and July 15.

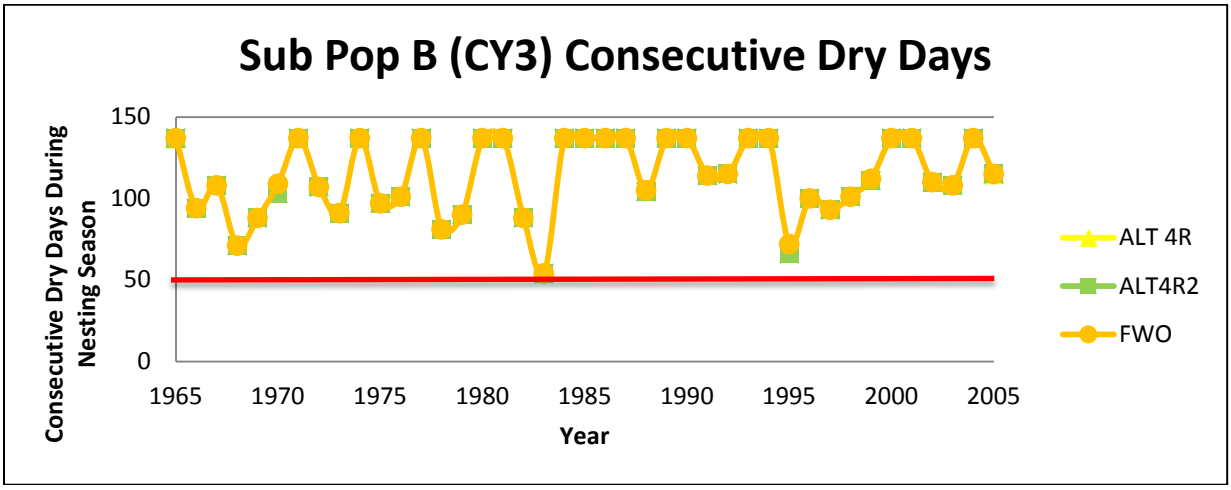


Figure C.2.2-15. Duration of consecutive dry days for CSSS-B (CY3) between March 1 and July 15.

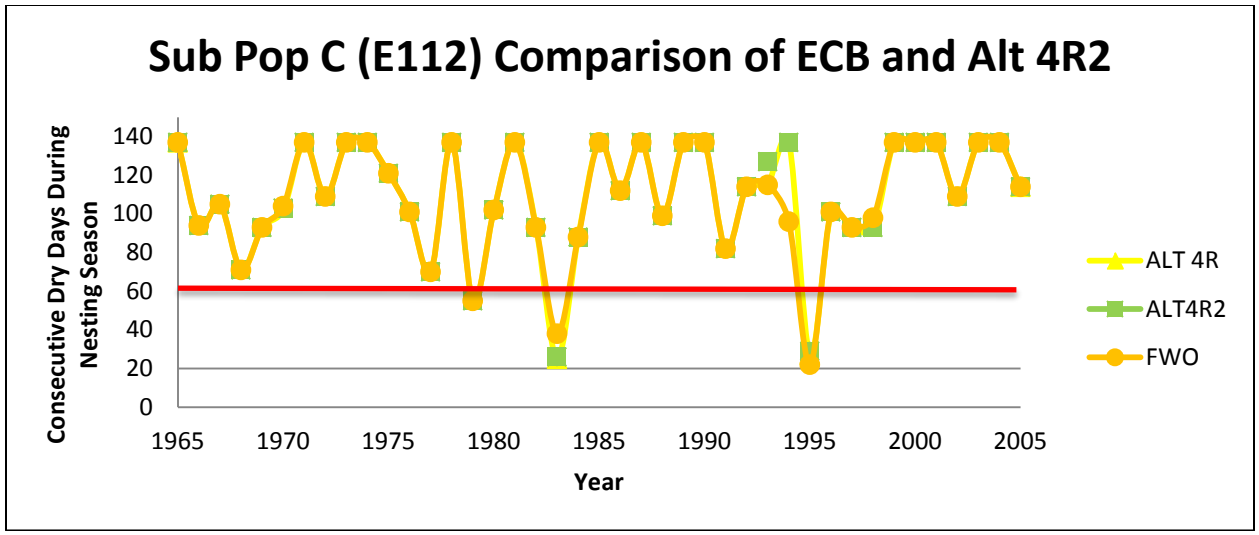


Figure C.2.2-16. Duration of consecutive dry days for CSSS-C (E112) between March 1 and July 15.

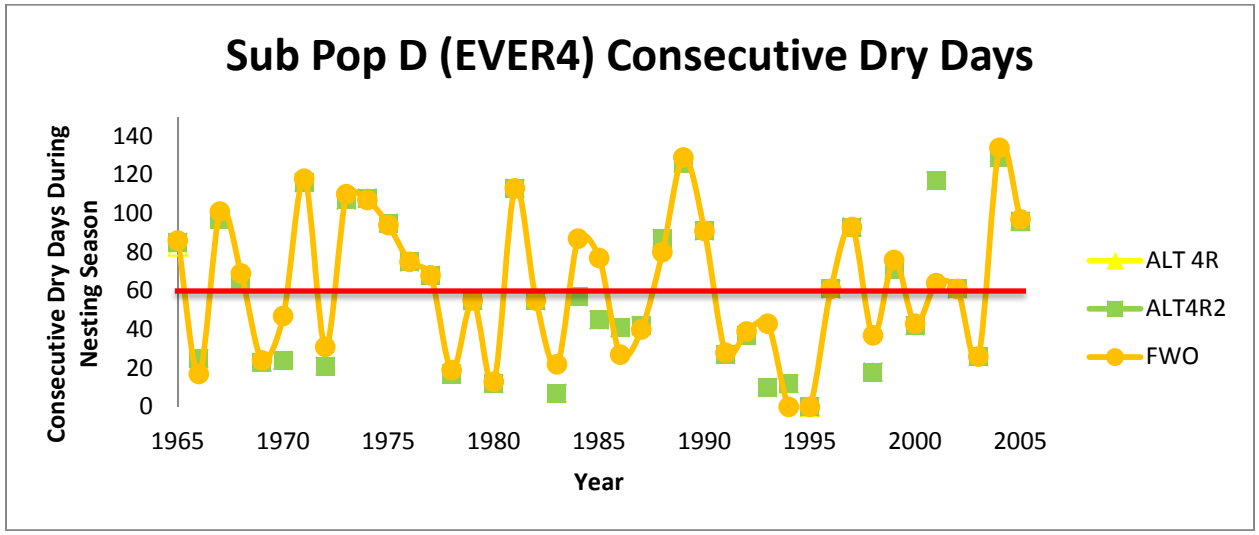


Figure C.2.2-17. Duration of consecutive dry days for CSSS-D (EVER4) between March 1 and July 15.

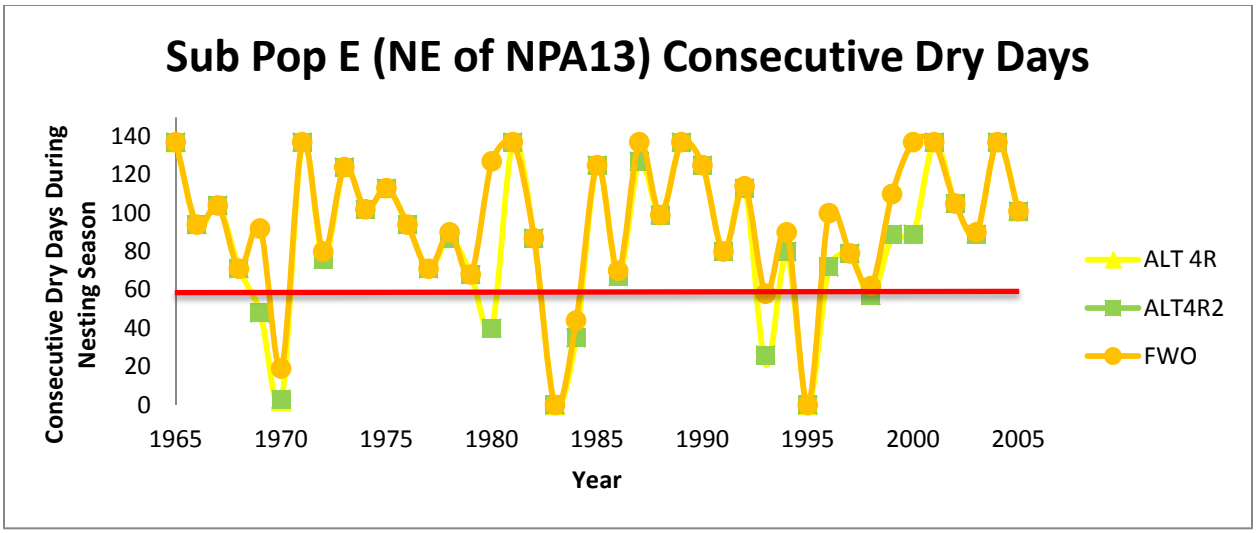


Figure C.2.2-18. Duration of consecutive dry days for CSSS-E (NE of NPA13) between March 1 and July 15.

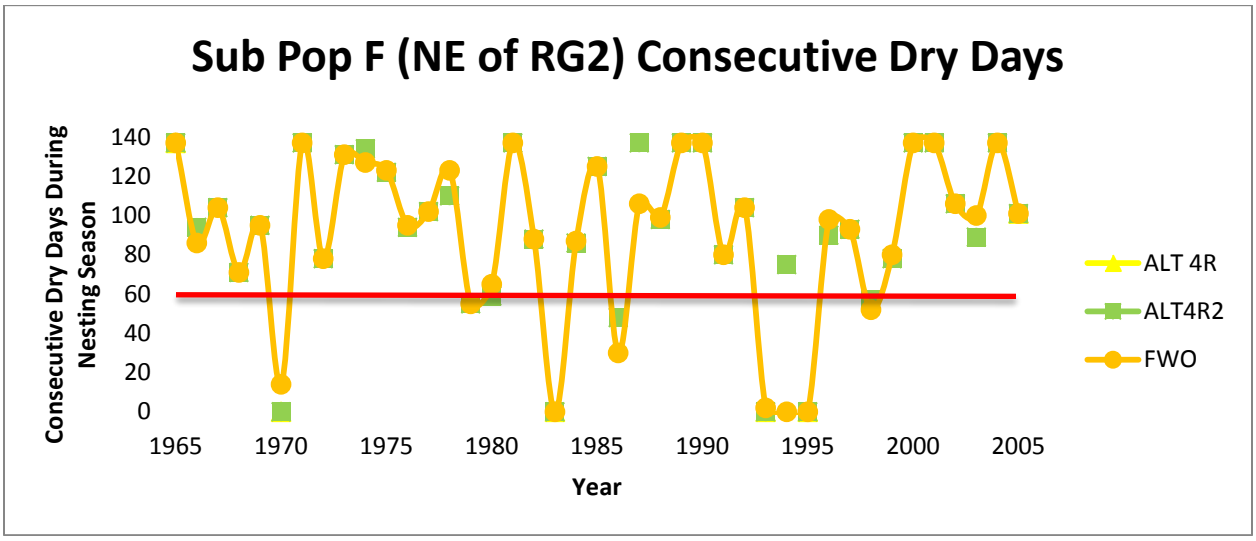


Figure C.2.2-19. Duration of consecutive dry days for CSSS-F (NE of RG2) between March 1 and July 15.

Further analysis of the PM-A data looked at the durations and timing of the total number of consecutive dry days during the nesting season for each year of the POR. Some of the consecutive day counts are close to 60, and may have been a day or a few days where the water level is just above the ground surface. In these cases, the cells were coded as yellow in that they may provide a suitable nesting season. Cells that are green met the 60 consecutive dry days and cells that are red did not meet the 60 consecutive dry days or even a total of 60 dry days during the nesting season. This analysis shows that for the northern CSSS sub population A (A-1), while there is still no difference between Alt 4R, Alt 4R2 and FWO, 1979 was a year in which there were 96 dry days for Alts 4R and 4R2 and 89 dry days for FWO that has the possibility of producing a successful nest (**Table C.2.2-3**). 1979 is also a year that is between years that did not reach 60 dry days during the nesting season, thus three consecutive years of nesting may not occur. 1984 is another year where Alts 4R and 4R2 do reach 60 dry days during the nesting season and in 2000, Alts 4R, 4R2 and FWO have a combined number of dry days greater than 60 during the nesting season. **Table C.2.2-3** shows that in the southern sub population A (A-2), while Alts 4R and 4R2 perform worse than FWO with more years and more consecutive years where there are less than 60

dry days during the nesting season, the breakdown of the days show that in 1979, there are 60 dry days during the nesting season as well as in 2000. **Table C.2.2-4** shows no difference between Alt 4R, Alt 4R2 and FWO in sub populations B and C, respectively. **Table C.2.2-5** shows that while Alts 4R and 4R2 perform slightly worse than FWO for CSSS sub population D, 1966 was a year in which there were 70 dry days for Alt 4R, 71 dry days for Alt 4R2 and only 48 dry days for FWO with Alts 4R and 4R2 having the possibility of producing a successful nest. A similar scenario was seen in 1986 where there were 67 dry days for Alt 4R, 68 dry days for Alt 4R2 and only 51 dry days for FWO. 1972, 1987, 1991, 1996 and 2000 were all years where Alts 4R, 4R2 and FWO have a combined number of dry days greater than 60 during the nesting season. **Table C.2.2-5** shows while that Alts 4R and 4R2 perform worse than FWO in the northern CSSS sub population E (E-1), there are a few years such as 1969, 1980 and 1984 where the alternatives do not meet the 60 consecutive dry day target, they do have at least 60 dry days during the nesting season and there are not three consecutive years where they do not reach 60 consecutive dry days during the nesting season. **Table C.2.2-6** shows while that Alts 4R and 4R2 perform worse than FWO in the southern CSSS sub population E (E-2), there are a few years such as 1972, 2000 and 2003 where the alternatives do not meet the 60 consecutive dry day target, but they do have at least 60 dry days during the nesting season. **Table C.2.2-6** shows that Alts 4R and 4R2 perform better than the FWO in CSSS sub population F and that there are a few years such as 1980 and 1986 where the alternatives do not meet the 60 consecutive dry day target, but they do have at least 60 dry days during the nesting season.

Table C.2.2-3. Total number of consecutive dry days during March 1 – July 15 for the northern CSSS sub population A-1 (left) and the southern CSSS subpopulation A-2 (right). Cells that are green have 60 or greater dry days during the nesting season. Cells that are yellow do not have 60 or more consecutive dry days during the nesting season, but do have a total of 60 or more dry days during the nesting season. Cells that are red do not have 60 dry days during the nesting season.

Sub Pop A-1	Alt 4R	Alt 4R2	FWO
Year	# consecu-tive days	# consecutive days	# consecutive days
1965	69, 1, 17	69, 1, 17	69, 1, 17
1966	14, 41	14, 41	14, 41
1967	104	104	89
1968	79	80	3, 3, 63
1969	1, 6, 31, 16	1, 6, 31, 16	3, 28, 14
1970	47	47	46
1971	137	137	137
1972	14, 43	14, 43	8, 3, 35
1973	117	117	13, 94
1974	112	112	112
1975	112	112	112
1976	83, 4	83, 4	83, 2
1977	112, 22	112, 22	106, 22
1978	2, 55	2, 55	54
1979	52, 3, 9, 29, 3	52, 3, 9, 29, 3	51, 2, 8, 8, 6, 13, 1
1980	11	11	11
1981	135	135	135
1982	87	87	87
1983	31	31	31
1984	6, 9, 1, 47, 25	6, 9, 1, 47, 25	37, 22
1985	135, 1	135, 1	135
1986	1, 2, 1, 69	1, 2, 2, 70	1, 67
1987	14, 51	14, 51	15, 51
1988	86, 2	85, 2	12, 61, 1
1989	123, 11	123, 11	122, 9
1990	112, 1	112, 1	101, 10
1991	80	80	80
1992	102	102	93
1993	79	79	77
1994	54	54	2, 49
1995	13, 1, 4	13, 1, 3	5, 2, 1
1996	9, 72	9, 72	2, 1, 68
1997	23, 10, 4	23, 10, 4	13, 1
1998	3, 75	3, 75	3, 75
1999	62	62	63
2000	44, 58	44, 58	38, 43, 10
2001	113	113	112
2002	95	95	89
2003	61, 24	61, 24	61, 23
2004	121	122	12, 92
2005	98, 1	98, 1	98, 1

Sub Pop A-2	Alt 4R	Alt 4R2	FWO
Year	# consecutive days	# consecutive days	# consecutive days
1965	103	103	109
1966	63, 1, 2	63, 1, 2	70
1967	3, 100	3, 100	2, 96
1968	58	58	1, 73
1969	4, 44	4, 44	8, 46
1970	0	0	0
1971	137	137	137
1972	76	76	76
1973	119, 1	119, 1	120, 1
1974	117	117	117
1975	89	89	89
1976	83, 3	83, 3	83, 2
1977	137	137	137
1978	4, 53	3, 53	9, 97
1979	46, 1, 8, 5	46, 1, 8, 5	74, 8
1980	0	0	15, 21, 37, 5
1981	137	137	137
1982	87	87	87
1983	0	0	0
1984	73	73	93
1985	137	137	137
1986	57	57	103
1987	5, 82	5, 81	5, 82
1988	84	84	86
1989	137	137	137
1990	99, 4, 2	99, 4, 2	99, 4, 2
1991	80	80	80
1992	6, 69	5, 68	90
1993	0	0	12
1994	55, 3	52, 1	76, 1
1995	0	0	0
1996	3, 37, 1	3, 37, 1	65, 8
1997	13, 83	13, 83	13, 82
1998	6	5	8
1999	70	70	88
2000	22, 45, 9	22, 45, 9	32, 48, 10, 1
2001	116, 1	116, 1	116, 1
2002	90	89	88
2003	61, 24	61, 24	89
2004	118	118	127
2005	98	98	98

Table C.2.2-4. Total number of consecutive dry days during March 1 – July 15 for the CSSS sub population B (left) and sub population C (right). Cells that are green have 60 or greater dry days during the nesting season. Cells that are red do not have 60 dry days during the nesting season.

Sub Pop B	Alt 4R	Alt 4R2	FWO
Year	# consecutive days	# consecutive days	# consecutive days
1965	137	137	137
1966	94	94	94
1967	107	107	107
1968	71	71	71
1969	91	91	91
1970	111, 1	111, 1	113, 1
1971	137	137	137
1972	107	107	107
1973	121	121	121
1974	137	137	137
1975	97, 3, 4	97, 3, 4	107
1976	101	101	101
1977	137	137	137
1978	84	84	84
1979	137	137	137
1980	137	137	137
1981	137	137	137
1982	88	88	88
1983	53	53	53
1984	134	134	134
1985	137	137	137
1986	118, 17	118, 17	137
1987	137	137	137
1988	99, 2	99, 2	99, 2
1989	137	137	137
1990	137	137	137
1991	110	110	110
1992	115	115	115
1993	97, 18, 17	97, 18, 17	135
1994	137	137	137
1995	65	65	71
1996	100	100	100
1997	93	93	93
1998	101	101	102
1999	110	110	112
2000	137	137	137
2001	137	137	137
2002	109	109	109
2003	103, 4, 13	103, 4, 13	103, 4, 13
2004	137	137	137
2005	114, 1, 5	114, 1, 5	114, 1, 5

Sub Pop C	Alt 4R	Alt 4R2	FWO
Year	# consecutive days	# consecutive days	# consecutive days
1965	137	137	137
1966	94	94	94
1967	105	105	105
1968	71	71	71
1969	93	93	93
1970	83	84	86, 7, 2
1971	137	137	137
1972	109, 2	109, 3	109
1973	125, 3, 4	125, 3, 4	125, 3, 4
1974	126, 1	126, 1	125
1975	116	116	116
1976	94, 5	94, 5	94, 5
1977	70, 33, 26	70, 33, 26	70, 33, 27
1978	2, 5, 123	2, 5, 123	8, 124
1979	68, 56	68, 56	68, 55
1980	1, 135	1, 135	137
1981	137	137	137
1982	90, 24	90, 24	90, 24
1983	10, 1, 1, 1	11, 2, 4	32
1984	44, 77	44, 77	44, 77
1985	124, 4, 4	124, 4, 4	124, 9
1986	112, 1, 1, 6	112, 1, 1, 6	112, 4
1987	137	137	137
1988	99	99	99
1989	137	137	137
1990	137	137	123, 13
1991	82	82	82
1992	114	114	114
1993	92, 16, 2, 1	92, 1, 17, 7	92, 1, 17, 7
1994	1, 92, 30	1, 92, 1, 31	1, 93, 12, 12
1995	3, 12	5, 12	5, 2, 20
1996	86, 6	86, 6	86, 7
1997	82, 10	82, 10	82, 10
1998	81	82	92
1999	111, 7, 3	111, 7, 3	111, 7, 4
2000	137	137	137
2001	137	137	137
2002	106	106	106
2003	109, 3, 17	109, 3, 18	109, 4, 2, 18
2004	137	137	137
2005	101, 8	101, 8	101, 8

Table C.2.2-5. Total number of consecutive dry days during March 1 – July 15 for the CSSS sub population D (left) and southern sub population E (E-1, right). Cells that are green have 60 or greater dry days during the nesting season. Cells that are yellow do not have 60 or more consecutive dry days during the nesting season, but do have a total of 60 or more dry days during the nesting season. Cells that are red do not have 60 dry days during the nesting season.

Sub Pop D	Alt 4R	Alt 4R2	FWO
Year	# consecutive days	# consecutive days	# consecutive days
1965	111, 5, 14	111, 5, 14	111, 6, 18
1966	3, 24, 27, 16	3, 25, 27, 16	9, 25, 14
1967	102	102	102
1968	69	69	69
1969	26	27, 1	1, 1, 28, 1
1970	31	34	44
1971	118, 3, 2, 4	118, 4, 2, 4	119, 9, 7
1972	31, 3, 12, 16	31, 3, 12, 16	31, 3, 12, 17
1973	114	114	114
1974	123	123	110
1975	90, 21	90, 10, 10	90, 7, 2, 10
1976	75, 5, 2	75, 4, 2	75, 5, 2
1977	68, 1, 3, 8	68, 1, 3, 8	68, 1, 3, 8
1978	19	19	21, 1
1979	55	55	55
1980	16, 22, 1	17, 22, 1	20, 29, 6
1981	119	119	119
1982	54, 4	54, 4	54, 6
1983	0	0	14
1984	22, 63	22, 63	86
1985	72, 3, 38	72, 3, 38	117
1986	19, 48	20, 49	5, 46
1987	5, 4, 48, 51	5, 6, 49, 51	6, 13, 47, 47
1988	91	91	91
1989	126, 7	126, 7	137
1990	87, 29	87, 8, 20	87, 4, 16
1991	2, 45, 29	2, 45, 29	2, 44, 29
1992	19, 75	20, 75	22, 75
1993	19	22	2, 8, 31
1994	12, 4	13, 4	1, 9
1995	0	0	0
1996	45, 23	46, 23	2, 47, 23
1997	93	93	93
1998	14, 27, 3	15, 27, 4	31, 29, 5
1999	84	85	2, 104
2000	42, 54, 1	43, 54, 1	100, 2
2001	100, 29, 4	100, 29, 1	100, 29, 4
2002	89	90	91
2003	26, 18, 6, 1	26, 18, 6, 1	26, 19, 7, 5
2004	133	135	137
2005	101	101	101

Sub Pop E-1	Alt 4R	Alt 4R2	FWO
Year	# consecutive days	# consecutive days	# consecutive days
1965	137	137	137
1966	93	94	94
1967	104	104	104
1968	71	71	71
1969	14, 48, 11, 1	15, 48, 12, 1	92
1970	2	3	19
1971	137	137	137
1972	76, 1	76, 1	80, 4
1973	124	124	124
1974	102	102	102
1975	113, 1	113, 1	113, 1
1976	94	94	94
1977	71, 34, 2, 3, 6	71, 34, 2, 3, 6	71, 34, 3, 6, 6
1978	87	87	90
1979	68, 7	68, 5	68, 13, 3, 3, 1
1980	15, 30, 41, 4	14, 29, 40, 4	1, 127
1981	137	137	137
1982	87	87	87
1983	0	0	0
1984	32, 5, 35, 8, 4	32, 5, 35, 8, 2, 1	44, 38, 9, 7
1985	125	125	125
1986	25, 67	25, 67	26, 70
1987	5, 127	5, 127	137
1988	99	99	99
1989	137	137	137
1990	125, 1, 2, 1	125, 1, 1	125, 1, 1
1991	80	80	80
1992	113	113	114
1993	21	26	58, 15
1994	1, 78, 8, 8	80, 8, 8	90, 8, 9
1995	0	0	0
1996	1, 72, 10	2, 72, 10	100
1997	79	79	79, 1
1998	56	57	62
1999	88	89	110
2000	44, 89	44, 89	137
2001	137	137	137
2002	105	105	105
2003	89	89, 6	90, 9, 3
2004	137	137	137
2005	101	101	101

Table C.2.2-6. Total number of consecutive dry days during March 1 – July 15 for the southern CSSS sub population E (E-2, left) and sub population F (right). Cells that are green have 60 or greater dry days during the nesting season. Cells that are yellow do not have 60 or more consecutive dry days during the nesting season, but do have a total of 60 or more dry days during the nesting season. Cells that are red do not have 60 dry days during the nesting season.

Sub Pop E-2	Alt 4R	Alt 4R2	FWO
Year	# consecutive days	# consecutive days	# consecutive days
1965	137	137	137
1966	2, 70	3, 70	81
1967	104	104	104
1968	70	70	71
1969	2, 3, 29	2, 3, 1, 29	1, 7, 9, 32
1970	0	0	0
1971	137	137	137
1972	24, 1, 36	24, 1, 36	35, 1, 40
1973	3, 1, 75	3, 1, 75	4, 2, 78
1974	106	106	106
1975	90	90	90
1976	88	88	88
1977	71, 33, 2, 6, 6	71, 33, 2, 6, 6	71, 33, 2, 7, 6
1978	71	71	74
1979	51	51	55, 2, 1
1980	1, 18	18	24, 41, 2, 40, 5
1981	56, 123	2, 124	131
1982	87	87	87
1983	0	0	0
1984	12, 45	2, 9, 45	22, 58
1985	124	124	124
1986	25, 71	25, 71	103
1987	5, 98	5, 98	5, 103
1988	98	98	99
1989	137	137	137
1990	117	117	117
1991	80	80	80
1992	23, 72	23, 72	97
1993	17, 3	17, 3	64, 1, 1
1994	33, 5, 18	33, 5, 17	68
1995	0	0	0
1996	2, 13, 44	2, 13, 44	9, 72, 1
1997	79	79	79
1998	35	35	40
1999	83	84	100
2000	36, 42	36, 43	44, 46, 1, 2
2001	137	137	137
2002	90, 4	90, 4	91, 5
2003	16, 8, 21, 19	16, 8, 21, 19	26, 23, 19
2004	135	135	137
2005	98	98	98

Sub Pop F	Alt 4R	Alt 4R2	FWO
Year	# consecutive days	# consecutive days	# consecutive days
1965	137	137	137
1966	94	94	86
1967	104	104	104
1968	71	71	71
1969	95	95	95
1970	0	0	14
1971	137	137	137
1972	78	78	78
1973	131	131	131
1974	134, 2	134, 2	127, 5, 1
1975	122	122	123
1976	94	94	95, 1
1977	94, 7, 33	102, 33	102, 34
1978	9, 110	9, 110	123
1979	55	55	55, 1
1980	10, 57, 2	9, 59	1, 33, 2, 65
1981	137	137	137
1982	88	88	88
1983	0	0	0
1984	86	86	87
1985	125, 3	125, 3	125, 7
1986	25, 48	25, 48	24, 30, 2
1987	137	137	30, 106
1988	98	98	99
1989	137	137	137
1990	137	137	137
1991	80	80	80
1992	104	104	104
1993	0	0	2
1994	73, 4, 1, 25	75, 33	0
1995	0	0	0
1996	90	90	98
1997	93	93	93, 2
1998	55	57	52
1999	77, 8, 5	77, 8, 5	80, 8, 6
2000	137	137	137
2001	137	137	137
2002	106	106	106
2003	89	89	100
2004	137	137	137
2005	101	101	101

ET-1 (NP-205, CSSS-A): Strive to reach a water level of less than or equal to 7.0 feet, NGVD at NP-205 by December 31 for nesting season water levels to reach 6.0 feet, NGVD by mid-March.

As illustrated by **Figure C.2.2-20** ET-1 would have been achieved in 97 percent of years (39 of 40 years) in Alternatives 4R and 4R2 and the FWO.

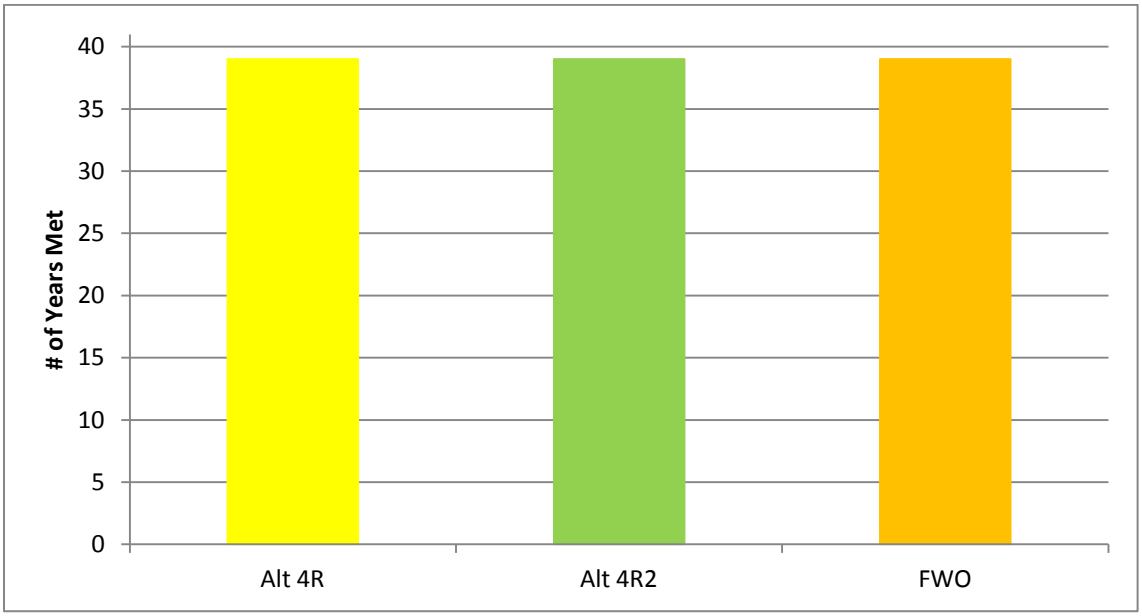


Figure C.2.2-20. ET-1 Number of years over the POR where water levels were at or below 7.0 ft at NP-205 by December 31 for nesting season water levels to reach 6.0 feet by mid-March for the four alternatives and the No Action Alternative (FWO).

ET-2 (CSSS): Strive to maintain a hydroperiod between 90 and 210 days (three to seven months) per year throughout sparrow habitat to maintain marl prairie vegetation.

To maintain suitable habitat for CSSS, the annual hydroperiod (i.e. time above ground surface during wet season) should be between 90 and 210 days. Sparrows prefer to nest in short-stature clumped grasses such as *Muhlenbergia*, *Schizachryium*, and *Schoenus.* Habitat can tolerate infrequent years of up to 240 days and below 90 days. In order to compare alternatives for hydroperiod throughout CSSS habitat, ETs were used. RSM-GL results for each CSSS subpopulation are depicted in **Table C.2.2-7** and **Figure C.2.2-21** through **Figure C.2.2-29**. **Table C.2.2-7** and **Figure C.2.2-21** compares Alternatives 4R and 4R2 to the FWO to maintain a hydroperiod between 90 and 210 days (three to seven months) per year throughout sparrow habitat to maintain marl prairie vegetation. Alternatives 4R and 4R2 performed better than the FWO in the Northern subpopulation A (10 years met compared to 6 in FWO; **Figure C.2.2-22**) and show a minor beneficial effect. Alternatives 4R and 4R2 perform slightly worse than the FWO for southern subpopulation A (8 years met compared to 9 in FWO; **Figure C.2.2-23**) and subpopulation B (24 years met compared to 25 in FWO; **Figure C.2.2-24**) and show a minor adverse effect. Alternatives 4R and 4R2 perform worse than the FWO for subpopulation C (16 years met for 4R and 15 years met for 4R2 compared to 19 for FWO; **Figure C.2.2-25**), subpopulation D (12 years met for 4R and 13 years met for 4R2 compared to 16 years for FWO; **Figure C.2.2-26**), northern subpopulation E (17 years met for 4R and 18 years met for 4R2 compared to 24 for FWO; **Figure C.2.2-27**), southern subpopulation E (10 years compared to 12 years for FWO; **Figure C.2.2-28**) and subpopulation F (15 years met for 4R and 14 years met for 4R2 compared to 18 for FWO; **Figure C.2.2-29**) and show a major

adverse effect. **Figure C.2.2-30** through **Figure C.2.2-37** show the hydroperiod in each sub population and the target number of days within the hydroperiod. In looking at the amount of time the hydroperiod is in the target range of 90 – 210 days below 7.0 ft over the entire POR, **Figure C.2.2-30** shows that Alternatives 4R and 4R2 spend more time within the target range over the POR than FWO for sub population A-1, the northern sub population A population. In the southern portion of sub population A (A-2) FWO spends slightly more time within the target range than Alternatives 4R and 4 R2 (**Figure C.2.2-31**). In sub populations B and D there is no significant difference between Alternatives 4R, 4R2 and FWO with the amount of time over the POR that is spent within the target range (**Figure C.2.2-32** and **Figure C.2.2-34**). In sub populations C and E-2 (southern sub population E) Alternatives 4R and 4R2 had slightly less time in the target ranges than the FWO during the POR (**Figure C.2.2-33** and **Figure C.2.2-36**). Sub populations E-2 (southern sub population E) and F show the greatest difference between Alternatives 4R and 4R2 and FWO with Alts 4R and 4R2 spending a greater amount of the POR outside of the target range (**Figure C.2.2-35** and **Figure C.2.2-37**).

Table C.2.2-7. Number of years out of the period of record that the hydroperiod was between 90 and 210 days (three to seven months) each year throughout sparrow habitat in order to maintain marl prairie vegetation.

CSSS Subpopulation	Alt 4R	Alt 4R2	FWO
Northern A (A-1)	10	10	6
Southern A (A-2)	8	8	9
B	24	24	25
C	16	15	19
D	12	13	16
Northern E (E-1)	17	18	24
Southern E (E-2)	10	10	12
F	15	14	18

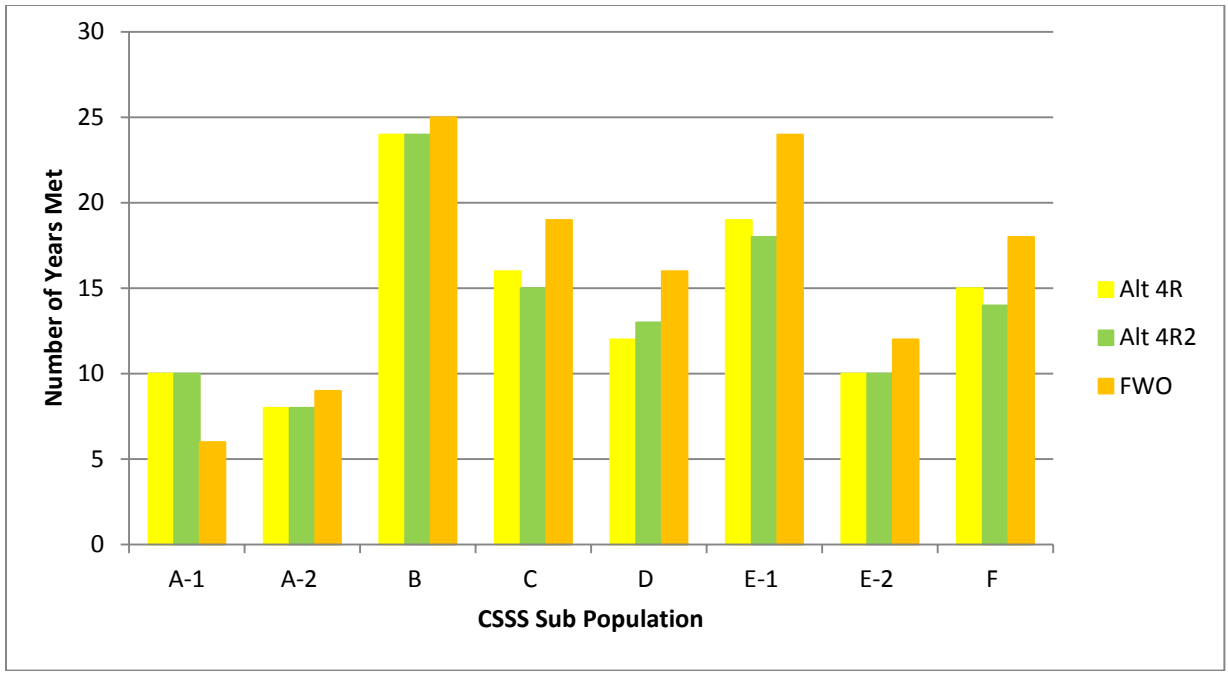


Figure C.2.2-21. Number of years out of the period of record that the hydroperiod was between 90 and 210 days (three to seven months) each year throughout sparrow habitat in order to maintain marl prairie vegetation.

Figure C.2.2-22. Northern subpopulation A hydroperiod.

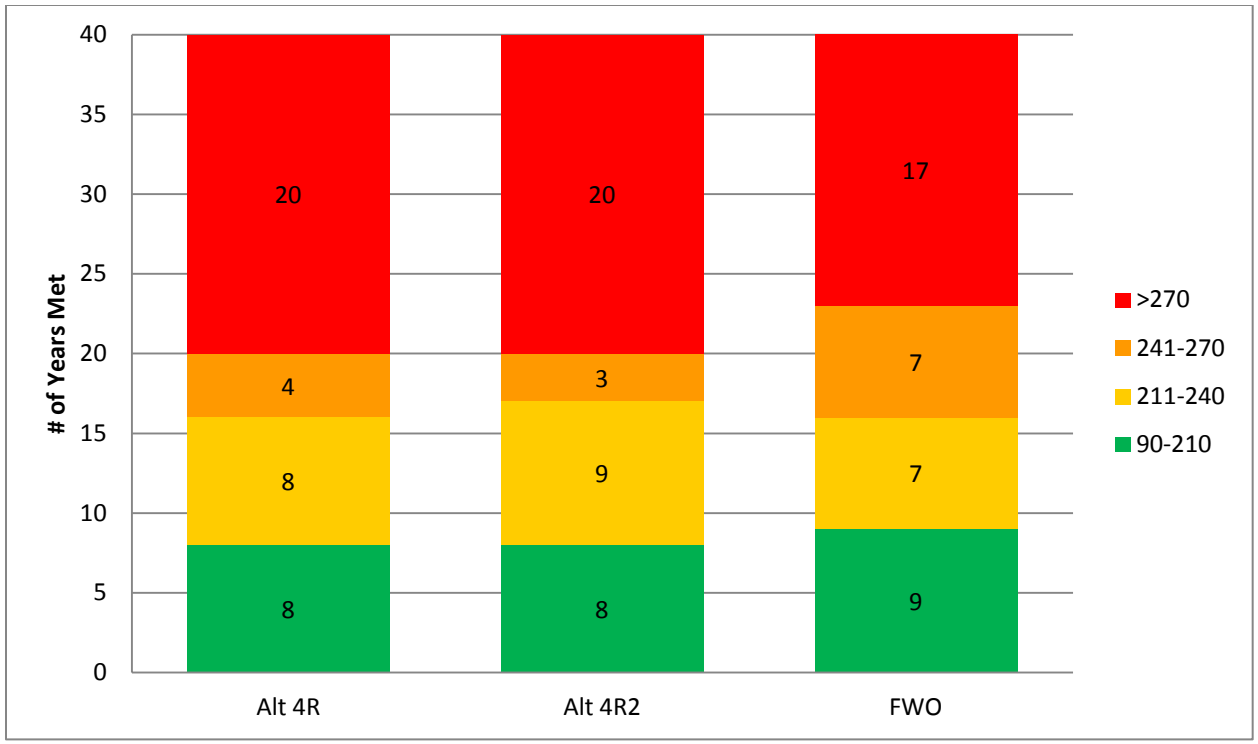


Figure C.2.2-23. Southern subpopulation A hydroperiod.

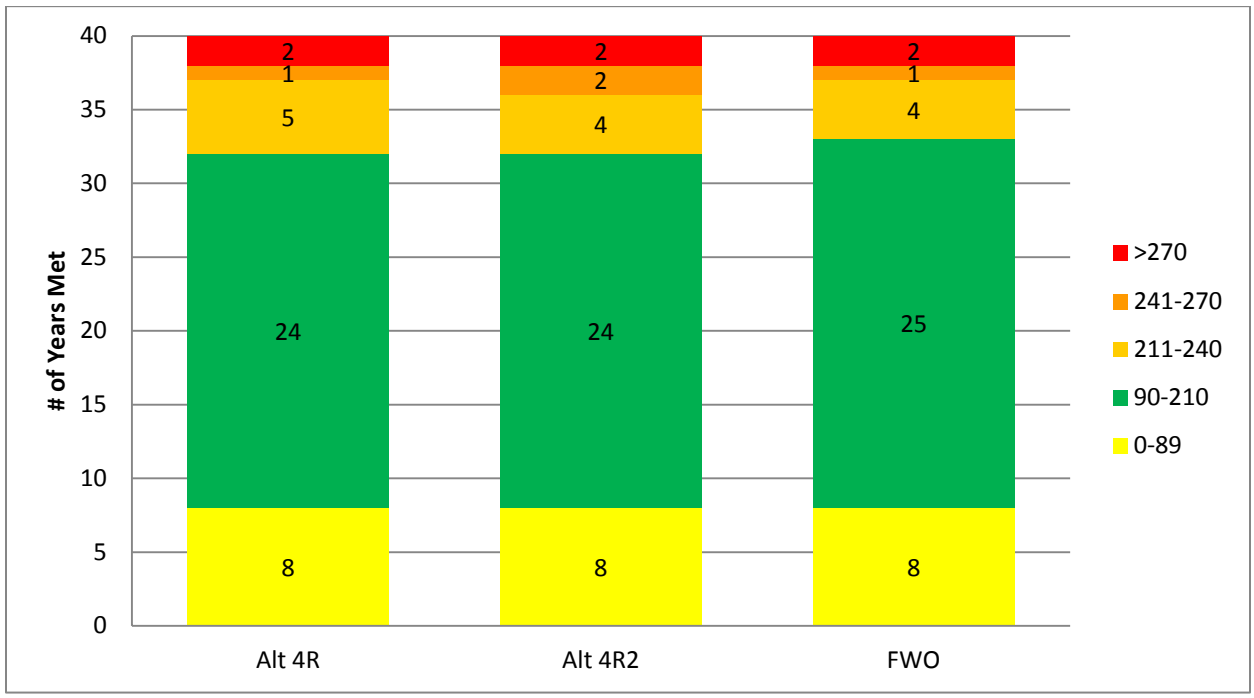


Figure C.2.2-24. Subpopulation B hydroperiod.

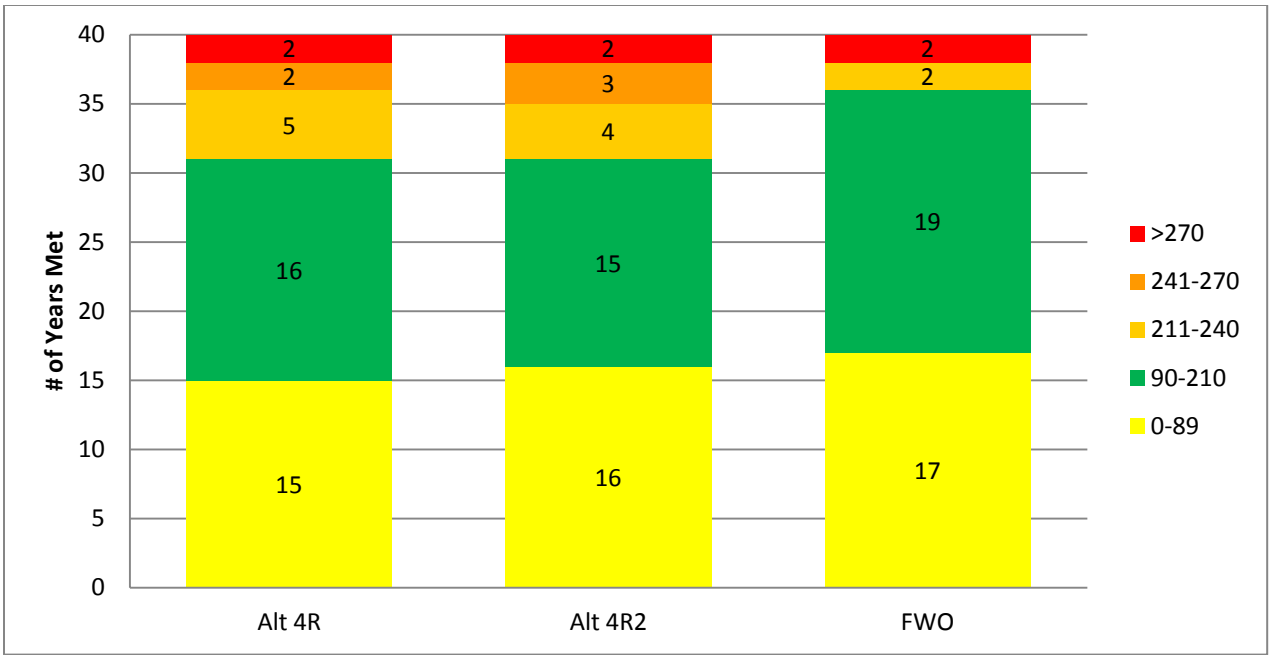


Figure C.2.2-25. Subpopulation C hydroperiod.

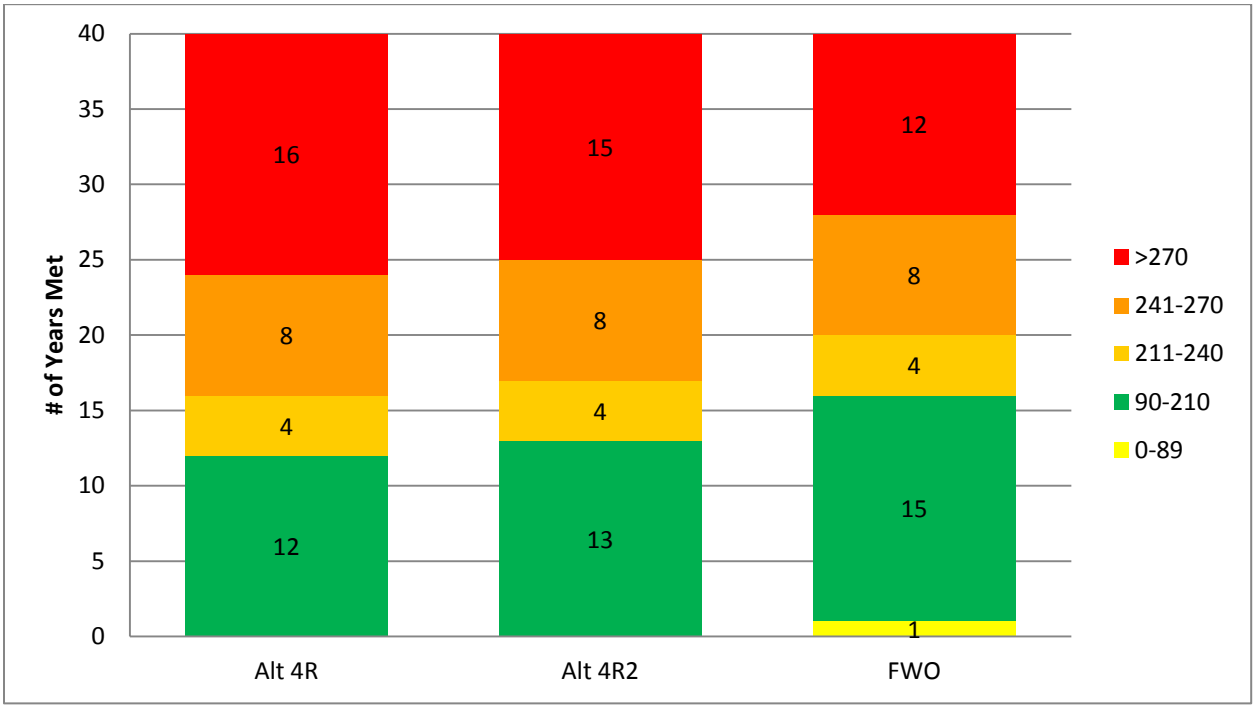


Figure C.2.2-26. Subpopulation D hydroperiod.

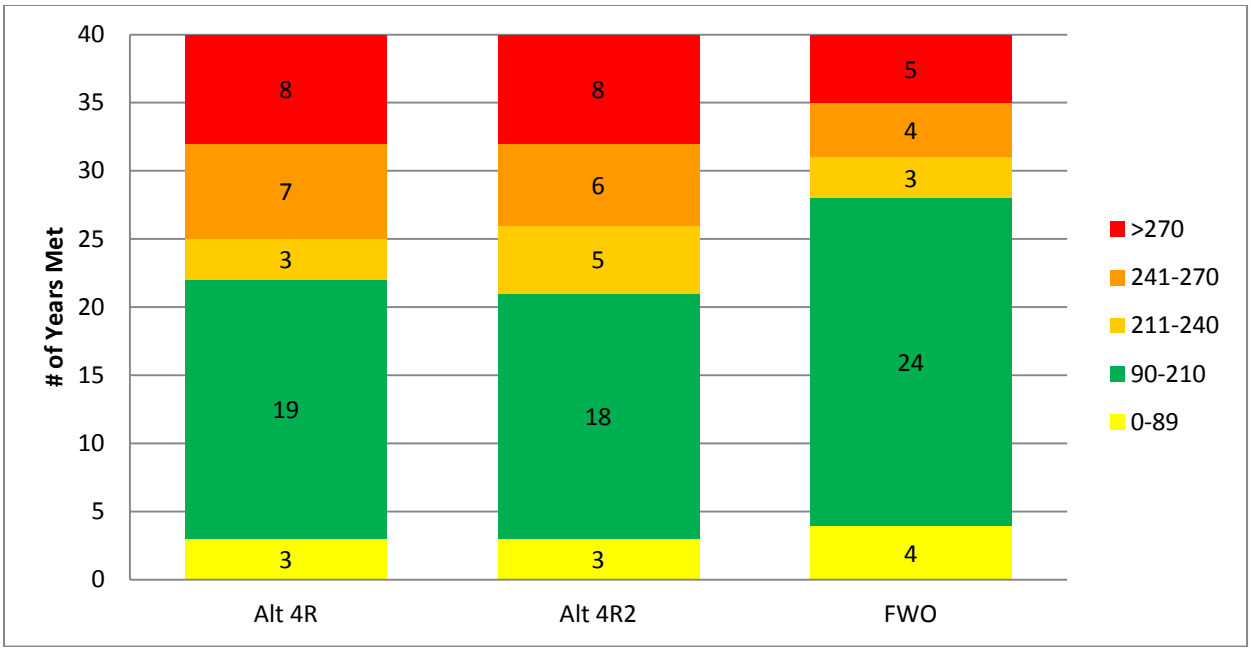


Figure C.2.2-27. Northern subpopulation E hydroperiod.

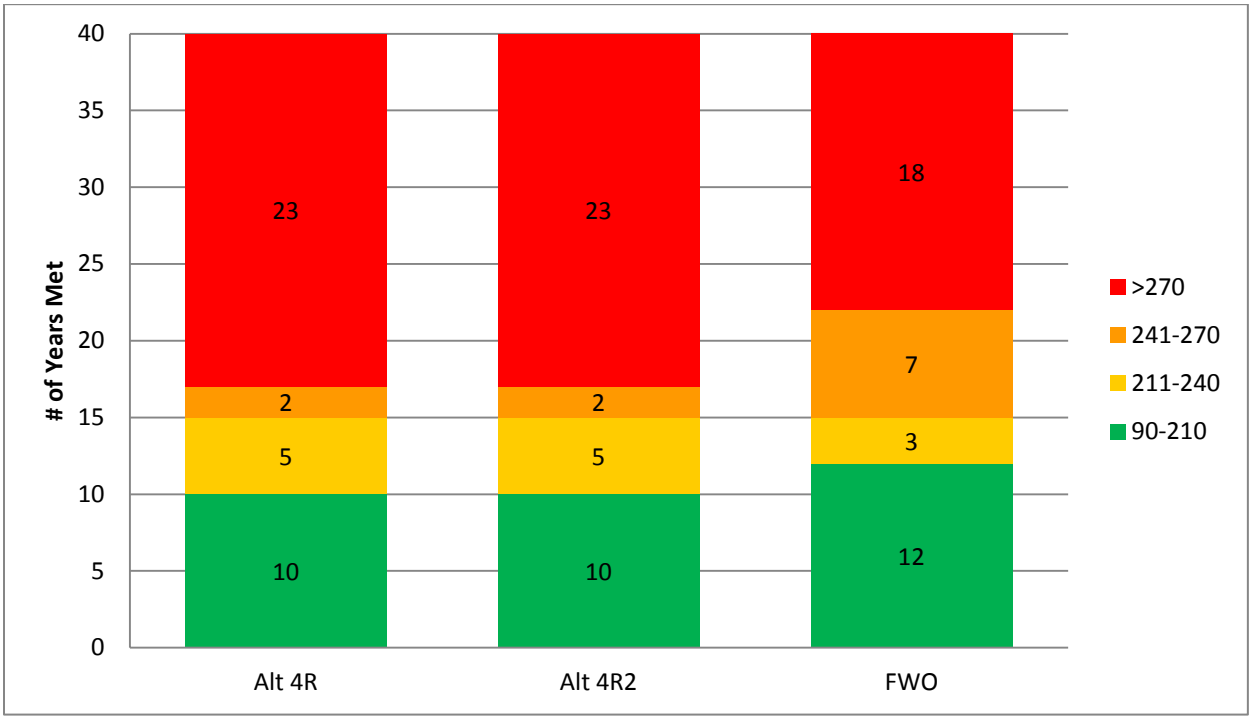


Figure C.2.2-28. Southern subpopulation E hydroperiod.

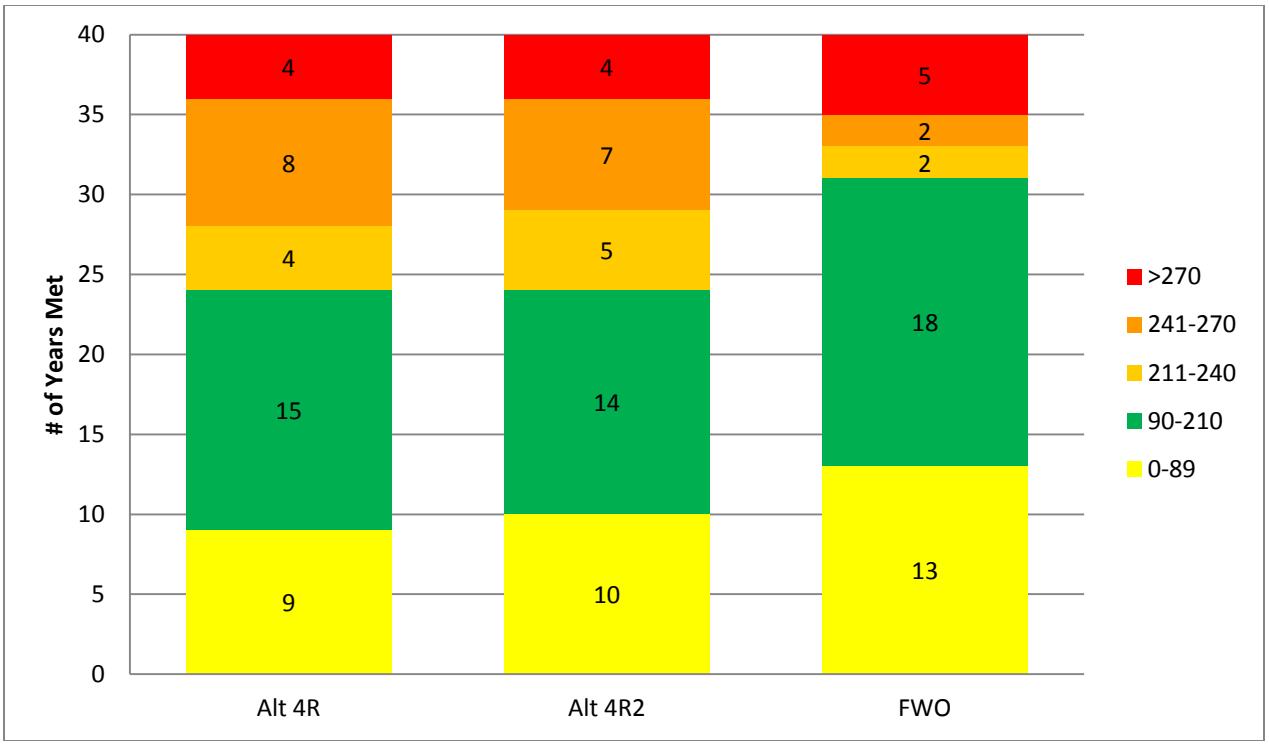


Figure C.2.2-29. Subpopulation F hydroperiod.

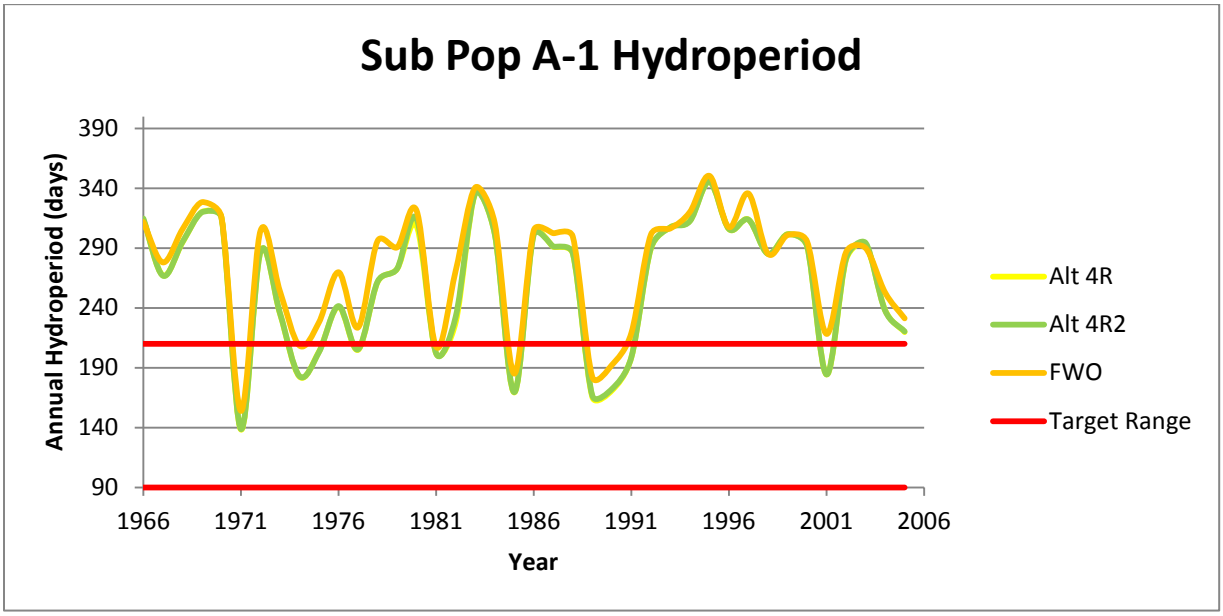


Figure C.2.2-30. Annual hydroperiod for the northern CSSS sub population A over the POR.

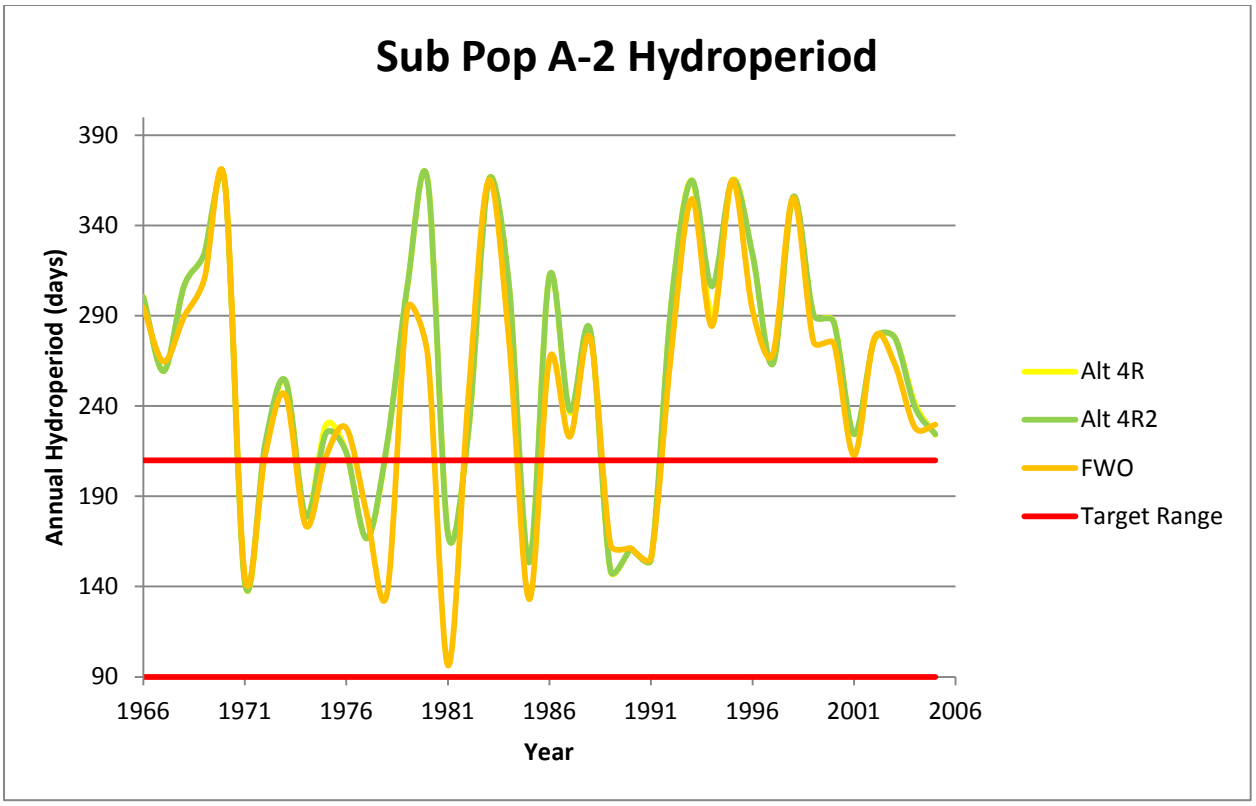


Figure C.2.2-31. Annual hydroperiod for the southern CSSS sub population A over the POR.

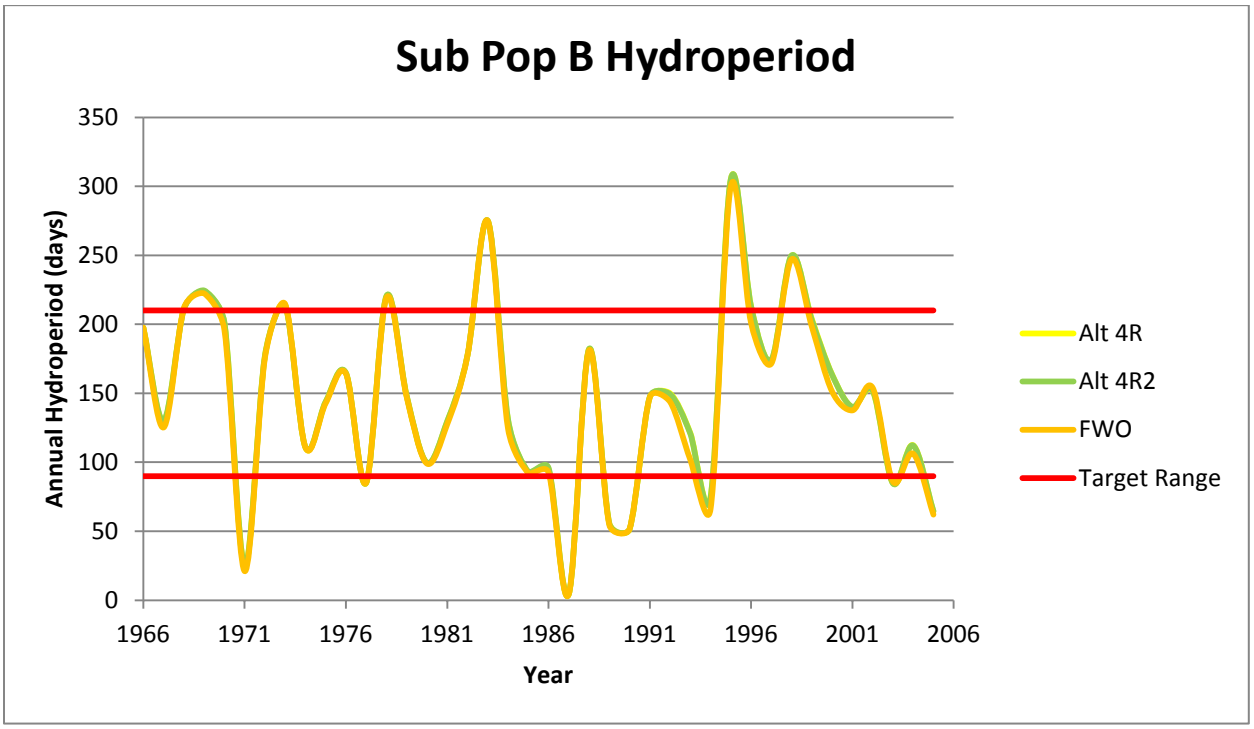


Figure C.2.2-32. Annual hydroperiod for the CSSS sub population B over the POR.

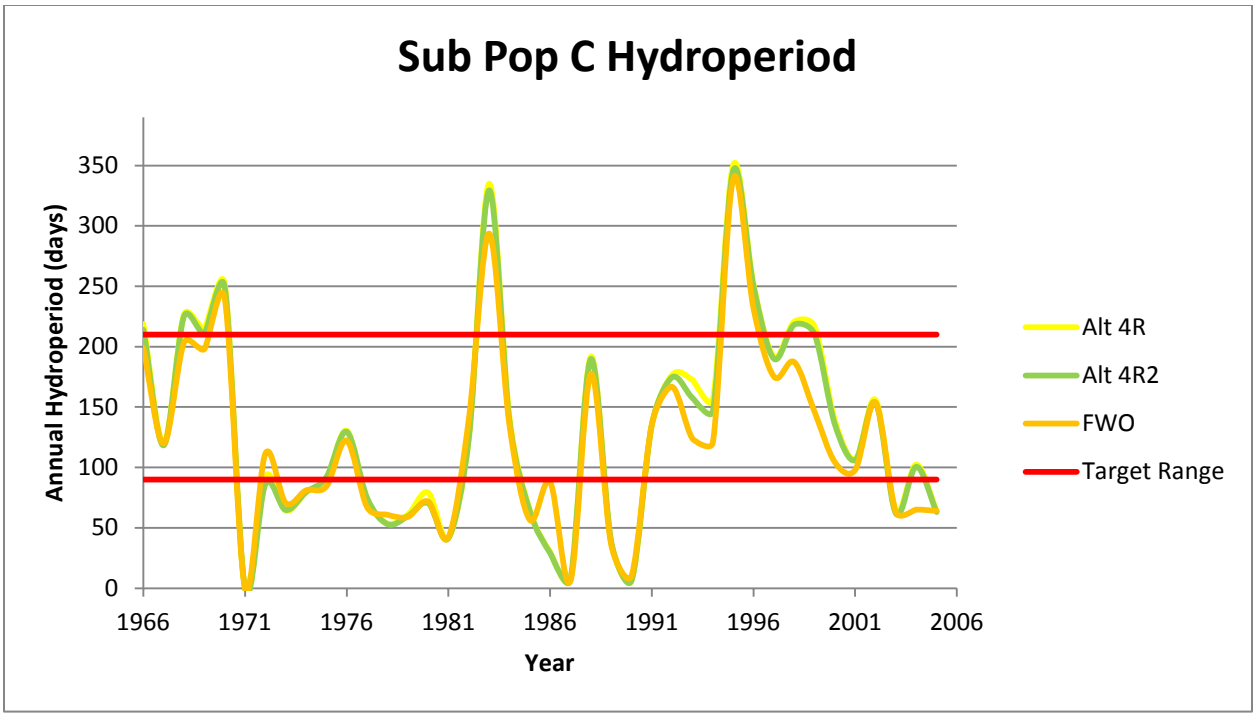


Figure C.2.2-33. Annual hydroperiod for the CSSS sub population C over the POR.

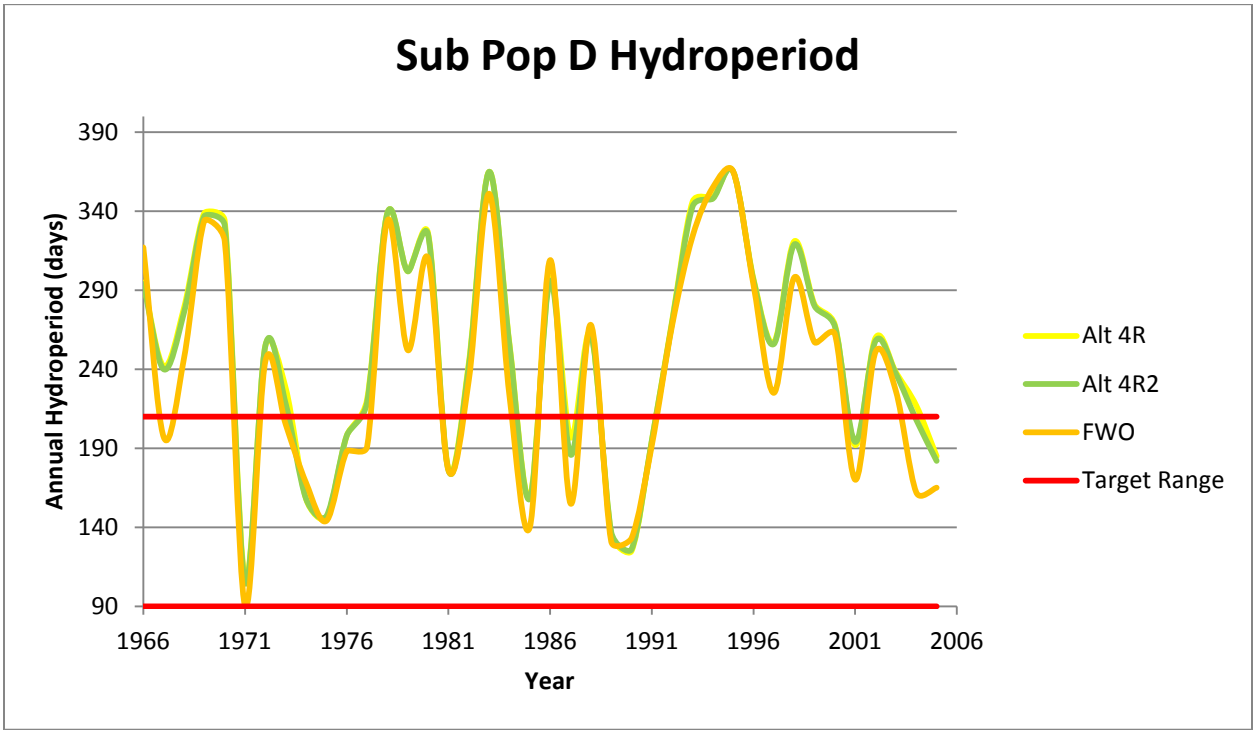


Figure C.2.2-34. Annual hydroperiod for the CSSS sub population D over the POR.

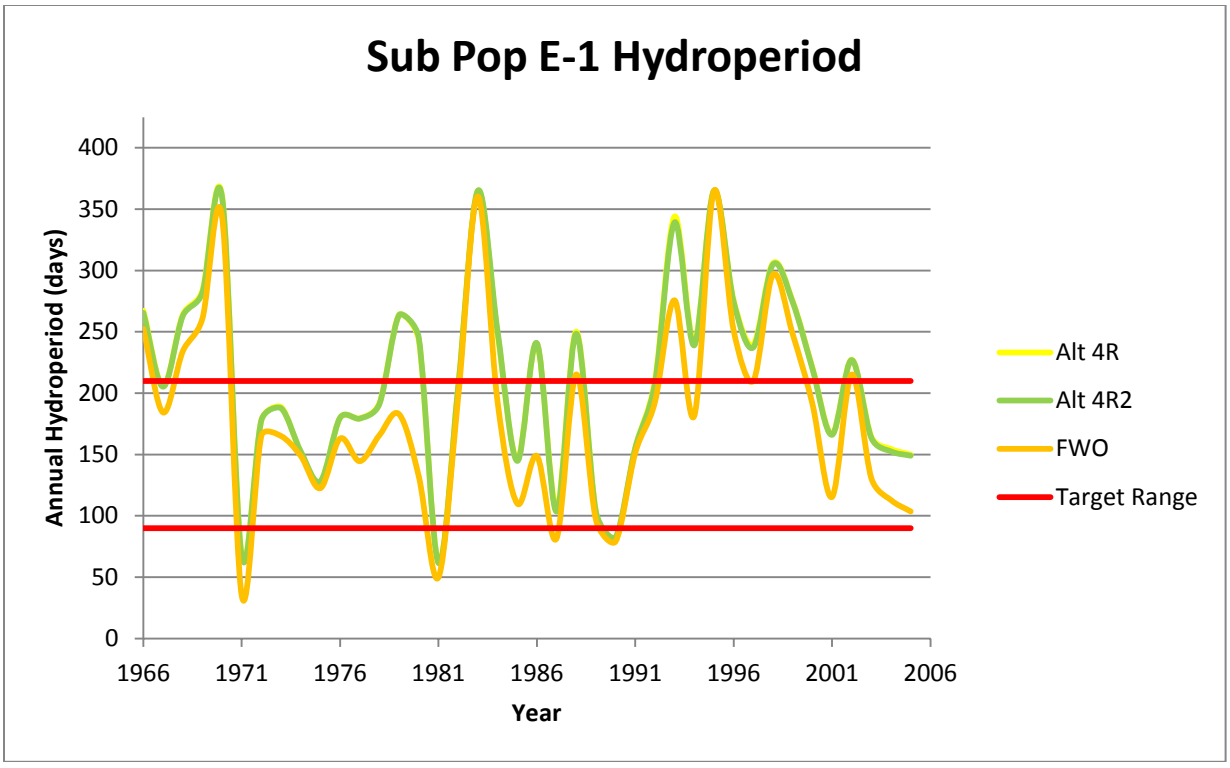


Figure C.2.2-35. Annual hydroperiod for the northern CSSS sub population E over the POR.

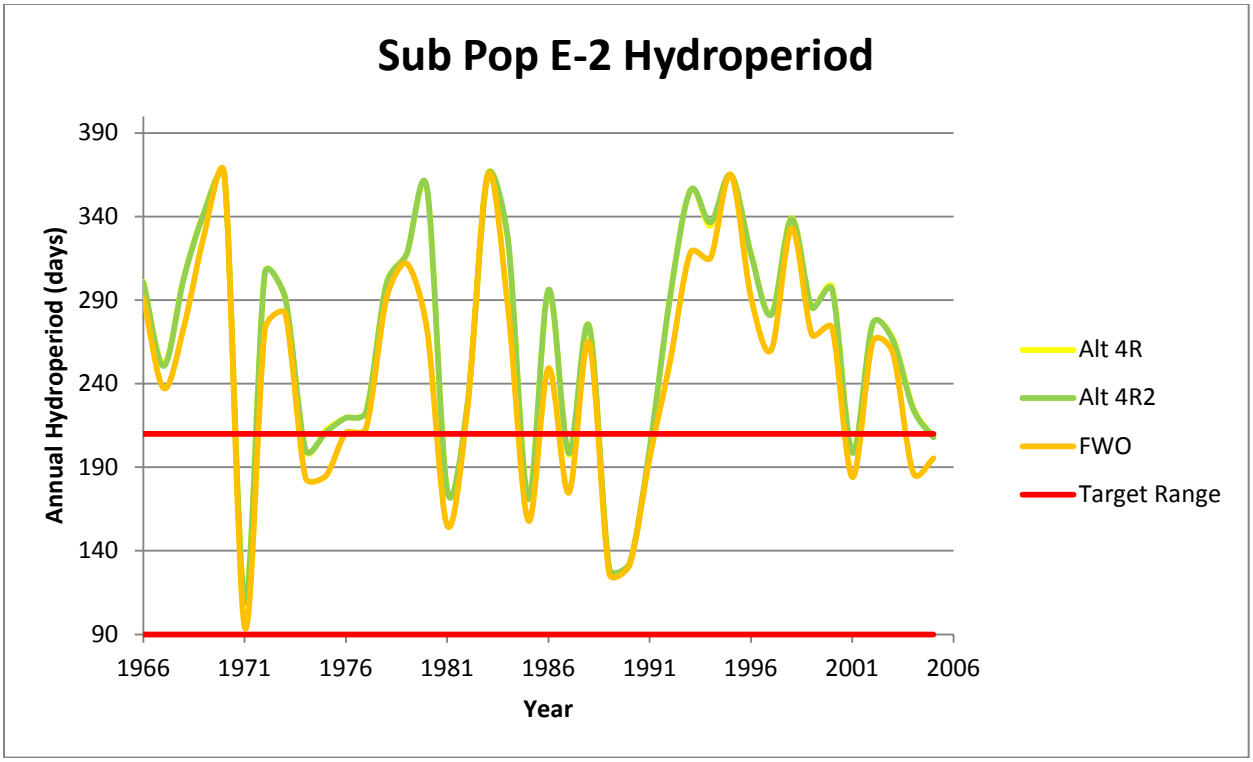


Figure C.2.2-36. Annual hydroperiod for the southern CSSS sub population E over the POR.

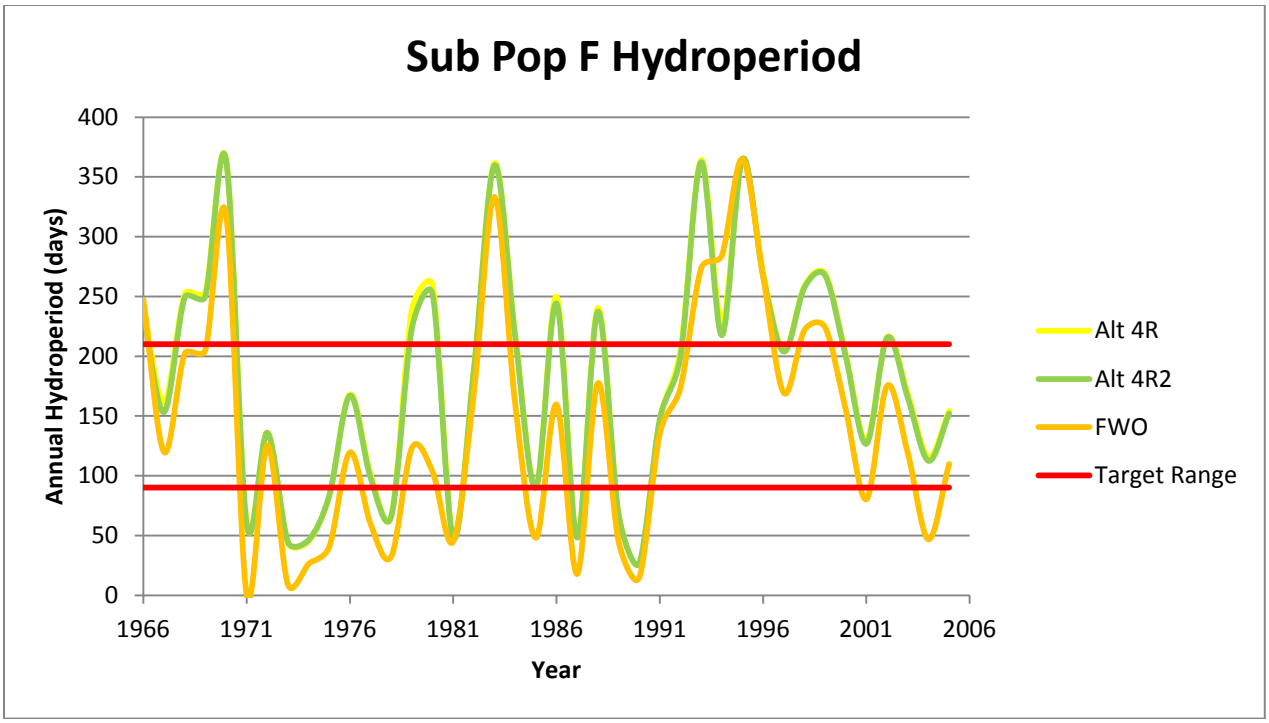


Figure C.2.2-37. Annual hydroperiod for the CSSS sub population F over the POR.

Implementation of Alts 4R and 4R2 has the potential to have a major adverse effect and significant and unavoidable effect on hydroperiods within the marl prairies adjacent to SRS. Modeling indicates an increase in hydroperiod within CSSS-E and southern portions of CSSS-A. However, hydroperiods within northern CSSS-A are slightly reduced as compared with FWO, providing slightly better, but overall, too wet conditions for marl prairie habitat and nesting CSSS. Minor habitat improvements were seen in CSSS-F.

C.2.2.4.3 Wood Stork

Wood storks rely upon short hydroperiod wetlands (i.e. marl prairies) for pre-breeding foraging. Short hydroperiod wetlands would help increase body condition and would allow for wood storks and other wading birds to initiate nesting earlier than they do now (November versus February). This will improve nesting success by reducing potential for nest abandonment, increasing juvenile survival by ensuring prey are available within CFA and allowing juveniles to fledge prior to end of dry season/start of wet season when food availability decreases around nests.

Several models of wading birds were used to assess potential affects to wading birds within the Greater Everglades as a result of implementation of CEPP Alt 4R including: 1) Wood Stork Foraging Probability Index model (SFNRC 2013a) 2) wading bird species distribution (Beerens 2013); and 3) wading bird nesting success (Beerens et al. 2014). ERTP PMs are captured within the Beerens models.

A Wood Stork Foraging Probability Index model (ENP 2013) was used to assess potential affects to wading birds within the Greater Everglades as a result of CEPP implementation. An analysis of wood stork foraging potential was performed to predict improvements to foraging habitat with CEPP implementation (ENP 2013). The Wood Stork Foraging Probability Index (STORKI v. 1.0) was developed to provide rapid simulations of wood stork foraging conditions in response to modeled CERP scenarios (LoGalbo et al. 2012).

Figure C.2.2-38 and **Figure C.2.2-39** indicate that Alt 4R2 provides the greatest benefit within northeastern WCA 3, areas adjacent to the Miami Canal, and throughout ENP relative to the existing conditions. Wood stork foraging suitability notably improves with Alt 4R2 in northern WCA 3A (CEPP zones 3A-MC and 3A NE) and within southern ENP, providing a moderate beneficial effect. Less substantial benefits occur within NW WCA 3A (CEPP zone 3A-NW), and southeast Everglades National Park (CEPP zone ENP-S) relative to the FWO. Benefits generally result from the increased water deliveries to these regions which result in more suitable water depths for wood stork foraging as compared to the FWO. Substantial declines in stork foraging suitability occur within northern Everglades National Park (CEPP Zone ENP-N) with Alt 4R and Alt4R2 relative to future conditions without CEPP, providing moderate adverse effects. The effects of increasing flow deliveries to Everglades National Park through the Blue Shanty Flow-way results in downstream water depths in ENP-N substantially less suitable for wood stork foraging. Less substantial negative impacts to wood stork foraging also occur in central and southern WCA 3A central (CEPP Zones 3A-C and 3A-S) with Alt 4R and Alt4R2 as compared to the FWO.

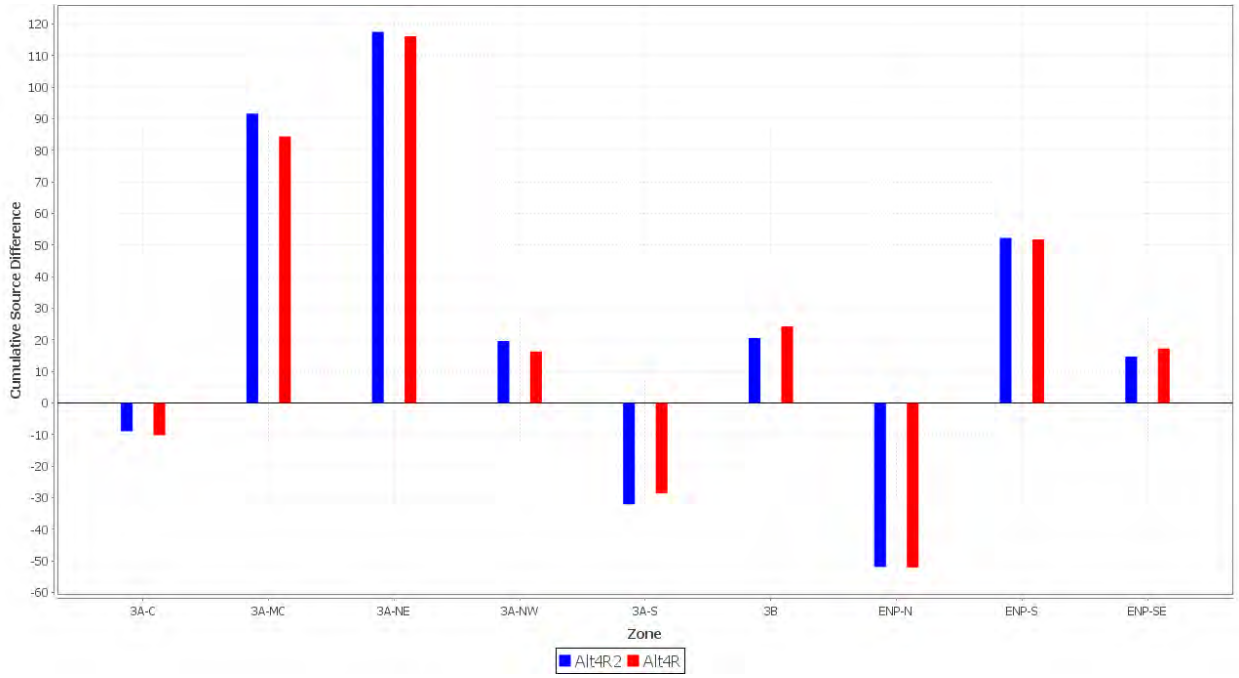


Figure C.2.2-38. Cumulative wood foraging suitability (1965-2005) lift from future without CEPP (FWO) for CEPP recommended plan (ALT4R2) and CEPP alternative (Alt4R) within each CEPP zone. A maximum score of 1327 is possible if FWO has a suitability score of 0.0 every week and the alternative has a suitability score of 1.0 every week of the 41 year hydrologic model runs.

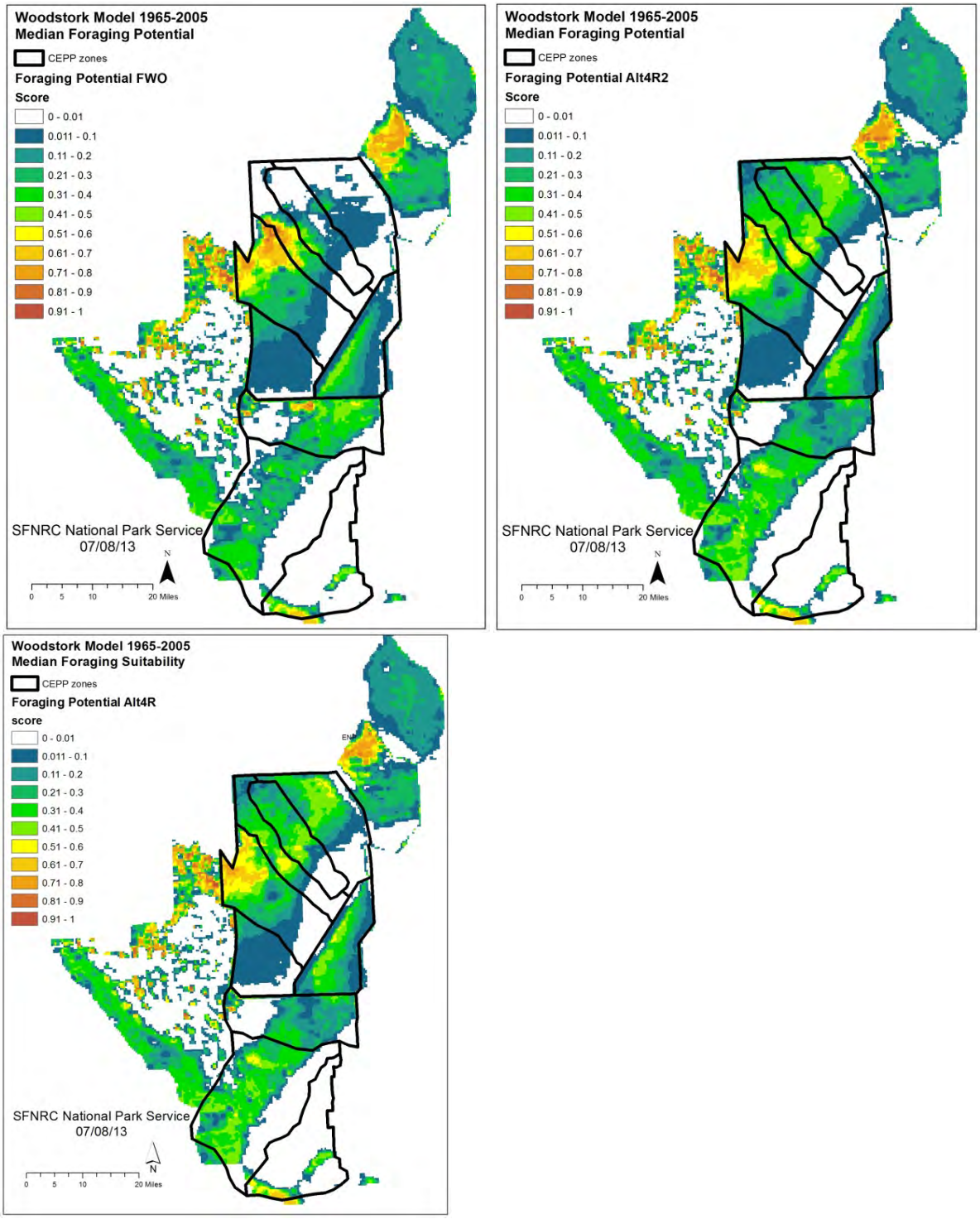


Figure C.2.2-39. Median wood stork foraging potential suitability scores for 1965-2005. Scores vary from 0.0 (not suitable) to 1.0 (optimal foraging). Existing conditions is shown in the left panel and Alt 4R2 in the right panel (SFNRC 2013a).

Wood stork species distribution was modeled by Beerens (2013) in support of the RECOVER Greater Everglades ecological evaluation. The objectives of the spatial foraging conditions model (SFC) are to determine the average hydrological and spatial characteristics of a cell that predict the species-specific

frequency of cell use over the study period. Wood storks generally showed increased numbers in northern WCA 3A, WCA 3B, and southern ENP under Alt 4R and Alt 4R2 compared to the FWO (**Figure C.2.2-40** and **Figure C.2.2-41**).

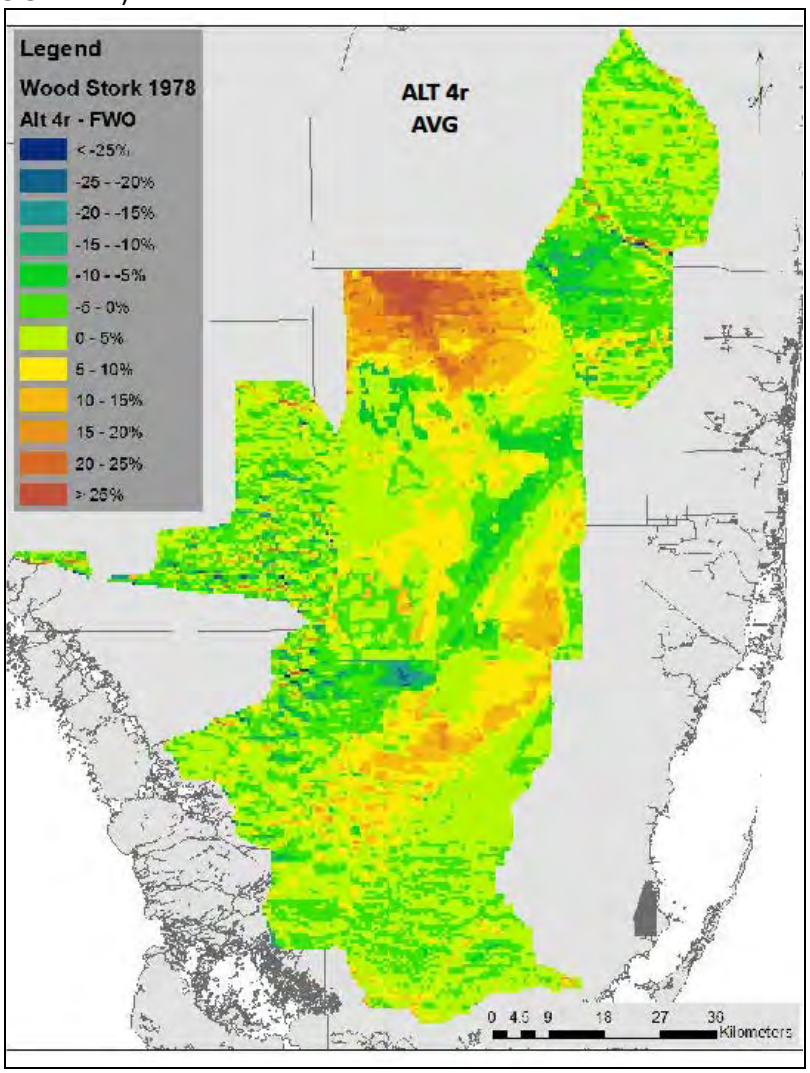


Figure C.2.2-40. CEPP RSM WADEM Spatial Foraging Conditions Model Output for Wood Stork for Alt 4R as compared with FWO for 1978, an average year. (Beerens 2013).

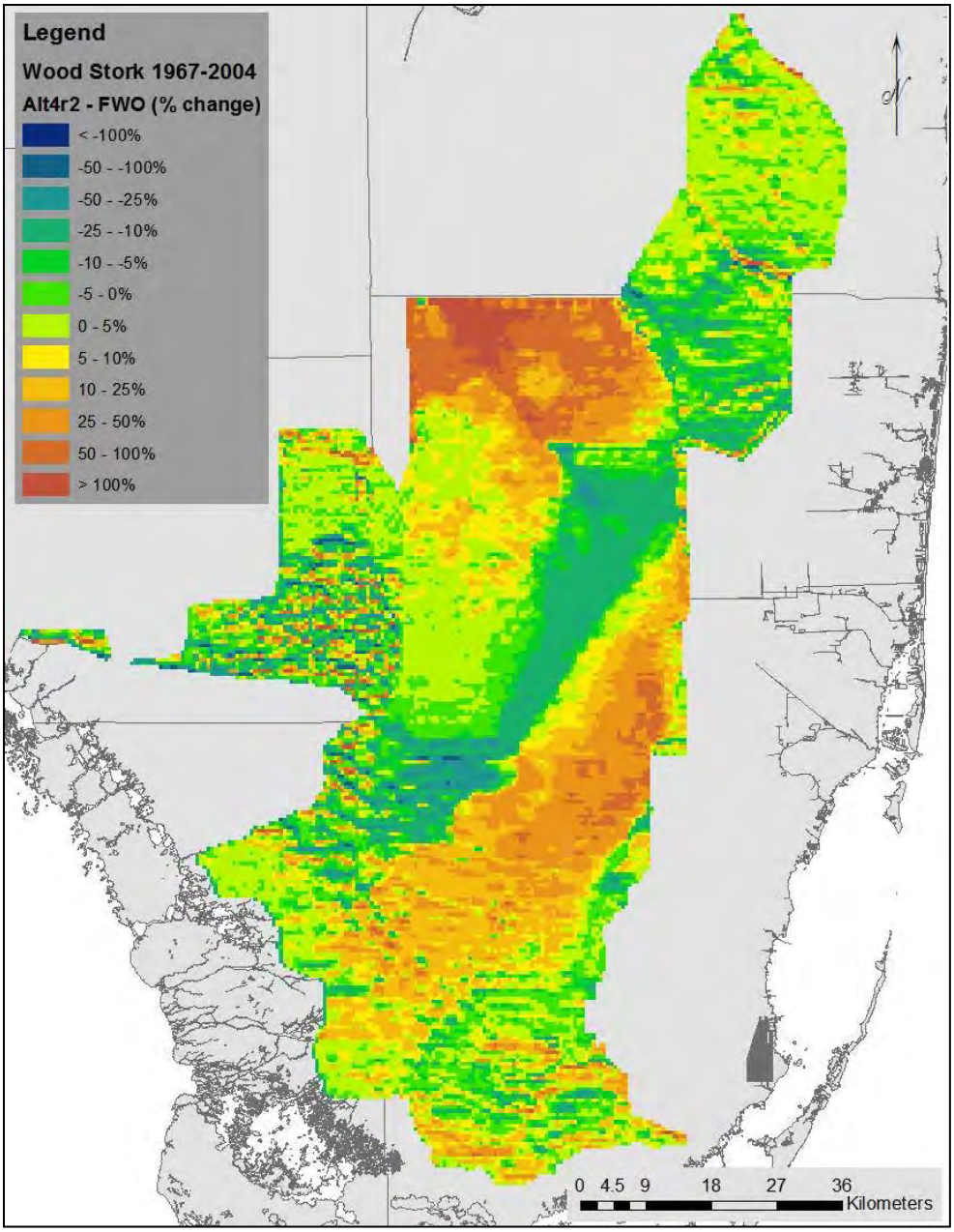


Figure C.2.2-41. The coloration in this map represents the mean percent change in wading bird cell use (Jan – May, 1967-2004) for Alt4R2 relative to Future Without (FWO).

Historically, the short hydroperiod wetlands within ENP have been important for wood stork foraging during the pre-breeding season with the storks shifting to longer hydroperiod wetlands as the dry season progresses. Hydrological patterns that produce a maximum number of patches with high prey availability (i.e. high water levels at the end of the wet season and low water levels at the end of the dry season) are necessary for high reproductive outputs (Gawlik 2002; Gawlik et al. 2004). Depending upon the elevation and microtopography throughout the WCAs and ENP, implementation of CEPP will produce a variety of wetland habitats that would support prey densities conducive to successful wading bird foraging and nesting.

Water depth and recession rate are the two most important hydrological variables for wood storks (Gawlik et al. 2004) and wading birds. In their analysis of habitat suitability, Gawlik et al. (2004) identified feeding sites where the weekly average water depths from November to April (pre-breeding and breeding season) were between 0.0 and 0.5 feet as the most suitable. Suitability drops to 0.0 when water depths are -0.3 feet below marsh surface or greater than 0.8 feet. Wood storks and other wading birds require recession condense their prey items into shallow pools for more effective foraging. It is recognized that areas of suitable foraging habitat will vary both within and between years due to microtopography, antecedent conditions, hydrological and meteorological conditions, and water management actions. It is anticipated that these provisions within CEPP will help to improve foraging conditions within WCA 3A and provide a direct benefit to the wood stork and other wading bird species.

Although the benefits to wood storks of the selected plan is clear from the interpretation of the SFNRC (2013a; STORK1) model, this model may considerably underestimate the benefits of CEPP to storks and other wading birds because it looks only at depths and recession rates. The Beerens (2013) model can also evaluate benefits because it represents critical avian responses to the timing and frequency of multi-annual prey pulses that are a function of much longer-term hydrologic patterns. It can predict when and where resource pulses from optimal periods of inundation will be delivered at the depths at which birds can feed as a function of Depth (linear), Depth (quadratic), Recession (quadratic), Days Since Drydown (DSD), DSD (quadratic), Hydroperiod (linear), Hydroperiod (quadratic), and Depth* DSD. Basically, this model showed that relatively long periods of standing water are necessary to promote sufficient prey production for optimal foraging. It indicates that stork occurrence can significantly decline at a so-called "optimal depth" if wetland inundation is too brief to grow prey populations.

The Beerens model showed improvement in stork habitat conditions in NE Shark Slough with CEPP restoration scenarios, whereas the STORK1 model does not. With CEPP providing greater flows to Shark Slough it will experience longer hydroperiods and DSD, allowing for greater production of fish. This prey production will provide considerably improved foraging habitat in this area. The Beerens (2013) model also showed increases in foraging in Northern WCA-3A (relative to FWO) , with clear improvements during the critical early months.

Restoration of hydroperiods and hydropatterns closer to a pre-drainage condition (Pre-drainage conditions are defined as those conditions that occurred in the late 1800s, prior to the wide-scale drainage, urbanization, and compartmentalization of the Everglades.) is a focal Everglades restoration objective for the Comprehensive Everglades Restoration Plan (CERP). A related CERP restoration goal is to restore historic wading bird foraging and colonial nesting habitats in the mainland estuary zones of Everglades National Park (ENP). Therefore, the general transitioning of wood stork foraging habitat (under most climatic conditions) from Shark River Slough, which historically was a deep water white-water lily-dominated slough habitat, back into southern ENP, is considered a progressive step toward ecosystem restoration.

Hydrologic changes associated with implementation of the project are expected to alter and provide an overall net benefit and significant effect for wood stork foraging suitability throughout WCA 3 and ENP. However, substantial declines in foraging suitability occur in northern ENP due to increased flow deliveries through the Blue Shanty flow way. Implementation of a coordinated adaptive management plan incorporating real-time ground monitoring will also benefit the species.

C.2.2.4.4 Eastern Indigo Snake

The Eastern indigo snake is the largest native non-venomous snake in North America. It is an isolated subspecies occurring in southeastern Georgia and throughout peninsular Florida. The Eastern indigo snake prefers drier habitats, but may be found in a variety of habitats from xeric sandhills, to cabbage palm hammocks, to hydric hardwood hammocks (Schaefer and Junkin 1990). Eastern indigo snakes need relatively large areas of undeveloped land to maintain their population. The main reason for its decline is habitat loss due to development. Further, as habitats become fragmented by roads, Eastern indigo snakes become increasingly vulnerable to highway mortality as they travel through their large territories (Schaefer and Junkin 1990).

In south Florida, the Eastern indigo snake is thought to be widely distributed. Given their preference for upland habitats (Steiner et al. 1983), Eastern indigo snakes are not commonly found in great numbers in the wetland complexes of the Everglades region, even though they are found in pinelands, tropical hardwood hammocks, and mangrove forests in extreme south Florida (Duellman and Schwartz 1958; Steiner et al. 1983). They prefer dry, well drained sandy soils, and commonly use burrows and other natural holes as dens. Steiner et al. (1983) also report that Eastern indigo snakes inhabit abandoned agricultural land and human-altered habitats in south Florida which would include levees within the Water Conservation Areas.

One of the CEPP project features to be constructed is the A-2 FEB. This would convert approximately 14,000 acres of former agricultural land to a wetland functioning area. The proposed A-2 FEB consists almost exclusively of drained marsh that has been converted to agriculture. Currently, the main crop is sugar cane, although rice has also been observed in some fields. A few areas have become overgrown with exotic Brazilian pepper, willow, dog fennel, and grasses including invasive exotic Napier grass. Only two soil types occur in the project area: Pahokee Muck and Lauderhill Muck (NRCS 2012). Both types consist of very poorly drained organic materials that commonly occur in broad freshwater marshes. These soil types indicate hydric soils/wetland areas, which was originally in place prior to human actions. One of the CEPP goals is to help restore lands back to a more natural condition, which in the FEB area, would be considered wetlands.

No natural standing water features are present in the A-2 FEB project area. Natural sloughs and channels are evident in aerial photographs from the 1940s as well as those taken as recently as 2012. These natural sloughs and channels are much drier due to drainage changes, but are the first areas to be inundated during rains. Man-made drainage features such as ditches and narrow canals traverse the A-2 FEB and are continually being modified and created in response to agricultural needs.

Since Eastern indigo snakes occur primarily in upland areas, their presence within the Greater Everglades portion of the project area is somewhat limited. The hydrologic effects of the proposed project are expected to benefit existing or historic wetlands. Once the Miami Canal is backfilled, created tree islands will be constructed, which would potentially provide habitat for the indigo snakes, perhaps offsetting the increased hydroperiods within WCA 3. In addition, improvements to mangrove communities adjacent to Florida Bay may also benefit Eastern indigo snakes within those areas. However, eastern indigo snakes have a high probability of occurrence within the proposed A-2 FEB site and as a result of construction of the A-2 FEB are likely to be displaced, thereby removing approximately 14,000 acres of potential habitat having a significant and unavoidable major adverse effect.

C.2.2.4.5 Florida Manatee

The federally endangered Florida manatee is a large, plant-eating aquatic mammal that can be found in the shallow coastal waters, rivers, and springs of Florida. Florida manatees live in freshwater, brackish, and marine habitats, and can move freely between salinity extremes. Florida manatees have been observed in conveyance canals within the action area, specifically in the lower C-111 Canal just downstream of S-197; and adjacent nearshore seagrass beds throughout Florida Bay including all waters of Card, Barnes, Blackwater, Little Blackwater, Manatee and Buttonwood sounds. The extensive acreages of seagrass beds in the bay provide important feeding areas for Florida manatees. Decreased salinities within the Northern Estuaries that reduce stress on SAV and promote increases in seagrass shoots have the potential to increase foraging opportunities for manatees in this region. Similarly, increased freshwater flows to Florida Bay and the southwestern coastal estuaries resulting in lowered salinity levels that better encompass seagrass salinity tolerance ranges would also increase foraging opportunities for manatees. Alternative 4R2 would provide benefits to Florida manatee as compared with the FWO, providing minor beneficial effects (refer to **Section C.2.1.3.5.2, Seagrass Beds** for further information).

Florida manatees also depend upon canals as a source of freshwater and resting sites. It is highly likely that Florida manatees also depend on the deep canals as a cold-weather refuge. The relatively deep waters of the canals respond more slowly to temperature fluctuations at the air/water interface than the shallow bay waters. Thus, the canal waters remain warmer than open bay waters during the passage of winter cold fronts. **Figure C.2.2-42** illustrates canals that Florida manatees have access to within CEPP action area. All CEPP alternatives include backfilling of portions of the Miami Canal north of Interstate 75. Although **Figure C.2.2-42** shows that manatees can access portions of the Miami Canal, backfilling as described under CEPP is not likely to adversely affect manatees.

Alts 4R and 4R2 would provide increased flows to Florida Bay and the southwestern coastal estuaries, improving salinities, therefore benefitting Florida manatee as compared with the FWO and providing minor beneficial effects. Damaging flows to the Northern Estuaries related to pulse releases would be reduced, resulting in decreased sedimentation and silt, and increased light penetration, therefore providing better sea grass survival and minor beneficial effects. Alt 4R2 includes backfilling portions of the Miami Canal north of Interstate 75, which manatees do access; however, backfilling could benefit them with less likelihood of becoming stranded in the WCAs.

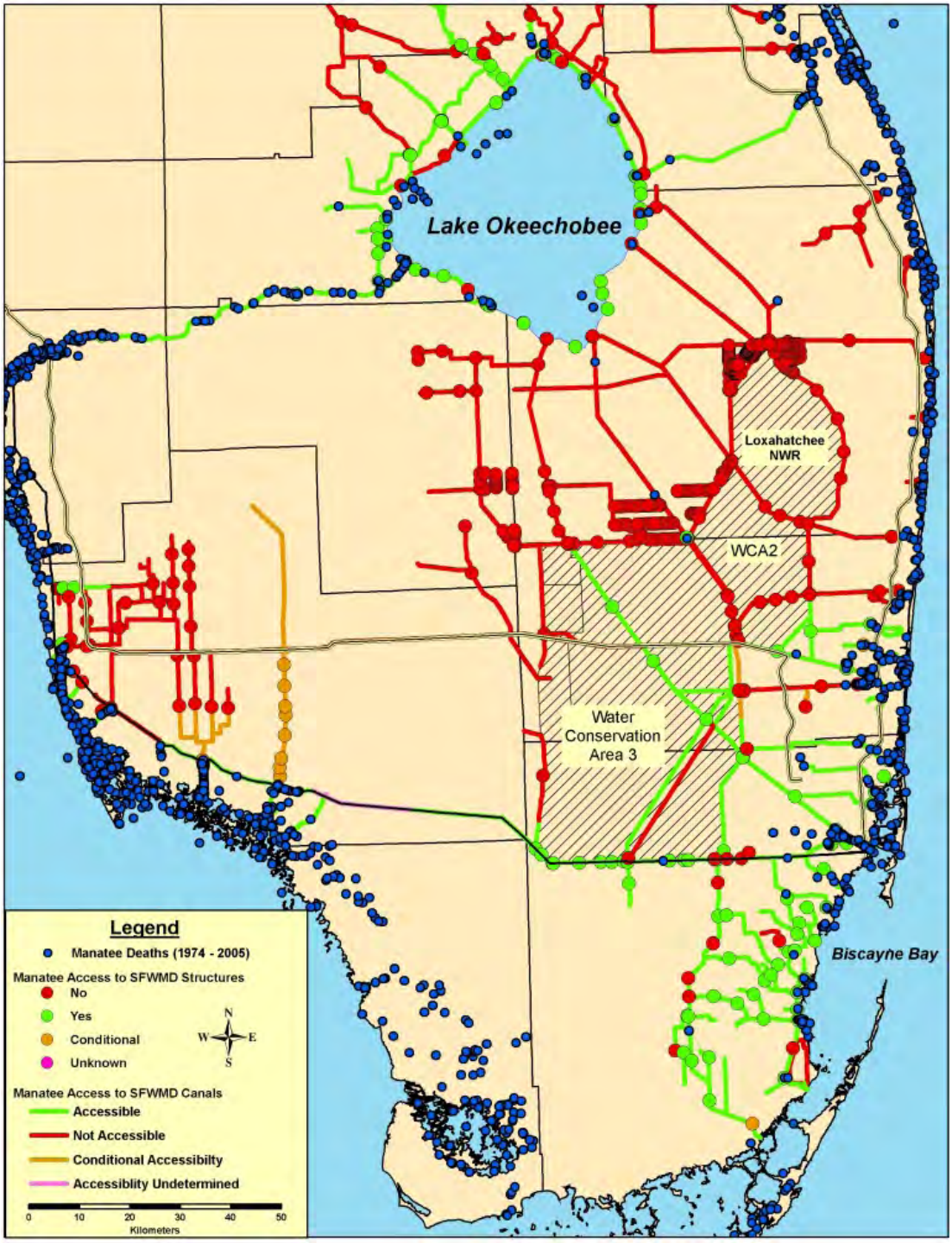


Figure C.2.2-42: Canals that Florida manatee have access to within CEPP action area.

C.2.2.4.6 Florida Panther

The federally endangered Florida panther (*Puma concolor cory)* was once the most widely distributed mammal (other than humans) in North and South America, but it is now virtually exterminated in the eastern United States. Habitat loss has driven the subspecies known as the Florida panther into a small area, where the few remaining animals are highly inbred, causing such genetic flaws as heart defects

and sterility. Recently, closely-related panthers from Texas were released in Florida and are successfully breeding with the Florida panthers. Increased genetic variation and protection of habitat may save the subspecies.

Florida panthers presently inhabit lands in the EAA and ENP adjacent to the Southern Glades, and radio tracking studies have shown that they venture into the Southern Glades on occasion during post-breeding dispersion. Reference is made to the revised Panther Key and Panther Focus Area Map (**Figure C.2.2-43**) for use in determining effects to the Florida panther. Construction of the 14,000 acre FEB within the A-2 parcel in EAA would result in conversion of upland habitat that could be potentially used by Florida panther to transverse the area to wetland habitat, thereby eliminating potential habitat within the panther secondary zone in this region. This would provide a minor adverse effect. In addition, since potentially suitable habitat occurs within the project area, increased water deliveries to ENP could affect Florida panther habitat. However, as lands within the CEPP project area become restored to their more historic natural values, the improved forage base would result in greater use by the Florida panther utilizing these areas, providing a minor beneficial long-term effect.

Today, the A-2 FEB contains agricultural fields planted in sugar cane and rice. Some areas are overgrown with Brazilian pepper, willow, and dog fennel; however, most fields are regularly tilled and disked to a standard depth. This tilling gives the fields a very uniform elevation, which makes observing any variations in the topography difficult. CEPP Alternatives 4R and 4R2 have the potential to affect both the Primary and Secondary Zones for Florida panther habitat.

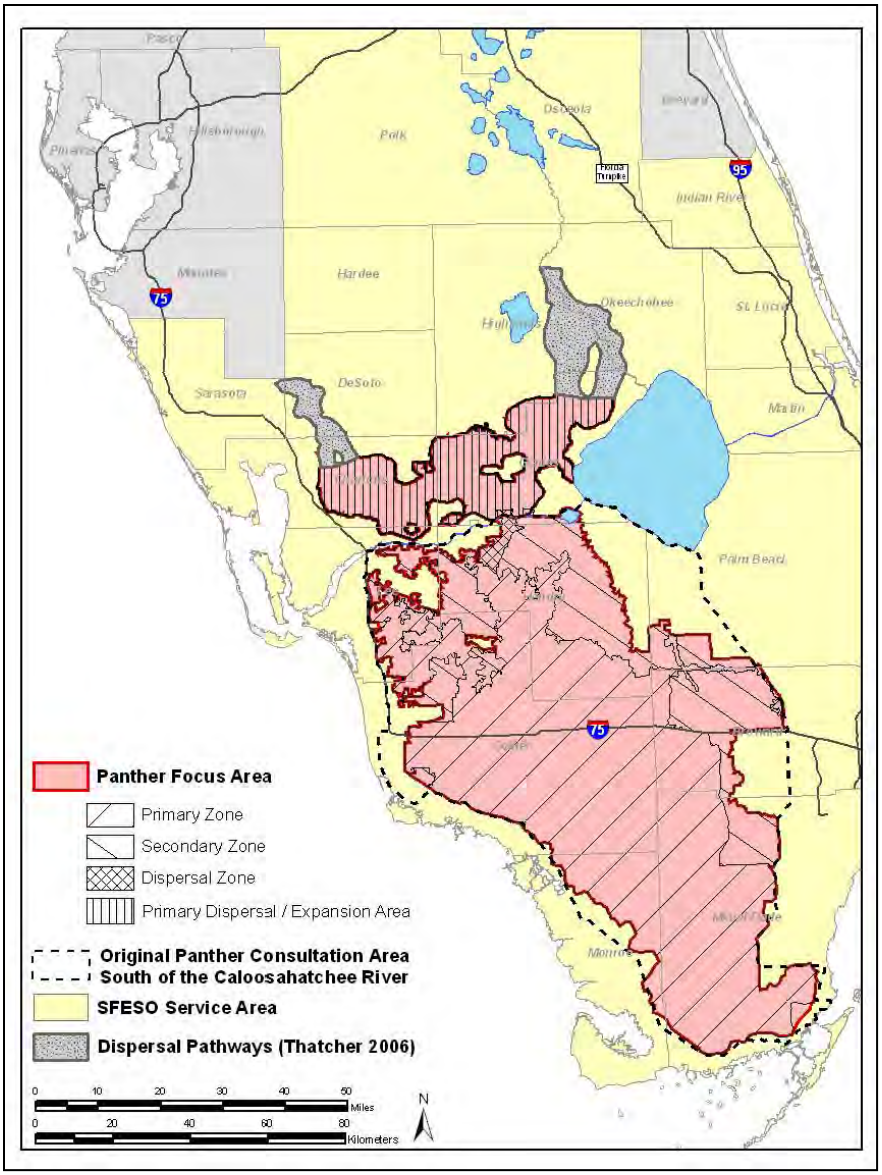


Figure C.2.2-43. Panther Focus Areas Map.

Since potentially suitable habitat occurs within the action area, increased water deliveries under all CEPP alternatives to ENP could affect Florida panther habitat. However, as lands within the study area become restored to their more historic natural values, the concomitant improved prey base would result in greater use by the Florida panther utilizing these areas.

C.2.2.4.7 American Alligator

A keystone species within the Everglades ecosystem, the American alligator (*Alligator mississippiensis*) is dependent on spatial and temporal patterns of water fluctuations that affect courtship and mating, nesting, and habitat use (Brandt and Mazzotti, 2000). Historically, American alligators were most abundant in the peripheral Everglades marshes and freshwater mangrove habitats, but are now most abundant in canals and the deeper slough habitats of the central Everglades. Water management practices including drainage of peripheral wetlands and increasing salinity in mangrove wetlands as a result of decreased freshwater flows has limited occurrence of American alligators in these habitats

(Craighead 1968, Kushlan 1990, Mazzotti and Brandt 1994). A HSI for alligators was employed to predict potential effects of implementation of CEPP Alts 4R and 4R2 (South Florida Natural Resources Center 2013c). The HSI measures habitat suitability annually for five components of alligator production: (1) land cover suitability, (2) breeding potential (female growth and survival from April 16 of the previous year - April 15 of the current year), (3) courtship and mating (April 16 – May 31), (4) nest building (June 15 – July 15), and egg incubation (nest flooding from July 01 – September 15).

Results indicate that implementation of Alts 4R and 4R2 would improve alligator habitat suitability as compared with the FWO and provide a minor beneficial effect. Alligator habitat suitability for Alts 4R and 4R2 trend similarly; differences between alternatives within the project area are negligible. The greatest increase in benefits is visible within northern WCA 3A (CEPP Zones 3A-MC, 3A-NE and 3A-NW) (**Figure C.2.2-44)** due to additional water deliveries within this region. Gains are smaller in central WCA 3A, WCA 3B and ENP north and south zones, though they appear to have an increased spatial extent of slightly improved potential habitat in Alts 4R and 4R2 **(Figure C.2.2-45).** Changes within southern WCA 3A and southeastern ENP are negligible (South Florida Natural Resources Center 2013c). Southern WCA 3A is the only region showing negative impacts to alligator production with Alt 4R (**Figure C.2.2-44**). In summary, increasing freshwater flow through the Greater Everglades into WCA 3 and ENP under CEPP will provide significant increased benefits to alligators within these habitats in comparison with the FWO. Major adverse, significant and unavoidable effects to alligators that utilize the Miami Canal will occur due to backfilling of the Miami Canal. However, these effects are expected to be short-term as alligators will expand into other areas of suitable habitat created as a result of CEPP implementation.

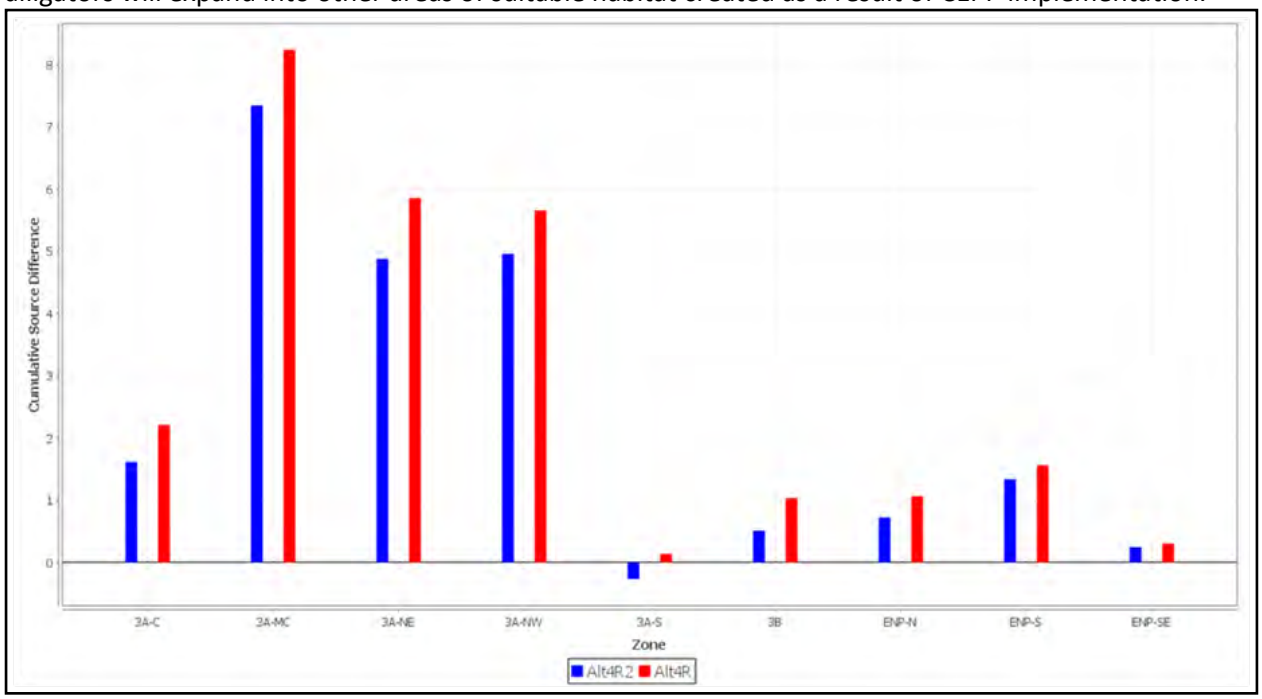


Figure C.2.2-44. Suitable alligator habitat cumulative (1965-2005) lift above the No Action Alternative (FWO) for Alts 4R and 4R2 within each CEPP zone. A maximum score of 41 is possible if FWO has a suitability score of 0.0 every year and the alternative has a suitability score of 1.0 every year. (South Florida Natural Resources Center 2013a).

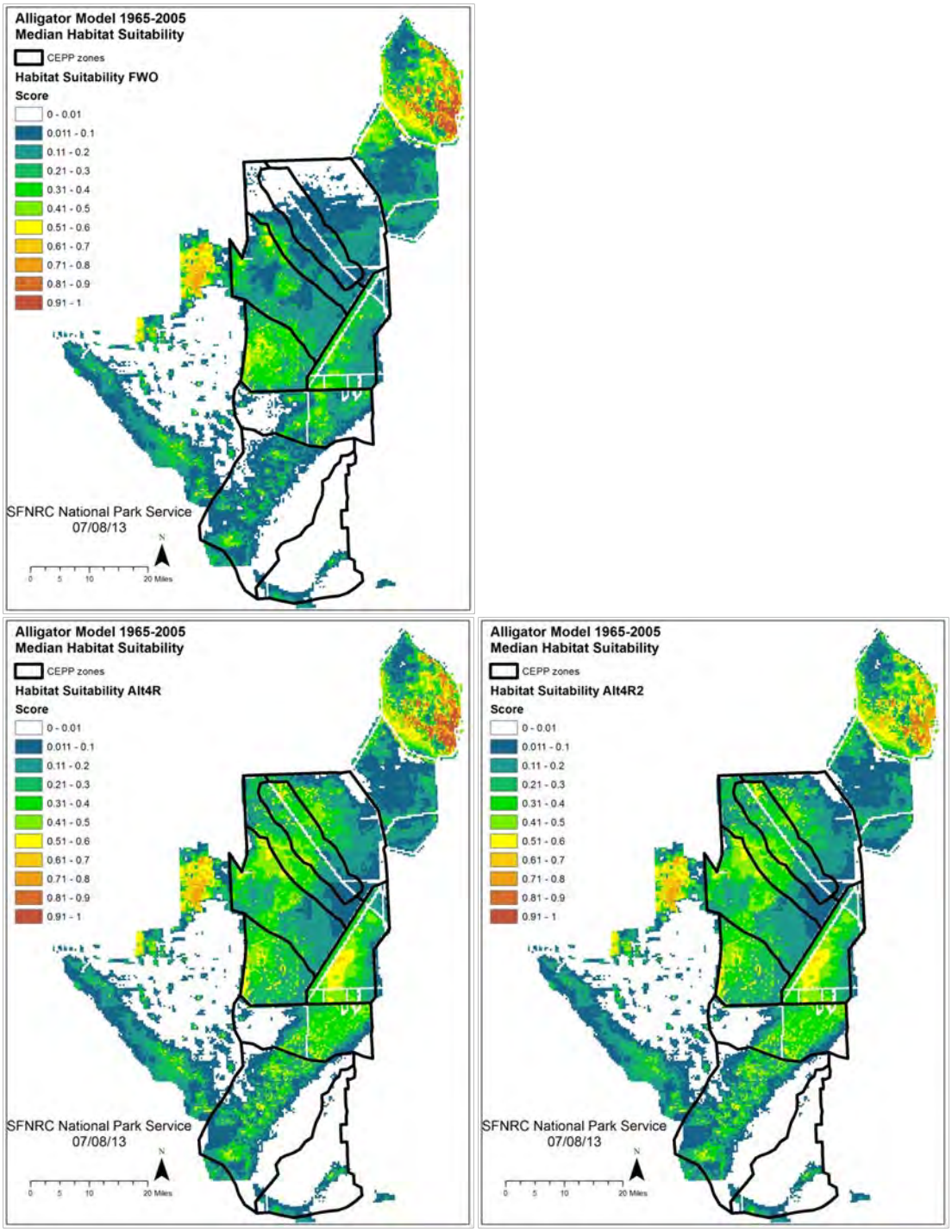


Figure C.2.2-45. Suitable alligator habitat cumulative (1965-2005) lift above the No Action Alternative (FWO) for Alts 4R and 4R2 within each water conservation area (WCA). (South Florida Natural Resources Center 2013a).

C.2.2.4.8 American Crocodile

A HSI for juvenile American crocodiles (*Crocodylus acutus*) was employed to predict potential effects of implementation of CEPP Alts 4R and 4R2. The crocodile growth and survival index used in this analysis is one of the components of a crocodile HSI that characterizes suitable habitat for crocodiles based on habitat, location of known nest sites, salinity, and prey biomass. The growth and survival index is

calculated for August through December, the period following hatching when hatchlings are most vulnerable to high salinities (Moler 1992; Mazzotti 1999; Mazzotti et al. 2007). For this analysis, data from salinity monitoring stations at Joe Bay, Trout Cove, Little Madeira Bay (the stations among the available stations closest to where the highest densities of crocodile nests are) and Long Sound, Little Blackwater Sound, Terrapin Bay and Garfield Bight (generally closer to shoreline stations in areas where crocodiles could occur) are used as input to HSI. Each day between August 1 through December 31 is assigned a score based on the following salinity ranges: salinity <20 practical salinity units (psu) was assigned the highest score of 1 because salinity in this range is considered most favorable for juvenile crocodile growth and survival (Moler 1992; Mazzotti 1999; Mazzotti et al. 2007); salinity $\geq$ 20 and <30 psu was assigned a score of 0.6; $\geq$30 and <40 psu was assigned a score of 0.3, and >40 psu a score of 0. Average yearly and an average overall score were calculated.

Results from applying the salinity data into the juvenile crocodile HSI is shown in **Figure C.2.2-46** (Brandt 2013)**.** The plot shows the lift (Alt 4R minus FWO and Alt 4R2 minus FWO) of an index of juvenile crocodile growth and survival at sites along the northern Florida Bay shoreline for all years of the model runs. Sites in the orange box historically have had the most crocodile nesting. Results of the juvenile crocodile HSI performance for an extremely dry (1989) year are shown in **Figure C.2.2-47**. As indicated by **Figure C.2.2-46** and **Figure C.2.2-47,** implementation of Alts 4R and 4R2 will directly benefit juvenile crocodiles within the CEPP action area, providing a minor beneficial effect.

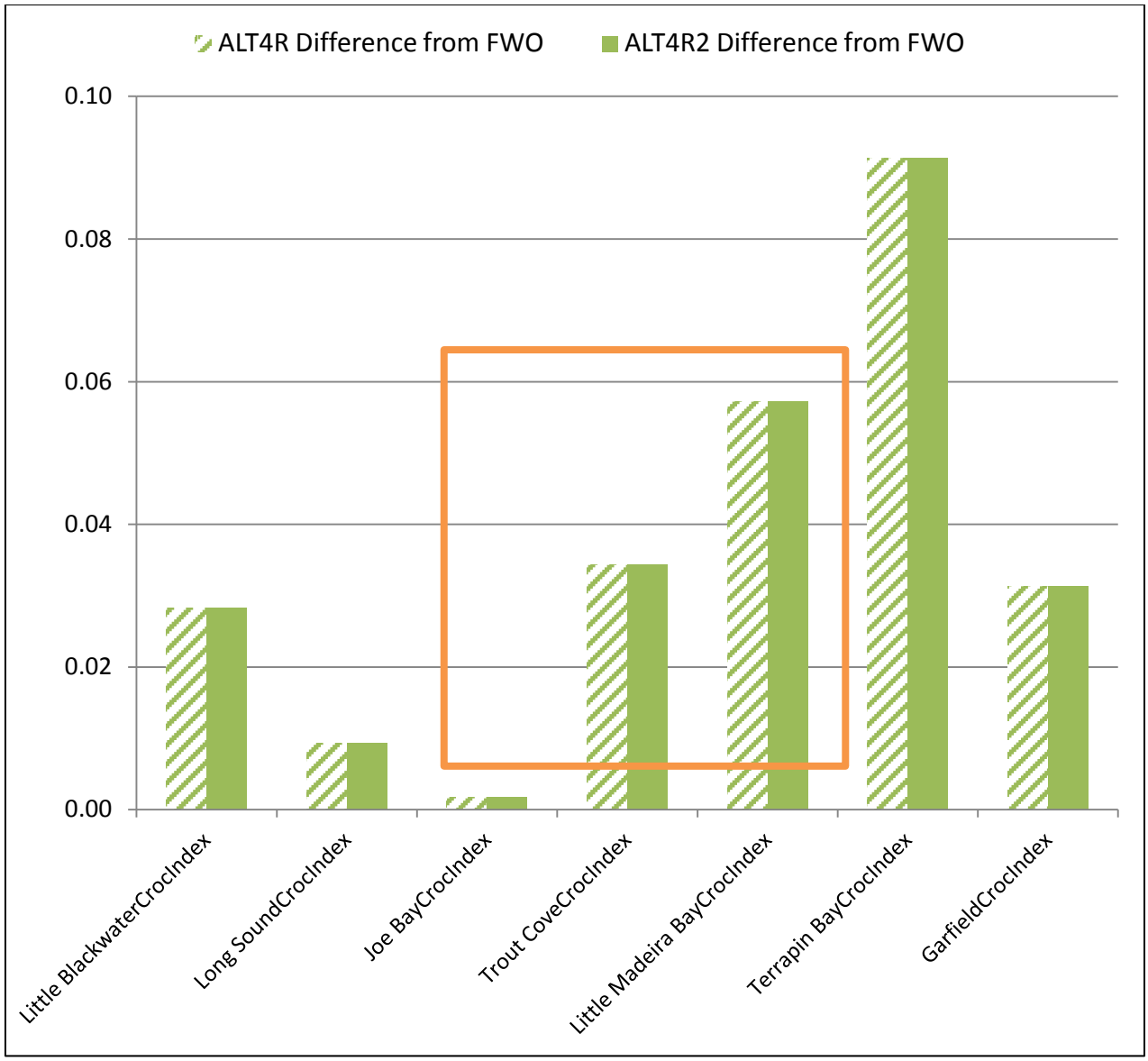


Figure C.2.2-46. Histogram showing the results of the juvenile crocodile HSI for 7 locations of known crocodile nesting areas across all years within Period of Record (1965-2005). Index values show lift provided by Alt 4R as compared with the No Action Alternative and Alt 4R2 as compared to the no action alternative. (Brandt 2013).

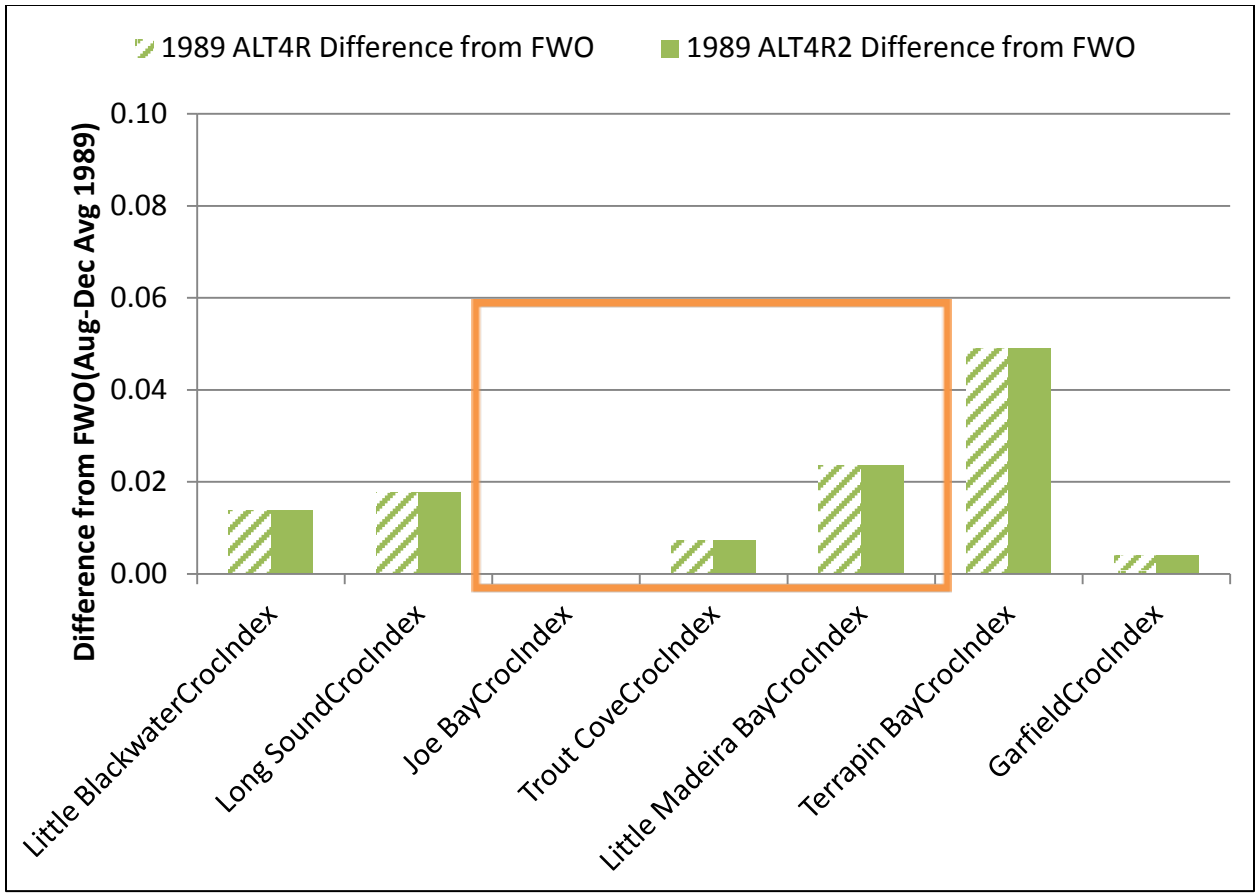


Figure C.2.2-47. Histogram showing the results of the juvenile crocodile HSI for 7 locations of known crocodile nesting areas for a very dry year (1989). Index values show lift provided by Alt 4R as compared with the FWO and Alt 4R2 as compared with FWO. (Brandt 2013).

C.2.2.4.9 Smalltooth Sawfish

Smalltooth sawfish (*Pristia pectinata*) have been reported in the Pacific and Atlantic Oceans, and the Gulf of Mexico; however, the United States population is found only in the Atlantic Ocean and Gulf of Mexico. Historically, the United States population was common throughout the Gulf of Mexico from Texas to Florida, and along the east coast from Florida to Cape Hatteras. The current range of this species includes peninsular Florida, with some regularity only in south Florida from Charlotte Harbor to Florida Bay. Juvenile sawfish use shallow habitats with a lot of vegetation, such as mangrove forests, as important nursery areas. Many such habitats have been modified or lost due to development of the coastal areas of Florida and other southeastern states. The loss of juvenile habitat likely contributed to the decline of this species.

Although the main Florida population resides in the Caloosahatchee River and adjacent Charlotte Harbor estuaries, smalltooth sawfish has the potential to be found in the southern estuaries where the juveniles could potentially occur and feed in red mangrove wetlands. By implementation of the proposed project, the smalltooth sawfish may show a minor beneficial effect from increased freshwater flows into the coastal wetlands adjoining Florida Bay, which would provide more natural and historic overland flows.

Discharging large volumes of freshwater from Lake Okeechobee to the Caloosahatchee River during the wet season significantly reduces salinities and increases nutrient loading; all of which has a profound adverse effect on estuarine flora and fauna. As a result, the smalltooth sawfish may show a minor beneficial effect from the project's ability to reduce excessive freshwater flows by improving the salinity regime throughout the Caloosahatchee estuary.

C.2.2.4.10 Green Sea Turtle

The green sea turtle weighs approximately 150 kilograms and lives in tropical and sub-tropical waters. Areas that are known as important feeding areas for the green turtles in Florida include the Indian River Lagoon, the Florida Keys, Florida Bay, Homosassa, Crystal River and Cedar Key. Green turtles occupy three habitat types: high energy oceanic beaches, convergence zones in the pelagic habitat, and benthic feeding grounds in the relatively shallow, protected waters. Females deposit eggs on high energy beaches, usually on islands, where a deep nest cavity can be dug above the high water line. Hatchlings leave the beach and move in the open ocean. Green sea turtles forage in pastures of seagrasses and/or algae, but small green turtles can also be found over coral reefs, worm reefs, and rocky bottoms.

Although green sea turtles are expected to be found foraging in nearshore seagrass habitats within Florida Bay, the increased freshwater flows associated with CEPP may alter seagrass species composition but should have a negligible and less than significant effect on the overall biomass available for sea turtle feeding habits. Additionally, no green sea turtles would attempt to utilize areas for nesting purposes since there is no suitable habitat for nesting in the project area. With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction Conditions, the Corps has determined green sea turtle may be affected, but is not likely to be adversely affected, by the proposed project.

C.2.2.4.11 Hawksbill Sea Turtle

The hawksbill sea turtle is a small to medium-sized marine turtle weighing up to 15 kilograms in the United States. The hawksbill lives in tropical and sub-tropical waters of the Atlantic, Pacific, and Indian Oceans. Areas that are known as important feeding areas for hawksbill turtles in Florida include the waters near the Florida Keys and on the reefs off Palm Beach County. Hawksbill turtles use different habitat types at different stages of their life cycle. Post hatchlings take shelter in weed lines that accumulate at convergence zones. Coral reefs are the foraging habitat of juveniles, sub-adults, and adults. They are also known to inhabit mangrove-fringed bays and estuaries, particularly along the eastern shore where coral reefs are absent. Hawksbills feed predominantly on sponges and nest on low and high energy beaches, frequently sharing 94 the high-energy beaches with green sea turtles. Nests are typically placed under vegetation.

Although hawksbill sea turtles are expected to be found foraging near hardbottom habitats within Florida Bay, the increased freshwater flows associated with CEPP may reduce nearshore salinity concentrations but should have a negligible and less than significant effect on sponges or other food sources utilized by this species. Additionally, no hawksbill sea turtles would attempt to utilize areas for nesting purposes since there is no suitable habitat for nesting in the project area. With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction Conditions, the Corps has determined hawksbill sea turtle may be affected, but is not likely to be adversely affected, by the proposed project.

C.2.2.4.12 Leatherback Sea Turtle

The leatherback sea turtle is the largest living turtle and weighs up to 700 kilograms. The leatherback lives in tropical and sub-tropical waters. Habitat requirements for juvenile and post-hatchling leatherbacks are virtually unknown. Nesting females prefer high-energy beaches with deep unobstructed access. Leatherbacks feed primarily on jellyfish.

Although leatherback turtles are expected to be found foraging in nearshore habitats within Florida Bay, the increased freshwater flows associated with the CEPP may reduce nearshore salinity concentrations but should have a negligible and less than significant effect on jellyfishes or other food sources utilized by this species. Additionally, no leatherback sea turtles would attempt to utilize areas for nesting purposes since there is no suitable habitat for nesting in the project area. With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction Conditions, the Corps has determined leatherback sea turtle may be affected, but would not likely be adversely affected, by the proposed project.

C.2.2.4.13 Kemp's Ridley Sea Turtle

The Kemp's ridley sea turtle is the smallest of all sea turtles and weighs up to 45 kilograms. This species is a shallow water benthic feeder consuming mainly algae and crabs. Juveniles grow rapidly. Juveniles and sub-adults have been found along the eastern seaboard of the United States and in the Gulf of Mexico. However, the major nesting beach for the Kemp's ridley sea turtle is on the northeastern coast of Mexico. This species occurs mainly in coastal areas of the Gulf of Mexico and in the northwestern Atlantic Ocean. The post-pelagic stages are commonly found dwelling over crab-rich sandy or muddy bottoms. Juveniles frequent bays, coastal lagoons, and river mouths. 95

Although Kemp's ridley sea turtles could be found foraging in nearshore habitats within Florida Bay, this species is not expected to be found within the direct area of influence associated with CEPP. Additionally, no Kemp's ridley sea turtles would attempt to utilize areas for nesting purposes since their main nesting location is on a single stretch of beach on the Gulf Coast of Mexico. With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction Conditions, the Corps has determined Kemp's ridley sea turtle may be affected, but would not likely be adversely affected, by the proposed project.

C.2.2.4.14 Loggerhead Sea Turtle

Loggerhead sea turtles inhabit the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian Oceans. Females select high energy beaches on barrier strands adjacent to continental land masses for nesting. Steeply sloped beaches with gradually sloped offshore approaches are favored. After leaving the beach, hatchlings swim directly offshore and eventually are found along drift lines. They migrate to the near-shore and estuarine waters along the continental margins and utilize those areas as the developmental habitat for the sub-adult stage. Loggerheads are predators of benthic invertebrates.

Although loggerhead sea turtles are expected to be found foraging in nearshore habitats within Florida Bay, the increased freshwater flows associated with CEPP may reduce nearshore salinity concentrations but should have a negligible and less than significant effect on crustaceans, mollusks or other invertebrate food sources utilized by this species. Additionally, no loggerhead sea turtles would attempt to utilize areas for nesting purposes since there is no suitable habitat for nesting in the project area.

With the expectation of improved nearshore habitat, no utilization of the project area for nesting purposes, and the implementation of agency approved Sea Turtle and Smalltooth Sawfish Construction Conditions, the Corps has determined loggerhead sea turtle may be affected, but would not likely be adversely affected, by the proposed project.

C.2.2.4.15 State Listed Species

C.2.2.4.15.1 Florida Bonneted Bat

The Florida bonneted bat is Florida's largest bat, weighing approximately 1.1 to 2.0 ounces, with a 19 to 21 inch wingspan, and a body length of 5.1 to 6.5 inches. The species has dark brown fur and large broad ears that join together and slant forward over the eyes. Relatively little is known regarding the ecology and habitat requirements of this species (FWS 2009). In general, bats will forage over ponds, streams and wetlands and require roosting habitat for daytime roosting, protection from predators and rearing of young (Marks and Marks 2008). Florida bonneted bats roost in tree cavities, rocky outcrops and dead palm fronds. In residential communities, the bats roost in Spanish tile roofs, but have also been found in attics, rock or brick chimneys and fireplaces of old buildings (NatureServe 2009). Colonies are small, with the largest reported as just a few dozen individuals. The bat is a nocturnal insectivore and relies upon echolocation to navigate and detect prey. Females give birth to a single pup from June through September (Scott 2004); however limited data suggests that a female may undergo a second birthing season possibly in January or February (FWS 2009).

The Florida bonneted bat is Florida's only endemic bat and is listed by FWC as a state listed endangered species and is a candidate species for Federal listing under the ESA. The range of this species is limited to southern Florida, although this species was encountered in 2008 in two locations within the Kissimmee River Wildlife Management Area north of Lake Okeechobee. Records indicate that it was once common in the 1950s and early 1960s near Coral Gables and Miami (Belwood 1992). The Florida bonneted bat has only been documented in 12 locations within Florida, including areas within Coral Gables, Homestead, Naples, Everglades City and North Fort Myers. Seven of the locations are under public ownership with the Florida bonneted bat found in discrete and specific areas within BCNP, Fakahatchee Strand Preserve State Park, Kissimmee River Wildlife Management Area, Babcock Ranch and Fred C. Babcock and Cecil M. Webb Wildlife Management Area (FWS 2009). Loss of suitable habitat is believed to be the primary cause of population declines. Other perceived threats include pesticide and herbicide use, which decrease populations of insects, the bats primary prey. Given the documented location of the located bats outside of the project area and that increased hydroperiods and wetland area from CEPP implementation should provide for ideal habitat, the Corps determination is that the Florida bonneted bat would not be affected by CEPP.

C.2.2.4.16 State Threatened Species

C.2.2.4.16.1 Everglades Mink

The Everglades mink is an exceedingly rare, small, semi-aquatic mammal. The mink is medium to dark brown in color with dense, glossy, water repellant fur. Minks have a small head with beady black eyes and an elongated body with five partially-webbed toes. Males weigh 2 to 3.5 pounds and are typically two feet in length; females are smaller in size. Minks are nocturnal and generally solitary, except when raising young; three to six kits are born inside the den during the spring and are weaned at five to six weeks. Dens typically consist of a hollow log. Minks are carnivorous, primarily feeding on crayfish, fish, insects, small snakes, small mammals, and birds (Conservancy of Southwest Florida 2009).

The Everglades mink is listed by FWC as a state listed threatened species. Historically, the Everglades mink ranged into the northern Everglades, near the Lake Okeechobee region, but no sightings have been reported in the northern range in recent years. The range of the Everglades mink is currently limited to the shallow freshwater marshes and swamps of ENP, BCNP, and Fakahatchee Strand. Most of the recent sightings of the minks occurred in ENP, near Tamiami Trail (U.S. Highway 41) (Smith 1980).

Seasonal habitat use by the Everglades mink was documented by Humphrey and Zinn (1982) within a large wetland in south Florida (Big Cypress Swamp) using line transects of chalk-dusted trackboards and anal scent attractant. Results indicated a higher frequency of track station visits to marshes in autumn (late wet season) than in spring (late dry season). In the late dry season, most mink track station visits occurred in swamps, where aquatic habitat and high concentrations of prey (fishes) persisted, suggesting that disruptions in the timing and magnitude of water level fluctuations or hydroperiods may negatively impact the species.

The quality of the Everglades mink habitat has been degraded through development and the drainage of wetlands. Unnatural high water levels have also resulted in flooding of dens and an increase in road-related deaths. Suitable freshwater wetland habitat for the species exists within the project area. Evidence of direct impacts to the Everglades mink as a result of the existing operating regime (i.e. ERTP) is lacking, however the species is extremely rare and difficult to trap and/or monitor. IOP has resulted in lower average water levels and shorter periods of surface water inundation in the WCAs to the north of ENP (WCA 3A and WCA 3B), as well as in central and western SRS. Shorter hydroperiods potentially decrease the distribution and abundance of small fish species sensitive to hydrologic changes upon which the Everglades mink feeds. CEPP would increase hydroperiods within WCA 3 and ENP, therefore the Corps determined that CEPP may affect, but is not likely to adversely affect the Everglades mink.

C.2.2.4.16.2 Florida Black Bear

The Florida black bear is one of three subspecies of American black bear recognized in the southeastern United States. The bear is characterized by a highly arched forehead and long narrow braincase. Adult males normally weigh 250 to 450 pounds and females 125 to 250 pounds. Both sexes have soft, black hair, often with blonde chest markings, small round ears, short tails, stout curved claws, and large canine teeth (FWC 2003b). Females give birth every two years, breeding in June and July. Young are born in January and February; litter size is two to four cubs. Females generally first give birth at three to four years of age. Males generally live to be 8 to 12 years old and females 10 to 15 years (FWC 2003b).

Florida black bears may inhabit large tracts of forestland of any type. Habitat includes; pine flatwoods, hardwood swamp, cypress swamp, cabbage palm forest, sand pine scrub and mixed hardwood hammock. Home range sizes vary greatly among individuals, age classes, and populations, but average approximately 37 square kilometers for females and 161 square kilometers for males; individuals tend to be solitary (Maehr and Wooding 1992). Florida black bears are omnivorous, primarily feeding upon vegetation, nuts, berries, and insects. In Florida, black bears are dependent upon saw palmetto plants, black gum, and oak trees for a significant portion of their diet. The species may prey upon animals such as armadillos, deer fawns, and hogs, but overall, these food sources make up a small percentage of their diet (Maehr and Wooding 1992).

The Florida black bear is listed by FWC as a state listed threatened species. Historically, the subspecies ranged throughout the southeastern United States, inhabiting all of Florida, including the upper keys and portions of southern Georgia, Alabama, and Mississippi (FWC 2003b). This widespread distribution has been severely reduced; the range has now been restricted to eight locations within Florida

(Apalachicola, Big Cypress, Eglin, Ocala, Osceola, and St. Johns) and two remnant areas (Chassahowitzka and Glades/Highlands) (FWC 2003b). Unregulated hunting up to the mid 1900s has had the greatest impacts on population declines. More recently, development associated with Florida's growing population has led to an increase in the loss of forested lands and human-induced mortality. The annual number of recorded vehicle/bear collisions and reported human/bear conflicts (nuisance complaints) has risen substantially. CEPP is not expected to negatively affect forested areas, therefore the Corps determination is may affect, not likely to adversely affect the Florida black bear.

C.2.2.4.17 Shore Birds

C.2.2.4.17.1 Snowy Plover, Least Tern, Black Skimmer, and American Oystercatcher

Snowy plovers are small in size, weighing about two ounces, with a 13 inch wingspan, and a length of six to seven inches. Snowy plovers have inconspicuous plumage, with white undersides, pale-brown upperparts, a short black bill, and dark grey to blackish legs (Warriner et al. 1995). Least terns are slightly larger than both, with a wingspan of 20 inches and a length of nine inches. Least terns have a grayish-white body with yellow legs, a short notched tail, and a yellow bill unique among North American terns (Thompson et al. 1997).

The snowy plover and least tern are listed by FWC as state listed threatened species. Florida populations of snowy plovers are made up of both migrant and resident species. Breeding birds are discontinuously distributed along the Gulf coast from Marco Island north to Anclote Key and along the coast of the Florida Panhandle, where most Florida breeders now occur. In central and southern Florida, breeding occurs only in a few protected parks, such as Caladesi Island, Fort DeSo Park, and Cayo Costa and on isolated peninsulas (FWC 2003c). No breeding records exist from the Keys or Atlantic coast. The least tern is more widely distributed than the snowy plover; breeding populations are distributed along both the Gulf and Atlantic Coasts and the Florida Keys (FWC 2003c).

These shorebirds inhabit sparsely vegetated sandy beaches where they nest in shallow depressions on bare, open ground. They typically form loose colonies and require open dry sand near dunes for breeding; access to inner dunes is essential for brood protection (FWC 2003c). For the two species, females typically lay two to three eggs; eggs are incubated for less than 30 days. Nestlings fledge in approximately four weeks and the breeding season extends from March to September (FWC 2003c). Plovers feed on crustaceans, mollusks, marine worms, and insects, by directly capturing prey or by probing in the sand for food. Least terns forage over open water and primarily feed upon small fish and crustaceans.

The numbers and distribution of these shorebirds have steadily decreased due to loss and degradation of coastal habitats and breeding grounds. Continued development of beachfront property into residential, commercial, and recreational areas has led to population declines. Birds quickly abandon nesting attempts when they are disturbed by people. Conservation efforts include closing nesting beaches, monitoring nests, roping off or fencing in breeding sites, posting educational signs and banning pets and vehicle use. CEPP would not affect shorelines, therefore the project would have no effect on the snowy plover, least tern, black skimmer, or American oystercatcher.

C.2.2.4.18 State Listed Species of Special Concern

C.2.2.4.18.1 White Ibis

The white ibis is easily identified by its long red legs, all white plumage, red face, long de-curved red bill and black tipped wings. White ibises are medium-sized wading birds, weighing about two pounds, with a 36-inch wingspan, and a length of 24 inches. White ibises inhabit shallow coastal marshes, wetlands and mangrove swamps and feed on crayfish, crabs, insects, snakes, frogs, and fish (Kushlan and Bildstein 1992).

Nesting occurs in trees, shrubs, and grass clumps from ground level to a height of 50 feet. Nests are constructed of vegetation sticks, leaves, and/or roots. Females typically lay two to three eggs; eggs are incubated for 21 to 22 days. The young are able to leave the nest at 9 to 16 days of age. Nestlings are independent at 40 to 50 days of age. Breeding season extends from March to August (FWC 2003c). Ibises are known for frequent shifts in roost and colony sites.

The white ibis has been recorded to breed throughout the state of Florida; the center of breeding abundance occurs in the Everglades, with breeding populations extending into Florida Bay and the Keys (FWC 2003c). Aerial surveys have revealed 90 percent declines in south Florida breeding pairs since the 1940s and 20 to 50 percent declines statewide during the past decade. Because of this, the FWC listed the white ibis as a state listed species of special concern (FWC 2003c). Population declines of the species are attributed to loss and degradation of suitable habitat; however, large populations of white ibises remain. CEPP would increase hydroperiods, therefore increasing habitat for white ibis as well as increasing the forage base, showing a minor beneficial effect. Therefore the Corps determination is that CEPP may affect, but is not likely to adversely affect the white ibis.

C.2.2.4.18.2 Snowy Egret, Reddish Egret, Little Blue Heron, and Tricolored Heron

The snowy egret, reddish egret, little blue heron, and tricolored heron are listed by the FWC as a species of special concern. Snowy egrets are medium sized herons, with entirely white plumage, long slender black bills, long black legs, and bright yellow feet (Parsons and Masters 2000). The snowy egret breeds in Florida from January through August, breeding mostly in central and southern Florida in freshwater and saltwater marshes (FWC 2003c). The tricolored heron occupies similar habitats; breeding occurs in February through August (FWC 2003c). The tricolored heron is ornately colored; it is slate-blue on its head and upper body and has a purplish chest with white under parts and fore-neck (Frederick 1997).

The little blue heron is a smaller-sized heron, dark overall with yellow-green legs, and a blue bill with a black tip (Rodgers and Smith 1995). The little blue heron shows a preference for freshwater habitat; however, it also inhabits saltwater marshes. Little blue herons breed later than tricolored herons or snowy egrets; breeding occurs in April through September in Florida. The little blue heron is more widely distributed throughout the state in comparison to the tricolored herons or snowy egrets. Like the snowy egret, breeding populations are concentrated in central and southern Florida (FWC 2003c).

Reddish egrets have two color morphs; white and dark. Dark morphs have gray bodies with chestnut heads, blue legs and pink bills with black tips (Lowther and Paul 2002). The reddish egret is the rarest heron in Florida and is entirely restricted to the Florida coast with concentrations in Florida Bay and the Keys; two-thirds of the state's breeding population. The heron forages on shallow flats and sandbars for fish species, including killifish. In Florida Bay, reddish egrets nest from November through May (FWC 2003c).

Population declines of the species are attributed to loss and degradation of suitable habitat. Target nest numbers for snowy egrets and tricolored herons combined are 10,000 to 20,000 pairs. Nesting targets

for the snowy egret and tricolored heron have not been met in the WCAs and ENP since the implementation of IOP in 2002. Nesting effort (number of nests) of these species from 2002 to 2008 is summarized as follows; 2000-2002: 8,614 pairs, 2001-2003: 8,088 pairs, 2002-2004: 8,079, 2003-2005: 4,085 pairs, 2004-2006: 6,410 pairs, 2005-2007: 4,400 pairs, 2006-2008 3,778 pairs(SFWMD 2009b). However, target numbers have not been met prior to the current operating regime; 1998-2000: 2,788 pairs, 1999-2001 4,270 pairs. Little blue heron censuses from aerial surveys are unreliable due to its dark plumage and tendency to nest in small, isolated colonies (FWC 2003c).

CEPP would not negatively affect these bird species. Improved hydroperiods in the WCAs and WNP, CEPP may have a minor beneficial effect, but is not likely to adversely affect the snowy egret, reddish egret, little blue heron, and tricolored Heron.

C.2.2.4.18.3 Limpkin

Limpkins are large (approximately 66 cm) brown to olive colored birds with a long, heavy down-curved yellow bill with a dark tip. Occurring from peninsular Florida and southern Mexico through the Caribbean and Central America to Northern Argentina, limpkins are listed as species of special concern in Florida. Limpkins inhabit freshwater marshes and swamps with tall reeds, as well as mangroves. They are largely nocturnal, but daytime activities have also been observed (Holyoak and Colston 2003).

Limpkins forage primarily in shallow water and on floating vegetation, such as water hyacinth and water lettuce. Similar to Everglade snail kite, this wading bird species feeds primarily on apple snails of the genus *Pomacea*. The availability of apple snails has a significant effect on the local distribution of the limpkin (Cottam 1936). Freshwater mussels and other species of snail are secondary food resources. Less important prey items include insects, frogs, lizards, crustaceans and worms, which may be important dietary components during periods of drought or flooding when birds may be forced to forage in suboptimal areas. Implementation of CEPP would increase hydroperiods, therefore increasing the forage base for the limpkin, providing minor beneficial effects. Therefore, the Corps determination is that CEPP may affect, but is not likely to adversely affect the limpkin.

C.2.2.4.18.4 Roseate Spoonbill

Roseate spoonbills have a pink body with a white neck and breast, pink wings with highlights of red and long reddish legs. Spoonbills have an unfeathered head which can be yellow or green. Roseate spoonbills are large wading birds, weighing about three pounds and have a 50-inch wingspan. Characteristic to the species is a long, spatulate bill. The spoonbill feeds by wading through shallow water, head down, probing the bottom by sweeping its long, spoon-shaped bill back and forth in the water. When prey is detected by touch, the bill snaps shut; small fish, crustaceans, and insects make up the bulk of the diet (Dumas 2000).

Spoonbills typically establish nests in Florida Bay between November 1 and December 15, with a mean nest initiation date of November 18. Females typically lay three eggs; eggs are incubated for about 21 days. After the young spoonbills hatch, chicks require a continuous supply of food for 42 days. Spoonbills primarily feed on wetland fishes. Foraging adult spoonbills require water levels at or below 13 centimeters within the coastal wetlands to forage efficiently and feed young (Lorenz et al. 2010). Nestlings fledge in approximately four weeks (FWC 2003c).

Thirty-nine of Florida Bay's keys have been used by roseate spoonbills as nesting colonies. These colonies have been divided into five distinct nesting regions based on the colonies primary foraging locations: northeast region, northwest region, central region, south region, and southwest region. The

northeast and northwest colonies contain the largest nesting colonies and these birds principally use wetlands on the mainland as their primary foraging grounds (Lorenz et al. 2010). In addition to a large nesting population in Florida Bay, roseate spoonbills historically nested along the southwest coast of the Everglades in the SRS and Lostman's Slough estuaries. Although there has been some documentation of spoonbill nesting in this area, the numbers have been negligible (Lorenz et al. 2009).

The roseate spoonbill is state listed by the FWC as a species of special concern. In 1979, 1,258 roseate spoonbill nests were located in Florida Bay. More than half of these nests (688) were located in the northeast region (Lorenz et al. 2008). Drops in nests coincide with the completion of the South Dade Conveyance System (SDCS) in 1982, when water deliveries to Taylor Slough and northeastern Florida Bay changed dramatically. Since completion of the SDCS, spoonbill nesting effort has shifted to the northwest region of Florida Bay; nesting effort has been consistent since the early 1980s and the population remains stable with an average of 1.24 chicks produced per nest, per year (Lorenz et al. 2008). Prior to the construction of the SDCS, spoonbills in the northeast region of Florida Bay produced an average of 1.38 chicks per nest, per year. Following completion of the SDCS, spoonbill production dropped to 0.67 chicks per nest, per year (Lorenz et al. 2008). Wading bird studies suggest that a population that does not produce at least one chick per nest, on average, will decline. CEPP is expected to benefit wading bird populations with an increased forage base. Therefore, the Corps determination is that CEPP may provide minor beneficial effects, but is not likely to adversely affect the roseate spoonbill.

C.2.2.5 Wildlife

A comparison of the FWO and CEPP action alternatives Alt 4R and 4R2 and their potential effects on wildlife within the CEPP action area are summarized below. Effects to state and federally listed species are described in further detail in **Section C.2.2.4, Threatened and Endangered Species** and within **Annex A**. Changes in water quality also have the potential to affect prey forage base through altering of vegetation composition or structure. Water quality will continue to be monitored under CEPP; potential effects are largely uncertain at this time.

C.2.2.5.1 Invertebrates

Negligible and less than significant effects to the invertebrate community within Lake Okeechobee or EAA are anticipated with CEPP implementation. Currently, many oyster beds are stressed and have been reduced or eliminated from their former areas by extreme salinity fluctuations, increased turbidity, sedimentation, dredging and damage from boats. Oyster beds have been stressed and occasionally all but eliminated by frequent freshwater releases from both the watershed and Lake Okeechobee. During dry times, oysters in the Caloosahatchee are also stressed by disease and increased predation due to higher salinities. As compared with the FWO, Alts 4R and 4R2 show a minor beneficial effect with performance improvement within the Northern Estuaries as indicated by fewer high volume flow months. Reductions in high volume discharges and salinity fluctuations would likely benefit oysters within the Northern Estuaries. Reduction in high flows and accompanying flow velocities would help lessen the current problem of flushing of oyster spat into outer areas of the Northern Estuaries that experience high salinities levels during the dry season resulting in increased predation and disease in the oyster population.

Within Florida Bay, a habitat suitability index model was employed to simulate growth, survival and potential harvest of a cohort of shrimp as a function of salinity and temperature (Browder et al. 1999; 2002). Comparisons of the percent increase in potential pink shrimp harvest in two representative Florida Bay basins over the 41-year POR for Alts 4R and 4R2 relative to the FWO are shown in **Figure C.2.2-48** and **Figure C.2.2-49**. Whipray Basin is located in north central Florida Bay and Johnson Key

Basin is located in western Florida Bay. Alt 4R2 provides slight improvement relative to Alt 4R in both Whipray Basin and Johnson Key Basin and provides minor beneficial effects.

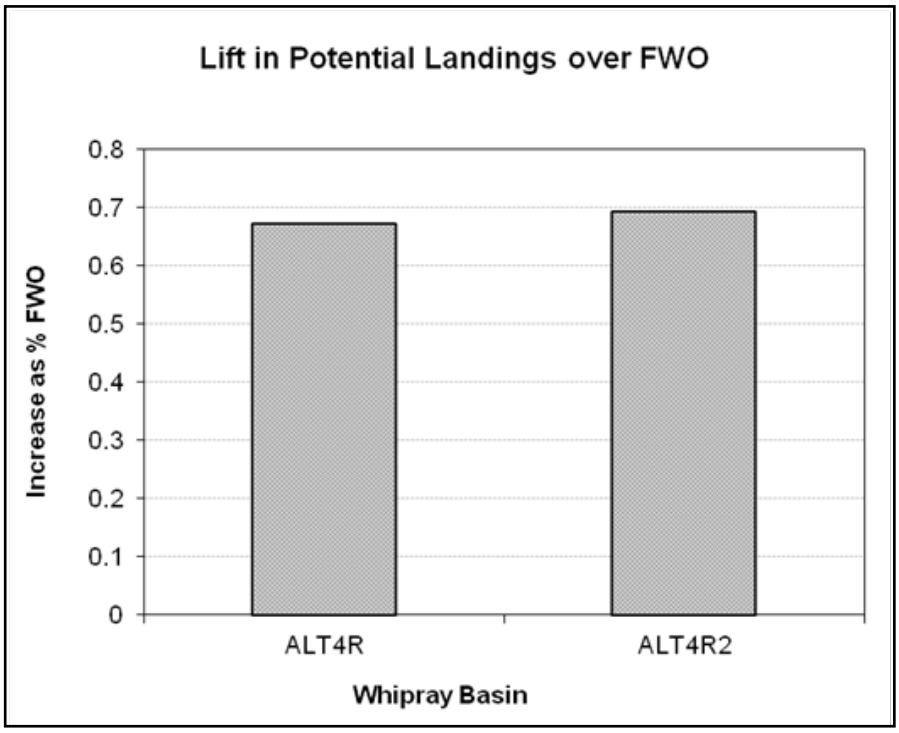


Figure C.2.2-48. Comparison of the percent increase in potential pink shrimp harvest in Whipray Basin for the 1965-2005 period of record for Alts 4R and 4R2 relative to the No Action Alternative (FWO). (Browder 2013).

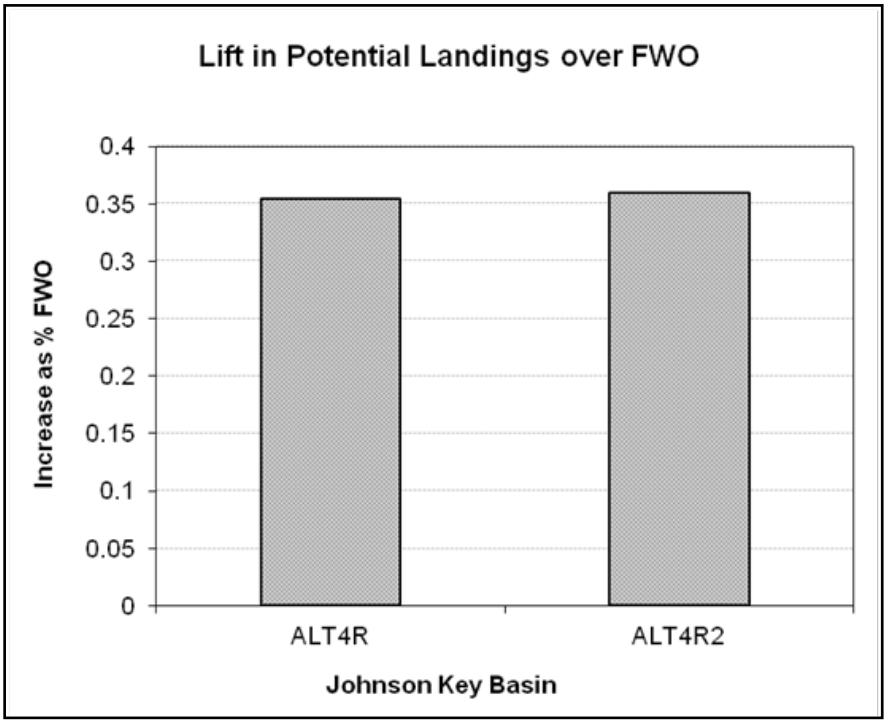


Figure C.2.2-49. Comparison of the percent increase in potential pink shrimp harvest in Johnson Key Basin for the 1965-2005 period of record for Alternatives 4R and 4R2 relative to the No Action Alternative (FWO). (Browder 2013).

In Biscayne Bay, Alt4R provided less water while Alt4R2 provided additional flows when compared to FWO. Alt4R flows to the coast are not evenly distributed showing positive benefits in the very northernmost reach of Biscayne Bay and minor adverse effects from the mid-section of the northern portion to the south. Alt4R2 provides additional flows throughout the bay and is likely to provide a minor beneficial effect to the invertebrate population by providing additional flows to the coast, thereby lowering salinity levels and/or reducing the number of days salinities exceed 40 psu. Alt4R would likely result in a significant and negative effect to the invertebrate population by increasing the likely hood of maintaining salinity conditions in Biscayne Bay above the preferred salinity range of invertebrate population for longer periods of time than FWO. Alternative 4R shows an unfavorable seasonal flow pattern with reductions in flows compared to FWO generally greater during the dry season. Alt4R2 shows slightly increased flows patterns for both seasons compared to FWO.

Within the Greater Everglades aquatic invertebrates would rapidly colonize newly re-hydrated areas with implementation of Alts 4R and 4R2, showing a minor beneficial effect that directly benefits aquatic invertebrates within the action area. Increases in stages and hydroperiods within WCA 2, northern WCA 3A, WCA 3B and ENP would promote wetland vegetation transition through contraction of sawgrass marshes and expansion of wet prairies, and in deeper regions, sloughs. Submerged aquatic plants are commonly associated with sloughs providing structure for growth of periphyton, the main source of primary production within the freshwater Everglades (Gunderson 1994; Powers 2005).

Periphyton is a primary component of invertebrate diets, including apple snails. In addition to the potential for increased foraging opportunities, changes in vegetation resulting in expansion of wet prairie and increases in emergent vegetation would also provide habitat structure critical for apple snail aerial respiration and egg deposition (Turner 1996; Darby et al. 1999). Apple snails tend to avoid areas where water depths are greater than 50 centimeters (Darby et al. 2002). Avoidance of deeper depths may be related to the type and density of vegetation in deeper water areas, food availability or energy requirements for aerial respiration (van der Walk et al. 1994; Turner 1996; Darby 1998; Darby et al. 2002). Water-lily sloughs support lower apple snail densities as compared with wet prairies (Karunaratne et al. 2006). Limited food quality and lack of emergent vegetation in sloughs may account for the lower densities. Research indicates that apple snails depend upon periphyton for food (Rich 1990; Browder et al. 1994; Sharfstein and Steinman 2001), which may be limited within deeper water environments. Karunaratne et al. (2006) observed little or no submerged macrophytes and epiphytic periphyton in the sloughs they studied in WCA 3A. In contrast, species commonly encountered within wet prairie habitat (e.g. *Eleocharis* spp., *Rhynchospora tracyi*, *Sagittaria* spp.), along with sawgrass that grows within the ecotones between the two vegetative communities, support abundant populations of epiphytic periphyton (Wetzel 1983; Browder et al. 1994; Karunaratne et al. 2006). A reduction in the number of available emergent stems for egg deposition would also contribute to the observed lower snail densities within sloughs. Drying events are needed to maintain the emergent plant species characteristic of typical apple snail (Wood and Tanner 1990; Davis et al. 1994). As shown by Darby et al. (2008), apple snails can survive these events and it is the timing and duration of the dry down event that are critical determinants of apple snail survival and recruitment. As compared with the FWO, Alts 4R and 4R2 provide increased opportunities for apple snails within northern WCA 3A; and appropriate conditions for increased apple snail populations in ENP and provide minor beneficial effects (see **Section C.2.2.4.1** for more information on apple snails).

Crayfish are important components within the Everglades food web, serving as primary dietary components of higher trophic level species including fish, amphibians, alligators, wading birds and mammals such as raccoons and river otters (Kushlan and Kushlan 1979). Crayfish are particularly important forage resource for nesting white ibis (*Eudocimus albus*), therefore the availability of crayfish is an important component for recovery of this species (Boyle et al. 2012; Dorn et al. 2011). Crayfish species composition and abundance within the Greater Everglades are linked to hydroperiod. Two species of freshwater crayfish are found within the Greater Everglades: Everglades crayfish (*Procambarus alleni*) and slough crayfish (*Procambarus fallax)*. *P. alleni* is commonly found in marshes that dry seasonally, generally with a hydroperiod of less than 10 months. When surface water recedes, *P. alleni* burrows to escape drying conditions. *P. fallax* is commonly found in perennially flooded habitats. Both species have been found co-occurring in areas with hydroperiods ranging between 9 and 11 months, as well as in sites that remained flooded during the dry season.

Increases in hydroperiod associated with implementation of Alts 4R and 4R2 would likely increase crayfish density within areas of northern WCA 3A, WCA 3B and ENP, particularly within the marl prairies providing a moderate and significant beneficial effect. Research by Acosta (2001) revealed that environmental changes associated with shortened hydroperiod have affected growth, survival, dispersal and productivity within Everglades marl prairies and within the rocky glades. Results from this study indicate that crayfish productivity would increase substantially if hydroperiods within marl prairies wetlands were extended by 3 to 4 months. Although CEPP would not extend hydroperiods within marl prairies by this duration, Alts 4R and 4R2 would increase hydroperiods within this region resulting in increased *P. alleni* productivity.

P. alleni biomass also declines during periods of extended high water. During extended periods of inundation, populations of large predatory fish species may increase, thereby increasing predation pressure on crayfish populations (Kushlan and Kushlan 1979). Under CEPP, in areas in which hydroperiods will be extended sufficiently to support increases in large predatory fish (refer to **Section C.2.2.5.2**, **Fish**), there will also likely be associated declines in *P. alleni* biomass.

Kushlan and Kushlan's (1979) notion that dry-downs promote crayfish abundance and recruitment by reducing predatory fish populations has recently received considerable empirical support for both crayfish species. Kellogg and Dorn (2012) demonstrated that just a few small sunfish (*Lepomis* spp.) can have dramatic effects on crayfish recruitment in experimental wetland mesocosms. Moreover, this was verified at the slough scale in an experimental drought study at LILA (SFER 2012), and at the scale of WCA 3A where crayfish densities were positively correlated with the length of the previous dry period (SFER 2012). Taken together, these results suggest aquatic predators control crayfish density and recruitment and dry disturbances, which temporarily reduce predatory fishes, release crayfish from top-down control. However, it should also be noted that deep water refuges (e.g. canals) buffering predatory fish populations against drying, and poor burrowing substrates for crayfish (i.e., shallow peat layers combined with long dry periods) can offset the positive effects of dry disturbances for crayfish population growth. Thus, while CEPP is likely to improve conditions for crayfish in areas that are currently too dry for crayfish production (sensu Acosta 2001), it is not entirely clear how additional water provided by Alts 4R and 4R2 will affect populations in areas that currently experience periodic dry downs and are relatively productive for crayfish.

C.2.2.5.2 Fish

Implementation of CEPP is expected to significantly improve conditions for fish species throughout much of the Greater Everglades and have a moderate and significant beneficial effect. It is predicted that with implementation of Alts 4R and 4R2, that the largest percent gains in daily average fish density would occur within northern WCA 3A and NESRS due to rehydration. In these areas, fish densities often increased in excess of 20%, with extremes of over 50% (**Figure C.2.2-50**). Other areas within Shark River Slough are also expected to experience appreciable gains in fish density due to increased flows. It is also expected that regional percent changes in fish densities would be highest in SRS and the southern marl prairies (17-31%) for Alt 4R and that Taylor Slough and Florida Bay would also be expected to experience positive changes as compared with the FWO (Catano and Trexler 2013). Alt 4R predicted approximately 5% higher biomass than Alt 4R2 in SRS and the southern marl prairies. Decreases in fish density, or negligible changes (3%), were predicted for Alts 4R and 4R2 in WCA 2A and the area of WCA 3A along the L-67 A canal. Negligible differences between Alts 4R and 4R2 were predicted in most other regions.

Introduction or expansion of non-native fish species due to changes in water distribution and increased connectivity within WCA 3A, WCA 3B and ENP is likely to occur; however, the extent of invasion is uncertain at this time. In contrast to the FWO, new access points will be created under CEPP.

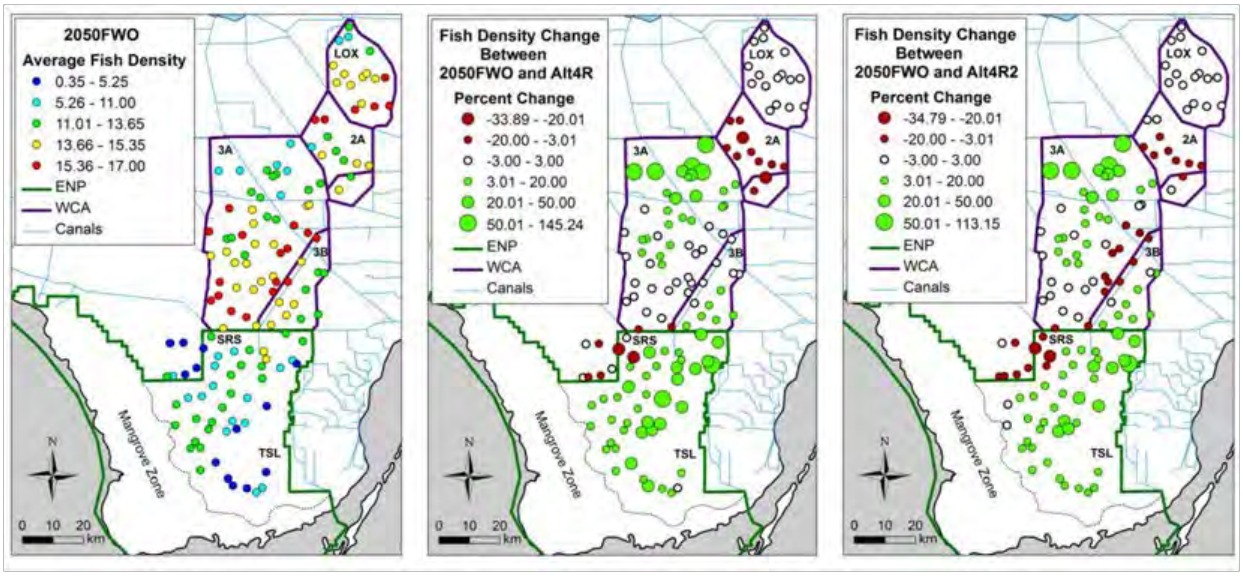


Figure C.2.2-50. Percent change in average daily fish density over the 41 year period of record (1965-2005) predicted by comparing the No Action Alternative to Alts 4R and 4R2. Bubble sizes are proportional to differences in density.

In Biscayne Bay, Alt4R provided less water while Alt4R2 provided additional flows when compared to FWO. Alt4R flows to the coast are not evenly distributed showing positive benefits in the very northernmost reach of Biscayne Bay and negative effects from the mid-section of the northern portion to the south. Alt4R2 provides additional flows throughout the bay and is likely to provide a benefit to the fish population by providing additional flows to the coast, thereby lowering salinity levels and/or reducing the number of days salinities exceed 40 psu, providing minor beneficial effects. Alt4R would likely result in a minor adverse effect to the fish population by increasing the likely hood of maintaining salinity conditions in Biscayne Bay above the preferred salinity range of fish population for longer periods of time than FWO. Alternative 4R shows an unfavorable seasonal flow pattern with reductions

in flows compared to FWO generally greater during the dry season. Alt4R2 shows slightly increased flows patterns for both seasons compared to FWO.

C.2.2.5.3 Amphibians and Reptiles

Minor beneficial effects to amphibian and reptile communities are anticipated with CEPP implementation. Alts 4R and 4R2 showed improved conditions for amphibians within WCA 3 and ENP as compared with the FWO. Rehydration within previously dry areas within northern WCA 3A would increase spatial extent of suitable habitat for aquatic amphibian species in this area. Similarly, increased hydroperiods within ENP would also benefit aquatic amphibian species. As hydrology improves within WCA 3A, WCA 3B and ENP, it is expected that amphibian species richness will also change. However, declines in some amphibian species will be offset by favorable habitat conditions for other species. Increase in forage prey availability (i.e. crayfish and other invertebrates, fish) in areas rehydrated by CEPP implementation will also directly benefit amphibian and reptiles species.

Introduction or expansion of non-native amphibian species due to changes in water distribution and increased connectivity within WCA 3A, WCA 3B and ENP is likely to occur and have a minor adverse effect; however, the extent of invasion is uncertain at this time. In contrast to the FWO, new access points will be created under CEPP.

Submerged aquatic vegetation and algal communities are also common foraging areas for the green sea turtle. Decreased salinities within the Northern Estuaries that reduce stress on SAV and promote increases in seagrass shoots have the potential to increase foraging opportunities for green sea turtles in this region. Similarly, increased freshwater flows to Florida Bay and the southwestern coastal estuaries resulting in lowered salinity levels that better encompass seagrass salinity tolerance ranges would also increase foraging opportunities for green sea turtles. Alt 4R2 provided slightly improved salinity conditions in Florida Bay in comparison to Alt 4R. Implementation of Alts 4R and 4R2 would directly benefit foraging green sea turtles within the Northern and Southern Estuaries and provide a minor beneficial effect.

C.2.2.5.4 Birds

The freshwater wetlands of the Everglades are noted for their abundance and diversity of colonial wading birds. Nesting and foraging activities of resident bird species are anticipated show a moderate beneficial effect with the implementation of Alts 4R and 4R2. Impacts to the Cape Sable seaside sparrow, snail kite, and word stork are further discussed in **Section C.2.2.4, Threatened and Endangered Species** (see also **Annex A** for the BA). Changes in water quality also have the potential to affect birds through alteration of vegetation composition or structure or impacts to their forage base. Water quality will continue to be monitored under CEPP and potential effects are largely uncertain at this time.

As predicted by the Trophic Hypothesis (RECOVER 2004) an increase in density of small fishes will directly benefit higher trophic level predators such as wading birds. Therefore, it is predicted that Alts 4R and 4R2 that provide a moderate beneficial effect to small fishes as described in **Section C.2.2.5.2, Fish**, will also perform well overall for wading birds. Crayfish are a particularly important forage resource for nesting white ibis (*Eudocimus albus*). Appropriate foraging conditions and crayfish densities within core foraging areas of nesting wading birds colonies can reduce foraging flight distance. As indicated in **Section C.2.2.5.1, Invertebrates**, increases in hydroperiod associated with implementation of Alts 4R and 4R2 would likely increase crayfish density within northern WCA 3A, WCA 3B and ENP, particularly within the marl prairies.

The largest wading bird rookery within the Everglades ecosystem is Alley North. Under current and FWO conditions, a large dry area within northeastern WCA 3A creates a significant hazard for nesting birds due to egg predation by mammals. Alts 4R and 4R2 show significant hydrological improvement within northeastern WCA 3A, providing minor beneficial effects. As compared to Alt 4R, Alt 4R2 showed slightly lower depths during average hydrologic conditions in northeastern WCA 3A. Associated increased depths, hydroperiods and sheetflow decrease the potential for nest predation within Alley North.

C.2.2.5.5 Mammals

As compared with the FWO, potential minor beneficial effects to mammals within the CEPP action area are anticipated with Alts 4R and 4R2. Small mammals including raccoons and river otters would benefit from increased crayfish and small prey fish biomass in rehydrated areas within northern WCA 3A, WCA 3B and ENP as a result of Alts 4R and 4R2. Effects to state and federally listed species are described in further detail in **Section C.2.2.4, Threatened and Endangered Species** and within **Annex A**. Changes in water quality also have the potential to affect prey forage base through altering of vegetation composition or structure. Water quality will continue to be monitored under CEPP; potential effects are largely uncertain at this time.

CEPP implementation, however, may have a short-term significant, adverse and unavoidable effect on mammals dependent upon upland habitat. As compared with the FWO, Alts 4R and 4R2 increased depths and resulting hydroperiods within northern WCA 3A. Due to increased water flow and changes in water distribution it is anticipated that overdrained areas in northern WCA 3A will be rehydrated, triggering a vegetation transition from upland to wetland habitat. Performance between Alts 4R and 4R2 was similar in northwestern WCA 3A; however Alt 4R2 showed slightly lower depths during average hydrologic conditions in northeastern WCA 3A. Although, mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades; there is an increased potential for this vegetation transition to have a short-term significant, adverse effect on the mammals utilizing upland habitat. This is a particular concern for deer populations within northern WCA 3A that utilize tree islands. However, as discussed in **Section C.2.2.3.4.4, Tree Islands**, no adverse effects to tree islands within WCA 3A and ENP are anticipated to occur under any CEPP implementation; however slightly lower water depths under Alt 4R2 relative to Alt 4R may be more favorable to deer populations in northeastern WCA 3A. Deer populations that utilize the lower elevation tree islands within WCA 3B may suffer from habitat loss, having a short-term significant, adverse and unavoidable effect. In addition, deer that utilize levees slated for removal (L-67A, L-29, L-67 Extension) also have the potential to show a moderate adverse effect. Loss of these levees may be offset by the construction of the Blue Shanty Levee in WCA 3B. Deer are highly mobile and will migrate to find suitable habitat. Negligible effects on mammals in the remainder of the CEPP action area are anticipated under Alts 4R and 4R2.

C.2.2.6 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act, 16USC 1801 et seq. Public Law 104-208 reflects the Secretary of Commerce and Fishery Management Council authority and responsibilities for the protection of essential fish habitat (EFH). Federal agencies that fund, permit, or carry out activities that may adversely impact EFH are required to consult with the National Marine Fisheries Service (NMFS) regarding the potential effects of their actions on EFH. In conformance with the 1996 amendment to the Act, the information provided in this Integrated Environmental Impact Statement (EIS) will comprise the required EFH assessment and has been coordinated with NMFS.

Consultation for CEPP was initiated on January 10, 2012 through a NEPA scoping letter. The NMFS has indicated that beneficial effects to fish resources and EFH may occur as a result of this project. The NMFS requested an evaluation of potential impacts to living marine resources, including mangroves, seagrasses, live bottom communities, and the marine/estuarine water column that may be impacted by activities or operations of the project alternatives.

Essential Fish Habitat in the Project Area:
The project area includes three distinct regional estuarine and nearshore coastal systems: The southern estuaries including Biscayne Bay and Florida Bay; and the northern estuaries including the Caloosahatchee River and the St. Lucie Estuary.

The southern estuaries comprise Biscayne National Park and a large portion of Everglades National Park, and are a shallow estuarine system (average depth less than 3 feet). Florida Bay is the main receiving water of the greater Everglades, heavily influenced by changes in timing, distribution, and quantity of freshwater flows into the southern estuaries. Lake Okeechobee discharges into the two northern estuaries. The St. Lucie Canal feeds into the St. Lucie Estuary, and the Caloosahatchee Canal/River feeds into the Caloosahatchee Estuary to the west.

Biscayne Bay and Florida Bay
The southern estuaries contain essential fish habitat for corals; coral reef and live bottom habitat; red drum (*Sciaenops ocellatus*); penaeid shrimps; spiny lobster (*Panulirus argus*); other coastal migratory pelagic species and the snapper-grouper complex. Species generally present in the southern estuaries region include brown shrimp (*Penaeus aztecus*), pink shrimp (*Penaeus duorarum*), white shrimp, spiny lobster, stone crab, gulf stone crab, red drum, Spanish mackerel, and gray snapper (*Lutjanus griseus*). Essential fish habitat in the southern estuaries is comprised of seagrasses, estuarine mangroves, intertidal flats, the estuarine water column, live/hard bottoms, and coral reefs.

Caloosahatchee River
The Caloosahatchee River estuary contains essential fish habitat for juvenile brown shrimp (*Penaeus aztecus*), juvenile gray snapper (*Lutjanus griseus*), juvenile pink shrimp (*Penaeus duorarum*), adult and juvenile red drum, (*Sciaenops ocellatus*), adult and juvenile Spanish mackerel (*Scomberomorus maculatus*), smalltooth sawfish (*Pristia pectinata*) and juvenile stone crab (*Menippe mercenaria*). Downstream habitats include oyster reefs and seagrass beds (submerged aquatic vegetation).

St. Lucie Estuary
The proposed project is within the jurisdiction of the South Atlantic Fishery Management Council (SAFMC) and is located in areas designated as EFH for wormrock, live bottom habitat, for the American oyster (*Crassostrea virginica*); pink shrimp (*Penaeus duorarum*); white shrimp (*Penaeus* sp.) and brown shrimp (*Penaeus aztecus*); Florida red drum (*Sciaenops ocellatus*); grouper (*Epinephelus* spp.); gray snapper (*Lutjanus griseus*); white grunt (*Haemulon plumieri*); red porgy (*Pagrus pagrus*); spiny lobster (*Panulirus argus*); and the snapper-grouper complex. In addition, the nearshore hardbottom habitat outside of the St. Lucie Estuary is designated as Essential Fish Habitat-Habitat Areas of Special Concern (EFH-HAPC) for the snapper-grouper complex.

Assessments of Effects on Essential Fish Habitat:
Southern Estuaries
Project construction activities should have no effect on the nearshore communities or essential fish habitat downstream of the project areas. However, this project is expected to have a minor beneficial

indirect effect by increasing overland flow into the southern estuaries. The increased flow is anticipated to stabilize the water quality and salinities required to improve and sustain nearshore biological communities.

Seagrasses are expected to benefit from the re-direction and dispersion of fresh water across the wetland systems prior to entering the southern estuaries. Seagrass habitats are heavily utilized by both juvenile and adult fishes and invertebrates for feeding and shelter (SAFMC 1998). Species that depend on seagrass habitats include the penaeid pink and brown shrimp, and spiny lobster (SAFMC 1998). Seagrass performs as an important nursery habitat for red drum, snook (*Centropomus undecimalis*), bonefish (*Albula vulpes*), tarpon (*Megalops atlanticus*) and several species of snapper and grouper, and is critical to the health of Biscayne Bay, Florida Bay, and a number of commercial and recreational fisheries (SAFMC 1998).

The restored hydrology provided by this project would also increase the periodic inundation of the downstream mangrove wetlands. Mangrove wetlands depend on this periodic inundation; the lack of freshwater from upstream sources contributes to their degradation (SAFMC 1998). Mangrove habitats are important because they provide food and refuge to a large variety of species. These species include: spiny lobsters, pink shrimp, snook (*Centropomus undecimalis*), goliath grouper (*Epinephelus itajara*), tripletail (*Lobotes surinamensis*), leatherjack (*Oligoplites saurus*), gray snapper (*Lutjanus griseus*), dog snapper (*L. jocu*), sailor's choice (*Haemulon parra*), bluestriped grunt (*H. sciurus*), sheepshead (*Archosargus probatocephalus*), black drum (*Pogonias cromis*) and red drum (SAFMC 1998).

The estuarine water column is typically characterized by four salinity categories: oligohaline (< 8 psu), mesohaline (8-18 psu), and polyhaline waters (18-30 psu) with some euhaline water (>30 psu) around inlets (SAFMC 1998). Saline boundaries in the estuarine water column are variable, but are generally maintained by sea water transported through inlets by tide and wind mixing with fresh water supplied by land runoff' (SAFMC 1998). This project will improve quantity, timing, and distribution of water delivered to Northern Biscayne Bay and Eastern Florida Bay, providing a minor beneficial effect. It is likely that this will result in an improvement to the salinity characteristics of the estuarine water column. This habitat is utilized by larvae of commercially important fishes for feeding, and is an important means of conveying organisms and nutrients from inland to offshore areas (SAFMC 1998).

This project is not expected to have an effect on coral reef or hard bottom communities in the southern estuaries. There are no coral reefs or hard bottom communities located within the proposed project site or the nearshore waters affected by the project. Corals found within Florida Bay and Biscayne Bay are outside the area of potential effect.

<u>Northern Estuaries</u>

Aquatic habitats within the Caloosahatchee Basin have been altered through the channelization of the river. Nevertheless, the basin continues to support fishery resources of some recreational and commercial importance. Seagrass communities within the Caloosahatchee estuary provide critical refugia for juvenile fishes such as redfish, grouper, snook, and spotted seatrout. The decline in juvenile abundance and distribution of these and other species, along with an overall decrease in species richness may be related to the loss of seagrass habitat and/or a result of alterations in the salinity regime and the timing of the freshwater discharges from the S-79 structure. Reports from Lee County biologists (e.g. J.N. Ding Darling National Wildlife Refuge, City of Sanibel, and the Sanibel Captiva Conservation Foundation), indicate seasonal seagrass die-offs (as observed under the present freshwater plume extending beyond the mouth of the lower estuary); and given the appropriate salinity

conditions, seagrass growth and spatial expansion. However, while difficult to quantify the mortality and subsequent impacts to estuarine organisms including oysters and fishes, reductions and durations of high volume freshwater discharges into the Caloosahatchee River as a result of implementing CEPP will help maintain salinities in the preferred ranges for all estuarine biota.

Another primary goal of this project is to reduce high nutrient freshwater flows to the St. Lucie estuary. No direct impacts are anticipated, rather the restoration potential of seagrass beds, oyster reef, and the estuarine water column itself. Increases in seagrass and oyster reef would provide a large number of benefits to the essential fish habitat species. The proposed project significantly increases the acres of SAV, oyster, and healthy benthic habitat, providing a minor beneficial effect.

Conclusion:

Southern Estuaries

Previous water management operations have resulted in an inland migration of saline conditions in both groundwater and surface waters. This has caused the expansion of moderate to high salinity zones and has diminished the spatial extent of freshwater wetland habitats in the southern estuaries. Landward expansion of saltwater and mangrove wetlands, including low-productivity, sparsely vegetated dwarf mangrove communities typical of the hypersaline 'white zone' has also occurred in the southern estuaries.

The proposed project components would improve freshwater delivery to coastal wetlands and adjacent southern estuaries. Implementation of the project would redistribute flow to salt water wetlands and nearshore bay areas and result in favorable changes to salinity levels. These changes may affect essential fish habitat, although the impacts to the aquatic resources are anticipated to be significant and beneficial.

Northern Estuaries

The Caloosahatchee and St. Lucie estuaries both receive excessive discharges from Lake Okeechobee as well as their local basins during wet years, and suffer from too little discharge on excessively dry years.

Restoration goals in the Caloosahatchee estuary include; re-establishment of a salinity range favorable to juvenile marine fish, shellfish, oysters and submerged aquatic vegetation (SAV), re-establishment of seasonally appropriate freshwater flows of favorable quality that maintain low salinities in the upper estuary and re-establishment of more stable salinities and ranges in the lower estuary. Restoration goals for the St. Lucie estuary include maintaining a salinity range favorable to fish, benthic invertebrates, oysters and SAV. This requires a reduction of high volume, long duration discharge events from Lake Okeechobee, the C-44, C-23 and C-24 watersheds.

In summary, CEPP may improve conditions for estuarine and marine resources throughout the Northern Estuaries by restoring more natural timing, volume, and duration of freshwater flows to the Caloosahatchee and St. Lucie estuaries. It has the potential to reduce excess nutrient loading and provide a more appropriate range of salinity conditions by reducing extreme salinity fluctuations and durations. The improvement of estuarine conditions will ultimately have a significant beneficial effect to essential fish habitat resources.

C.2.2.7 Hydrology

Hydrologic modeling simulations of the ECB and the FWO were developed with the RSM-BN and RSM-GL sub-regional modeling tools, to provide baseline conditions for plan formulation, the assessment of

CEPP project benefits (comparisons against FWO), and the assessment of CEPP alternative performance for the level-of-service for flood protection and water supply (comparisons against ECB). The ECB was developed to represent the system-wide infrastructure and operations that were in place at the time CEPP plan formulation was initiated, approximately January 2012. The FWO for CEPP assumes the construction and implementation of currently authorized CERP and non-CERP projects, and other Federal, state or local projects constructed or approved under existing governmental authorities that occur in the CEPP study area. Selection of the recommended plan is conducted based on comparisons between the CEPP alternatives and the CEPP FWO. The reader should refer to Section 2 of the CEPP PIR main report and Appendix C.1 for additional documentation of the ECB and FWO conditions.

The portion of the Greater Everglades within the CEPP project area includes WCA 1, WCA 2A, WCA 2B, WCA 3A, WCA 3B, and ENP. This overview of CEPP hydrological conditions is intended to provide a general overview of regional hydrological changes for Alt 4R and the CEPP recommended plan (Alternative 4R2) compared to the CEPP FWO. RSM-BN and RSM-GL hydrologic modeling simulations for the CEPP final array of alternatives were developed starting from the FWO modeling simulation. Since all of the components north of the red line were the same for the initial CEPP final array of alternatives (Alts 1 through 4), a single RSM-BN simulation was originally completed for all of the CEPP components north of the red line. However, during the modeling effort for the Alt 4R and Alt 4R2, revised RSM-BN simulations were completed for these alternative simulations to address performance shortfalls observed with Alt 4 and Alt 4M, including to avoid potential impacts to water supply levels of service in the Lake Okeechobee Service Area (LOSA) and the Lower East Coast (LEC) and to avoid increases in the number of low flow events to the St. Lucie Estuary. The revised RSM-BN simulations resulted in updated boundary conditions for the RSM-GL modeling of Alt 4R and Alt 4R2. Hydrologic performance within any specific spatial area is due to the combined effect of Alt 4R and Alt 4R2 components and operations identified throughout the project area. Deduction of cause-effect relationships between CEPP alternative components were conducted throughout the CEPP preliminary screening and alternative formulation effort (refer to **Sections 3** and **4** of the CEPP PIR/EIS main report). For a more detailed assessment, the reader should refer to the complete suite of RSM-GL modeling results. A map of the RSM-GL gage locations is provided in **Figure C.2.2-51**.

The ECB and FWO baseline condition assumptions, which were established early during the CEPP preliminary screening process (prior to February 2012), were not modified during the CEPP formulation process in order to maintain a consistent set of base conditions for screening and alternative evaluation purposes. Following identification of the recommended plan in June 2013, the base condition assumptions were subsequently revisited and updated to represent the most current information for the analysis of Savings Clause requirements and Project-Specific Assurances in Annex B. The revised 2012 Existing Condition Baseline (2012EC) updated the ECB to include implementation of ERTP operations for WCA-3A and the South Dade Conveyance system, in addition to minor localized corrections to improve RSM-GL representation of the S-9/S-9A operations and the L-28 weir (all other ECB assumptions remain unchanged; the complete assumptions tables for the ECB and 2012EC are provided in Annex A-2 of Appendix A). The revised Initial Operating Regime Baseline (IORBL1) updated the FWO to include final SFWMD proposed operational intent for the Restoration Strategies project, the 2.6 mile western Tamiami Trail bridge proposed with the initial increment of the DOI Tamiami Trail Next Steps Project (based on best available phased implementation information from DOI), operational updates to the CERP Indian River Lagoon South (IRLS) project (based on best available information from the IRLS project team), and operational refinements to the CERP Broward County Water Preserve Area project (to reduce excess discharges to tide via S-29, including accounting for the effects of the Lake Belt expansion assumed in the CEPP FWO condition), in addition to the same minor localized corrections

included with the 2012EC to improve RSM-GL representation of the S-9/S-9A operations and the L-28 weir (all other FWO assumptions remain unchanged; the complete assumptions tables for the FWO and IORBL1 are provided in Annex A-2 of Appendix A). Compared to the FWO baseline, the updated IORBL1 baseline indicates significant hydrologic differences with respect to the Saint Lucie Estuary, the L-28 Triangle, and Biscayne Bay, with other portions of the CEPP project area performing similar to the FWO; since the analysis contained in Annex B compares the recommended plan (ALT 4R2) to the IORBL1, a summary of these performance differences between the FWO and IORBL1 is provided in this section for the St. Lucie Estuary, the L-28 Triangle, and Biscayne Bay.

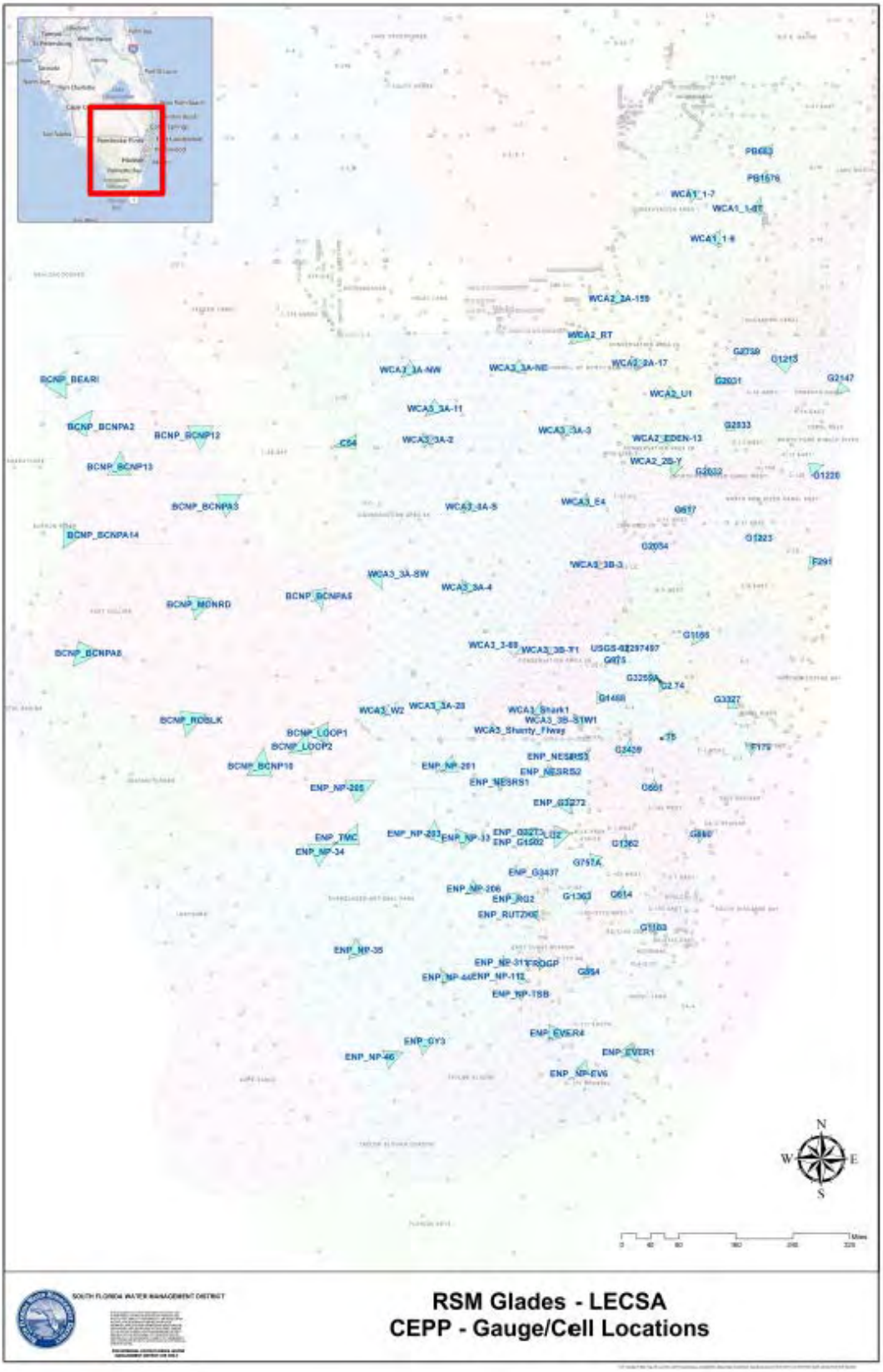


Figure C.2.2-51. Map of RSM-GL monitoring gage locations.

C.2.2.7.1 Lake Okeechobee and the Northern Estuaries

As a result of the CEPP preliminary screening process, operational changes were incorporated into the hydrologic modeling conducted for the CEPP alternatives, including the Alt 4R and the recommended plan Alt 4R2, in efforts to optimize CEPP system-wide performance within the assumed existing flexibility of the 2008 LORS. More specifically, the hydrologic modeling of the CEPP alternatives included proposed revisions to the 2008 LORS decision tree outcome maximum allowable discharges dependant on the following criteria: Lake Okeechobee inflow and climate forecasts (class limits were modified for tributary hydrologic conditions, seasonal climate outlook, and multi-seasonal climate outlook), stage level (regulation zone), and stage trends (receding or ascending). While some refinements were made within the operational flexibility available in the 2008 LORS, consistent with the original modeling intent, the final operational assumptions ultimately extended beyond this flexibility due to adjustments made to the tributary/climatological classifications. Minor modifications to the operational assumptions were included for Alt 4R and Alt 4R2, compared to Alts 1 through 4. For all CEPP alternatives, the LORS 2008 Regulation Schedule zones were unchanged. Additional information and documentation of these assumptions can be found in the Engineering Appendix of the CEPP PIR.

Compared to the FWO, Alt 4R2 Lake Okeechobee stages are increased by 0.25-0.50 feet for the upper 70% of the stage duration curve, excluding extreme wet hydrologic conditions (**Figure C.2.2-52**). Compared to the FWO, Alt 4R Lake Okeechobee stages are increased by 0.25-0.50 feet for the upper 60% of the stage duration curve, excluding extreme wet hydrologic conditions. Compared to Alt 4, Lake Okeechobee stages for Alt 4R and Alt 4R2 are slightly increased by less than 0.10 feet during the upper 40% of the stage duration curve. Peak lake stage increased from 17.50 feet NGVD in the FWO to 17.64 feet NGVD in Alt 4R and 17.66 feet NGVD for Alt 4R2. The number of days with stages above 16 feet NGVD is increased from 696 in the FWO to 1157 and 1162 in Alt 4R and Alt 4R2, respectively, during the 1965-2005 period of simulation. Average annual total discharges from Lake Okeechobee to the Northern Estuaries were reduced from 621 kAF in the FWO (435 to the Caloosahatchee Estuary; 186 to the St. Lucie Estuary) to 493 kAF in Alt 4R (350 to the Caloosahatchee Estuary; 143 to the St. Lucie Estuary) and 482 kAF in Alt 4R2 (356 to the Caloosahatchee Estuary; 126 to the St. Lucie Estuary).

For the Caloosahatchee Estuary, compared to the FWO, mean monthly flows above 2800 cfs and 4500 cfs are reduced by 11 months and 4 months, respectively for Alt 4R2 (14% and 12% reductions, respectively; **Figure C.2.2-53**). Mean monthly flows above 2800 cfs and 4500 cfs are reduced by 11 and 3 months, respectively for Alt 4R (14% and 9% reductions, respectively. Mean monthly flows less than 450 cfs are reduced by 4 months (15%) for Alt 4R2 and 3 months (11%) for Alt 4R (**Figure C.2.2-54**).

For the St. Lucie Estuary, compared to the FWO, mean monthly flows above 2000 cfs and 3000 cfs are reduced by 29 months and 7 months, respectively for Alt 4R2 (34% and 23% reductions, respectively; **Figure C.2.2-55**). Mean monthly flows above 2000 cfs and 3000 cfs are reduced by 27 months and 5 months, respectively for Alt 4R (32% and 16% reductions, respectively. Mean monthly flows less than 350 cfs are decreased by 27 months (29%) for Alt 4R2 and decreased by 2 months (2%) for Alt 4R (**Figure C.2.2-56**).

For the St. Lucie Estuary, compared to the IORBL1, mean monthly flows above 2000 cfs and 3000 cfs are reduced by 15 months and 5 months, respectively for Alt 4R2 (21% and 17% reductions, respectively). Compared to the IORBL1, mean monthly flows less than 350 cfs are increased by 12 months (23%) for Alt 4R2. Average annual total discharges from Lake Okeechobee to the Northern Estuaries were reduced

from 625 kAF in the IORBL1 (441 to the Caloosahatchee Estuary; 184 to the St. Lucie Estuary) to 482 kAF in Alt 4R2 (356 to the Caloosahatchee Estuary; 126 to the St. Lucie Estuary).

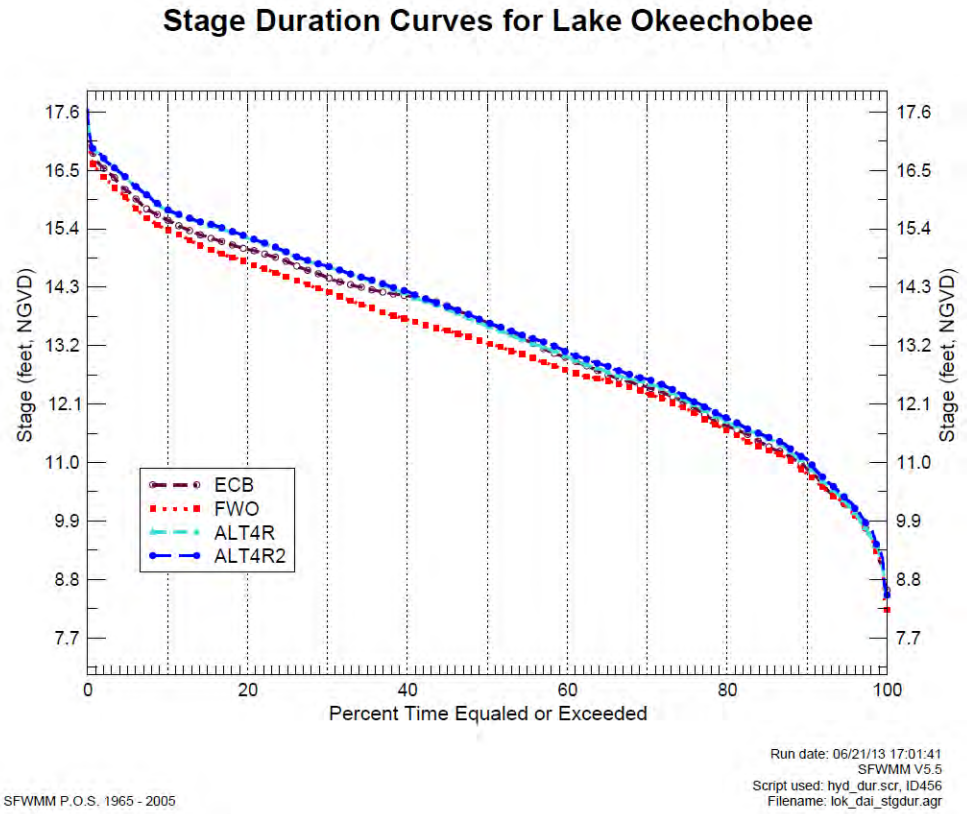


Figure C.2.2-52. Lake Okeechobee Stage Duration Curve for CEPP Alt 4R and Alt 4R2.

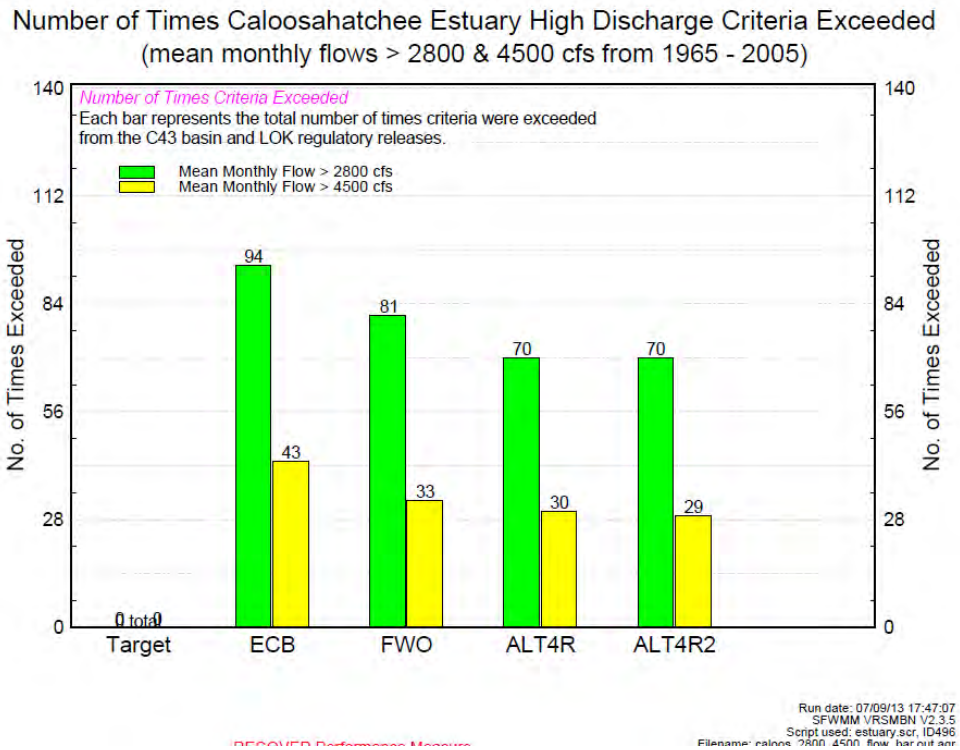


Figure C.2.2-53. Caloosahatchee Estuary High Discharge Frequency for CEPP Alt 4R and 4R2.

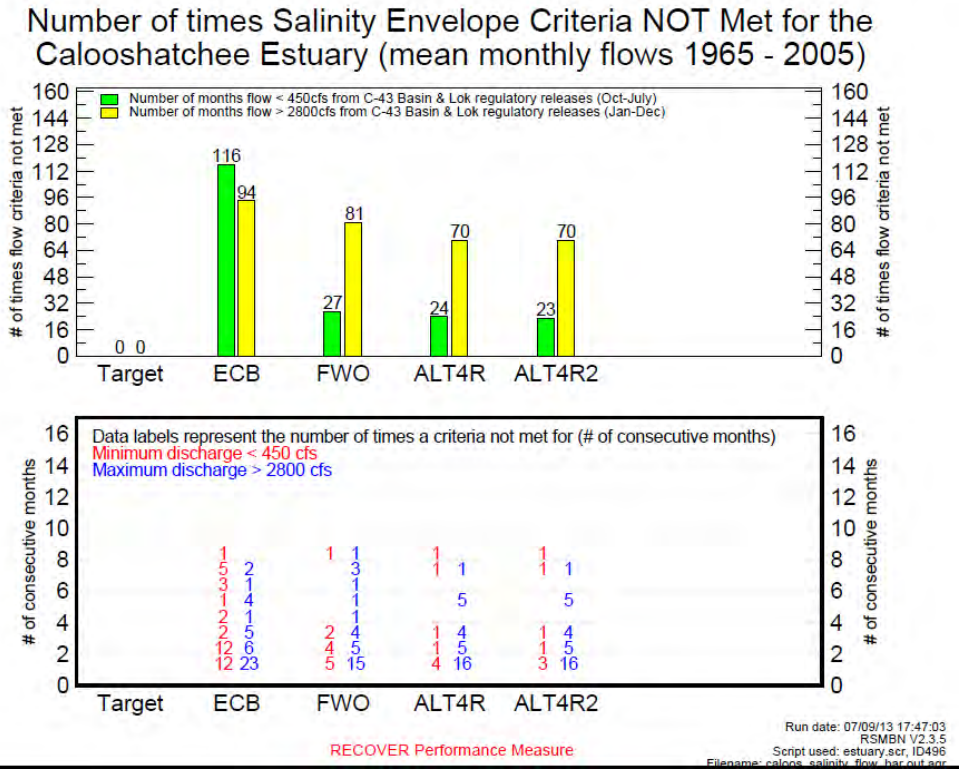


Figure C.2.2-54. Caloosahatchee Estuary Low Discharge Frequency for CEPP Alt 4R and 4R2.

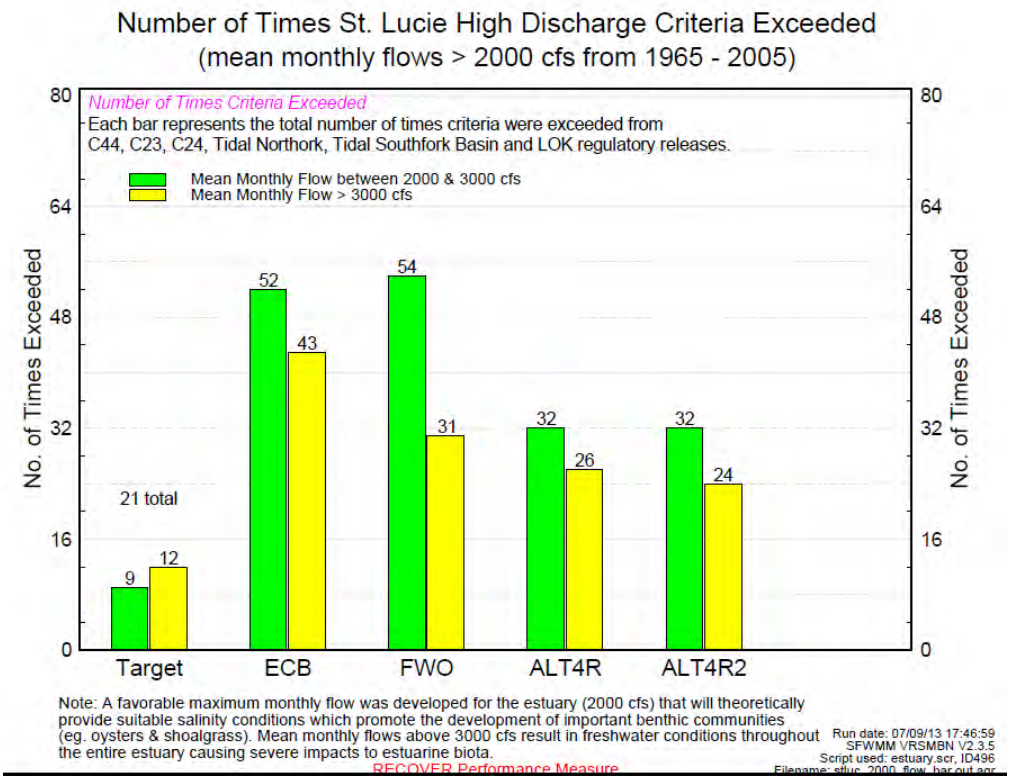


Figure C.2.2-55. St. Lucie Estuary High Discharge Frequency for CEPP Alternatives.

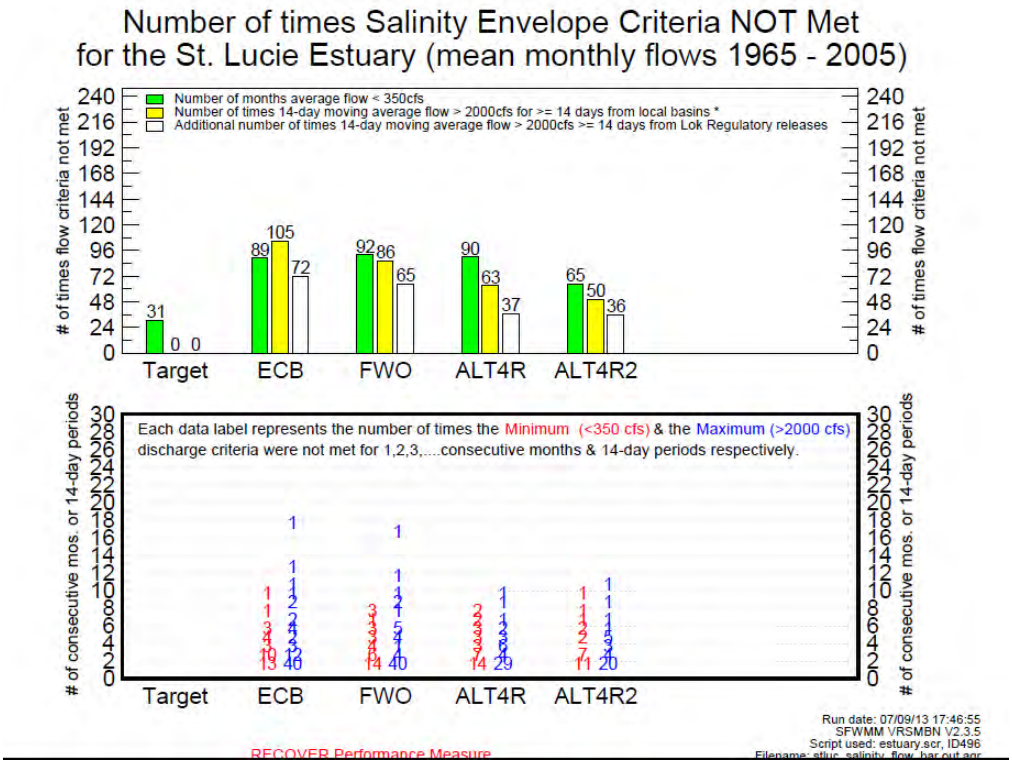


Figure C.2.2-56. St. Lucie Estuary Low Discharge Frequency for CEPP Baselines.

C.2.2.7.2 Everglades Agricultural Area

Minor changes to groundwater levels are expected adjacent to the proposed CEPP A-2 FEB (14,000 acres), compared to the FWO which includes the SFWMD Restoration Strategies A-1 FEB. The A-2 FEB design includes perimeter seepage collection canals and associated seepage pumps to limit potential impacts. Detailed CEPP assessments within the EAA are not available because the RSM-BN does not simulate groundwater within the EAA.

C.2.2.7.3 Water Conservation Area 1

Compared to the FWO, no significant changes to WCA 1 stages are indicated with Alt 4R or Alt 4R2. Average annual regulatory releases from WCA 1 to WCA 2A via the S10 structures are slightly reduced from 268,000 acre-feet (268 kAF) to approximately 266 kAF with Alt 4R and Alt 4R2.

C.2.2.7.4 Water Conservation Area 2A and 2B

Compared to the FWO, WCA 2A stages are moderately decreased by 0.1-0.3 feet under all hydrologic conditions for Alt 4R and Alt 4R2 (**Figure C.2.2-57**). Average annual inflows from STA 2 (including Compartment B) to WCA 2A are significantly decreased from 381 kAF to 230 kAF in Alt 4R (a 40% decrease) and 236 kAF in Alt 4R2 (a 38% decrease) with the assumed implementation of the L-6 diversion from WCA 2A to WCA 3A. The S-7 pump station also contributes inflows to WCA 2A; S-7 inflows are reduced from 77 kAF in the FWO to 29 kAF in Alt 4R and 68 kAF in Alt 4R2, due to operations to redirect a portion of STA-3/4 discharges away from WCA 2A to WCA 3A via the S-8 pump station. The L-6 diversion from WCA 2A to WCA 3A is utilized approximately 70 percent of the period of simulation under the recommended plan Alt 4R2 operations (reduced compared to Alt 4R), with the maximum diversion capacity of 500 cfs approximately 17 percent of the period of simulation. Average annual regulatory releases from WCA 2A to WCA 3A via the S11s are significantly decreased from 460 kAF in the FWO to 290 kAF for Alt 4R and 323 kAF for Alt 4R2.

Compared to the FWO, Alt 4R stages within WCA 2B are significantly decreased by 0.25-0.50 feet under nearly all hydrologic conditions, excluding extreme wet conditions, for Alt 4R (**Figure C.2.2-58**). Stages are approximately equivalent to the ECB. Alt 4R2 operational adjustments to reduce the frequency and magnitude of the L-6 diversion operations resulted in increased stages within WCA 2B. Compared to the FWO, Alt 4R2 stages within WCA 2B are slightly decreased by less than 0.10 feet between the 20th and 60th percentiles of the stage duration curve and stages are decreased by 0.25 feet during the driest 20 percent of the stage duration curve. Changes within WCA 2B are directly related to the decreased stages within WCA 2A and decreased inflows from S-144, S-145, S-146, and seepage.

C.2.2.7.5 L-28 Triangle and Western L-28 Basin

Located to the west of northwestern WCA 3A, the areas immediately west of the L-28 Levee are affected by the increased stage levels in northwest WCA 3A through increased seepage westward across the L-28 Levee. South of the L-4 Levee and north of Interstate 75 (approximately 11 miles), the areas immediately west of the L-28 Levee include the Seminole Tribe of Florida's Big Cypress Reservation and the Miccosukee Tribe of Indians of Florida's Reservation. Compared to the FWO, Alt 4R and Alt 4R2 stages immediately west of the L-28 Levee are increased by 0.1-0.2 feet under wet to normal hydrologic conditions and increased by 0.2-0.3 feet under normal to dry hydrologic conditions, with no significant change indicated for extreme wet or dry conditions (**Figure C.2.2-59**). Stage increases are only observed for the RSM-GL cells located immediately west of the L-28 Levee, which correspond to approximately 1-2 miles west of L-28. Average annual hydroperiods for these cells are increased by 10 to 60 days with Alt 4R and Alt 4R2 for the 7-8 miles north of Interstate 75 (FWO hydroperiods range from 25-150 days), with no

significant hydroperiod changed indicated for the 2-3 miles south of L-4 (FWO hydroperiods range from 0-15 days) .

The L-28 Triangle area is located entirely within the boundaries of the Miccosukee Tribe of Indians of Florida's Reservation and encompasses 7830 acres of Tribal lands and approximately 230 acres of BCNP. The L-28 Triangle area is confined on north by Interstate 75, the west by L-28 Interceptor Canal (L-28I) and the BCNP, and the east by the L-28 Canal. Although Alt 4R and Alt 4R2 do not include modifications to the L-28 Levee or the adjacent canal, stages within the L-28 Triangle are significantly increased by 0.25-1.0 feet during normal to extreme wet hydrologic conditions, compared to the FWO. This anomalous stage increase is the result of a localized correction to improve RSM-GL representation of the L-28 weir, which was implemented for the updated ECB (2012EC) and the updated FWO (IORBL1), and retained (unchanged compared to the IORBL1) in Alt 4R and Alt 4R2. The ECB and FWO baseline conditions should not be compared to the Alt 4R and Alt 4R2 results. Alt 4R and Alt 4R2 results for the L-28 Triangle area can only be meaningfully compared to the 2012EC and IORBL1.

Although Alt 4R and Alt 4R2 do not include modifications to the L-28 Levee or the adjacent canal, stages within the L-28 Triangle are slightly increased by 0.1-0.2 feet during nearly all hydrologic conditions, due to groundwater interactions with the down-gradient western WCA 3A marsh (**Figure C.2.2-60**). Compared to the FWO, no stage increases are indicated during extreme wet hydrologic conditions.

C.2.2.7.6 Big Cypress National Preserve

Stages within the BCNP, west of WCA 3A and Western Shark River Slough (ENP), do not change significantly between the CEPP FWO, Alt 4R, and Alt 4R2.

C.2.2.7.7 Water Conservation Area 3A and 3B

The hydrologic effects of the CEPP alternatives include the combined effects from implementation of the A-2 FEB, the L-6 Diversion, the northern WCA 3A hydropattern restoration components along L-4, the Miami Canal backfill (north of Interstate 75), and the proposed new or expanded WCA 3A outlet structures along L-67A, along with the associated operations. Compared to the FWO, average annual combined structural inflows to WCA 3A from STA 3/4, STA 5/STA 6 (including Compartment C), and WCA 2A are significantly increased from 1,028 kAF to 1,258 kAF (a 22% increase) with Alt 4R2. Compared to the FWO, average annual combined structural inflows to WCA 3A from STA 3/4, STA 5/STA 6 (including Compartment C), and WCA 2A are significantly increased from 1,028 kAF to 1,266 kAF (a 23% increase) with Alt 4R. In order to avoid adverse increases to the frequency, duration, and peak stages of WCA 3A high water conditions with this net increase in WCA 3A inflows, average annual combined structural outflows from WCA 3A through S-151 (to WCA 3B), three new outflow structures along L-67A (to WCA 3B), S-333 (to ENP NESRS), the S-12 structures (to ENP WSRS), and the S343/S344 culverts are also significantly increased from 1,190 kAF in the FWO to 1,427 kAF in Alt 4R2 and 1,423 kAF in Alt 4R (approximately 20% increases).

Since WCA 3A covers approximately 752 square miles, hydrologic differences between the CEPP FWO , Alt 4R, and Alt 4R2 are characterized at representative gages throughout WCA 3A.

Within northwest WCA 3A, compared to the FWO, stages are generally significantly increased by 0.6-0.8 feet for Alt 4R and Alt 4R2 (**Figure C.2.2-61**). Stages within northeast WCA 3A are generally significantly increased by 0.4-0.7 feet for Alt 4R and Alt 4R2, with no significant change during extreme wet conditions and a slight increase in stage for extreme dry conditions (**Figure C.2.2-62**); Alt 4R2 stages are slightly reduced, by less than 0.10 feet, compared to Alt 4R2 due to the reduced frequency and

magnitude of L-6 diversion operations. Within east-central WCA 3A (3A-3), Alt 4R and Alt 4R2 stages are generally significantly increased by 0.2-0.5 feet, with no significant change during the wettest 20% of conditions (**Figure C.2.2-63**). Proceeding south within central WCA 3A (3A-4), Alt 4R and Alt 4R2 stages are generally increased by 0.1-0.2 feet during average to dry conditions, with a slight depth reduction during the wettest 10% of conditions and no significant change during extreme dry conditions (**Figure C.2.2-64**). Southern WCA 3A (3A-28) stages for Alt 4R and Alt 4R2 are decreased by 0.1-0.2 feet during the wettest 5% of conditions and slightly decreased during normal to dry conditions (**Figure C.2.2-65**).

The CEPP FWO includes the existing S-151 gated culvert as the sole structural inflow to WCA 3B (327 kAF average annual) and the existing S-355 A and B spillways as the only structural outflows from WCA 3B (<2 kAF average annual). Alt 4R and Alt 4R2 include three new inflow structures to WCA 3B along L-67A (in addition to increased capacity at S-333), resulting in an additional WCA 3B inflow design capacity of 1500 cfs. Compared to the FWO, average annual combined structural inflows to WCA 3B from WCA 3A are significantly increased from 327 kAF in the FWO to 544 in Alt 4R2 and 548 in Alt 4R (66-67 percent increase). The WCA 3B outflow configuration for Alt 4R and Alt 4R2 includes the removal of the L-29 Levee within the Blue Shanty flowway. Water budget maps with surface water flow vectors for Alt 4R and Alt 4R2, focusing primarily on the structure flows (kAF average annual) and locations (levee seepage flux along L-30 and L-29 is also indicated), are provided in **Figure C.2.2-66** and **Figure C.2.2-67**, similar to the graphics previously provided for Alts 1 through 4; the WCA 3B inflow structures indicated for the Alt 4R2 hydrologic modeling (S-345D, S-345F, and S-345G) were renamed to S-631, S-632, and S-633 (sequenced from north to south) following identification of Alt 4R2 as the CEPP recommended plan. Alt 4R and Alt 4R2, with the Blue Shanty flowway and L-29 Levee Gap, achieve significant north-to-south surface water flow directionality within WCA 3B only in the spatial footprint of the Blue Shanty flowway. Compared to the FWO, average annual combined structural outflows from WCA 3B to the L-29 Canal and ENP NESRS are significantly increased from less than 2 kAF in the FWO to 240 kAF in Alt 4R2 and 238 kAF in Alt 4R, with more than 99 percent of these WCA 3B outflows in Alt 4R2 and Alt 4R discharged across the L-29 Levee degrade within the Blue Shanty flowway. Also included in the WCA 3B water budget, average annual combined structural outflows from WCA 3B to the Lower East Coast (S-31 and S-337) are moderately reduced from 128 kAF in the FWO to 104 kAF in Alt 4R2 and 107 kAF in Alt 4R. Peak stages within central WCA 3B (Site 71) exceed 9.0 feet NGVD for only 15 days (0.10%) of the RSM-GL 1965-2005 period of simulation for both alternatives (compared to 9 days for Alt 4), and WCA 3B stages are above 8.0 feet NGVD for approximately 22-24% or the period of simulation (compared to 21% for Alt 4); Alt 4R2 stages at Site 71 are slightly higher than Alt 4R.

The WCA 3B hydrologic effects, resultant from the targeted increased inflows to eastern WCA 3B with Alt 4R and Alt 4R2, compared to Alt 4, are apparent. Compared to the FWO, Alt 4R and Alt 4R2 stages at WCA 3B Site 71 are increased under all hydrologic conditions (**Figure C.2.2-68**), including stage increases of 0.1 feet during the upper 20% of the stage duration curve (wet to extreme wet conditions), stage increases of 0.2-0.3 feet for normal to dry conditions, and a slight stage increase during extreme dry conditions. Resultant from the CEPP plan formulation process, based on ecological, seepage management, and cost considerations, stages within eastern WCA 3B for Alt 4R and Alt 4R2 were intentionally managed lower than within the Blue Shanty flowway, and increased structural inflows to this area of WCA 3B (S-345D) were targeted to achieve benefits of an extended hydroperiod without significantly increasing WCA-3B discharges through the existing S-355A and S-355 gravity spillway structures. For Alt 4R and Alt 4R2, the stage duration curves for stages within the interior of the Blue Shanty flowway and the down-gradient L-29 Canal stages are shown in **Figure C.2.2-69** and **Figure C.2.2-70**. For Alt 4R2, the peak stage within the Blue Shanty flowway is 9.70 feet NGVD and stages exceed 8.0 feet NGVD for approximately 42% of the period of simulation. For Alt 4R, the peak stage

within the Blue Shanty flowway is 9.74 feet NGVD and stages exceed 8.0 feet NGVD for approximately 45% of the period of simulation. The Alt 4R2 simulation included operational constraints for the inflow structures to the Blue Shanty flowway (S-345F and S-345G) to prevent L-29 Canal stages from exceeding 9.7 feet NGVD, the assumed design high water criteria for the DOI TTNS project. Within the Blue Shanty Flowway, approximately 97 percent of the increase in average annual structural inflows to this area of WCA 3B are discharged across the L-29 Levee degrade.

C.2.2.7.8 Northeast Shark River Slough

Consistent with Alts 1 through 4, Alt 4R and Alt 4R2 assumes the L-29 Canal maximum operational limit at 9.7 feet NGVD (7.5 feet NGVD is used for the ECB and FWO) and removal of the G-3273 stage constraint (6.8 feet NGVD is used for the ECB and FWO). Total net structural inflows to NESRS (via the L-29 Canal), computed as the sum of S-333, S355A, S-355B, L29 Levee Gap, and S-356 minus S-334), are significantly increased to 761 kAF with Alt 4R and Alt 4R2, compared to the CEPP FWO (94 kAF average annual); L-29 inflows are slightly increased compared to Alt 4 (717 kAF).

Stage duration curves for the L-29 Canal are provided in **Figure C.2.2-71** and **Figure C.2.2-72** (upper 25% only) (note: for Alt 4R and Alt 4R2, L-29 Canal stages are indicated west of the proposed L-29 divide structure). For Alt 4R and Alt 4R2, peak stages in the L-29 Canal range are 9.59-9.60 feet NGVD west of the L-29 divide structure and 9.50-9.51 feet NGVD east of the L-29 divide structure (the FWO peak stage is 8.43 feet NGVD). Based on the assumed operational constraints, the CEPP FWO L-29 Canal stage exceeds the maximum operational limit of 7.5 feet NGVD approximately 6% of the 1965-2005 RSM-GL period of simulation (due to direct rainfall); by contrast, the 9.7 feet NGVD maximum operational limit prescribed for Alt 4R and Alt 4R2 is not constraining during any period within the period of simulation, and L-29 Canal stages exceed 8.5 feet NGVD during only approximately 11% of the period of simulation within the western L-29 Canal and approximately 5% within the eastern L-29 Canal segment in both alternatives.

Compared to the FWO, stages are significantly increased by 0.5-0.9 feet under all hydrologic conditions at NESRS-2 for Alts 4R and Alt 4R2 (**Figure C.2.2-73**). Similar trends are also observed further south at the NESRS-1 monitoring gage. Changes to the average annual overland flow to NESRS across RSM-GL transect 18 are shown in **Figure C.2.2-75**; a reference map for the RSM-GL transects (which are consistent with the SFWMM model transects, adjusted for the RSM grid resolution) is provided in **Figure C.2.2-74**.

C.2.2.7.9 Western Shark River Slough

WSRS, located to the west of L-67 Extension Levee and bounded on the north by Tamiami Trail, is primarily influenced by rainfall and water management operations at the S-12 structures (A, B, C and D). Under ERTP, the utilization of the S-12 structures and the seasonal sequential closure periods beginning from the west at S-12A (November 1 – July 14) and S-12B (January 1 – July 14), respectively, is meant to move water from WCA 3A into SRS while providing conditions for Cape Sable seaside sparrow Subpopulation-A (CSSS-A) nesting and breeding. Modification to the ERTP seasonal closure periods for the S-12A and S-12B was not considered during CEPP preliminary screening and alternative formulation, based on USACE consideration of the USFWS Biological Opinion for ERTP.

Changes to the average annual overland flows to WSRS across RSM-GL transect 17 are shown in **Figure C.2.2-76**. Compared to the FWO, Alt 4R and Alt 4R2 stages within northwest ENP (NP-201) are generally significantly decreased by 0.1-0.3 feet under both wet and dry hydrologic conditions; stages are slightly increased or unchanged from the FWO for normal hydrologic conditions between approximately 35%

and 55% on the stage duration curve (**Figure C.2.2-77**). To the south and west, the NP-205 monitoring gage (used as an indicator for CSSS-A hydrology) indicates a potentially significant stage decrease of 0.1-0.2 feet under all hydrologic conditions for all alternatives, including Alt 4R and Alt 4R2, compared to the FWO (**Figure C.2.2-78**). Stages further south within Central Shark River Slough (P-33) are generally significantly increases by 0.2-0.4 feet under all hydrologic conditions for Alt 4R and Alt 4R2 (**Figure C.2.2-79**). Stages within Central Shark River Slough demonstrate a combined hydrologic response to the hydrologic changes previously indicated for both NESRS and WSRS; the resultant combined average annual transect flows within Central Shark River Slough (Transect 27) are significantly increased from an average annual volume of 594 kAF with the FWO to 758 kAF for Alt 4R (28% increase) and 760 kAF for Alt 4R2 (28% increase) (**Figure C.2.2-80**).

C.2.2.7.10 Taylor Slough

Compared to the FWO, ENP stages along Taylor Slough (NP-TSB) are slightly decreased by approximately 0.1 feet during the wettest 20% of hydrologic conditions and slightly increased by 0.1-0.2 feet during normal to dry hydrologic conditions with Alt 4R and Alt 4R2 (**Figure C.2.2-81**). Consistent with Alt 4, Alt 4R and Alt 4R2 each include the Blue Shanty flowway and the L-29 divide structure to direct surface water flows further west within NESRS, as compared to Alts 1 through 3.

C.2.2.7.11 Lower East Coast Area

The LEC area is located to the east of the L-31N, L-31W, and C-111 canals. Under the FWO (ERTP), specified canal water levels/ranges are meant to provide flood protection, water supply, and prevention of saltwater intrusion for the LEC. For the CEPP final array of alternatives, including Alt 4R and Alt 4R2, the operations for the SDCS are changed from the FWO operations for G-211 and the coastal canals are utilized to convey seepage water to Biscayne Bay to offset for reduced flows caused by implementation of CEPP.

Observed stage changes within the LEC are separately discussed with the summary of flood control and water supply performance for the CEPP alternatives, included in **Section C.2.2.8**.

C.2.2.7.12 8.5 Square Mile Area

Consistent with Alts 1 through 4, Alt 4R and Alt 4R2 modify the FWO operations of the S-357 pump station, in an effort to increase discharges from the 8.5 SMA detention cell to the C-111 South Dade North Detention Area and reduce the reliance on the S-331 pump station in L-31N to provide flood mitigation for the 8.5 SMA protected area. Details of the S-357 operations are provided with the documentation of the modeling assumptions for the CEPP action alternatives, located in Annex A-2 of the Engineering Appendix (Appendix A). The protected portion of the 8.5 SMA is represented by three model grid cells in the RSM-GL (**Figure C.2.2-82**), and the resolution of the RSM-GL is extremely limiting for adequate representation of the 8.5 SMA project features. Prior to implementation of CEPP, further technical investigations will likely be needed for the 8.5 SMA operations, and additional hydrologic/hydraulic modeling with a higher resolution model may be required.

The 8.5 SMA detention cell weirs were lowered with Alt 4R and Alt 4R2 to allow overflow when depths exceeded 1.0 feet, which resulted in performance improvements within the southwestern portion of the 8.5 SMA protected area compared to Alts 1 through 4. RSM-GL modeling of Alt 4R and Alt 4R2 indicate that stages within the 8.5 SMA are lowered by approximately 0.25-0.50 feet during wet conditions for the three RSM-GL grid cells 2965 that represent the protected portion of the 8.5 SMA, compared to the FWO. Stages for the southwest portion of the 8.5 SMA protected area are indicated in **Figure C.2.2-83**.

C.2.2.7.13 Biscayne Bay

Combined total average annual surface water canal discharges to central and southern Biscayne Bay (S-336, S-338, S-194, S-196, S-197) are reduced by approximately 9 kAF for Alts 4R, compared to the FWO. Average annual surface water canal discharges to northern Biscayne Bay (S-29, S-28, S-27), which are affected by the assumed operations of the CERP BCWPA project, are slightly reduced by 2 kAF for Alt 4R, compared to the FWO. Modifications to the Alt 4 L-31N seepage cutoff wall and SDCS operations were specifically targeted to limit potential water supply reductions to Biscayne Bay (canal discharges to the central and southern Biscayne Bay were reduced by 37 kAF, and canal discharges to northern Biscayne Bay were reduced by 7 kAF for Alt 4). In response to potential Savings Clause concerns with this reduction to Biscayne Bay, Alt 4R2 operations were further adjusted to direct a larger quantity of the CEPP increased seepage from WCA 3B and NESRS to Biscayne Bay. Combined total average annual surface water canal discharges to central and southern Biscayne Bay (S-336, S-338, S-194, S-196, S-197) are increased by approximately 17 kAF for Alt 4R2, compared to the FWO. Average annual surface water canal discharges to northern Biscayne Bay (S-29, S-28, S-27), which are affected by the assumed operations of the CERP BCWPA project, are reduced by 46 kAF for Alt 4R2, compared to the FWO.

Combined total average annual surface water canal discharges to central and southern Biscayne Bay (S-336, S-338, S-194, S-196, S-197) are increased by approximately 15 kAF for Alt 4R2, compared to the IORBL1. Average annual surface water canal discharges to northern Biscayne Bay (S-29, S-28, S-27), which are affected by the assumed operations of the CERP BCWPA project, are reduced by 4 kAF for Alt 4R2, compared to the IORBL1.

C.2.2.7.14 Florida Bay

For Alt 4R and Alt 4R2, average annual surface water transect flows from southeastern ENP towards Florida Bay are increased by 2 kAF (7%) for Craighead Basin (RSM-GL Transect 23-A), increased by 8-10 kAF (11-14%) from Taylor Slough (Transect 23-B), and increased by 13-15 kAF (9-10%) for the Eastern Panhandle of ENP (Transect 23-C), resulting in a net increase of approximately 27 kAF for Alt 4R and 23 kAF for Alt 4R2, compared to the FWO. Alt 4R2 overland flows to Florida Bay are slightly reduced compared to Alt 4R for Transect 23-B and Transect 23-C. The salinity effects within Florida Bay from this overall increase and changed spatial distribution of flows were also evaluated by the CEPP ecological sub-team (with additional RECOVER support), and additional information for the changes observed between Alt 4R and Alt 4R2 compared to the FWO is discussed in **Appendix G, Environmental Benefits Model**.

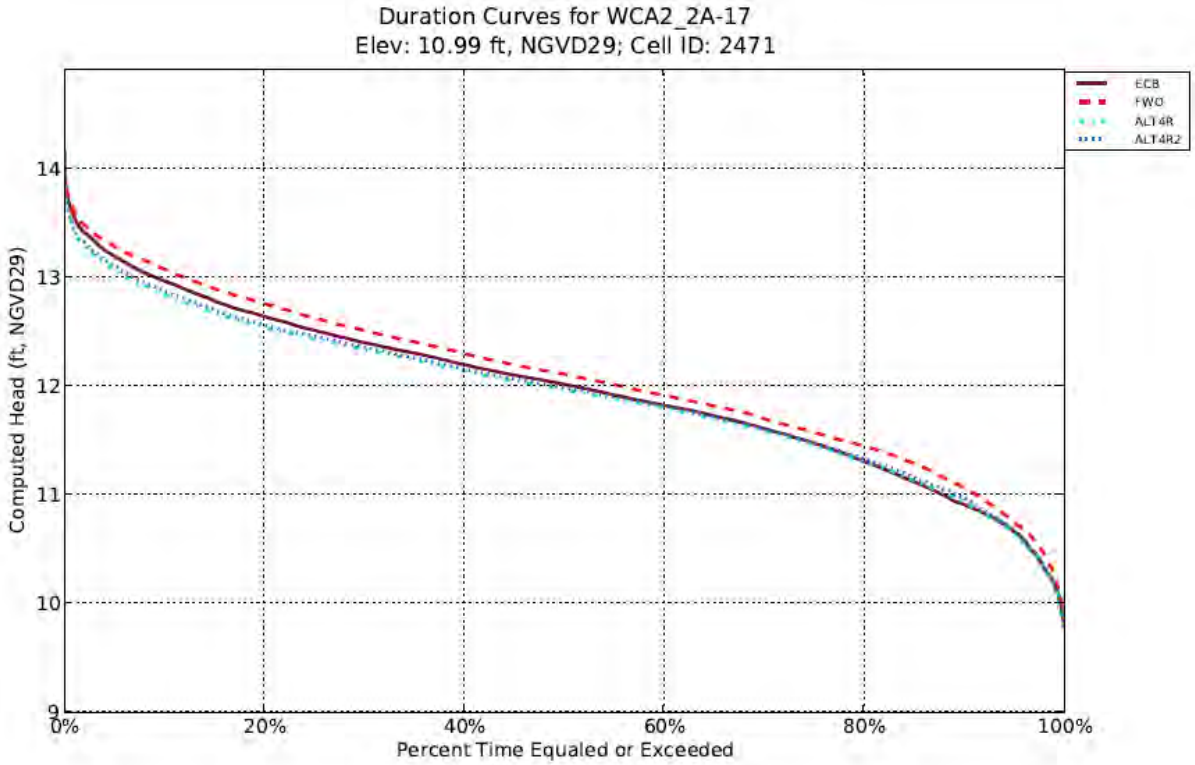


Figure C.2.2-57. Central WCA 2A Stage Duration Curve.

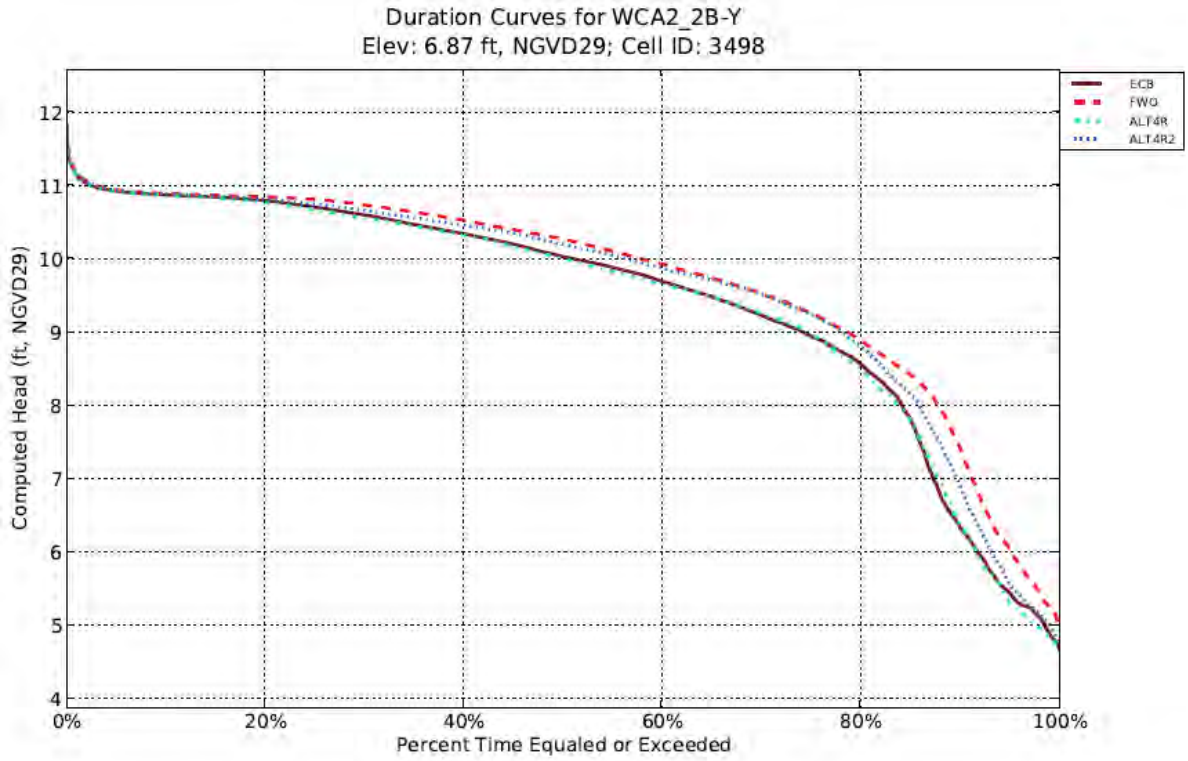


Figure C.2.2-58. Southern WCA 2B Stage Duration Curve.

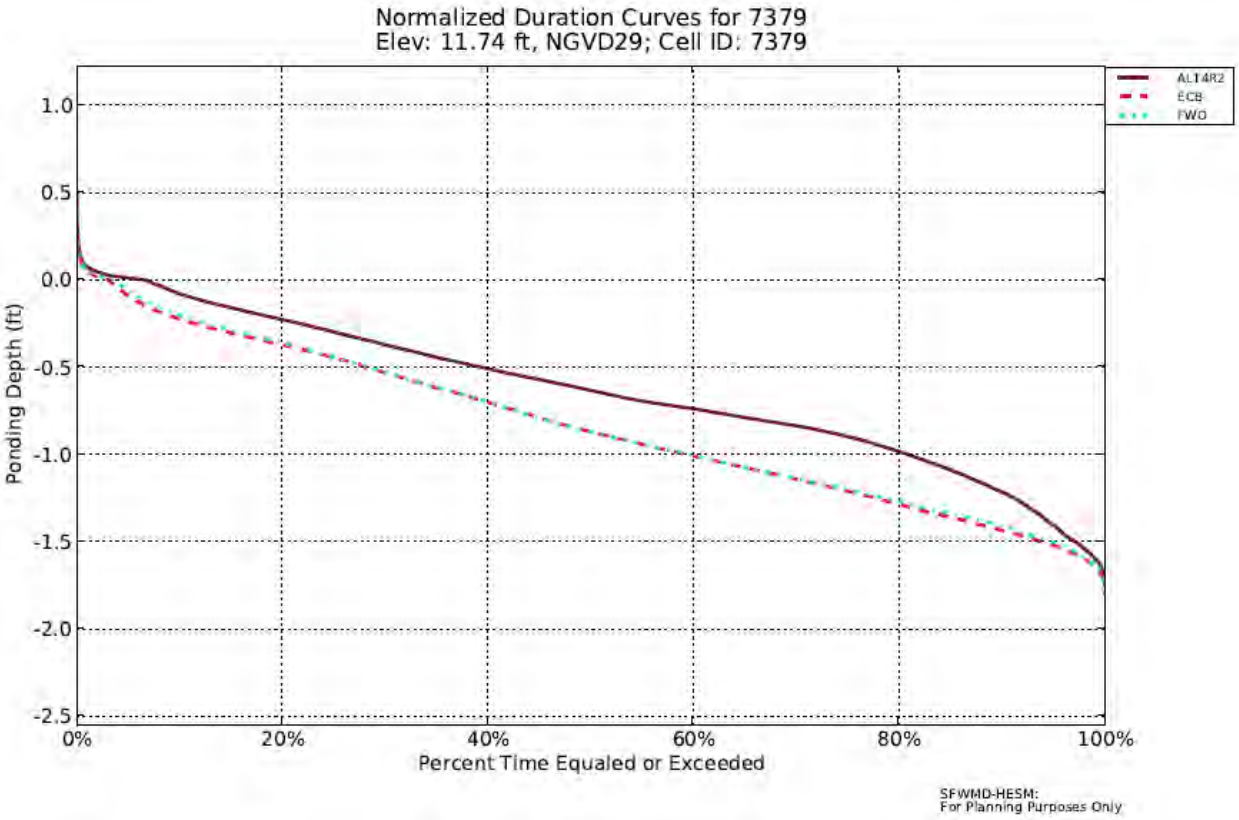


Figure C.2.2-59. Western L-28 Basin Stage Duration Curve.

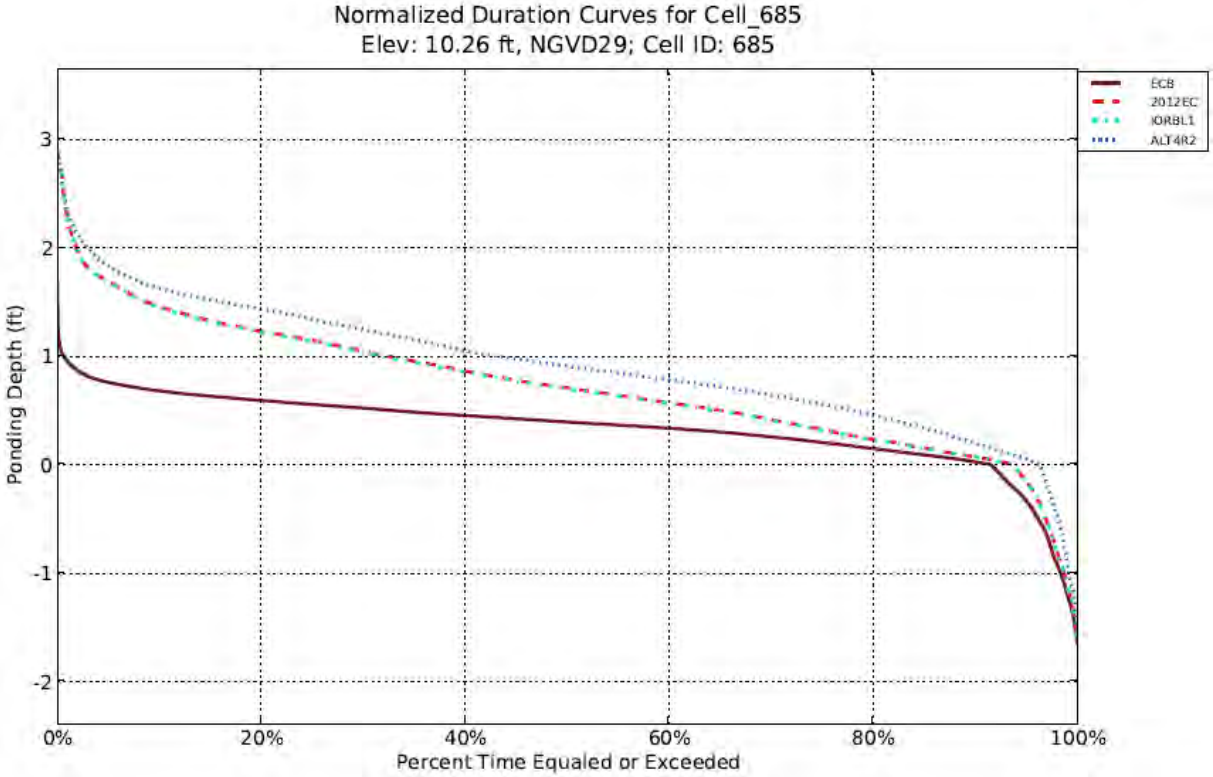


Figure C.2.2-60. L-28 Triangle Stage Duration Curve.

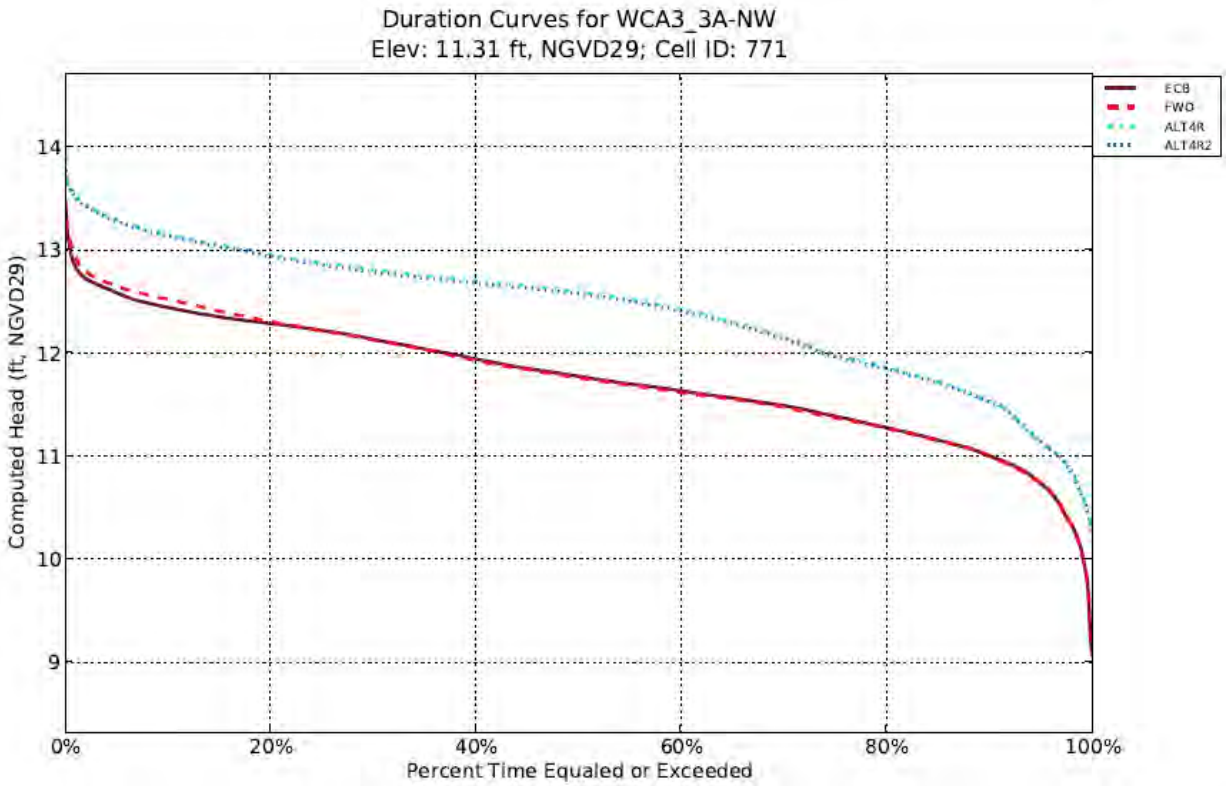


Figure C.2.2-61. Northwest WCA 3A Stage Duration Curve.

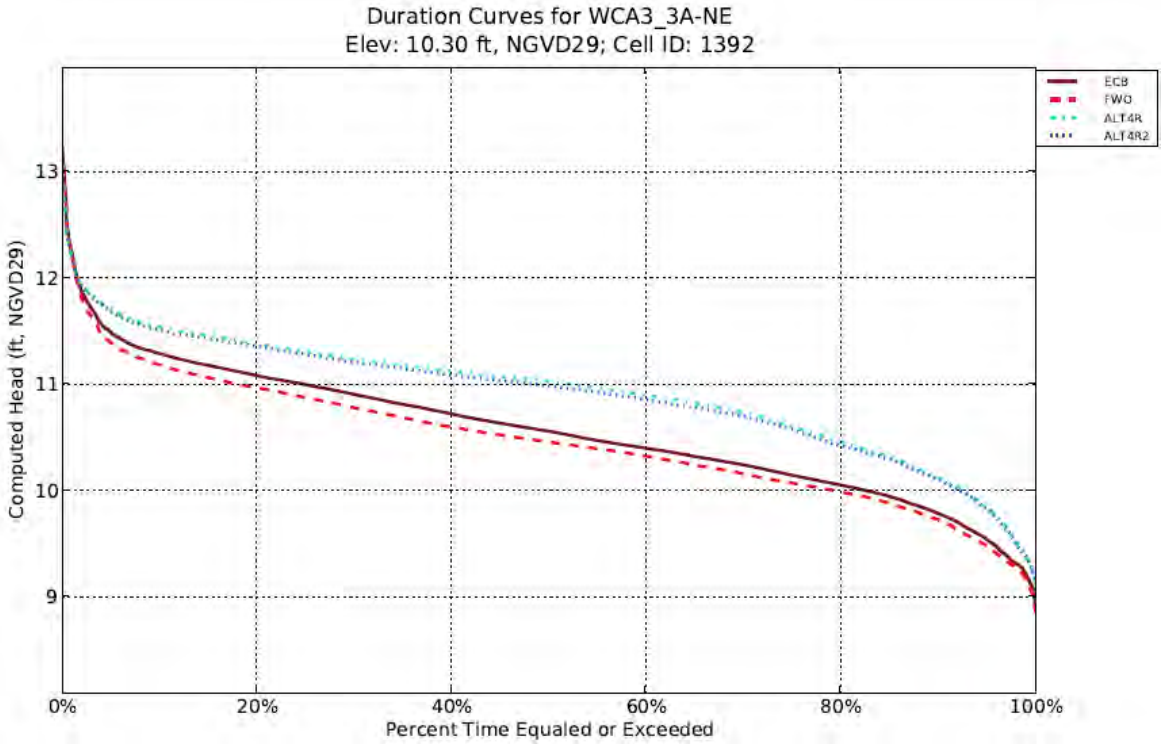


Figure C.2.2-62. Northeast WCA 3A Stage Duration Curve.

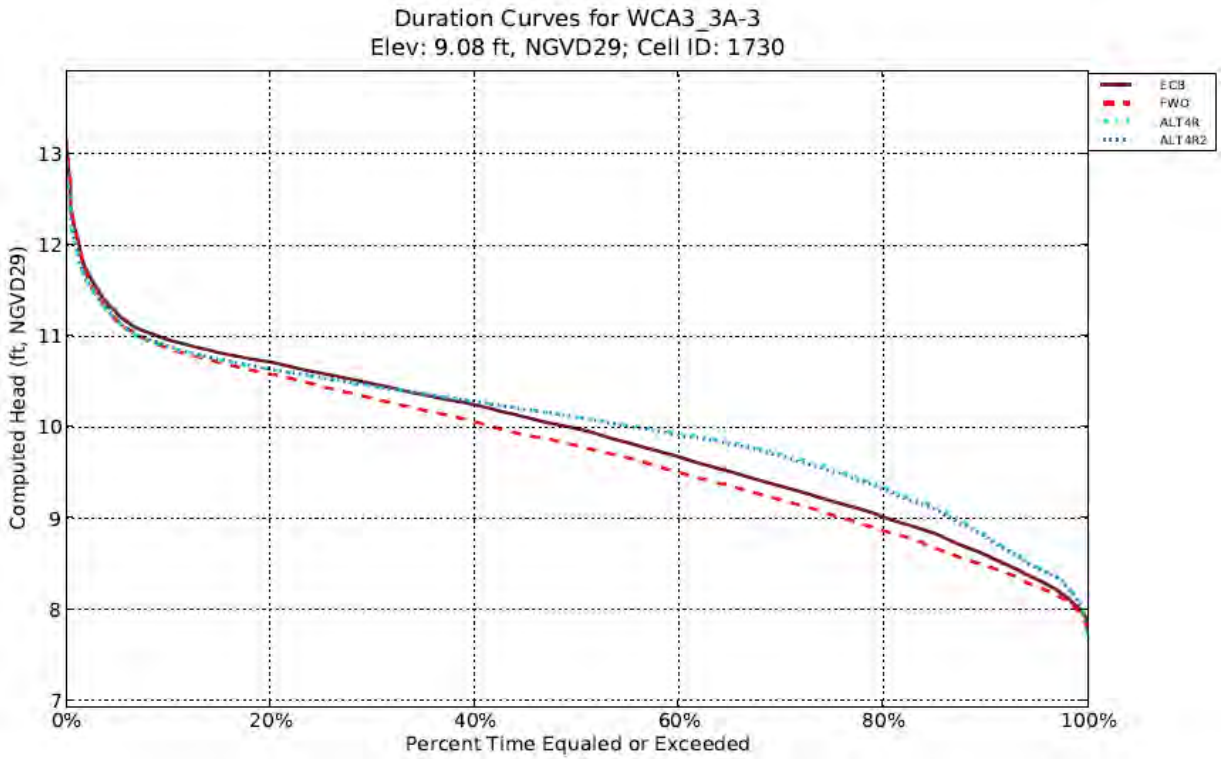


Figure C.2.2-63. East-Central WCA 3A Stage Duration Curve.

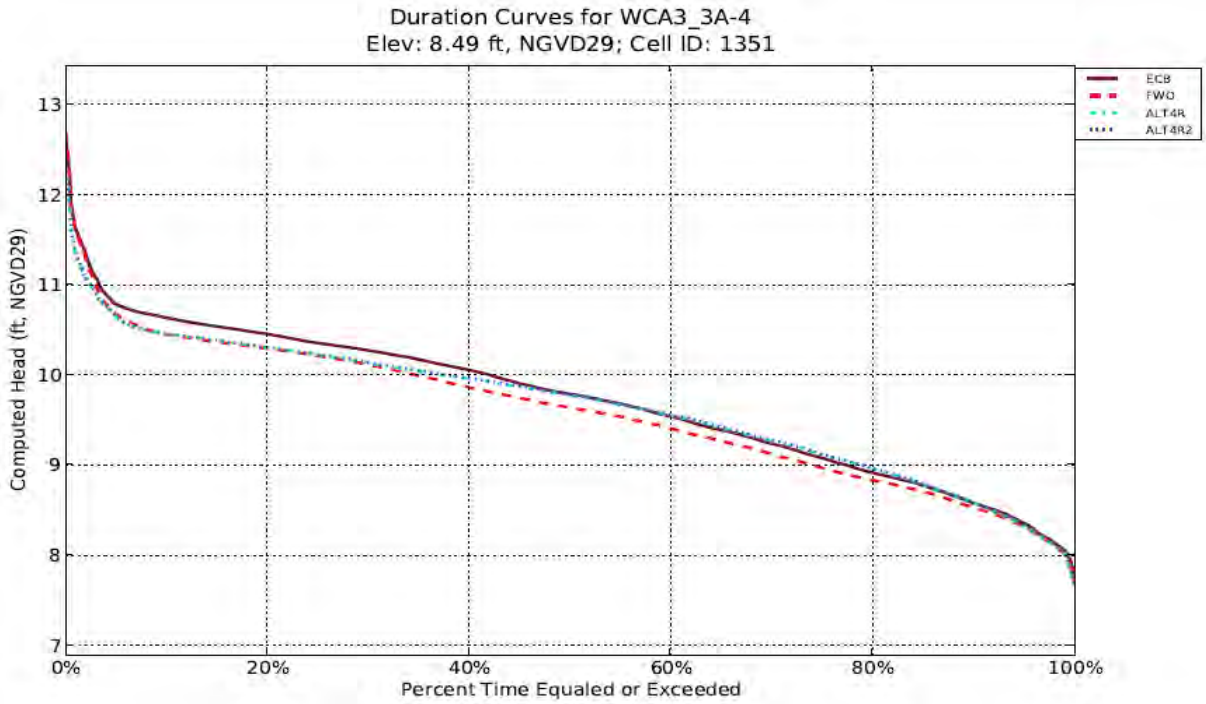


Figure C.2.2-64. Central WCA 3A Stage Duration Curve.

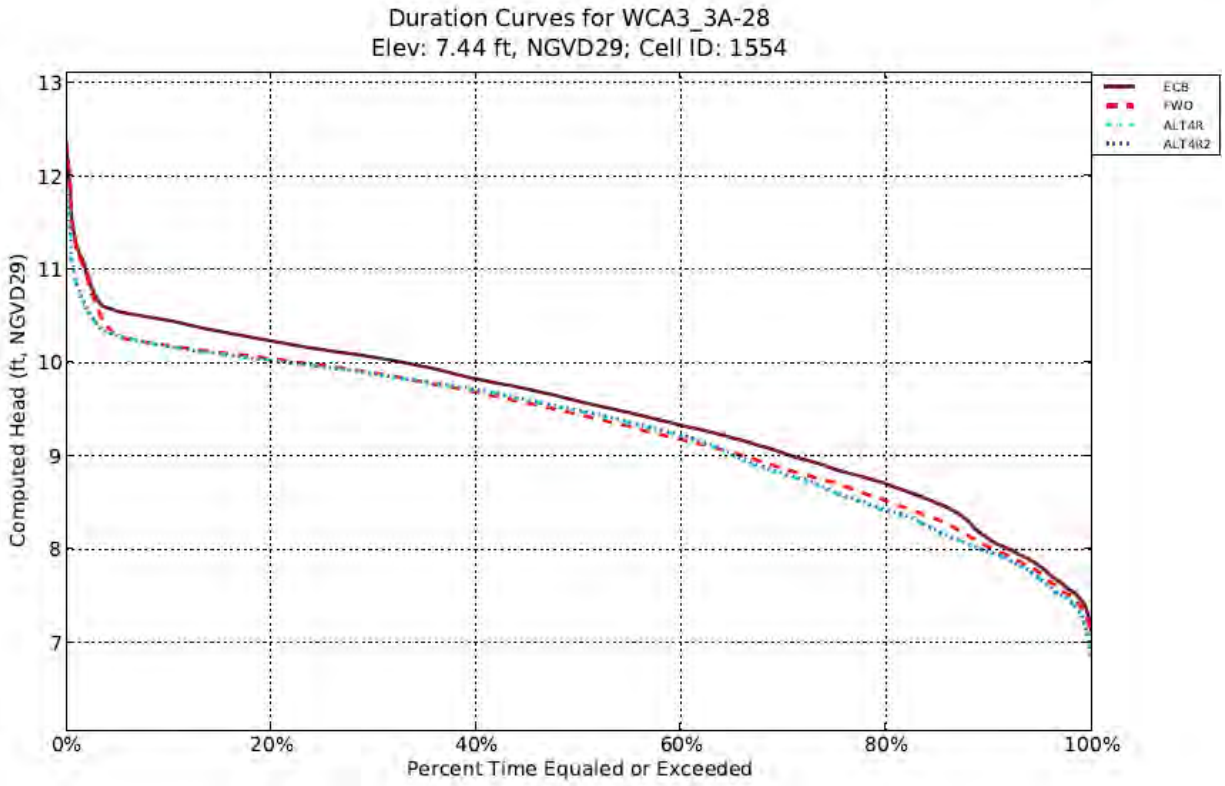


Figure C.2.2-65. South WCA 3A Stage Duration Curve

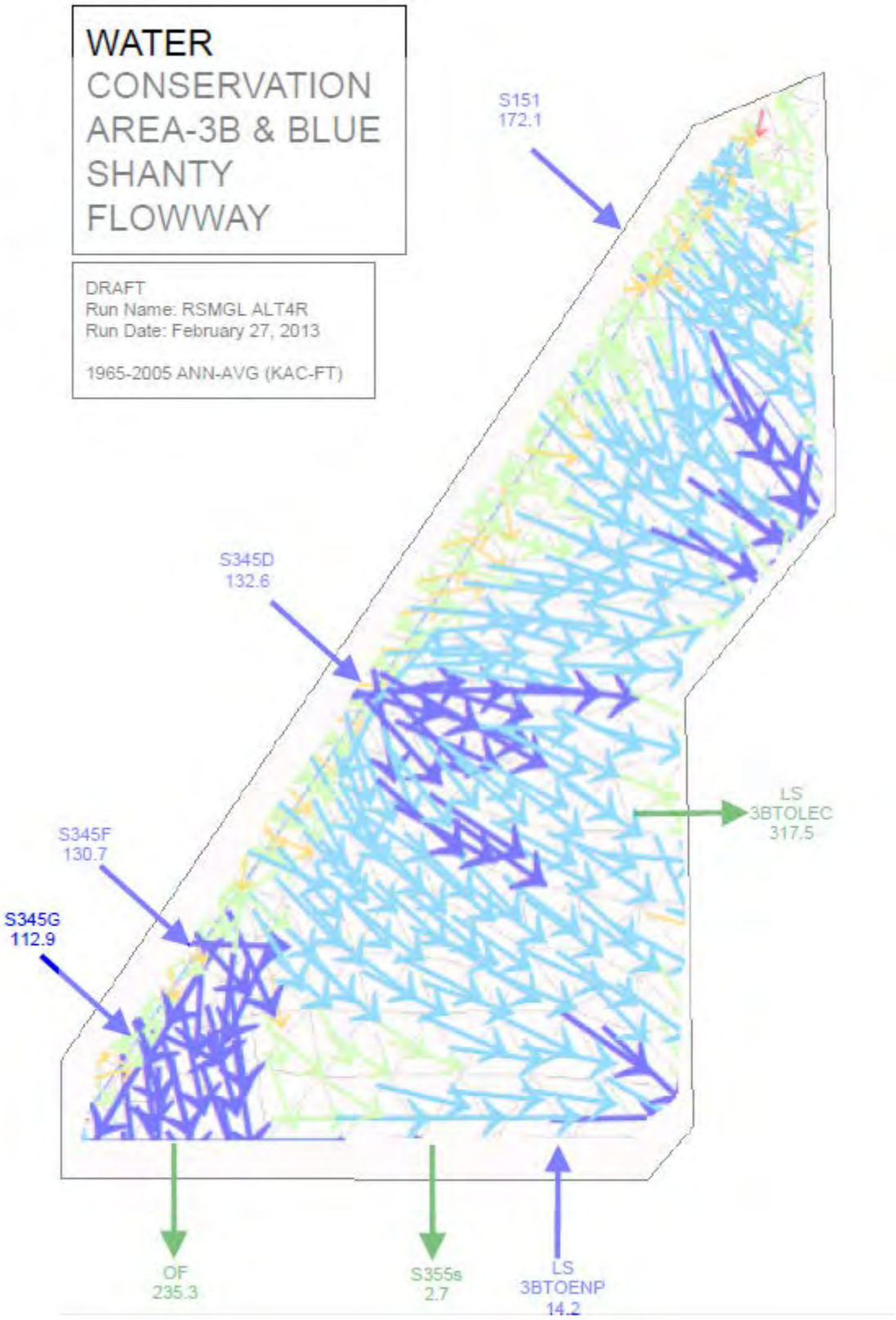


Figure C.2.2-66. WCA 3B Water Budget and Flow Vector Map for Alt 4R.

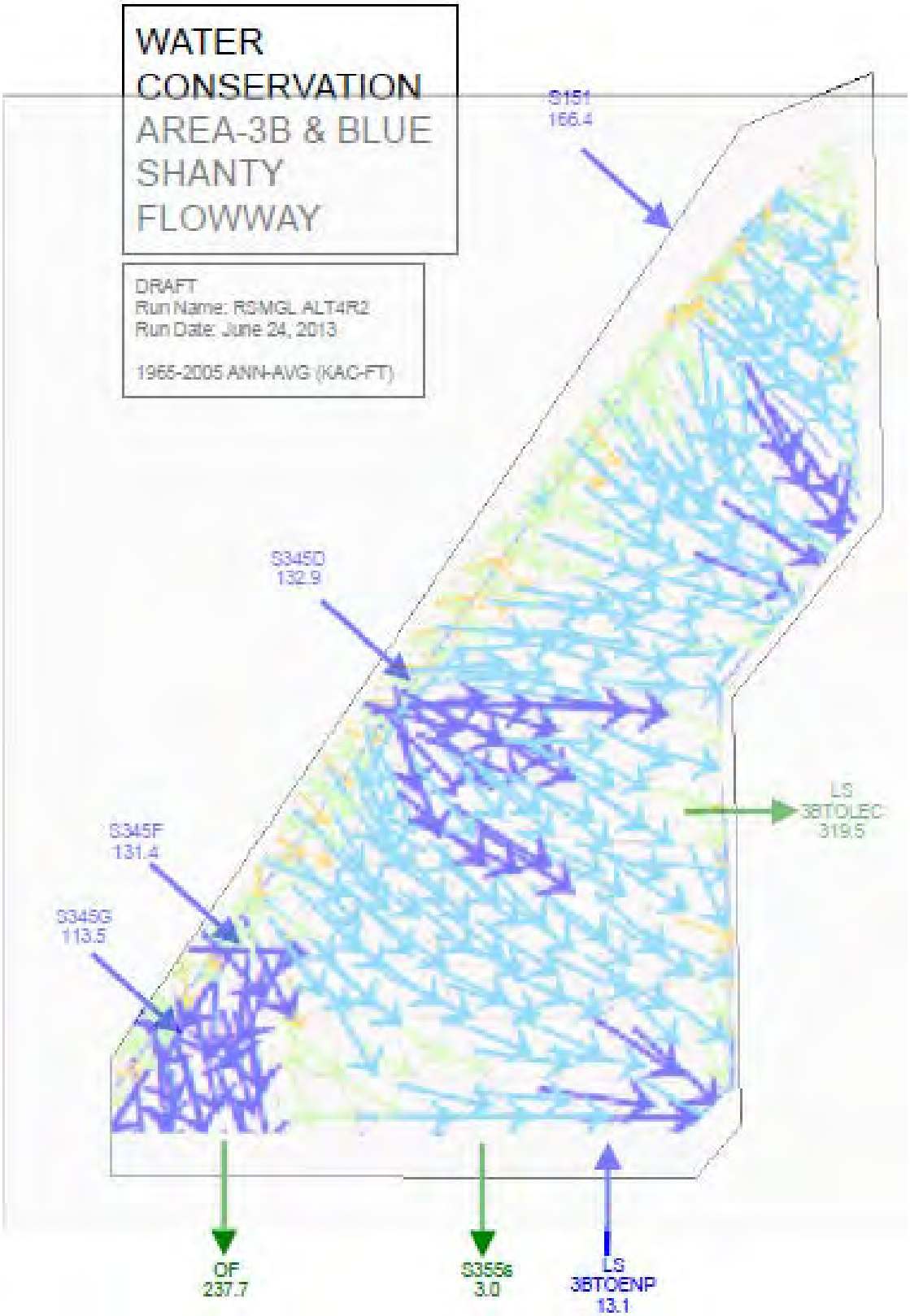


Figure C.2.2-67. WCA 3B Water Budget and Flow Vector Map for Alt 4R2

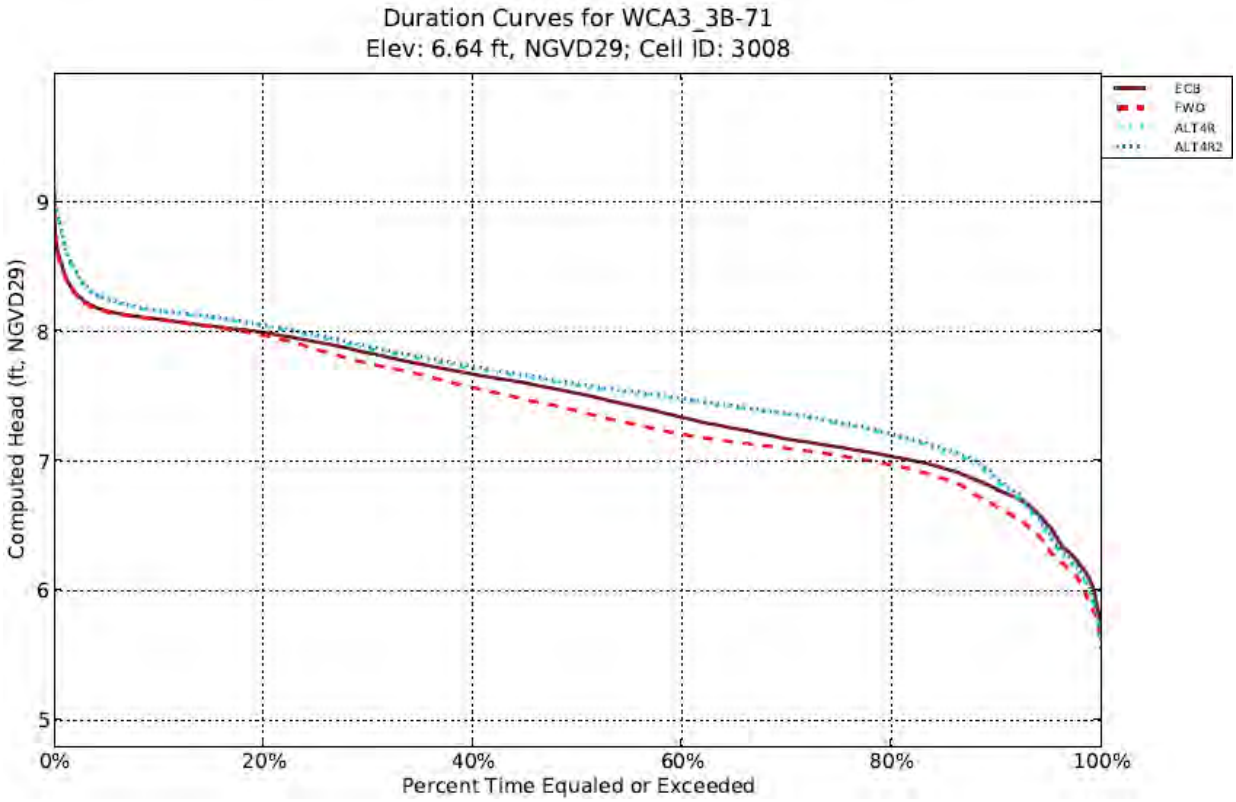


Figure C.2.2-68. Central WCA 3B Stage Duration Curve.

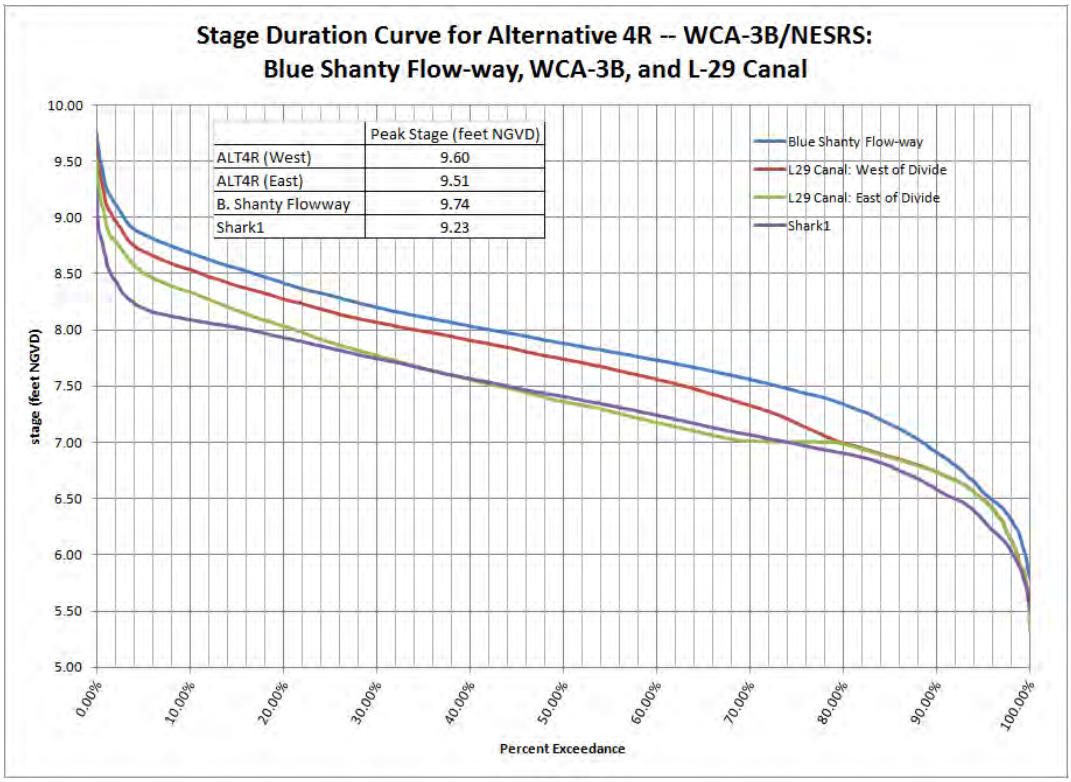


Figure C.2.2-69. WCA 3B Blue Shanty Flow-Way Stage Duration Curve (Alt 4R).

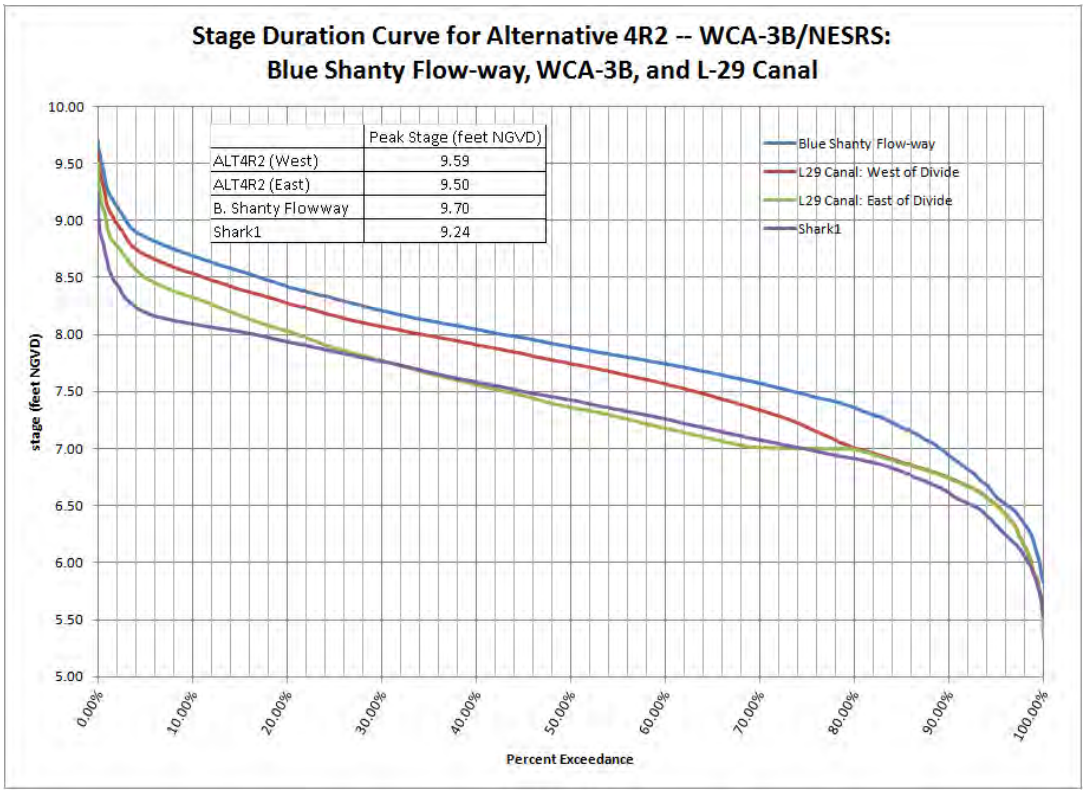


Figure C.2.2-70. WCA 3B Blue Shanty Flow-Way Stage Duration Curve (Alt 4R2).

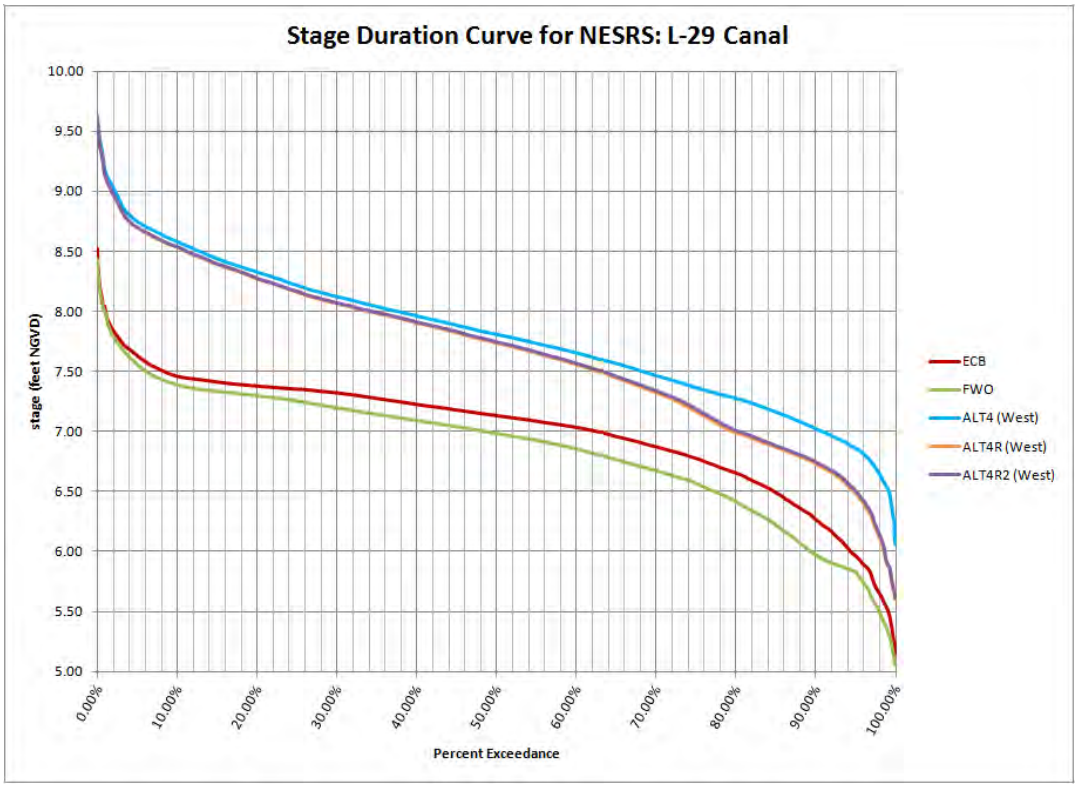


Figure C.2.2-71. L-29 Canal Stage Duration Curve.

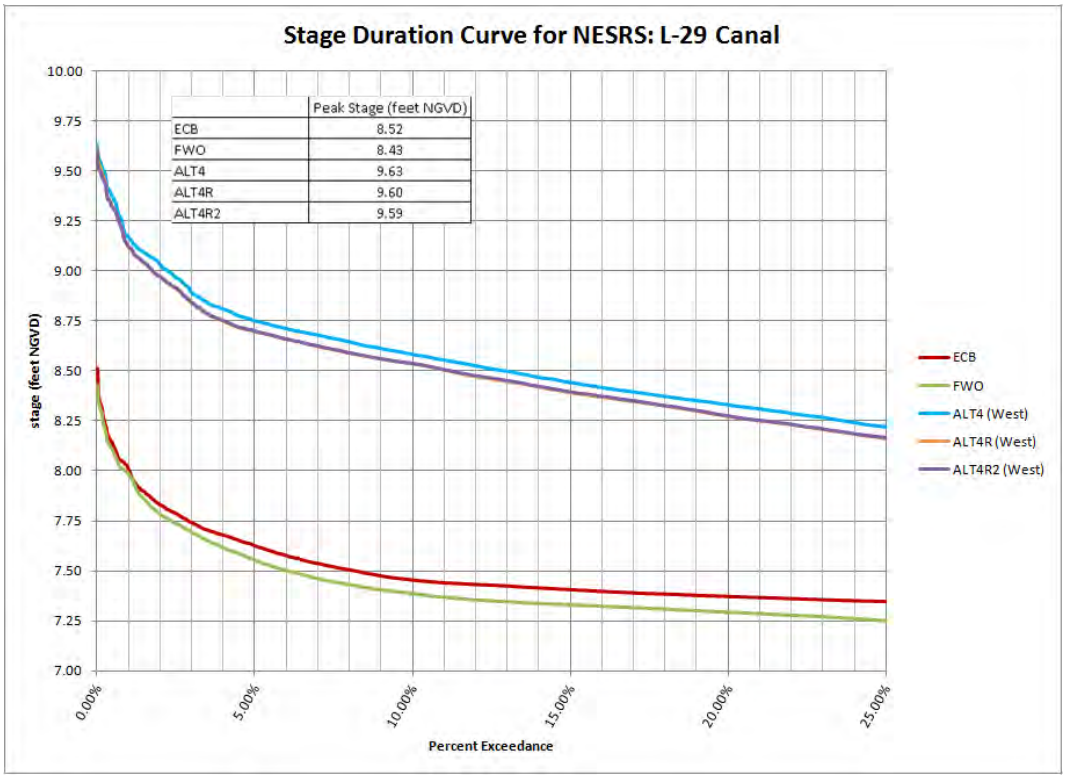


Figure C.2.2-72. L-29 Canal Stage Duration Curve (upper 25%).

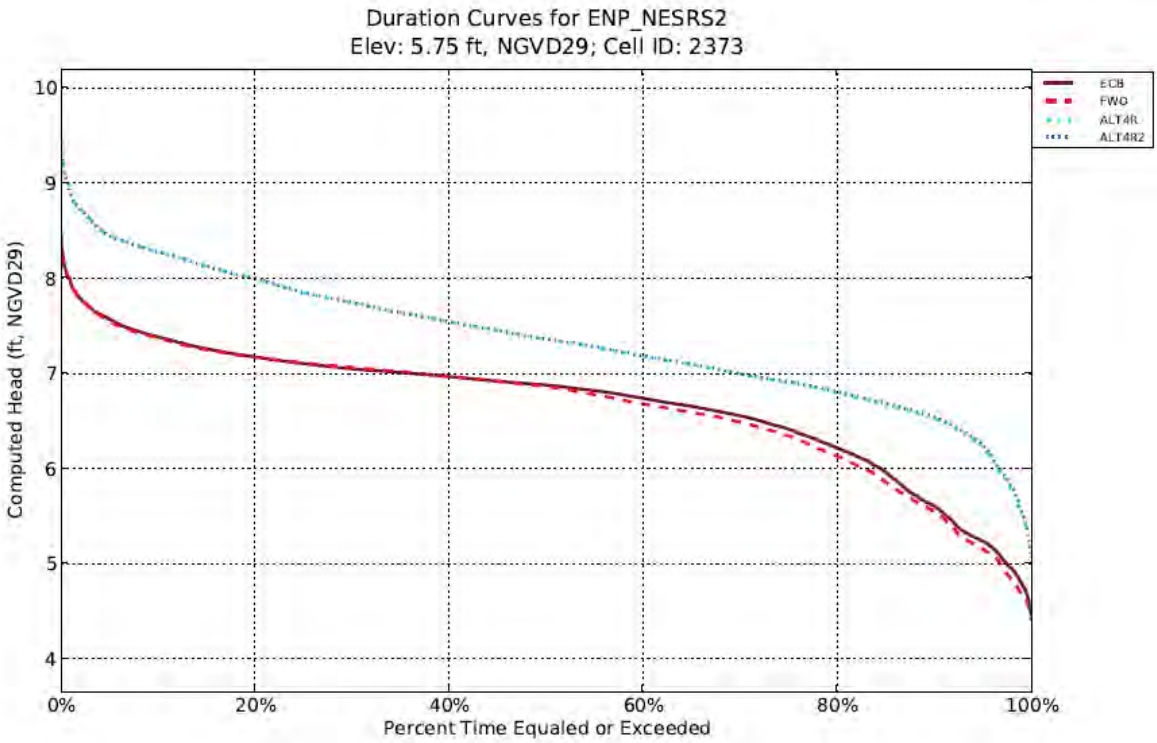


Figure C.2.2-73. Northeast ENP Stage Duration Curve.

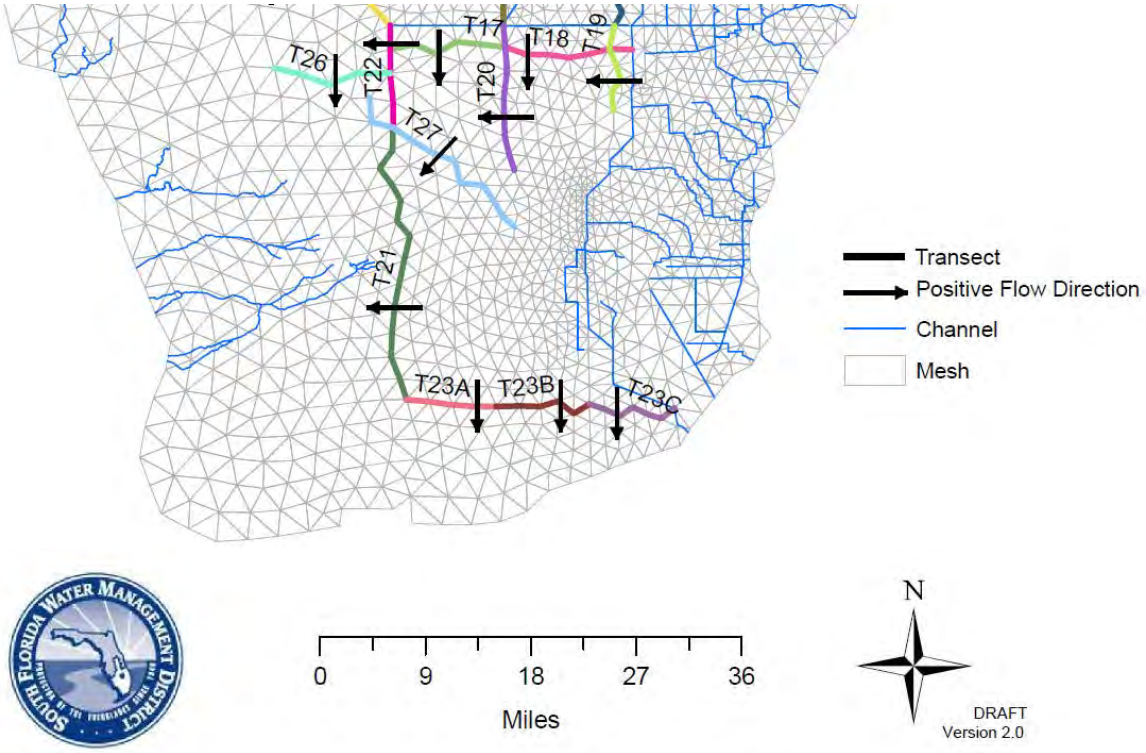


Figure C.2.2-74. RSM-GL Overland Flow Transects for ENP.

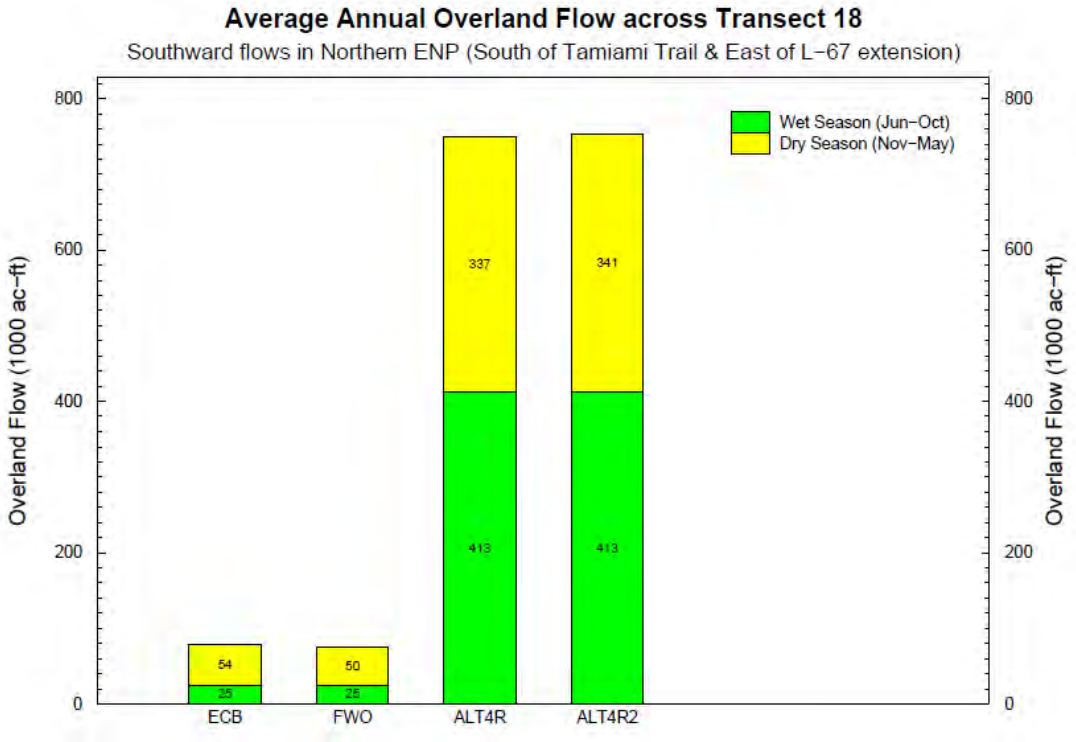


Figure C.2.2-75. Average Annual Overland Flow to NESRS.

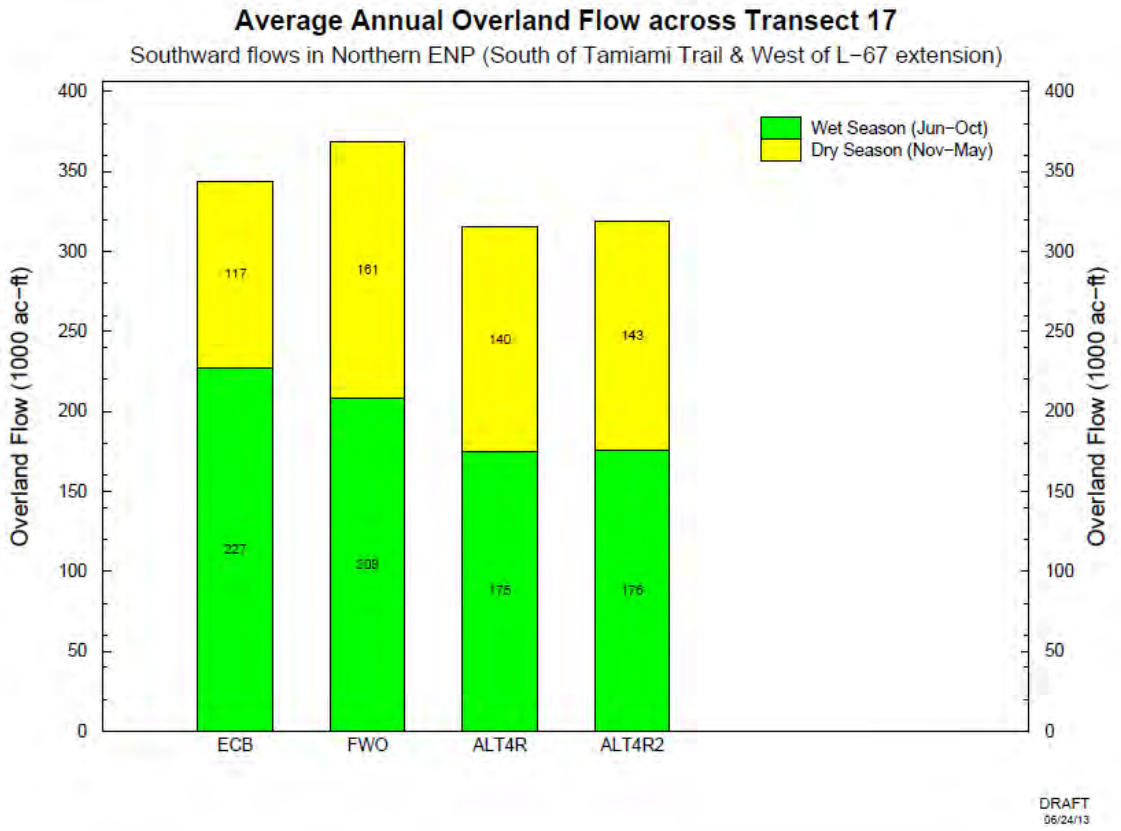


Figure C.2.2-76. Average Annual Overland Flow to WSRS.

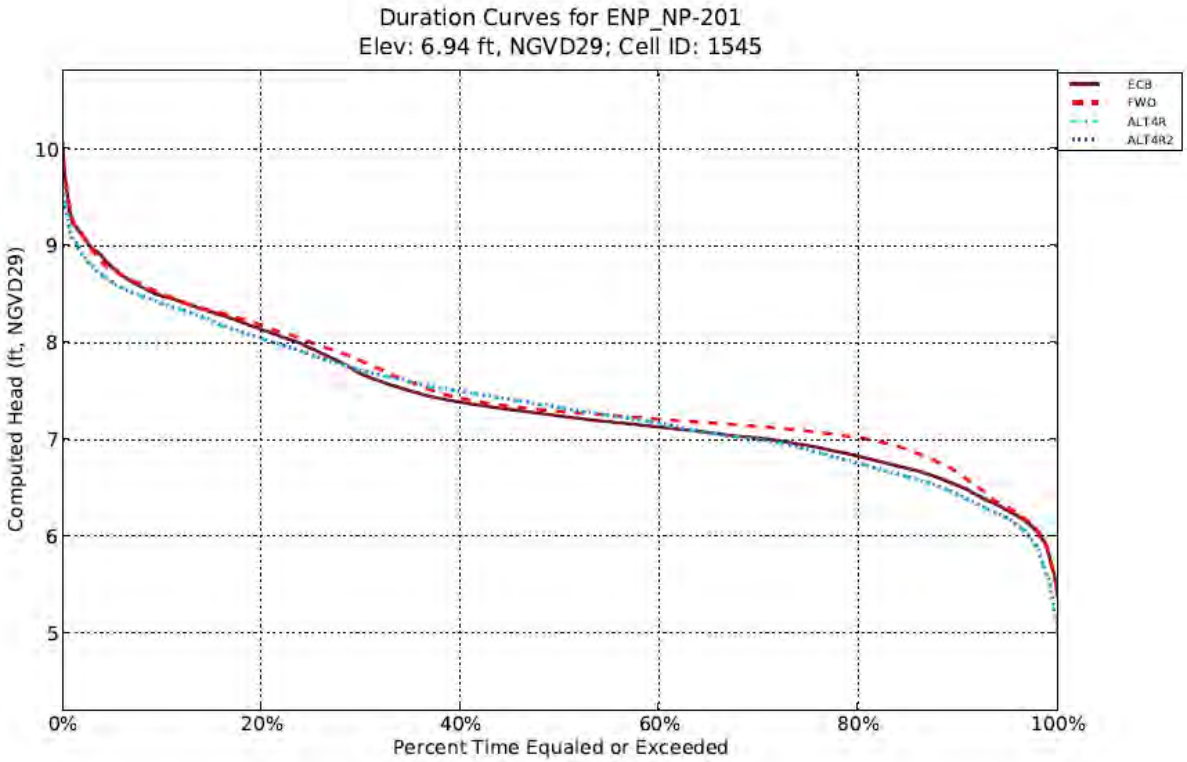


Figure C.2.2-77. Northwest ENP Stage Duration Curve (NP-201).

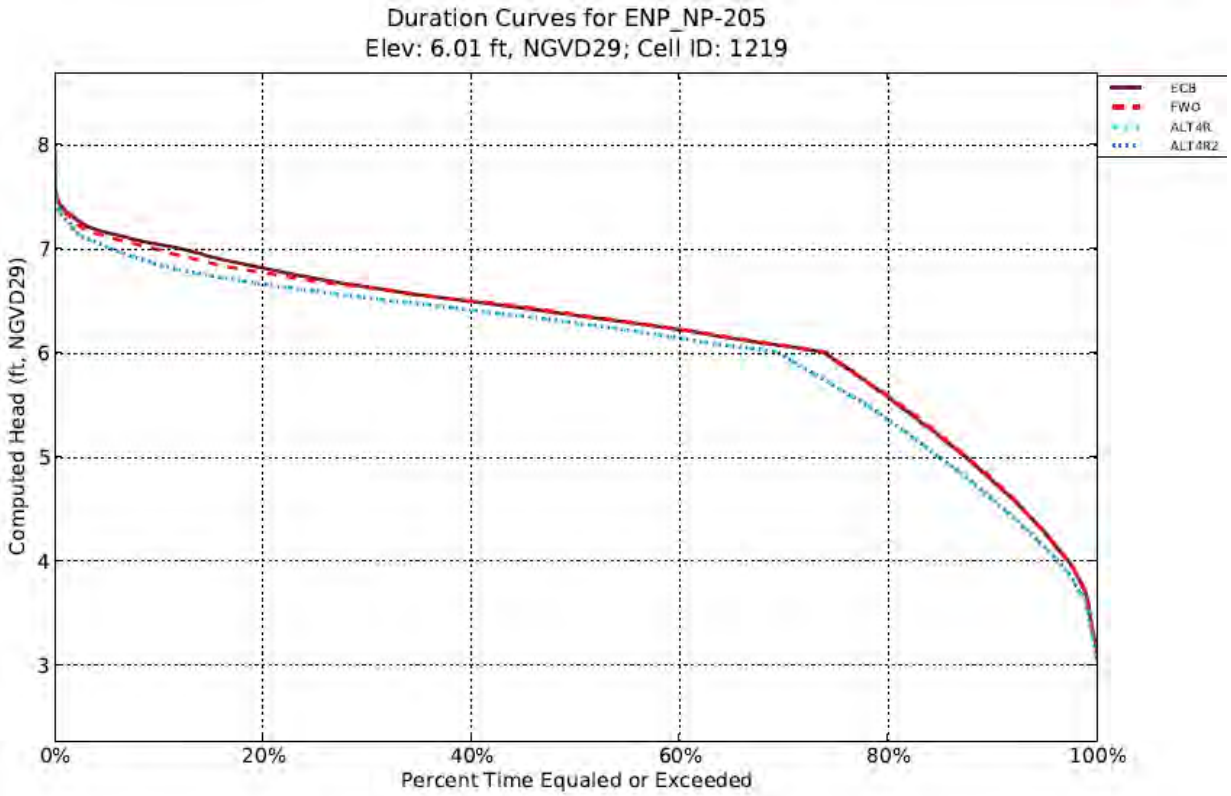


Figure C.2.2-78. Northwest ENP Stage Duration Curve (NP-205).

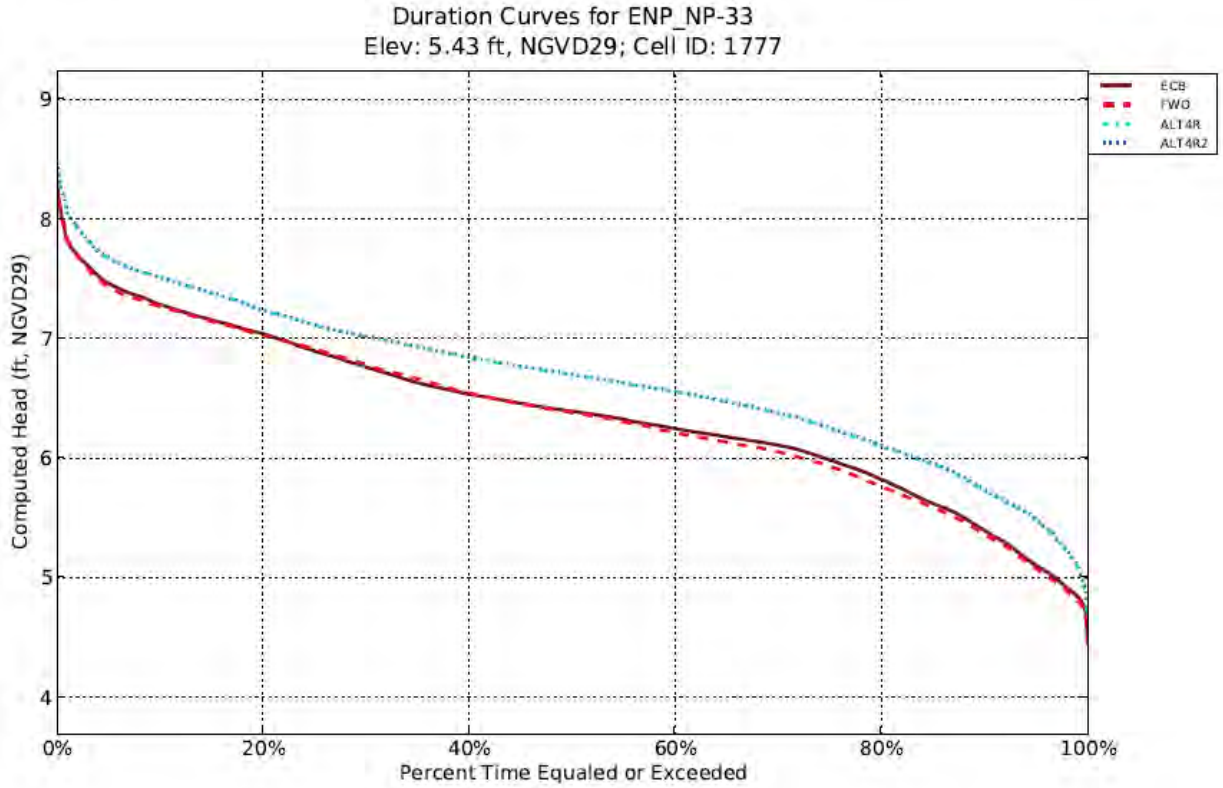


Figure C.2.2-79. Central ENP Stage Duration Curve.

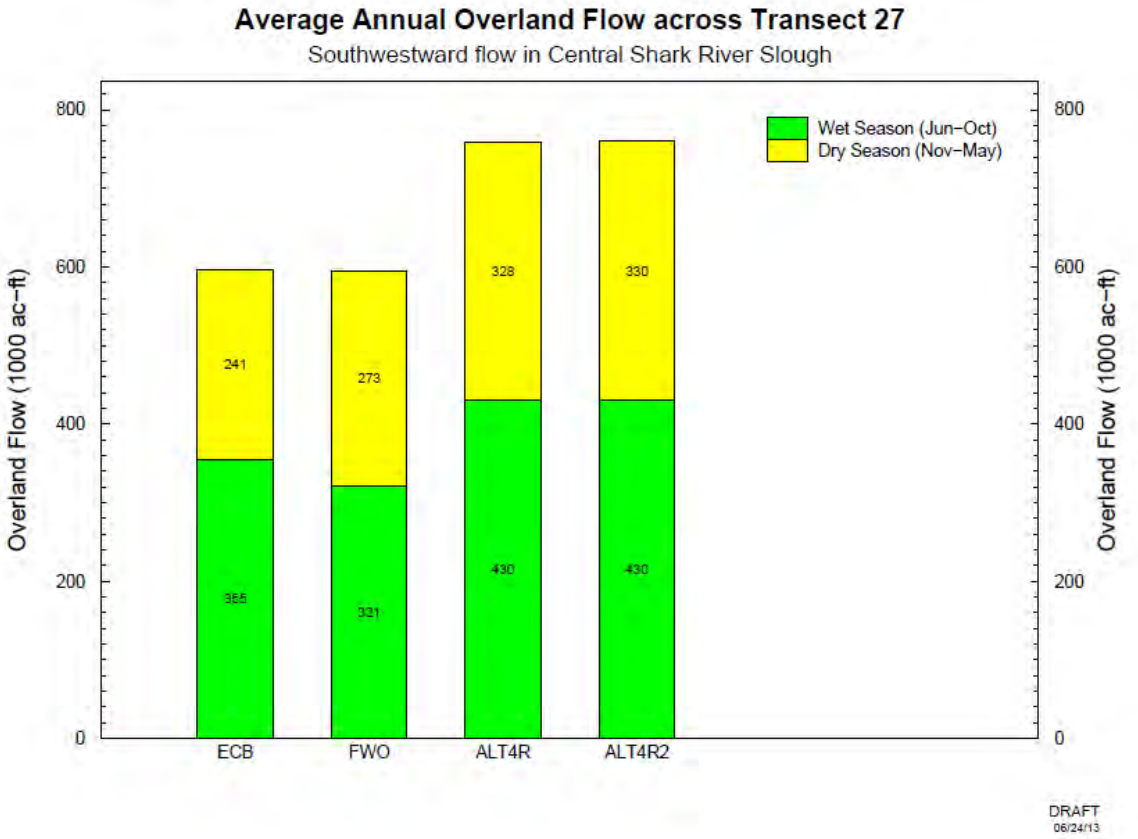


Figure C.2.2-80. Average Annual Overland Flow Transect for Central Shark River Slough.

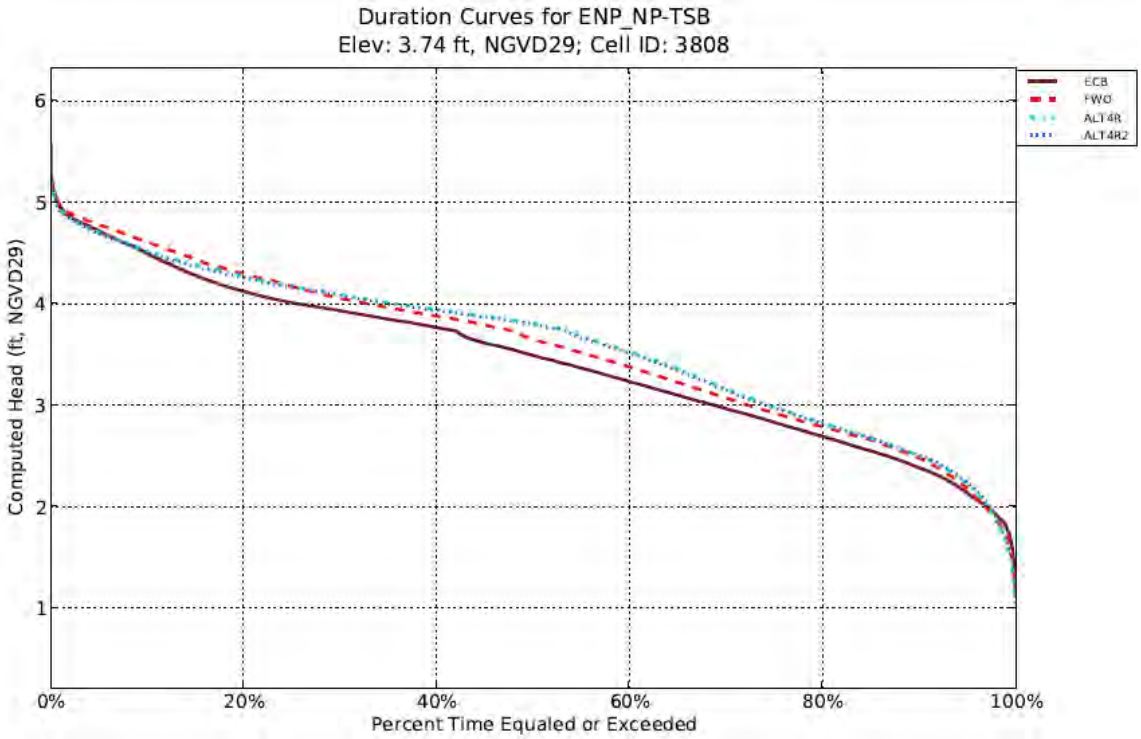


Figure C.2.2-81. ENP Taylor Slough Stage Duration Curve.

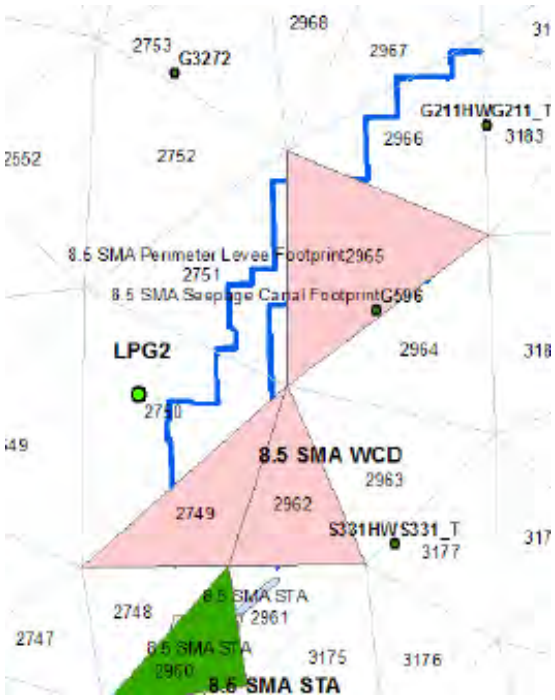


Figure C.2.2-82. RSM-GL grid cell representation of the 8.5 SMA

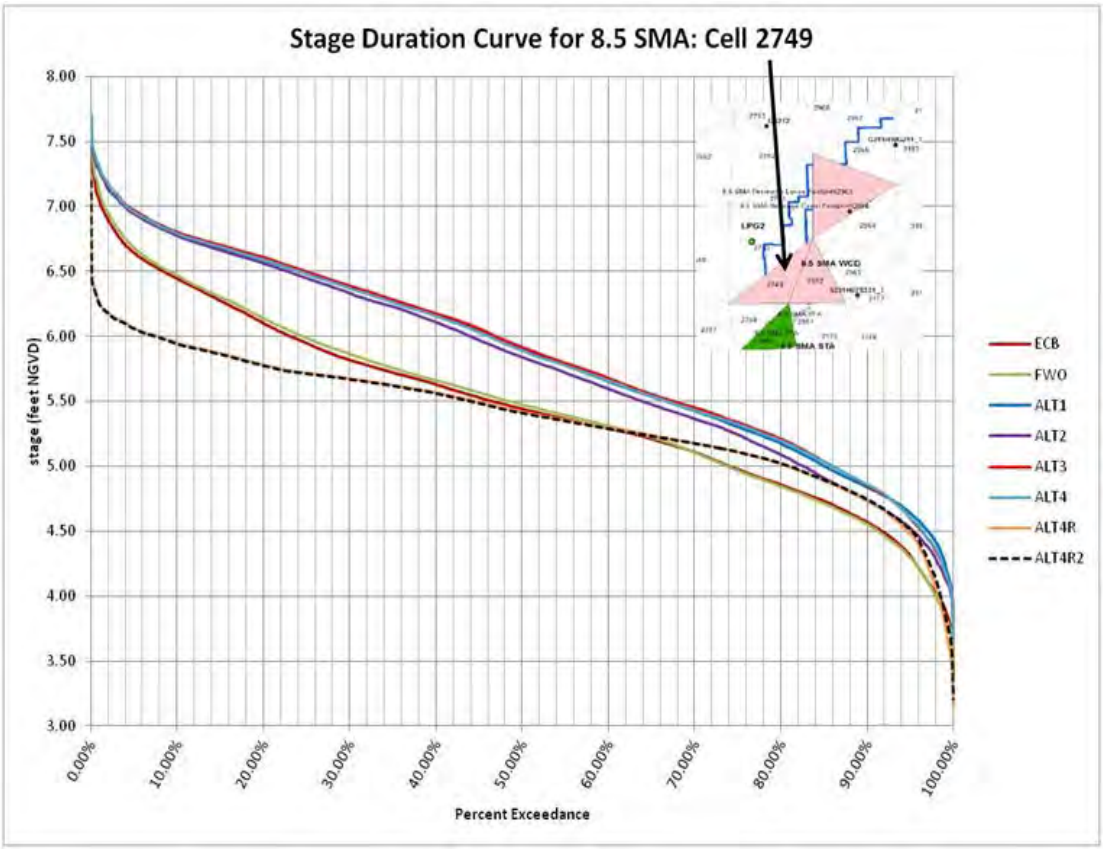


Figure C.2.2-83. Stage Duration Curve for Southwest 8.5 SMA.

C.2.2.8 Water Supply and Flood Control

Consistent with the Savings Clause requirements for CERP, each CERP project included in the CEPP FWO (Indian River Lagoon-South Project, Picayune Strand Restoration Project, Site 1 Impoundment Project, Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, Caloosahatchee River (C-43) West Basin Storage Reservoir, C-111 Spreader Canal Western Project) must independently demonstrate in the respective PIRs that implementation of these CERP projects would not adversely impact the existing legal sources for water supply or the levels of service for flood protection. Operations protocols for the first and second generation CERP projects were modeled in the CEPP FWO consistent with the draft Project Operating Manuals, as documented in the respective PIRs. Operations and components of the previously listed CERP projects are retained Alt 4R and Alt 4R2, and the inclusion of the components is therefore implicit to the analyses within this section.

To address the Savings Clause requirements for CERP, the CEPP draft PIR/EIS includes a detailed and comprehensive analysis of potential effects of the CEPP recommended plan (Alt 4R2), where applicable, to existing legal sources for water supply and/or the levels of service for flood protection (refer to **Section 6** of the PIR main report for summary information and **Annex B** for the complete analysis). The general hydrologic overview of water supply and flood control performance of Alt 4R2 in this section is separate and distinct from the content of the recommended plan Savings Clause analysis contained in **Annex B**. Areas within the CEPP project area that are not specifically discussed in this section, such as the WCAs, may be presumed to have insignificant impacts to water supply or flood control.

C.2.2.8.1 Lake Okeechobee

Based on the modeling, compared to the FWO, the frequency of water restrictions enacted by the SFWMD Governing Board due to Lake Okeechobee falling below the Water Shortage Trigger line as defined by LOWSM is projected to slightly decrease for both Alt 4R and Alt 4R2: two fewer years with three or more months with restrictions for LECSA 1 (note: one additional year with restrictions, compared to the ECB); no change in the number of years with three or more months with restrictions for LECSA 2 (note: one fewer year with restrictions, compared to the ECB); and three fewer years with three or more months with restrictions for LECSA 3 (note: same number of years as the ECB).

As a result of the CEPP preliminary screening process, operational changes were incorporated into the hydrologic modeling conducted for the CEPP alternatives, including the Alt 4R and the recommended plan Alt 4R2, in efforts to optimize CEPP system-wide performance within the existing flexibility of the 2008 LORS. More specifically, the hydrologic modeling of the CEPP alternatives included proposed revisions to the 2008 LORS decision tree outcome maximum allowable discharges dependant on the following criteria: Lake Okeechobee inflow and climate forecasts (class limits were modified for tributary hydrologic conditions, seasonal climate outlook, and multi-seasonal climate outlook), stage level (regulation zone), and stage trends (receding or ascending). While some refinements were made within the operational flexibility available in the 2008 LORS, consistent with the original modeling intent, the final operational assumptions ultimately extended beyond this flexibility due to adjustments made to the tributary/climatological classifications. Minor modifications to the operational assumptions were included for Alt 4R and Alt 4R2, compared to Alts 1 through 4. For all CEPP alternatives, the LORS 2008 Regulation Schedule zones were unchanged. Additional information and documentation of these assumptions can be found in the Engineering Appendix **(Appendix A)** of the CEPP PIR.

Based on the modeling assumptions and the resulting moderate stage increases within Lake Okeechobee with Alt 4R and Alt 4R2, the average annual percentage of water supply demand not met is projected to decrease for the EAA and the remainder of the LOSA (**Figure C.2.2-84**). For the eight years

with the largest water supply cutbacks within the LOSA, the water supply cutback percentage with Alt 4R2 is reduced for seven of the eight years and increased for one of the eight years (1981), compared to the FWO (**Figure C.2.2-85**). For the eight years with the largest water supply cutbacks within the LOSA, the water supply cutback percentage with Alt 4R is reduced for six of the eight years and increased for two of the eight years (1981 and 1982), compared to the FWO.

Lake Okeechobee stage duration curves for the RSM-BN model representation of the CEPP ECB (LORS 2008), CEPP FWO (LORS 2008, plus additional CERP and non-CERP projects), and CEPP Alts 1 through 4R2 (LORS 2008, additional CERP and non-CERP projects, and prescribed operational flexibility) are shown in **Figure C.2.2-86**. A single RSM-BN simulation was originally completed for all of the CEPP components north of the red line for the final array of Alts 1 through 4, although separate RSM-BN simulations were later completed for both Alt 4R and Alt 4R2 to improve water supply performance within the LOSA with the recommended plan. Compared to the FWO, Alt 4R2 Lake Okeechobee stages are increased by 0.25-0.50 feet for the upper 70% of the stage duration curve, excluding extreme wet hydrologic conditions. Compared to the FWO, Alt 4R Lake Okeechobee stages are increased by 0.25-0.50 feet for the upper 60% of the stage duration curve, excluding extreme wet hydrologic conditions. Compared to Alt 4, Lake Okeechobee stages for Alt 4R and Alt 4R2 are slightly increased by less than 0.10 feet during the upper 40% of the stage duration curve. Peak lake stage increased from 17.50 feet NGVD in the FWO to 17.64 feet NGVD in Alt 4R and 17.66 feet NGVD for Alt 4R2.

The baselines, Alt 4R and the recommended plan Alt 4R2 all show simulated stages above 17.25 feet NGVD: 18 days for the ECB; 9 days for the FWO; 29 days for Alt 4R; and 29 days for Alt 4R2 (note: 14,975 days in the RSM-BN 41-year period of simulation). The USACE LORS 2008 Environmental Impact Statement (EIS) assessment recognized that minimizing the frequency of exceedance of the 17.25 feet elevation offers additional protection for public safety and the HHD, for the condition prior to completion of the current approved and planned HHD remediation measures, and this criterion was evaluated as a LORS project performance measure. Significant increases in the frequency, duration, and magnitude of Lake Okeechobee peak stages do not result from the assumed modified Lake Okeechobee operations with the CEPP alternatives (including Alt 4R and Alt 4R2), despite the assumed completion of HHD remediation measures, because the adverse ecological effects associated with increased lake stages and the associated increases in high volume releases to the estuaries were effectively balanced during the CEPP preliminary screening (for additional discussion of screening metrics, refer to **Section 3** of the PIR main report). Extreme high lake stages have also been documented to adversely impact the plant and animal communities, through processes which include the following: physical uprooting of emergent and submerged plants; reduced light levels in the water column due to increased suspended sediment; and littoral zone exposure to increased nutrient levels from the water column. The number of days with stages above 16 feet NGVD is increased from 696 in the FWO to 1157 in Alt 4R and 1162 in Alt 4R2 during the 1965-2005 period of simulation.

Following completion of the HHD remediation of Reaches 1, 2, and 3, the degree to which higher maximum lake stages and increased frequency and duration of high lake stages would be accepted, if at all, will be contingent on the conclusions identified in the USACE 2014 Dam Safety Modification Report (DSMR) for the Herbert Hoover Dike (HHD). Any changes to the Lake Okeechobee Regulation Schedule would be analyzed and coordinated with the public through the NEPA process.

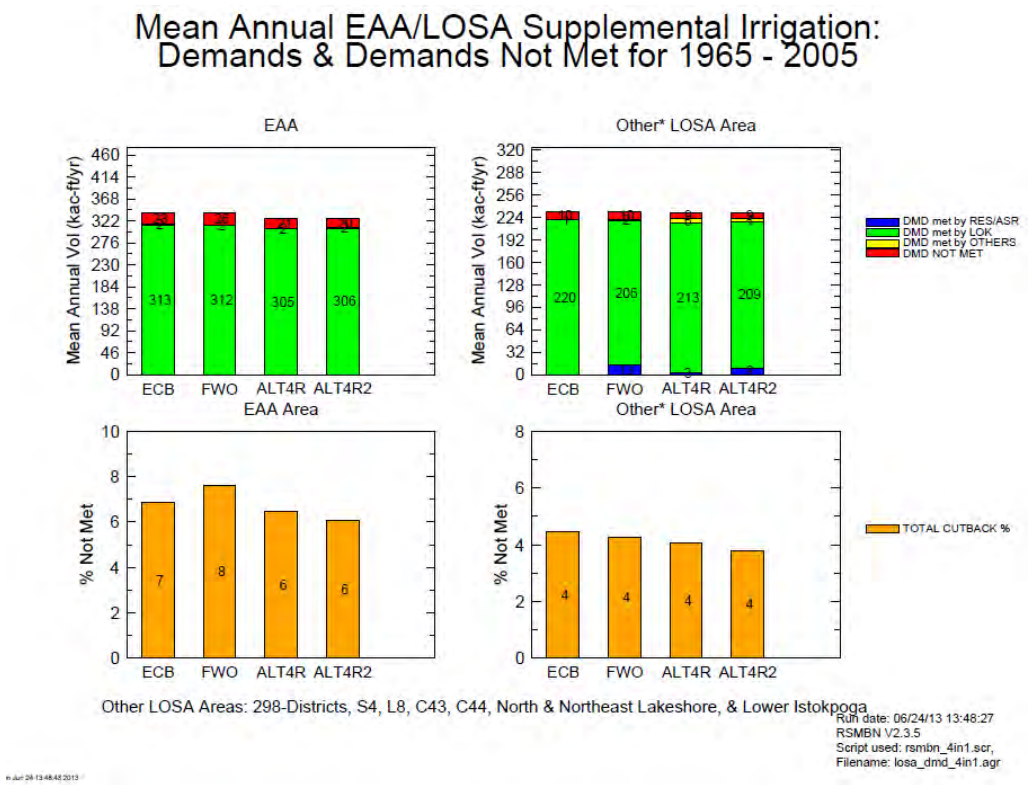


Figure C.2.2-84. EAA and LOSA Water Supply Performance.

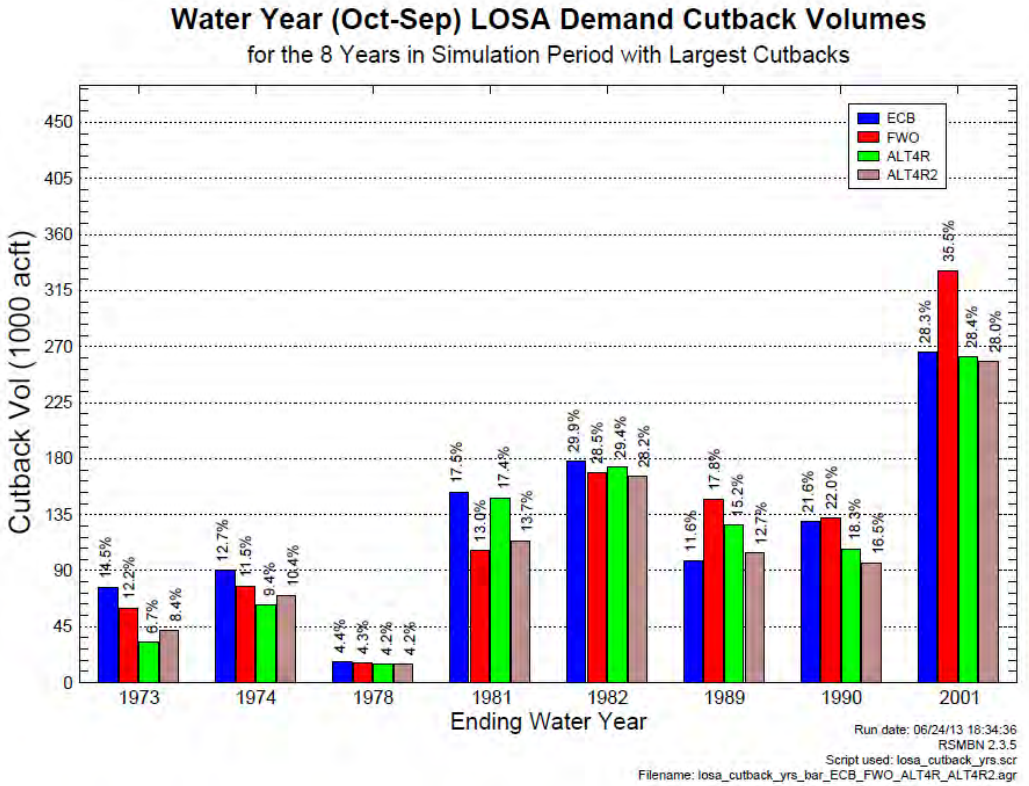


Figure C.2.2-85. LOSA Water Supply Performance for the Eight Largest Cutback Years.

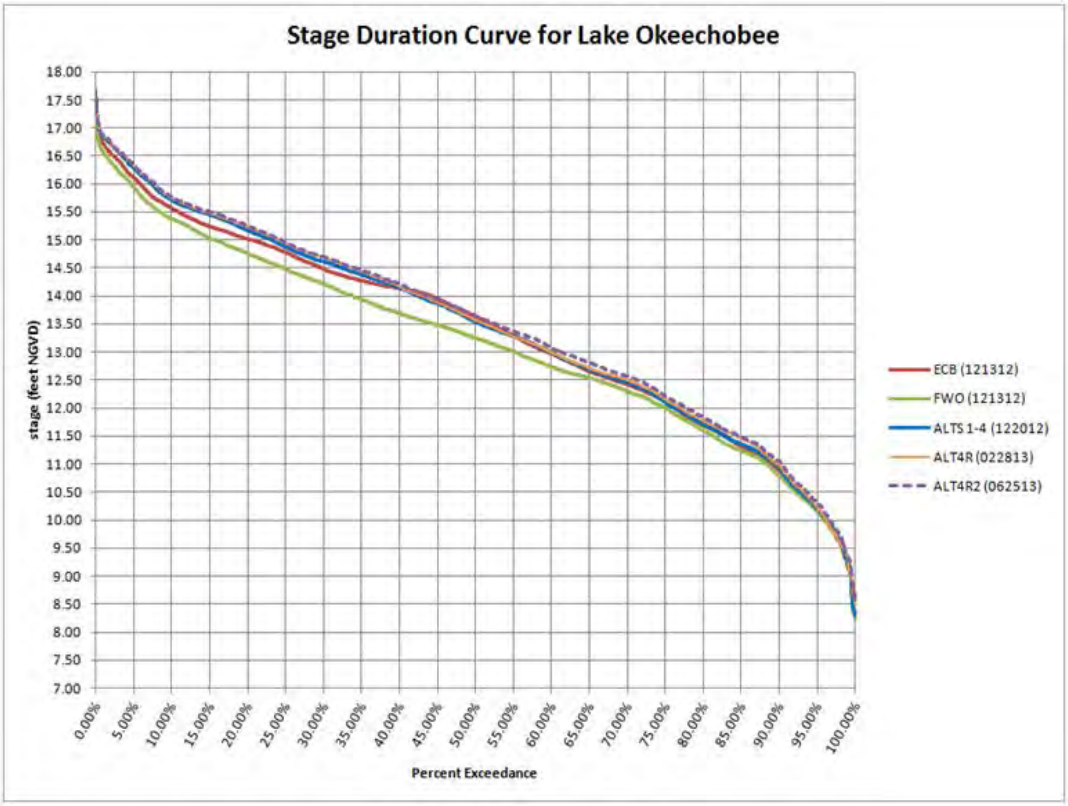


Figure C.2.2-86. Lake Okeechobee stage duration curves.

C.2.2.8.2 Seminole Tribe of Florida

Based on the CEPP alternative modeling assumptions regarding Lake Okeechobee operational flexibility and the resulting general moderate stage increases within Lake Okeechobee, the percentage of water supply demand not met for the Brighton Reservation is shown to slightly decrease by 0.5% for Alt 4R and by 0.8% for Alt 4R2 compared to the FWO (**Figure C.2.2-87**) (note: demand not met is also 0.3-0.6% lower than the ECB). The percentage of water supply demand not met for the Big Cypress Reservation is shown to be slightly reduced by 0.2% for Alt 4R and 0.4% for Alt 4R2 (**Figure C.2.2-88**) (note: demand not met is also 1.0-1.2% lower than the ECB). The Seminole Tribe of Florida has surface water entitlement rights pursuant to the 1987 Water Rights Compact and subsequent entitlement provisions executed between the Seminole Tribe of Florida, the State of Florida, and the SFWMD. Impacts are not expected for Alt 4R or Alt 4R2 based on the hydrologic modeling.

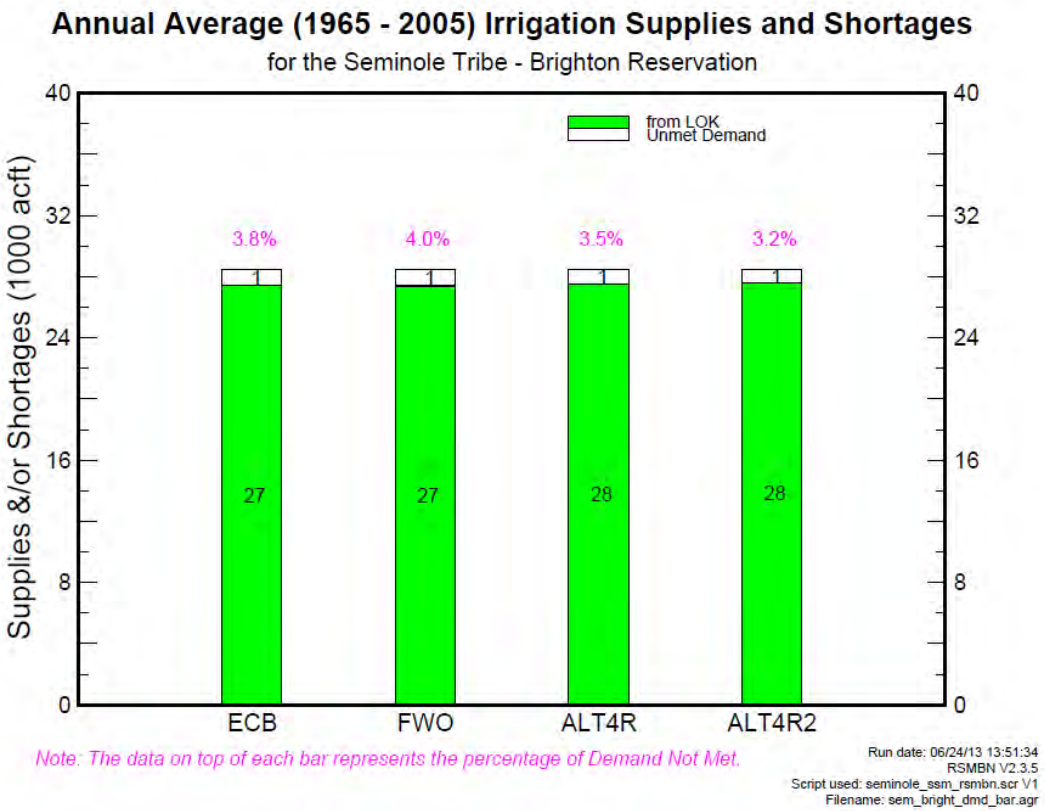


Figure C.2.2-87. Water Supply Demand for Seminole Tribe of Florida's Brighton Reservation.

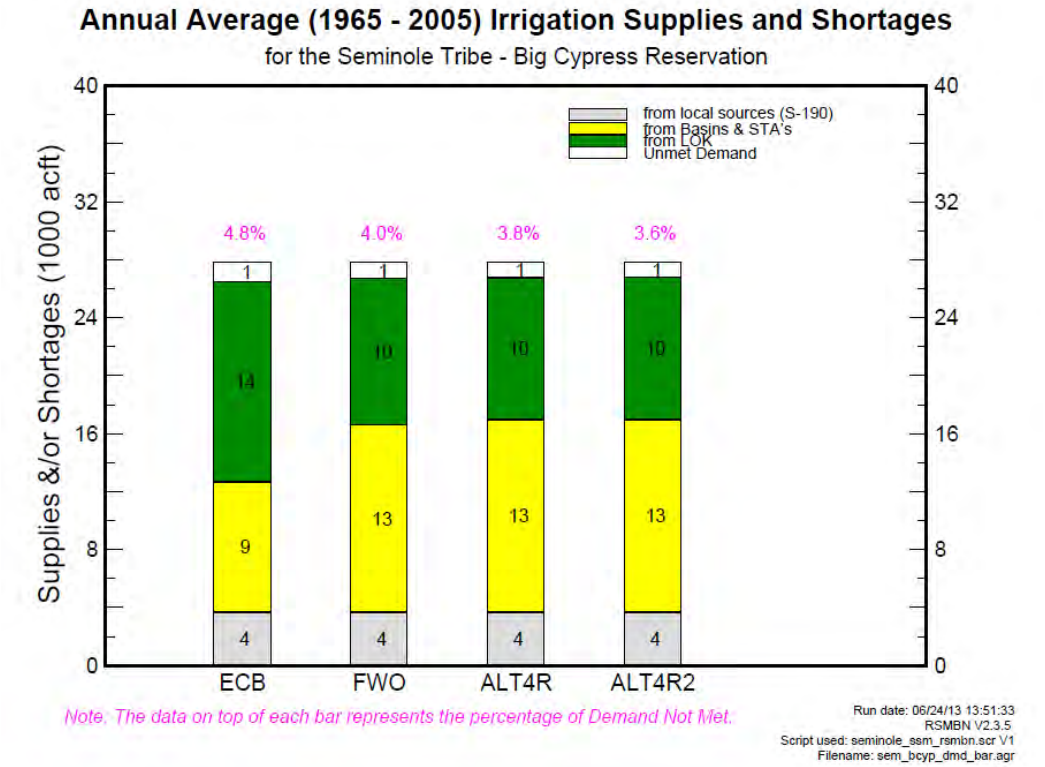


Figure C.2.2-88. Water Supply Demand for Seminole Tribe of Florida's Big Cypress Reservation.

C.2.2.8.3 Lower East Coast Service Areas

Based on the alternative modeling, compared to the FWO, the frequency of water restrictions enacted by the SFWMD Governing Board due to Lake Okeechobee falling below the Water Shortage Trigger line as defined by LOWSM is projected to slightly decrease for both Alt 4R and Alt 4R2: two fewer years with three or more months with restrictions for LECSA 1 (note: one additional year with restrictions, compared to the ECB); no change in the number of years with three or more months with restrictions for LECSA 2 (note: one fewer year with restrictions, compared to the ECB); and three fewer years with three or more months with restrictions for LECSA 3 (note: same number of years as the ECB). For the LECSA, additional water has been made available with Alt 4R2 in the regional system and has been quantified for LECSA 2 and LECSA 3. An increased demand of 12 million gallons per day (MGD) in LECSA 2 and 5 MGD in LECSA 3 was included in Alt4R2 above the demands in the FWO baseline; the public water supply demands assumed for the FWO are also equivalent to the demands assumed for the ECB and 2012EC existing condition baselines. This increase in demands for other water related needs was able to be provided without adversely affecting the benefits accrued in the natural system.

Alternative 4R and Alt 4R2 modeling also indicate no significant reductions to regional groundwater stages during dry conditions (assumed as a surrogate for water supply conditions for this discussion) for most portions within the LECSA, as compared to the FWO condition. No significant changes were indicated within LECSA 1, LECSA 2, and most of LECSA 3 that were prevalent through normal to dry hydrologic conditions. For Alt 4R, some reduced stages were indicated during the driest 5-10% of hydrologic conditions for areas east of WCA 2A and WCA 2B (monitoring gages G2031, G2033, and G2032) and during the driest 5% of hydrologic conditions for areas east of L-31N and south of the 8.5 SMA (monitoring gages G1362, G1363, G614, and G757A). The modified L-6 diversion operations applied for Alt 4R2 resulted in increased dry period stages within WCA 2B, and Alt 4R2 does not indicate reduced stages for areas east of WCA 2A and WCA 2B (monitoring gages G2031, G2033, and G2032) that were affected with Alt 4R. Alt 4R2 continues to indicate reduced stages during the driest 5% of hydrologic conditions for areas east of L-31N and south of the 8.5 SMA (monitoring gages G1362, G1363, G614, and G757A). In general, lowered regional groundwater stages during dry conditions that were apparent for the FWO when compared to the ECB are not further exacerbated by Alt 4R or Alt 4R2.

For Alt 4R and Alt 4R2, compared to the FWO, L-30 Canal stages (north of S-335) are generally increased by 0.1-0.6 feet for normal to extreme dry conditions (**Figure C.2.2-89**); L-30 Canal stages also show an increase of 0.2-0.4 feet compared to the ECB for the driest 20% of hydrologic conditions. L-30 Canal stages are highly correlated to hydrologic conditions within central and eastern WCA 3B. L-31N Canal stages (north of G-211) are increased by 0.1-0.2 during dry conditions for Alt 4R and Alt 4R2, with no significant change compared to the ECB and FWO during normal hydrologic conditions (**Figure C.2.2-90**). No significant stage reductions within the C-111 Canal (between S-176 and S-18C) are indicated during normal to dry hydrologic conditions that would affect water supply deliveries, and both Alt 4R and Alt 4R2 performance indicates a 0.1-0.2 feet stage increase during normal hydrologic conditions compared to both ECB and FWO (**Figure C.2.2-91**).

The Alt 4R and Alt 4R2 modeling indicates no significant increases to regional groundwater stages during wet conditions which would impact the levels of service for flood control within the LECSA, as compared to the FWO condition. No significant changes were indicated within LECSA 1, LECSA 2, and significant reductions were observed for portions of LECSA 3. For Alt 4R2, LEC monitoring gauge stages immediately east of the Pennsuco wetlands (east of WCA 3B), specifically G3259A (**Figure C.2.2-92**), USGS-02297497, and C2_74, indicate a minor increase to stages in the wettest 10% of the stage duration

curve, with stage increases of less than 0.20 feet; however, in all cases, Alt 4R2 stages are the same or lower than the ECB base condition for the wettest 10% of the stage duration curve. The L-30 Canal stages (north of S-335) for Alt 4R and Alt 4R2 indicate a moderate reduction of 0.1-0.2 feet to flood control stages within the wettest 10% of hydrologic conditions, with no significant change observed for the upper 1% of the stage duration curve (**Figure C.2.2-89**). The L-31N Canal stages (north of G-211) indicate a significant (up to 1.0 feet) reduction to flood control stages within the wettest 5% of hydrologic conditions for Alt 4R and Alt 4R2 (**Figure C.2.2-90**). C-111 Canal stages between S-176 and S-18C indicate no significant change for the upper 10% of the stage duration curve compared to the FWO, with a small stage reduction of 0.1 feet observed compared to the ECB (**Figure C.2.2-91**).

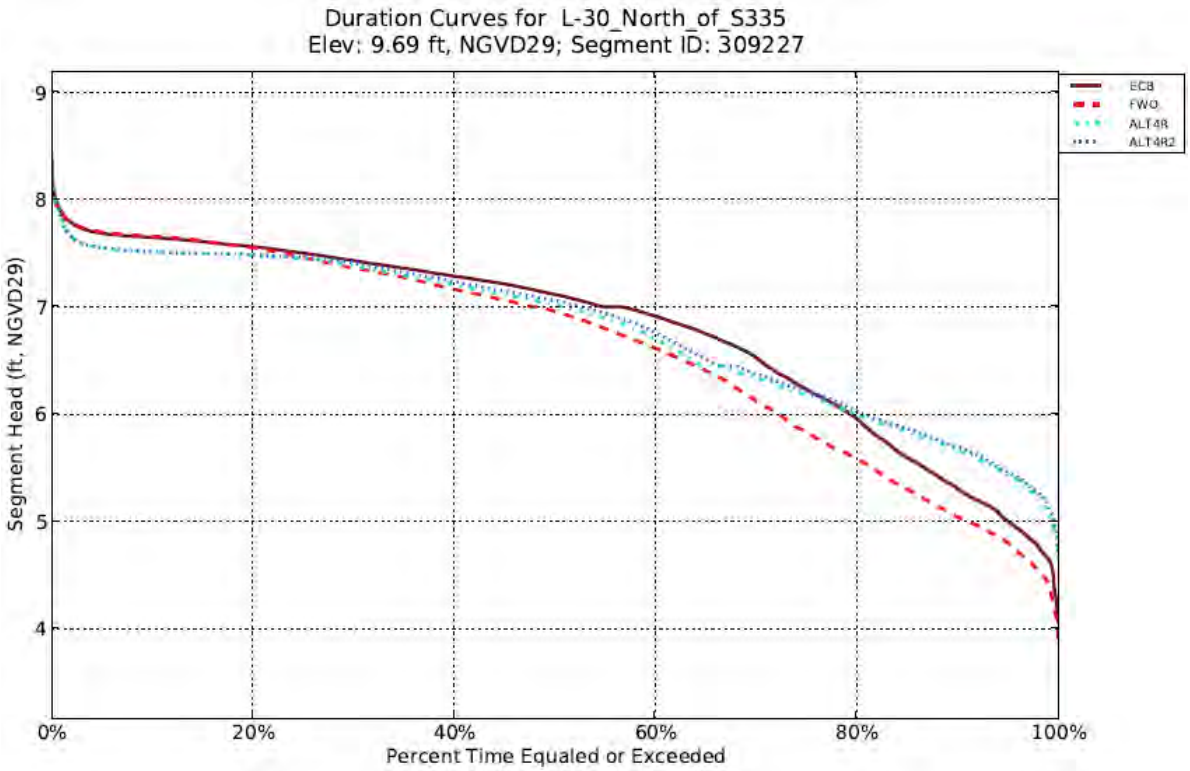


Figure C.2.2-89. Stage Duration Curve for L-30 Canal in LECSA 3.

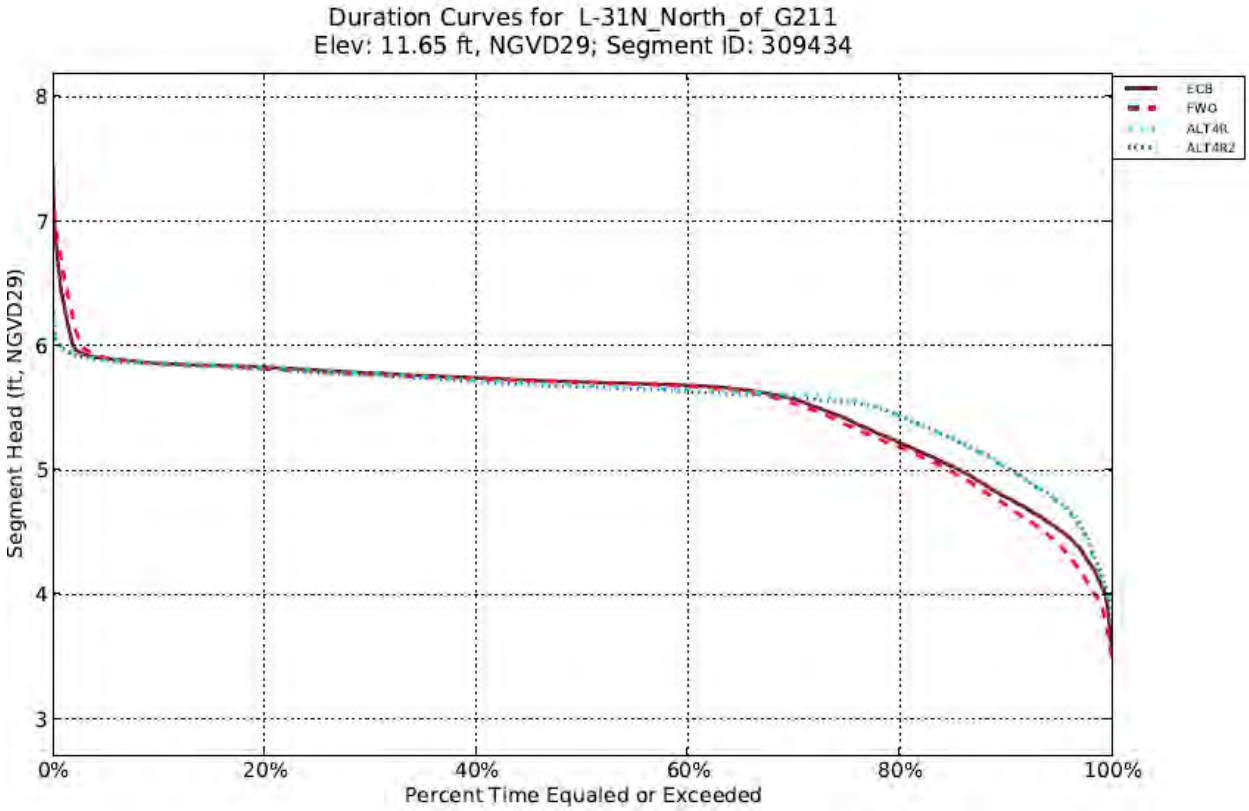


Figure C.2.2-90. Stage Duration Curve for L-31N Canal in LECSA 3.

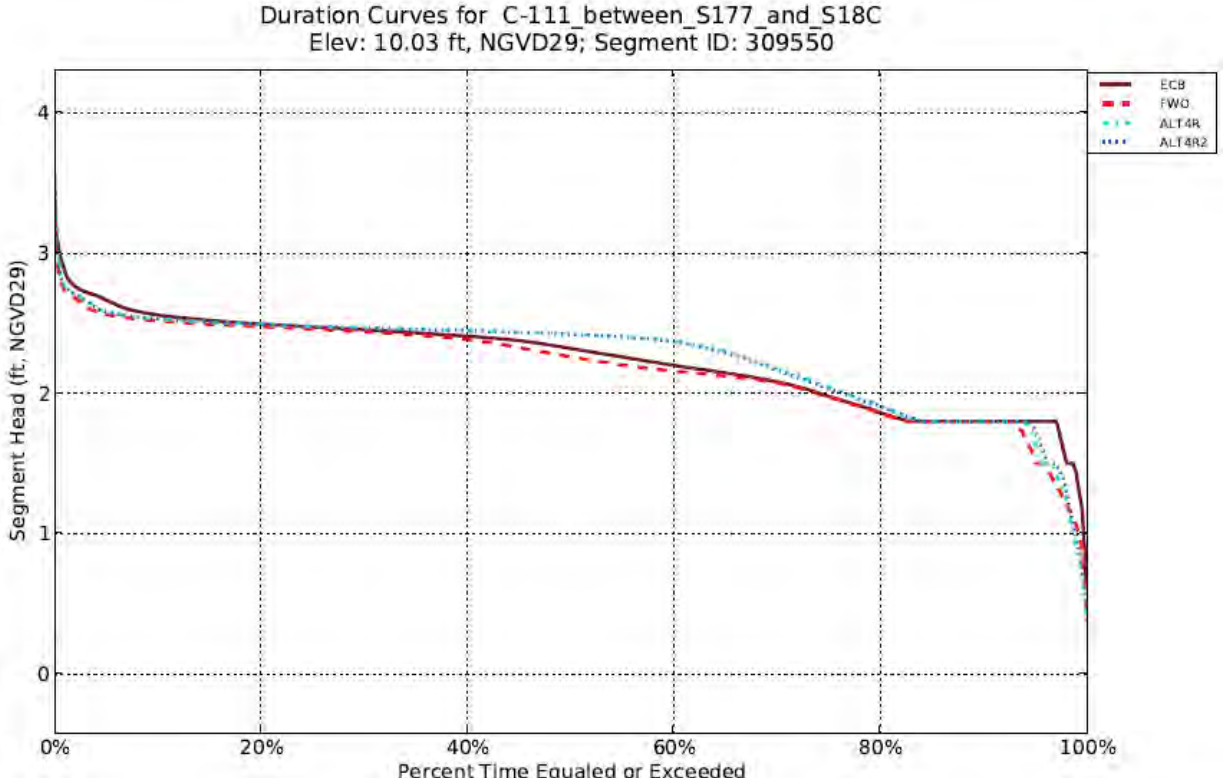


Figure C.2.2-91. Stage Duration Curve for C-111 Canal in LECSA 3.

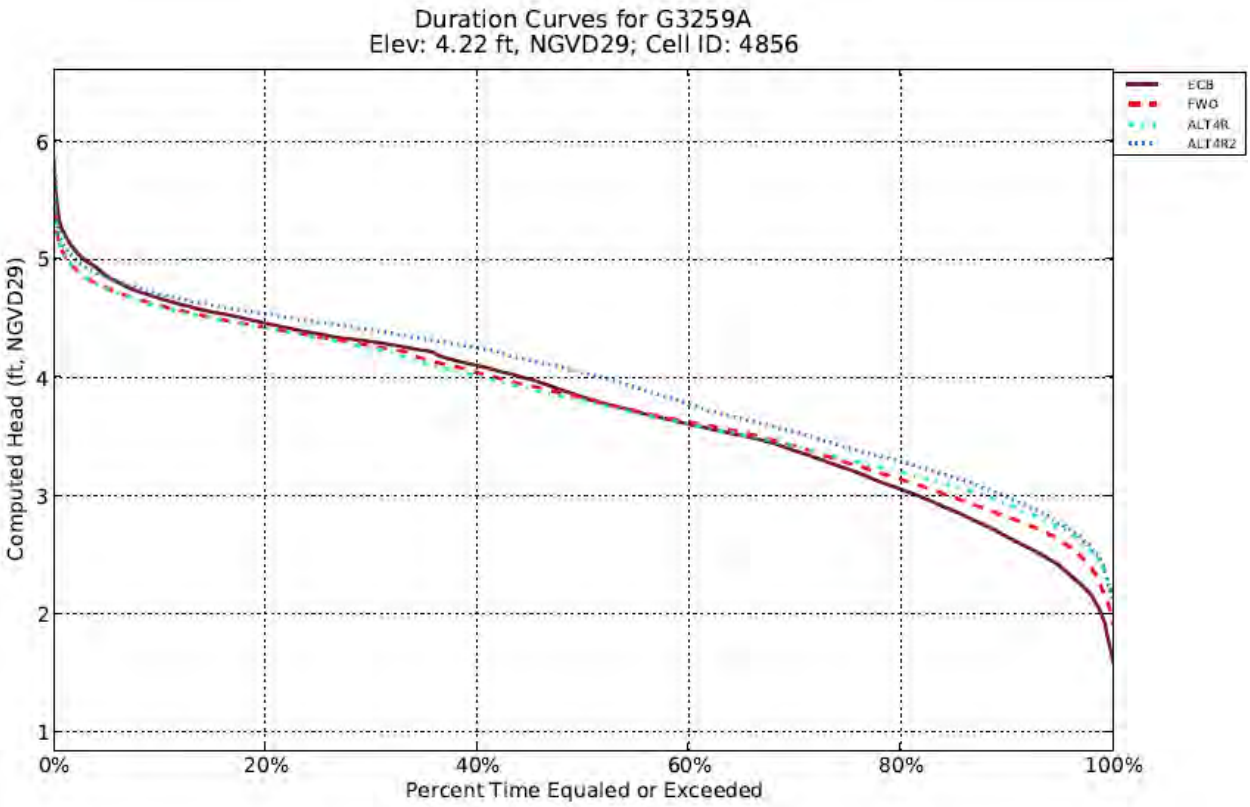


Figure C.2.2-92. Stage Duration Curve for G-3259A in LECSA 3.

C.2.2.9 Water Quality

Water quality impacts from Alt 4R and Alt 4R2 are considered to be nearly identical given that these alternatives have identical project features and nearly identical operating criteria. Discussion of the water quality impacts of Alt 4R apply equally to Alt 4R2.

C.2.2.9.1 Lake Okeechobee

Relative to the FWO project, Alt 4R will likely result in some improvement in Lake water quality as a result of reduced extreme lake stage events. However, the expected improvement will likely not be very significant since nutrient loading conditions are not expected to differ between FWO and Alt 4R. Methyl-mercury bioaccumulation potential in the lake is not expected to change. As discussed in the existing conditions section for Lake Okeechobee, there is an existing TMDL for phosphorus. This TMDL requires a reduction in annual phosphorus loading from more than 500 metric tons per year to 140 metric tons per year. The average annual S-308 backflow of 2.6 metric tons per year under the existing condition and 4.6 metric tons/yr under the with-project condition. . The increase of 2 metric tons per year amounts to less than 1.5 percent of the phosphorus TMDL target of 140 metric tons/yr. The allocation of TMDL phosphorus loads will be addressed through revisions to the Lake Okeechobee Basin Management Action Plan. Specifically, the FDEP is in the process of developing a BMAP for Lake Okeechobee pursuant to Section 403.067, Florida Statutes. Potential water quality issues associated with S-308 loads will be addressed as part of the BMAP.

C.2.2.9.2 Northern Estuaries

Caloosahatchee: Improved salinity conditions within this estuary as a result of a reduction in the number of high flow events and a reduction in the number of extreme low flow events as characterized

by flows through the S-79 structure. Nutrient and dissolved oxygen conditions should improve slightly during the wet season within the estuary given the reduction in high flow events. The frequency of dry season algal events within the upper estuary may change as a result of increased dry season flows through the S-79 structure during the late spring.

St. Lucie Estuary: Improved salinity conditions within this estuary as a result of a reduction in the number of high flow as characterized by flows through the S-80 structure. Nutrient and dissolved oxygen conditions should improve during the wet season within the estuary given the reduction in high flow events. The number of months of flow less than 300 cfs decreases so there may be some change in the frequency of algal blooms during the later part of the dry season.

C.2.2.9.3 EAA

With-Project Alternatives vs. FWO

Alternative 4R and Alt 4R2 include the A-2 FEB integrated into the A-1 FEB along with additional Lake Okeechobee water distributed south of the EAA. Dynamic Model for Stormwater Treatment Areas (DMSTA) water quality modeling indicates that the with-project alternatives will meet the 2012 Water Quality-based Effluent Limits (WQBEL).

C.2.2.9.4 Greater Everglades

WCA 1, WCA 2

Water quality conditions for WCA 1 are not expected to be significantly changed by Alt 4R since it does not include features that influence flows and treatment within the eastern flow path. Nutrient and sulfate loading conditions in WCA 2 should improve somewhat given the reduction in hydrologic load sent to this water conservation area. Reduced nutrient and sulfate loading could somewhat alter the locations where mercury methylation is problematic within WCA 2.

C.2.2.9.5 WCA 3A

Phosphorus loading into the northern portion of WCA 3A is expected to increase by about 10 percent relative to the FWO condition as a direct result of the increase in hydrologic loading; however, relative to the existing condition, phosphorus loads from Alt 4R will be reduced by approximately 25 percent. Phosphorus concentrations in water discharged into WCA3A are expected to be lower by approximately 1/3rd relative to existing conditions. Sulfate concentrations into the northern portion of WCA 3A are expected to decrease with Alt 4R as a result of the additional dilution of EAA runoff with Lake Okeechobee discharges which have sulfate concentrations roughly half that of the EAA runoff. The total load of sulfate into WCA3A is expected to increase from 5 to 10 percent over FWO.

Figure C.2.2-93 shows the average annual flow across three transects in WCA 3A. A comparison of total flow to the surface water flow for these three transects shows that surface water flows dominate the flow. Increased nutrient uptake in the northern portion of WCA 3A will likely result in reduced TP concentrations at the southern end of this WCA as compared with the FWO condition which has significant canal flows that provide less nutrient uptake than sheetflow across the marsh. It is likely that northern portions of the WCA 3A marsh that are adjacent and south of the L-4, and L-5 canals will experience higher TP loads as compared to the FWO. This will cause the conversion of some areas of native vegetation to less desirable cattail. A detailed discussion of CEPP impacts to phosphorus loads and concentrations in WCA 3A is provided in **Annex F**.

The methylmercury cycle is very complex with many factors affecting bioaccumulation in fish. Changes in hydrology can impact the formation of methylmercury. For instance, Alt 4R will reduce

dryout/rewetting cycles in northern WCA 3A which will reduce sulfate and Hg remobilization due to soil oxidation. Project related changes to the timing, distribution, and loading of sulfate in WCA 3A will likely alter the locations where methylated mercury is found at high concentrations in the water column. This is illustrated in **Figure C.2.2-94** from the 2013 SFER report which projects the impact to mosquitofish mercury body burden of reducing by 50 to 100 percent the agriculturally sourced sulfate discharged into the Everglades Protection Area. This figure shows that significant decreases in sulfate loading would both increase and decrease mosquitofish mercury concentrations in WCA 3A depending upon the location. A 100 percent reduction in non-marine sulfate exported from the EAA is projected to result in an overall reduction in average water column sulfate concentrations within the Everglades Protection Area from 2.4 mg/L to 0.78 mg/L; however, the average mosquitofish mercury concentration is estimated to be reduced from 85.7 ng/g to 80.0 ng/g which is a relatively insignificant change in proportion to the reduction in sulfate. Though these projections are for decreases in sulfate rather than increased sulfate loading, they are indicative of the relative insensitivity of mosquitofish methylmercury bioaccumulation to relatively small changes (<10 percent increase) in sulfate loading as contemplated with Alt 4R and Alt 4R2.

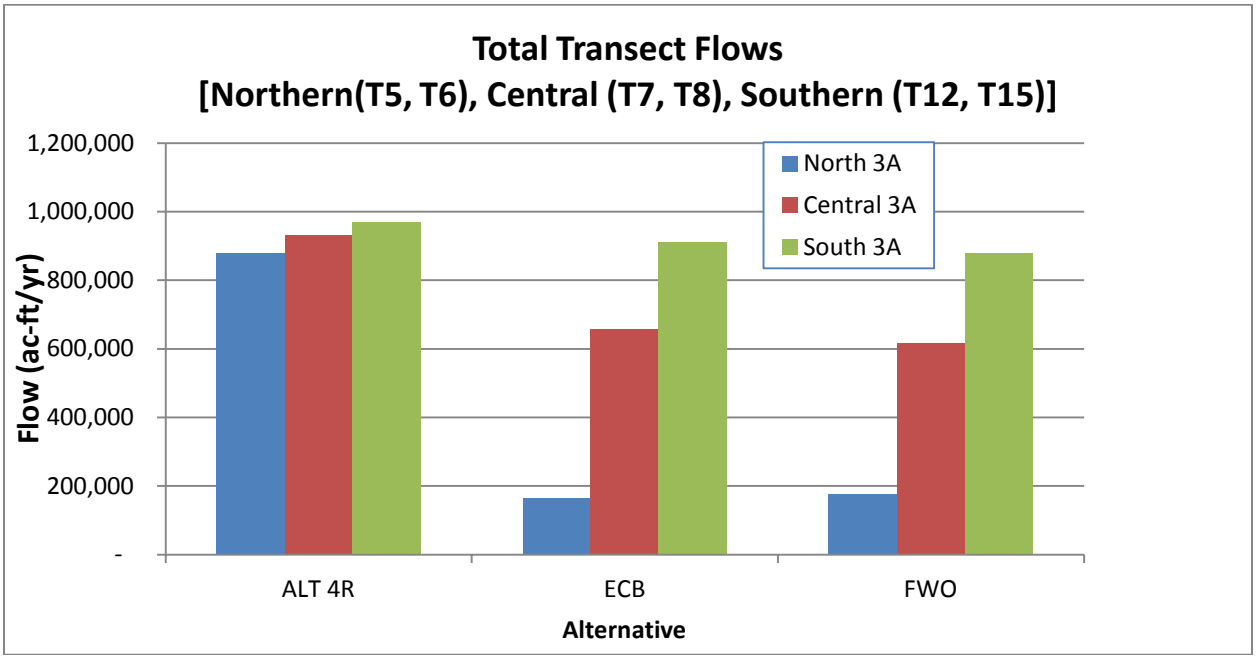


Figure C.2.2-93. Average Annual Surface and Groundwater Transect Flows for WCA 3A.

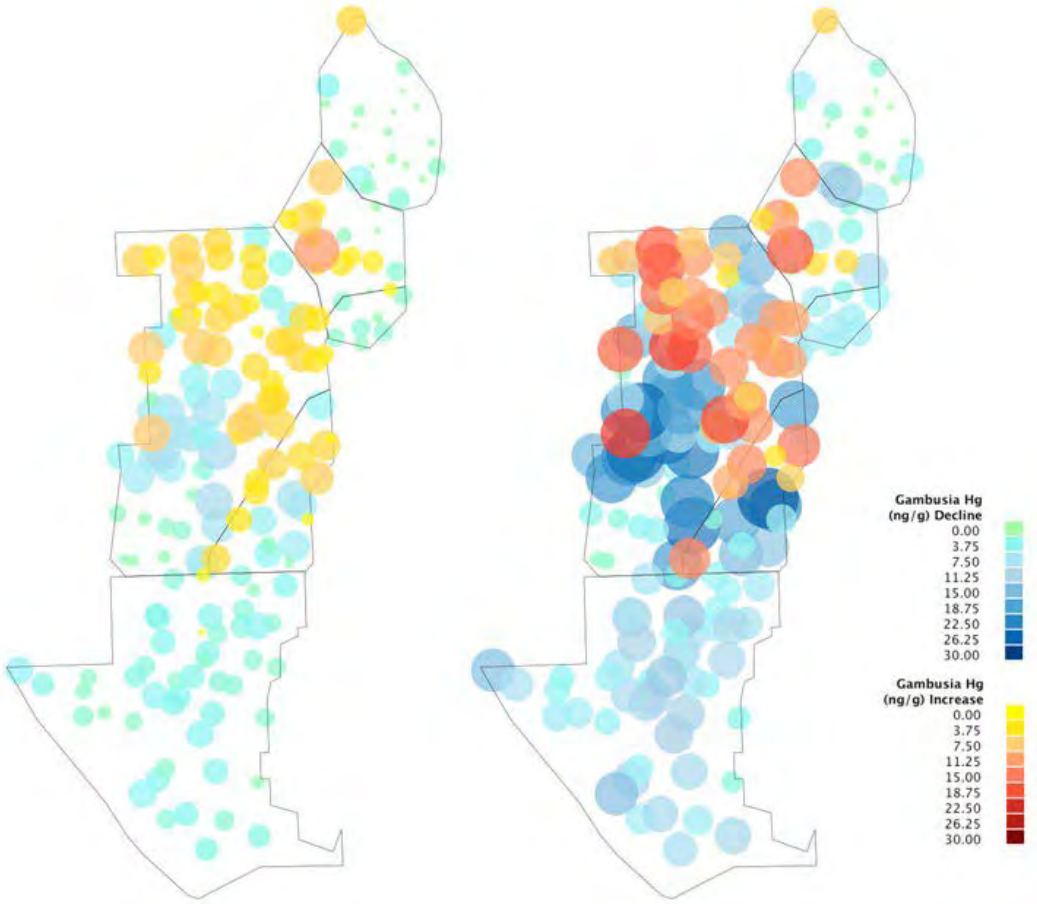


Figure C.2.2-94. Predicted changes in *Gambusia* Hg concentrations in response to 50 and 100 percent reductions in excess (non-marine) sulfate exported from the EAA (left and right, respectively) using R-EMAP Cycles 6 and 7 data. (from SFWMD, 2012).

C.2.2.9.6 WCA 3B

Additional water flow into WCA 3B will result from the breaches of the L-67A and L-67C levees. Relative to the FWO condition, flows through these breaches will be composed of more water that passes through the northern WCA 3A marsh and less water from the Miami Canal and the S-9 basin since these flows are reduced by approximately 50% at S-151 and 9% from S-9/S-9A pumps. Increased hydration of WCA 3B will reduce the risk for severe dry down and thus reduce fire risk relative to FWO. Water quality degradation such as the release of Total Phosphorous (TP) into the water column and increased methyl mercury (MeHg) in the water column associated with fire events and their aftermath will be reduced. Additional flow into WCA 3B will increase nutrient loads relative to the FWO condition. **Annex F** includes a detailed discussion of the impact of CEPP on phosphorus within WCA 3B.

Like WCA 3A, sulfate loads are likely to increase in WCA 3B due to increased flows into this area relative to the FWO condition. Less frequent dryout/rewetting cycles within this area should reduce soil oxidation and the resulting recycling of sulfate and mercury back into the water column. The effects of additional sulfate on water column methylmercury concentrations and total mercury body burden in fish and birds in WCA 3B cannot be predicted with certainty. In light of this uncertainty, there is no reason to predict that the CEPP project will result in bioaccumulation that exceeds historic mercury concentration maximums unless atmospheric mercury deposition increases over present rates. The

recent downward trends in measured water and tissue mercury concentrations in this area are encouraging.

C.2.2.9.7 Everglades National Park

C.2.2.9.7.1 Shark River Slough

Alternative 4R2 vs. FWO

Water entering Shark River Slough (SRS) from WCA 3 is likely to have lower concentrations of TP as compared with the FWO condition due to the backfilling of the Miami Canal which will result in more water passing through the marsh areas and less water flowing directly from upstream canal sources. A detailed discussion of the effect of the CEPP project on total phosphorus concentrations in ENP is provided in **Annex F**.

Fish mercury concentrations within ENP have not decreased as much as that observed in WCA 3. The reasons for continued higher concentrations of bioaccumulated mercury in ENP fish are not well understood at this time due to the complexity of processes involved. The range of sulfate concentrations that maximize methylmercury formation in ENP may differ from that in the water conservation areas (SFWMD, 2011). The effect that small changes in sulfate in ENP would have on fish mercury are difficult to predict.

Sulfate loading into ENP under the Alt 4R2 condition is likely to decrease somewhat relative to the FWO condition primarily because most of the flows into northern ENP will have been routed through the WCA 3 marsh which is likely to remove more sulfate than the additional sulfate provided by the increased flow from Alt 4R2. The additional flow will increase stages within Shark River Slough by an average of 0.5 ft which should significantly reduce areas that are subject to dry out and rewetting. Reduced dry out and rewetting will reduce the recycling of sulfate and mercury that exacerbates mercury bioaccumulation. The effects of Alt 4R2 on formation and bioaccumulation of methylmercury cannot be predicted with certainty since the mechanisms that affect mercury methylation rates in ENP are not fully understood at this time. However, if sulfate loads do not increase with Alt 4R2 and the additional flow reduces dry out/rewetting cycles, it is likely that future with-project mercury methylation conditions will not exceed the peak concentrations observed in ENP in 1999 unless atmospheric deposition of mercury increases in the future. Continued monitoring and scientific investigation of mercury within the Everglades Protection Area will provide more certainty regarding potential project impacts well before the additional flows from Alt 4R2 are realized.

C.2.2.10 Air Quality

Direct emissions from the proposed construction of the CEPP project features would be confined to exhaust emissions of labor transport equipment, and construction equipment (dump trucks, excavators, graders, bulldozers, etc.). Clean Air Act pollutants considered in this air quality assessment are SO_x; volatile organic compounds (VOCs); nitrogen oxides (NOx), CO, PM10, and PM2.5. Green house gas emissions are also considered. Volatile organic compounds, sulfer oxides, and nitrogen oxides are important since they are precursors to ozone generation. These criteria pollutants are generated by the construction and operational activities associated with the proposed alternatives.

Pursuant to the General Conformity Rule, of the Federal Clean Air Act (CAA) as promulgated by the U.S. Environmental Protection Agency (EPA), a federal agency must make a General Conformity Determination for all federal actions in non-attainment or maintenance areas where the total of direct and indirect emissions of a non-attainment pollutant or its precursors exceeds levels established by the regulations. Since Palm Beach, Broward, and Miami-Dade Counties are considered by EPA to be in

attainment for all criteria pollutants, the proposed recommended plan for CEPP is exempt from CAA Conformity Determination requirements. The criteria pollutants, including ozone, are estimated herein for planning purposes only.

C.2.2.10.1 Emission Sources

The emission rate factors shown in **Table C.2.2-8** for equipment such as excavators, dozers, dump trucks, and the associated support equipment, were derived from a USEPA non-road engine emissions modeling report USEPA, 2002). The number, type, and duration of use for each piece of equipment were estimated using preliminary earth moving volumes estimated for each of the project features.

Table C.2.2-8. Emission Rate Factors for Construction Equipment Likely to Be Used to Construct CEPP ALT 4R2 Project Features.

Equipment	HP	Load Factor	Emission Factors in g/bhp-hr					
			CO	VOC	Nox	Sox	PM10	PM2.5
Tractor with bush hog	108	0.21	4.07	1.19	7.16	0.007	0.654	0.582
Dozer	140	0.58	2.19	0.59	6.15	0.006	0.229	0.204
Off Road Dump Truck	300	0.57	1.82	0.57	5.55	0.006	0.295	0.263
Road Grader	165	0.59	2.19	0.59	6.15	0.006	0.229	0.204
Roller	106	0.43	4.08	1.32	7.76	0.007	0.686	0.611
Scraper	250	0.7	2.45	1.32	7.76	0.007	0.686	0.611
Trac-hoe	270	0.59	2.19	0.59	6.15	0.006	0.229	0.204

C.2.2.10.2 Emission Calculations

Project related air pollution emissions were estimated for each of the constructed features included in the selected plan (Alt 4R2) these estimates are considered to be applicable to the other with-project alternatives. The construction effort for each project feature was derived from very rough estimates of the volume of earth material moved for each features, the likely construction methodology, and the estimated drive distance between material excavation and material placement. To account for emissions from activities not directly associated with earth moving, the estimates were increased by 20 percent. The duration of construction for each project feature was determined using the probable maximum annual expenditure and the estimated construction cost of the feature. For instance, if the feature is estimated to cost $400 million and the probable maximum annual construction budget is $100 million per year, the duration of construction for that feature was estimated to take four years. Since the sequencing of activities required to build an individual project feature is not available in the planning phase, all construction tasks were spread out over the entire duration of construction of the feature. Emission rates, reported in tons of pollutant emitted per year of operation (tons/year) for each engine were calculated for each of the six criteria air pollutants: CO, NOx, PM2.5, PM10, SOx, and VOCs. The emission rates were derived from the formula:

Emission Rate (tons/yr) = Engine Horsepower × *Engine Load Factor* × *Emission Factor* × duration of operation over the year

Green house gas emissions (carbon dioxide) were estimated based upon the diesel fuel consumption for each feature.

C.2.2.10.3 With Project Construction Emissions

The criteria air pollutants emissions shown in **Table C.2.2-9** are the estimated total of direct and indirect emissions that would occur during the construction of the CEPP project features. The project features included are:

L-5: L-5 Canal Capacity Expansion
MCB: Miami Canal Backfill
BSL: Blue Shanty Flow-way Levee
DGRD: Degrade of the L-67E, L-67A, L-67C, L-29 levee
A2: A-2 FEB
SB: L-29N Seepage Barrier

The emissions from the construction of pump stations and flow control structures are accounted for in the 20 percent contingency factor applied to the total loads.

Table C.2.2-9. Estimated Air Pollutant Emissions from the Construction of ALT 4R2.

Feature Construction		Regulated Air Pollutants						Green House Gas Emissions	
	Year	CO	VOC	Nox	Sox	PM10	PM2.5	Fuel Burnt	CO2
		Mton/yr	Mton/yr	Mton/yr	Mton/yr	Mton/yr	Mton/yr	gallons/yr	Mtons/yr
L-5	1	27.8	8.3	82.5	0.1	4.0	3.5	453,333	4,565
L-5	2	27.8	8.3	82.5	0.1	4.0	3.5	453,333	4,565
MCB	3	23.9	7.2	71.2	0.1	3.5	3.1	465,000	4,683
MCB	4	23.9	7.2	71.2	0.1	3.5	3.1	465,000	4,683
MCB	5	23.9	7.2	71.2	0.1	3.5	3.1	465,000	4,683
MCB	6	23.9	7.2	71.2	0.1	3.5	3.1	465,000	4,683
BSL	7	12.0	4.3	34.2	0.0	2.0	1.8	212,654	2,141
DGRD	8	7.8	2.1	21.8	0.0	0.8	0.7	162,000	1,631
DGRD	9	7.8	2.1	21.8	0.0	0.8	0.7	162,000	1,631
DGRD	10	7.8	2.1	21.8	0.0	0.8	0.7	162,000	1,631
DGRD	11	7.8	2.1	21.8	0.0	0.8	0.7	162,000	1,631
DGRD	12	7.8	2.1	21.8	0.0	0.8	0.7	162,000	1,631
A2	13	15.4	5.4	43.3	0.0	2.5	2.2	309,421	3,116
A2	14	15.4	5.4	43.3	0.0	2.5	2.2	309,421	3,116
A2+SB	15	17.7	6.1	50.2	0.0	2.8	2.5	353,421	3,559
A2+SB	16	17.7	6.1	50.2	0.0	2.8	2.5	353,421	3,559
Totals		**268**	**83**	**780**	**1**	**38**	**34**	**5,115,006**	**51,508**

C.2.2.10.4 With Project Operational Emissions

Operational emissions estimates are assumed to be generated primarily from the pumps moving water into the A-2 FEB and from the enlarged S-356 pump station (**Table C.2.2-10**). The pump stations feeding the A-2 FEB is the S-370 and the S372 pumps. The NOx and SOx loads are taken from Golder Associates,

2010. The other pollutants loads were estimated from the Golder Associates NOx emissions. The A-2 FEB emissions and the ratio of A-2 FEB flows to S-356 flows were used to estimate the S-356 emissions. Emissions associated with employee transportation and maintenance of ALT4R features are not presented here because they should be minor in comparison to the emissions from the major pump stations. Emissions associated with the Alt 4R will result in minor, localized, temporary increases in concentrations of NO_2, SO_2, CO, VOC, and PM. Since the project is located in an attainment area, there is no requirement to prepare a conformity determination. Nonetheless, estimates were tallied to determine the level of emissions that would occur due to the proposed actions. On an annual basis, the project would result in nitrous oxide emissions exceeding the General Conformity threshold (100 tons/year) during operations. However, as stated earlier since Broward County is in an attainment area, there is no CAA requirement to meet this threshold or to mitigate for exceedance of it.

Rehydration of peat soils in the portion of WCA 3A north of Alligator Alley (approximately 70,000 hectares) is expected to stop the oxidation of peat soils by 2025 which releases between 3.71 and 9.2 tons of $C0_2$ per hectare per year. By 2065, rehydration should result in peat accretion which is estimated to capture approximate 3.7 tons of $C0_2$ per hectare per year (Richardson et. al., 2013). Peat accretion after 2065 will result in the sequestration of approximately 260,000 metric tons of $C0_2$ per year.

Table C.2.2-10. Air Quality Emissions for Major Project Features of ALT 4R2 During Operations.

Project Feature	Annual Emission Loads (Mton/yr)						Fuel Burnt	CO2
	CO	VOC	Nox	Sox	PM10	PM2.5	gallons/yr	Mtons/yr
A2 Inflow Pumping (G372, G370)	84	25	250	5	12	11	50,000	500
S356 Pump	28	8	83	2	4	4	17,000	170
Peat Accretion after year 2065*								(-260,000)

***Estimate of C02 sequestration from peat accretion is based on methodology found in Richardson et al, 2013.**

C.2.2.10.5 Without Project Air Emissions

The largest contributor of air emissions under the without project condition is the continued use of the 14,000 acre A-2 FEB lands for sugar cultivation. Sugarcane field burning is estimated to contribute 20 percent of the VOC, 48 percent of the PM2.5, 22 percent of the CO, and 11 percent of the NOx annual loads in Palm Beach County (Hall et. al 2010). **Table C.2.2-11** shows a rough estimate of the air emissions from sugar cane cultivation on the 14,400 acres A-2 FEB. Emissions for sugarcane cultivation were estimated using average heavy equipment emissions factors and an estimate of 16 gallons of diesel per acres of cultivation. Cane field burning factors were taken from Hall, et al (2010). Continued oxidation of peat soils will result in the release of as much as 51,500 tons of C02 from the A-2 FEB lands and 1,600,000 tons of C02 from northern WCA 3A.

Table C.2.2-11. Estimated Air Emissions From Continued Sugarcane Operations on A-2 FEB Lands and From Peat Loss in WCA-3A (North of Alligator Alley).

Activity	Annual Emission Loads (Mton/yr)						Fuel Burnt	CO2
	CO	VOC	Nox	Sox	PM10	PM2.5	gallons/yr	Mtons/yr
Sugar Cane Cultivation	10	3.5	20	.02	1.8	1.65	225000	2,250
Cane Field Burning	9	6				0.7		450
Peat Loss on A-2 Lands *								21,000 to 52,000
Peat Loss in WCA-3A (North of Alligator Alley) *								650,000 to 1,600,000

* Estimate of C02 Emissions from peat loss is based on methodology found in Richardson et. al 2013.

The total increases in air pollutants are relatively minor in relation to the existing point and nonpoint and mobile source emissions in Palm Beach, Broward, and Miami-Dade Counties. Impacts from project related emissions during construction and during the operational phase of CEPP would not significantly impact air quality within the airshed. Short-term loadings of internal-combustion engine exhaust gasses are expected to be negligible and not pose a threat to workers or local populations. The G-370 and G-372 pumps presently have air quality emissions permits. These permits may need modification to account for the additional operations and emissions. An air quality permit will be obtained prior to the construction of the S-356 pump station. Because the project is located within a designated attainment area, EPA's general conformity rule to implement Section 176 (c) of the Clean Air Act does not apply, and a conformity statement should not be required. Over the long-term, rehydration of peat soils in WCA 3A will capture many more tons of C02 than that emitted during construction or as a result of pump operations.

C.2.2.11 Hazardous, Toxic and Radioactive Waste

The FWO and with-project alternative conditions will have similar hazardous, toxic and radioactive waste (HTRW) conditions in the future with the exception of the lands used for the A-2 FEB. Under the FWO condition, the A-2 FEB lands will likely continue to be farmed which will result in the additional application of agricultural pesticides in the cultivated portions of this property and the inadvertent release of petroleum and pesticides in operation and maintenance areas. During the construction of project features, is possible that undiscovered HTRW contamination will be found. Per EC 1165-2-132, the non-federal sponsor will be required to remediate these sites at their sole expense. There is also the potential for HTRW release associated with the operation of project pump stations; however, with modern facilities and best management practices, this presents a minor risk to the environment.

C.2.2.11.1 Residual Agricultural Chemicals

The USACE HTRW policy (ER 1165-2-132) directs that Construction of Civil Works projects in HTRW-contaminated areas should be avoided where practicable. In September 2011, the ASA(CW) provided an exception to this HTRW policy for CERP Projects (Memorandum for Deputy Commanding General for Civil and Emergency Operations, Subject: Comprehensive Everglades Restoration Plan (CERP) – Residual Agricultural Chemicals, Dated September 14, 2011). A copy of this policy is included in **Appendix C.4.** If specific criteria are met, this policy memorandum allows residual agrichemicals to remain on project lands and allows the USACE or SFWMD to integrate response actions directly into the construction plan.

At the request of the SFWMD, this section of the PIR has been included in the CEPP PIR to comply with the ASA(CW) policy. A copy of the letter from the SFWMD requesting application of the policy is included in **Annex H** along with HTRW reports, sampling protocol, and correspondence**.**

The FDEP and USFWS have reviewed the sampling performed to date on the A-2 FEB land and preliminarily indicated that the soils do not require any remedial action in order to protect USFWS trust species. The FDEP and USFWS is recommending that additional sampling of water quality, periphyton and apple snails be conducted in lieu of requiring soil remediation since they believe that the risks to trust species are minimal. Development of an agrochemical best management practices (BMP) plan for the interim use of the property was also recommended. It is possible that in the future, some impacted soils may be identified for removal or isolation or the USACE may come in contract with these soils during construction. For these reasons, the SFWMD has requested that the CERP Residual Agricultural Chemical policy be applied to this project.

This section of the PIR partially fulfills the requirements established in the aforementioned policy for the A-2 FEB portion of the CEPP. The Jacksonville District is seeking conditional but not final approval of the application of the Ag-chem policy from HQ USACE at this time. Final approval will be requested prior to design of the A-2 FEB when it is expected that supplemental information will be available to completely fulfill the policy requirements. Pursuant to paragraph 4 of the policy and prior to beginning construction, the Jacksonville District will obtain written documentation of regulatory approval(s) for all response actions from SFWMD, and enter into an agreement with the SFWMD wherein the USACE accepts and expends funds, contributed by the SFWMD, for performance of the approved response action(s).

As part of the land acquisition process and in coordination with the Florida Department of Environmental Protection (FDEP) Bureau of Waste Cleanup and USFWS Contaminants Section, SFWMD assessed the A-2 FEB site in a series of Phase I/II Environmental Site Assessments (ESA) and Ecological Risk Assessments (ERA). The SFWMD performed point source remediation and completed multiple corrective actions in accordance with FDEP regulations. A Summary of the completed corrective actions performed by the SFWMD is included in the audit reports included in **Annex H**. The only chemicals of concern remaining on the A-2 FEB site are residual agricultural chemicals.

As required, the following is a discussion of each of the Policy Memorandum's requirements and conditions for only the constituents remaining on the A-2 FEB site. Documentation of full compliance with the CERP Ag-Chem policy requirements will be provided prior to construction on the A-2 FEB lands that have impacted soils.

a. Residual Agricultural Chemicals

1) Determination that lands were formerly cultivated soils. At the time of acquisition, the 14,408-acre site was in active sugar cane and rice cultivation. The historical research included in the Phase I/II ESA indicated that prior to converting the land to agricultural production around the 1950s, the land was undeveloped lowlands.

2) The nature and extent of residual agricultural chemicals within the cultivated area of the A-2 FEB lands was investigated by conducting soil sampling at 30 randomly selected 50-acre grids located within the 14,400 acre site. The 50-acre grid soil samples were analyzed for organochlorine pesticides (OCPs) by EPA method 8081, organophosphorus pesticides plus atrazine by EPA Method 8141, chlorinated herbicides by EPA Method 8151, and total organic carbon (TOC), and RCRA 8 metals

plus copper by EPA method 6010/7471. This list includes a total of 88 distinct analytes. **Table C.2.2-12** is a summary of the detected analytes found on the property. **Table C.2.2-12** lists all of the residual agricultural chemicals with the maximum concentration remaining on the A-2 FEB site as well as the applicable regulatory criteria for each detected chemical. Arsenic was detected in all samples at concentrations above the residential direct exposure criteria. Given that the project lands will be inundated, exceedance of residential exposure criteria does not pose a risk to human health. Atrazine was detected above the groundwater leachate limit on approximately 23 percent of the tested grid cells. Since atrazine is a modern, low-persistence herbicide this exceedance is classified as temporary and is expected to naturally attenuate once active sugar cane cultivation ceases.

Copper was detected on approximately 30 percent of the tested grids at concentrations that exceed the USFWS interim criteria of 85 mg/kg for copper in inundated soils/sediments. The estimated 95% Upper Confidence Limit concentration for A-2 FEB residual soil copper is estimated to be 81 mg/Kg which is slightly lower than the USFWS interim criterion. The 85 mg/kg criterion which is intended to protect the endangered Everglades snail kite, was established based upon sandy soil conditions associated with citrus cultivation. Relevant scientific literature reviewed as part of the Screening Level Ecological Risk Assessment (SLERA) performed on behalf of the SFWMD (PSI, 2013) indicate that the bioavailability of copper to ecological receptors is likely to be significantly lower in organic muck soils found within the A-2 FEB lands than it is for sandy citrus soils. Given that most of the samples exceeding 85 mg/Kg copper were in the 85 to 95 mg/ range and that the organic soil would make copper less available, PSI, the SFWMD contractor determined that the copper concentrations in the highly organic soils would not present a significant risk to the snail kite. The USFWS agreed with this assessment. Dieldrin, a legacy organo-chlorine pesticide was detected in 10 percent of the grid samples at concentrations that exceed the groundwater leachability criteria and the Sediment Quality Assessment Guideline Threshold Effect concentration (SQAG-TEC). Subsequent Synthetic Precipitation Leaching Procedure (SPLP) testing was conducted for the two (2) samples with the highest dieldrin concentrations. SPLP results indicated that dieldrin was not detected in either sample above the laboratory minimum detection limit (MDL); however, the MDL in this case was above the applicable surface water criteria. This is not uncommon since surface water criteria for organic chemicals are based on derived toxicity estimates and are not set with consideration for achievable laboratory detection limits. In this case, surface water flows and rainfall are expected to dilute the dieldrin from the sediments sufficiently such that surface water quality criteria will be met. After reviewing the analytical data, the USFWS and FDEP concurred that the detected concentrations of copper and other contaminants are unlikely to pose risk to trust resources or otherwise require remedial actions. The USFWS and FDEP agreed with the SFWMD's recommendation that sampling for detected pesticides and metals be performed during start up of the A-2 FEB. Copies of the USFWS and FDEP correspondence are found in **Annex H.**

Table C.2.2-12. Residual Agricultural Chemicals Detected on A-2 FEB Lands During January 2013 Sampling of Cultivated Lands (PSI, 2013).

				Regulatory Limits (mg/Kg)				
Parameter	CAS #'s[1]	CERCLA[2] Regulated (Y/N)	Range[3] Observed (mg/Kg)	EPA Regulatory Limits[4] (mg/Kg)	SCTL-CDE[5]	SCTL-RDE[6]	SQAG-PEC[7]	SQAG-TEC[8]
Arsenic	7440-38-2	Y	3.1-6.8	1.6	12	2.1	33	9.8
Barium	7440-39-3	Y	69-110	190,000	130,000	120	60	20
Cadmium	7440-43-9	Y	<0.1 - 0.18	800	1,700	82	5.0	1.0
Chromium	7440-47-3	Y	5.6-28	NG	470	210	110	43
Copper	7440-50-8	Y	53-110	41,000	89,000	150	150	32/85[9]
Lead	7439-92-1	Y	4.7-8.4	800	1,400	400	130	36
Mercury	7439-97-6	Y	0.077-0.15	43	17	3	1.1	0.18
Selenium	7782-49-2	Y	<0.58 - 3.7	5,100	11,000	440	N/A	4.2[10]
Silver	7440-22-4	Y	<0.3 - 0.64	5,100	8,200	410	2.2	1.0
2,4-D	94-75-7	N	<0.057-0.94	7700	13,000	770	***	***
Atrazine	1912-24-9	N	<0.025 - 3.5	7.5	19	4	NG	0.0003
Metribuzin	21087-64-9	N	<0.018 - 1.7	15,000	290	54	***	***
Phorate	298-02-2	N	<0.0036 - 0.12	120	320	16	***	***
Dieldrin	60-57-1	Y	<0.00099 - 0.0051	0.11	0.3	0.06	0.062	0.0019

Notes:
mg/Kg - milligrams per Kilogram
NG - No guideline
- Site concentrations for carcinogenic polycyclic aromatic hydrocarbons must be converted to Benzo(a)pyrene equivalents before comparison with the appropriate direct exposure SCTL for Benzo(a)pyrene using the approach described in the February 2005 'Final Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, F.A.C.'
[1]CAS Registry Number (CAS#'s) - unique numeric identifier which designates one substance and has no chemical significance
[2]40 Code of Federal Regulations (CFR) 302.4, Designation of Hazardous Substances - Comprehensive Environmental Response, Compensation, Liability Act
[3]Range of chemical concentrations observed in all the samples collected within the Agricultural Areas only.
[4]USEPA - Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites - Industrial Soil
[5]Chapter 62-777, FAC, Table 2 - Technical Background Document, SCTLs, Direct Exposure - Commercial / Industrial
[6]Chapter 62-777, FAC, Table 2 - Technical Background Document, SCTLs, Direct Exposure - Residential
[7]Development and Evaluation of Sediment Quality Assessment Guidelines, Volumes 1-4 (MacDonald, 2000), Sediment Quality Assessment Guidelines-Probable Effects Concentration
[8]Development and Evaluation of Sediment Quality Assessment Guidelines, Volumes 1-4 (MacDonald, 2000), Sediment Quality Assessment Guidelines-Threshold Effects Concentration
9USFWS Interim Screening Level for Everglades Snail Kite
10No SQAG criteria have been developed for selenium. An Action Level of 4.2 mg/kg was negotiated with USFWS on the C9/C11 project for Selenium in organic soils.

3) Determination that agricultural chemicals were commercially available products, lawfully applied for their intended purpose, not spilled, and did not result from waste management.

Phase I/II ESA were conducted on the site using an environmental protocol approved by SFWMD, FWS and FDEP-Bureau of Waste Cleanup. (Copies of summary environmental audit report and the environmental protocol are included in **Annex H**.) These Phase I/II audits document long-term sugar cane farming activities that began in the 1960's. **Table C.2.2-12** lists the chemical compounds found on the project lands that exceed regulatory limits or guidelines. These compounds are either active ingredients found in commercially available products registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) (7 U.S.C. 136a) or they are micro-nutrients that are added to increase the fertility of muck soils utilized to grow sugar cane (Rice, et al, 2010).

Copper was found in 30 percent of the soil samples above 85 mg/kg. The average copper soil concentration was 76.8 mg/kg. The minimum concentration was 53 mg/kg and the maximum copper concentration was 110 mg/kg. The average concentration was compared to potential residual concentrations that result from long-term application at recommended rates. If one assumes 40 years of copper application at a rate of 2 lb/acre/year (Rice, 2010), and a background of 30 mg/Kg, the potential average concentration of copper distributed in the top 1 ft of soil would be

approximately 90 mg/Kg. That the measured average is somewhat lower can be accounted for by losses to deeper soils or use of less copper in some areas. For comparison, copper concentrations on industrial National Priority List sites where spills or disposal have occurred are typically are in the 1,000s of mg/Kg.

Arsenic has a long and continued history of use in agriculture. It is likely that the reported arsenic concentrations found on the A-2 FEB land (average of 4.5 mg/kg) are the result of a combination of background arsenic (0.8 to 3.7 mg/Kg, per Chen 2001) and arsenic added during agricultural operations.

Lead was found at concentrations above the residential exposure limit (RDLE); however, since the A-2 FEB land will be inundated this particular criteria is not relevant.

Elevated selenium concentrations have been found on previously farmed land in Miami-Dade and Broward counties. Residual selenium concentrations in farm soils in South Florida are attributed to trace selenium contained within fertilizers applied to farms to enhance fertility.

Dieldrin and Atrazine are pesticides and herbicides that are or were registered under FIFRA. Their presence on the A-2 FEB lands is not unusual for farmed soils in the EAA.

The exceedances for barium, cadmium, chromium, mercury, and silver were of the SQAG limits which are guidelines but not promulgated standards. Several pesticides were detected (2,4, D , metribuzin, and phorate; however, the concentrations were below applicable standards and no SQAG limits exist for these contaminants.

Given the information presented here and other site evidence, there is no indication that the concentrations found on the A-2 FEB cultivated lands are indicative of a spill, deliberate on-site disposal or some other non-farming activity. A reasonable conclusion regarding the source of these residual soil contaminants is that they are the result of routine application of chemicals to the fields during routine farming operations.

4) Availability of Alternative Lands (why avoidance of land was not practicable). Much of the land in south Florida that is not currently residential, commercial, or industrial was once used for agriculture, even including some areas that now comprise the Everglades National Park. There are few open areas that were not used for agriculture. The lands for the A-2 FEB components were required to be located in the EAA Miami Canal Sub-basin with access to the Miami Canal on approximately 10,000 to 14,000 acres of land. There are several possible sites. The existing land use for these sites was predominantly sugar cane, turf grass, other agriculture or wetlands. Other than using other agricultural lands in the sub-basin, the A-2 FEB facility could be sited in wetlands. Siting storage facilities on wetlands obviously involves adverse impact to wetland habitat. In terms of the potential for presence of problematic concentrations of residual agricultural chemicals, sugar cane lands are considered to be lower risk than turf grass, citrus, or truck crop lands since persistent organo-chlorine pesticides were generally not applied at high rates during sugar cane cultivation.

5) Project Purpose (conversion from agricultural production to an aquatic restoration purpose). The project purpose for the A-2 FEB is capture and store releases from Lake Okeechobee and then distribute the water to STA3/4 and Compartment B of STA2 for treatment prior to releasing this water into northern WCA 3A. The project will inundate the land with water for an extended period of

time in order to meet federal project goals. This purpose is achieved with a 14,000 acre (wetted area) reservoir which will be inundated with up to 4 feet of water. Therefore, these components require the land conversion from agricultural production to aquatic restoration which inundates the land with water in order to meet the Federal project goals.

b. Regulatory Coordination

The SFWMD has conducted several Phase I/II site assessments prior to and since acquiring the A-2 FEB lands in 1999. A discussion of the findings of these investigations and coordination of remedial activities with FDEP in included in the Summary Environmental Report, PSI, Inc, August 21, 2012 which is in **Annex H**. In January of 2013, the SFWMD conducted additional sampling of cultivated areas on the A-2 FEB lands. The USFWS and FDEP have preliminarily determined that the residual agricultural chemicals found on the A-2 FEB lands do not present a risk to protected resources. Based on the results of the 2013 soil testing, the USFWS and FDEP are recommending that during the initial operations of the FEB, the SFWMD perform testing of water for several contaminants (2,4, D, atrazine, metribuzin, phorate, dieldrin, chromium, mercury, selenium, copper) as well as testing of periphyton and apple snails for copper.

The FDEP also reviewed the 2013 soil sampling results and recommended the development of a soil management plan to address the fate of arsenic impacted soils during construction as well as the same start-up operations sampling program as provided by the USFWS. The FDEP and the USFWS both recommended that agrochemical best management practices be instituted during the continued cultivation of the lands.

The USFWS and FDEP review letters did not identify threshold concentrations or the potential consequences of detecting elevated concentrations of copper in water, periphyton, or apple snails during initial operations monitoring. The USFWS and FDEP provided the same comments on the A-1 FEB which has similar levels of copper in the cultivated soil. To better define threshold copper concentrations, the SFWMD has jointly sponsored several studies which are currently underway to evaluate copper bioaccumulation, toxicity, desorption, and other important parameters that significantly impact the potential risks associated with exposure of the Everglades snail kite, and other species to copper in sediments. The SFWMD believes that they will be in a better position to discuss threshold concentrations with the USFWS and FDEP after completion of these studies within the next 12-18 months, and prior to the A-1 FEB construction. The risk that threshold copper concentrations detected in the A-2 FEB during start-up operations will result in a post-construction remedial action requirements is minimal given completion of ongoing copper bioaccumulation studies and because the operation of the A-1 FEB will precede the A-2 FEB design/construction by several years.

The A-2 FEB site was purchased with Farm Bill monies and per the Framework Agreement between the DOI, DOA, DEP and SFWMD, a subsequent protocol strictly controls the use of agricultural chemicals on leased lands to a predetermined list unless specifically approved by the FWS. The A-2 lands will remain in agricultural production for several years until the A-2 project feature is set for construction at which time the agricultural leases will be terminated. Once farming has ceased on the A2 FEB project lands, an Exit Assessment will be performed to determine the presence of any new potential sources of HTRW since the completion of the previous Phase II ESA, and to verify the concentration of contaminants in the cultivated areas at selected locations. The results of these audits will be provided to the FDEP and USFWS for their review, comment, and concurrence regarding the need for remedial actions.

c. Soils Removed

Testing and Investigations Performed. The environmental site assessments for the A-2 FEB site generally followed the FDEP and FWS established protocols in terms of procedures with the exception that 10 percent of the 50-acre grids were sampled rather than the normal 30 to 50 percent of the grids. The lower sampling rate was acceptable to the USFWS because of the prior land use which was limited to sugar cane cultivation in the cultivated areas and because the sampling results showed similar concentrations of detected analytes rather than widespread differences between sampled grids. The testing and investigations performed during the Phase I/II concluded that the remaining residual agricultural chemicals on the A-2 FEB site are either not "listed" hazardous wastes or are at concentrations reflecting lawful application for its intended purpose, and was not the result of a spill or waste management.

Hazardous Waste Characteristics. Per Subpart C (40 CFR 261.20 et seq.) the four RCRA characteristics of hazardous waste are: ignitability, corrosivity, reactivity, and toxicity. Ignitable wastes readily catch fire, sustain combustion, and when ignited, burn so vigorously and persistently that it creates a hazard. Corrosive wastes are a liquid and are acidic or alkaline wastes that readily corrode or dissolve flesh, metal, or other materials. Reactive wastes are unstable, readily explode or undergo violent reactions.

None of the soils tested in 2013 on the A-2 FEB site exhibit any of these hazardous waste characteristics. Per **Table C.2.2-12**, the concentrations of the remaining residual agricultural chemicals are not sufficient to render the soils ignitable or reactive. FDEP-Bureau of Waste Cleanup required no special handling of similarly impacted soils at other CERP project sites. Also, cultivation of crops in these and similar soils in the region is not known to result in soil combustion or explosion. Similarly, no corrosive materials are known to be present. To be corrosive, materials must be in a liquid state. Soils on the site are solids. Therefore, testing for these three characteristics (ignitability, corrosivity, and reactivity) is not necessary.

The fourth characteristic is toxicity. Toxic wastes leach toxic compounds or elements into underlying soils or groundwater supplies. For a toxic constituent in 40 CFR 261, Subpart C, demonstration of the RCRA toxicity characteristics can be determined by utilizing the Toxicity Characteristics Leachate Procedure (TCLP) test or by analyzing for total constituent concentration and applying the "Rule of 20" to infer whether the RCRA Toxicity Characteristics regulatory limits would be exceeded. The "Rule of 20" allows a toxicity determination to be made by comparing the total concentration analysis (dry weight) to the TCLP regulatory concentration (wet weight). The rule is used by multiplying the RCRA TCLP limit (mg/l) by 20 and then comparing this value to the measured total constituent concentration (mg/kg). If the measured total constituent concentration value is less than the TCLP concentration multiplied by 20, the material does not exhibit RCRA characteristics based on toxicity as determined by analytical procedures. Additionally, if the constituent is not listed in Table 1 of Subpart C, the material is not a RCRA characteristic waste based on toxicity.

Table C.2.2-13 summarizes the results of the "Rule of 20" for the residual agricultural chemicals on the A-2 FEB site. Based on the "Rule of 20" none of the remaining soils containing residual agricultural chemicals on the A-2 FEB site exceed the RCRA characteristic toxicity levels. Based on the information provided by the SFWMD, the USACE concurs that none of the remaining soils on

site will need to be removed from the A-2 FEB site by SFWMD prior to the start of construction based on the criteria in the Policy Memorandum (Soils Removed). Should soils containing residual agricultural chemicals be found to contain contamination that rises to a RCRA level before, during or after construction, the NFS shall remove, properly dispose, and manage such soils at 100% NFS cost and USACE shall not conduct such work. As discussed in previous sections, after agricultural operations have ceased on the lands, subsequent testing will be performed and the results subjected to the RCRA hazardous waste determination to ascertain compliance with the USACE Policy for Agricultural Chemicals on CERP lands

Table C.2.2-13. "Rule of 20" Test for Residual Soil Contaminants Found on A-2 FEB Lands.

Agricultural Chemicals on site	Maximum Concentration (mg/kg)	RCRA TCLP Concentration (mg/l)	RCRA TCLP Concentration multiplied by 20 (mg/kg)	Is Max Concentration Less than TCLP times 20?
Arsenic	6.8	1.0	20.0	Yes
Atrazine	0.0035	Not Listed	Not Applicable	Not Applicable
Barium	110	100	2000	Yes
Cadmium	0.18	1.0	20	Yes
Chromium	28	5.0	100	Yes
Copper	110	Not Listed	Not Applicable	Not Applicable
Dieldrin	0.0045	Not Listed	Not Applicable	Not Applicable
Mercury	0.15	.2	4.0	Yes
Metribuzin	1.7	Not Listed	Not Applicable	Not Applicable
Phorate	0.12	Not Listed	Not Applicable	Not Applicable
Selenium	3	1	20	Yes
Silver	0.64	5.0	100	Yes
2,4-D	3	10	200	Yes

d. Cost Comparison for Soils Containing Residual Agricultural Chemicals Remaining on Project Lands

The FDEP and USFWS have preliminarily determined that the residual agricultural chemicals found on the A-2 FEB lands do not present a risk to protected resources. At this time, the FDEP and USFWS are recommending that the SFWMD perform testing of water, periphyton algae, and apple snails for copper during the initial operations period for the FEB. Given that the USFWS has not identified soils requiring removal, no costs can be identified at this time. If the USFWS determines in the future that some A-2 FEB project soils have to be removed or isolated, a cost comparison will be prepared.

e. Cost Comparison for USACE Acting as the Construction Agency and Performing the Response Action for the NFS

If the FDEP and/or USFWS determine in the future that some A-2 FEB project soils have to be removed or isolated, this cost comparison will be prepared as part of complying with the CERP Agricultural-Chemical Policy.

Cost effective analyses for determining if it is cost effective for the USACE to perform the non-RCRA response actions for the SFWMD will be prepared for the A-2 FEB if and when sufficient information is available. The assumptions used to develop the costs for the construction scenario, where the USACE does not touch impacted soil, will likely be: 1) the SFWMD performs all earth moving construction activities that involve excavating impacted soils, stockpiling impacted soils, blending impacted soils, and placing blended materials; 2) the USACE performs construction actions such as pump foundation excavation of clean limerock, pump station construction, culvert installation, and earth moving construction in areas where impacted soils have either been removed or are covered with a minimum of 6 inches of clean fill; 3) splitting the work between the two agencies does not result in additional costs associated with actual construction activities, i.e., no additional material handling occurs; and 4) the additional cost of having two construction agencies and two contracts, results in an increase in the total amount required for design/engineering and contract supervision/administration. This assessment will be prepared and submitted to HQUSACE for concurrence prior to construction by USACE.

f. Engineering and Other Risks

1) Engineering Risk. The USACE will address risks during design and construction of the project components by: 1) Regulatory review of plans and specifications by the FDEP which is the delegated RCRA authority in Florida; 2) Review of environmental audits and environmental risk assessments prepared for and by the USFWS for potential impacts to Threatened and Endangered Species; 3) Incorporation of appropriate safety and handling specifications into the project bid documents; 4) Review of plans and specifications by the USACE Environmental and Munitions Center for Expertise (EM CX) prior to contract advertisement; 5) Conducting appropriate supervision and oversight of construction; 6) Conducting confirmation sampling after feature construction, and 7) SFWMD's obtaining final approval of construction actions by FDEP. These safeguards further reduce the risk of future releases or exposure and are consistent with USACE construction standards and requirements.

2) Other Risk. Once constructed, it is possible that man-made actions might disturb the soils containing residual agricultural chemicals if such material is placed within the project features or otherwise remains on the project site. To limit this risk, land use restriction covenants may be incorporated into the property deeds where required by FDEP. The SFWMD shall ensure that land use restrictions if any will not reduce ecosystem restoration benefits, hinder O&M, or interfere with the Project's proper function. Once an approved soil management plan is available, CESAJ environmental specialists and the EMCX (Environmental and Munitions Center of Expertise) will review the plan to determine other risks if any. The results of the CESAJ and EMCX review will be provided to HQUSACE for concurrence.

3) Final Risk Determination. The USACE and SFWMD will prepare a final determination report for the A-2 FEB to confirm that the overall project risk from impacted soils is low and acceptable. The final determination report will be submitted to HQUSACE prior to construction. For each construction contract managed by the USACE, the SFWMD will be responsible for providing full funding to the USACE prior to contract advertisement for the identified contract specific cost of addressing residual agricultural chemicals.

g. NFS Responsibility:
The NFS is 100% responsible for the cost of actions taken due to the presence of residual agricultural chemicals, at no expense to the Federal Government. Any future costs associated with the presence of residual agricultural chemicals at the Federal project site are a 100% NFS cost and responsibility. The costs for characterization of the project lands in preparation for conducting a response action for the residual agricultural chemicals and removal of soils that are hazardous waste shall be included as 100% NFS responsibility. The Jacksonville District shall not conduct actions to address residual agricultural chemicals for the SFWMD during the operation and maintenance, repair, replacement and rehabilitation (OMRR&R) phase of the project.

C.2.2.12 Noise

Features of Alts 4R and 4R2 are the same. There would be minor, short term and less than significant increases in noise during construction of Alts 4R and 4R2. Alts 4R and 4R2 propose additional pump stations which would result in long-term, localized increases in noise. Alts 4R and 4R2 each add the fewest number of pump stations (two) over the other action alternatives, having the least effect on noise.

C.2.2.13 Aesthetics

Features of Alts 4R and 4R2 are the same. During construction of all features there would be a temporary short-term significant adverse impacts to aesthetic values in the construction areas. Alternatives 4R and 4R2 show a significant increase in aesthetic value over the FWO due to restoration of hydropatterns and sheetflow throughout the project area and provide minor beneficial effect. The restoration of sheetflow provides additional habitat for native plants and animals and opportunities for wildlife viewing.

There would be negligible and less than significant effects due to Alts 4R and 4R2 in Lake Okeechobee. In the Northern Estuaries, Alts 4R and 4R2 increased the aesthetic value due to decreased high flow events, providing minor beneficial effects. Reductions in high volume discharges to the estuaries would result in lower suspended solids, increased water clarity and the correct salinity envelope that maintain healthy SAV beds. These benefits could also lead to an increase in wildlife viewing opportunities (Orth et al., 2006). Within the EAA, the existing aesthetic character of the A-2 footprint is similar to the EAA as a whole; the landscape is flat and has a predominantly uniform and organized appearance. Wetland vegetation is anticipated to colonize the proposed A-2 FEB increasing wildlife utilization and opportunities for wildlife viewing within the area in Alts 4R and 4R2, thus providing minor beneficial effects. In the southern estuaries Alts 4R and 4R2 increase the aesthetic value due to an increase in native plants and animals due to increased flows in Florida Bay providing increase in potential wildlife viewing as well as providing a potential for the reduction in red tide occurrences.

Within the Greater Everglades, Alts 4R and 4R2 have a greater potential effect on aesthetics compared with FWO due to the construction of a new levee (Blue Shanty Levee). There would be temporary, short-term, localized adverse effects to aesthetics during construction of the proposed features. Alternatives 4R and 4R2 show a minor beneficial effect in aesthetic value over the FWO due to restoration of hydropatterns and sheetflow throughout the project area. The restoration of sheetflow provides additional habitat for native plants and animals and increased opportunities for wildlife viewing. Restoration of flows within Florida Bay and the southwestern coastal estuaries that reduce extreme salinity ranges improves habitat within these regions, increase potential opportunities for wildlife viewing. Alternatives 4R and 4R2 include backfilling the Miami Canal from 1.5 miles south of S-8 down to Interstate 75, there-

by improving aesthetics due to removal of this unnatural landscape feature, providing long-term minor beneficial effects.

The complete degradation of the L-67 Extension levee provides a long-term minor beneficial effect in aesthetics due to the restoration of sheetflow increased native plants and animals and viewing potential. The construction of the Blue Shanty Levee (~8 mile levee) in WCA 3B has a minor adverse effect on aesthetic value due to the addition of a levee within a wetland, however, it creates a flowway to the west that provides wildlife viewing opportunities and water flowing under Tamiami Trail. The seepage barrier in Alts 4R and 4R2 provides a significant and moderate negative effect to the aesthetics.

C.2.2.14 Socioeconomics

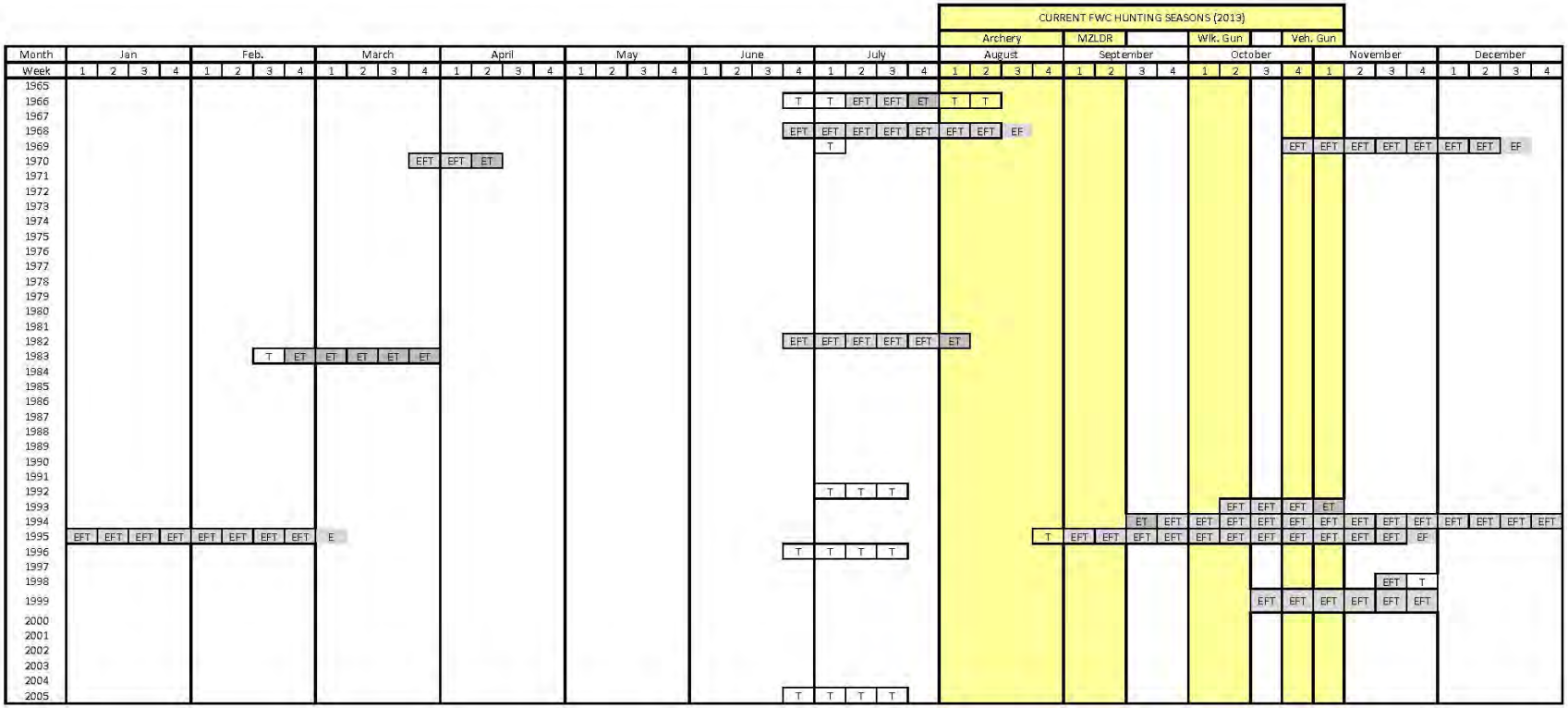
Effects are provided in the main report in **Section 5.2.15**.

C.2.2.15 Recreation

In Lake Okeechobee and the Northern Estuaries, FWO and Alts 4R and 4R2 have a negligible and less than significant effect on current recreation opportunities. . There will be no impacts to recreational navigation with this project. Alternatives 4R and 4R2 may provide enhanced fishing opportunities due to better salinity conditions in the Caloosahatchee and St. Lucie Estuaries. In the Everglades Agricultural Area (EAA), currently no recreation exists on the project site so Alts 4R and 4R2 would be positive for public access meeting the identified needs according to Florida's Statewide Comprehensive Outdoor Recreation Plan (SCORP) compared to FWO.

In the Greater Everglades, in the FWO condition recreational fishing would be affected little if at all. Hiking, biking and camping will not be affected directly. In the FWO any changes in recreation would be due to degraded quality of wetlands and the aesthetic values that could decrease as wildlife viewing and nature study would be degraded. Alternative 4R and 4R2 effects to recreation will be negative or positive depending on the activity and location. The Blue Shanty Levee will bisect L-67C. Recreational fishing by prop boat to the northern end of L67C canal would continue to be available from a new public boat ramp located in the northern end of L67C at the S151, providing minor beneficial effect. Also at the S151 a new public boat ramp will allow access into the northern 5 miles of the Miami Canal south of S151 not previously served by a public boat ramp. Recreational fishing by boat will have a significant and major adverse effect by back filling the Miami canal. This affects 13.5 of the 33 miles of the Miami canal in WCA 3. Bank fishing opportunities could have a minor beneficial effect by the addition of access points around proposed structures. Terrestrial mammal hunting (deer, hog, rabbit, etc.) could have a short-term significant, adverse and unavoidable effect by increased hydration in areas that have been drier. In the long term if not better hydration peat loss to oxidation and fire would degrade current habitat further. **Table C.2.2-14** compares alternatives, showing when high water would have prompted FWC to evaluate WCA 3 for a high water closure. The table uses the current closure criteria to compare alternatives, and does not replicate history or forecast FWC decisions. Waterfowl hunting should improve with better hydration throughout the greater everglades during the early part of the dry season. Bird watching should improve with increased hydration of the Greater Everglades as well. Improved access and designation of blue and greenway trails will be positive. In the Southern Estuaries there is no effect on recreation with the FWO. For Alts 4R and 4R2 access to the Southern Estuaries would not change based on CEPP, however, impacts to existing quality of recreation can be impacted negatively or positively depending on location and changes to fish habitat as identified above for the Greater Everglades, however additional flows to Florida Bay are expected to provide enhanced fishing opportunities, providing a minor beneficial effect. A Recreation Plan is included in **Appendix F**.

Table C.2.2-14. Weeks with High Water Closures for ECB, FWO, and Alt4R2 Comparisons with Existing Hunting Seasons Displayed for WCA 3 (WCA 3A-2 and WCA 3A-3 Two Gauge Average >= 11.60' NGVD). Blank cells mean there were no closures.



LEGEND for Closure Occurances

F	FWO only
E	ECB only
T	ALT 4R2 (TSP) only
EF	FWO and ECB
EFT	All scenarios (ECB, FWO, ALT 4R2)
ET	ALT4R2 & ECB
FT	ALT4R2 & FWO
	CURRENT FWC HUNTING SEASONS (2013)

MZLDR	Muzzleloader Hunt
Wlk. Gun	General Gun-Walk Hunt
Veh. Gun	General Gun-Vehicle Hunt

C.2.2.16 Land Use

C.2.2.16.1 Wetlands and Uplands

Much of the future development within the study area is expected to occur on lands that were formerly in agricultural use. **Table C.2.2-15** summarizes the impacts to wetlands and uplands for Alts 4R and 4R2. Features of Alts 4R and 4R2 are the same. Alternatives 4R and 4R2 each show a significant and major beneficial effect with an increase of 625 acres of wetland/upland habitat over the FWO as well as an increase in wetland function. While there are some minor adverse effects due to the construction of some features, most notably the Blue Shanty Levee in WCA 3B, the construction of other features, the degradation of levees and the backfilling of canals reconnects and adds wetland acreage and provides the needed topography for sheetflow to restore the natural system. Alternatives 4R and 4R2 each shift approximately 13,800 acres of agricultural land use with wetland soils to a higher quality wetland with the construction of the A-2 FEB. The A-2 FEB would alter the land use from agriculture to an FEB that includes wetland habitat. The degradation of the L-4 levee adds approximately 35 acres for each Alt due to the degradation of that levee and the reconnection of the wetlands in northwestern WCA 3A. The backfilling of the Miami Canal would provide an additional 417 acres of wetlands for each Alt. The backfilling of the Miami Canal would restore the wetland habitat and reestablish sheetflow in northern WCA 3. Spoil mounds on both sides of the Miami Canal from S-8 to S-339 would be removed and 22 spoil mounds (the highest priority/highest functioning Florida Fish and Wildlife Conservation Commission (FWC) enhanced spoil mounds) would be maintained for each Alt while the others would be removed. In addition to the removal of the selected spoil mounds in order to promote sheetflow across the backfilled Miami Canal, additional mounds (1.5 feet above the marsh surface) would be created every mile for each Alt from S-8 to Interstate 75 to prevent hydraulic channelizing and flow and provide upland animal habitat. This would provide an additional 45 acres of upland habitat for each Alternative. This additional upland habitat provides refuge for terrestrial mammals during periods of high water and a minor beneficial effect. These mounds also align with the historic ridge habitat and there is the possibility that the placement of the mounds would help reestablish the ridge and slough pattern in WCA 3A.

In southern WCA 3A and WCA 3B several features increase wetland habitat while other features remove/impact wetland habitat while connecting WCA 3A to WCA 3B and ENP. The proposed L-67A culverts would have a minor adverse effect to the wetland of 4.5 acres/gated culvert for each Alt. Alternatives 4R and 4R.2 each have 3 culverts, thus a loss of 13.5 acres for each Alt. However, the culverts are critical to connecting WCA 3A and WCA 3B and in conjunction with the gated culverts in L-67A levee, there are 6,000 foot gaps in the L-67C levee that would increase wetland habitat. Each 6,000 foot gap would provide an additional 9 acres of wetland habitat; therefore Alts 4R and 4R2 would each provide 9 additional acres of wetlands. Alternatives 4R and 4R2 each have only one 6,000 foot gap because the other 2 gated culverts are included in the Blue Shanty flowway discussed below. The degradation of approximately 8 miles of the L-67C in Alts 4R and 4R2 provide 64 acres of additional wetlands for each Alt. The degradation of the L-29 levee provides an additional 46 acres of wetlands for each Alt (approximately 4.3 miles of degradation per Alt). The construction of the Blue Shanty Levee to create the flow way between WCA 3B and ENP removes 84 acres of wetlands in WCA 3B for each Alt (approximately 6.25 mile levee per Alt). In ENP, the backfill of the entire L-67 Extension canal provides an additional 104 acres of wetlands for each Alt.

In addition to the benefit of increased wetland/upland acres, the wetland function increases as well due to the backfilling of the Miami Canal and the restoration of sheetflow across WCA 3A and 3B into ENP. The initial construction may have a temporary adverse affect on the wetland function in the construc-

tion areas, but once the project is complete, all alternatives would increase wetland function based on the acres of wetlands gained.

Table C.2.2-15. Wetland and upland impact of the project area.

Project Feature	FWO Acres of Wetland Gain (Loss)	Alt 4R Acres of Wetland Gain (Loss) over FWO	Alt 4R2 Acres of Wetland Gain (Loss) over FWO
L-4 Degrade	0	35	35
Miami Canal Backfill	0	417	417
Miami Canal Spoil Mounds	0	45	45
L-67A Culverts	0	(13.5)	(13.5)
L-67C Gaps	0	9	9
L-67C Flow Way Degrade	0	64	64
L-29 Degrade	0	46	46
Blue Shanty Levee	0	(113)	(113)
L-67 Extension Backfill	0	104	104
Old Tamiami Trail Road Degrade	0	31	31
Total Net Change	**0**	**625**	**625**

C.2.2.16.2 Agriculture

The entire CEPP project area consists of lands currently under public ownership. 14,000 acres in the proposed A-2 FEB footprint are currently in production for sugar cane. Alternatives 4R and 4R2 would convert 14,000 acres of agricultural lands to wetlands due to the construction of the proposed A-2 FEB. As described in **Section 5.2.1.7**, Hydrology, negligible changes were noted for water stages within the SDCS; therefore no indirect effects to agriculture within this region are anticipated. Coordination with the United States Department of Agriculture (USDA) and National Resources Conservation Service (NRCS) to meet the requirements of the Farmland Protection Policy Act, is ongoing. When detailed design information that locates each of the plan components is completed, it can then be determined how many acres of unique farmland would be affected by the Project. (Refer to **Appendix C.4.12**).

C.2.2.17 Cultural Resources

The Everglades and associated ecosystems are a nationally significant resource and have been severely impacted by human activities for over a hundred years primarily through drainage practices and agriculture. A review of the Florida State Master Site Files (FMSF) indicate that there are 23,499 recorded cultural resource sites and resource groups within the CEPP study area that have a survey determination and/or State of Florida Historic Preservation Office (SHPO) evaluation of other than ineligible for listing with the National Register of Historic Places (NRHP). For this document, the use of the term cultural resources includes significant historic properties that are determined eligible or potentially eligible for NRHP listing, and culturally significant sites. See **Section 10** in the Main Document for definitions of terms.

Consultation in conjunction with the National Historic Preservation Act (NHPA) was initiated with the Seminole Tribe of Florida's Tribal Historic Preservation Office (THPO), the Miccosukee Tribe of Indians of Florida's NAGPRA Representative, the SHPO, Everglades National Park, Chief of Cultural Resources (ENP) and Florida Bureau of Archaeological Research. During formal consultation, a number of conclusions were drawn: 1. It was determined that additional surveys were needed to identify cultural resources within specific areas of potential effect. 2. It was also decided that as the CEPP project progressed, additional surveys may be needed, specifically during the Pre-construction, Engineering and Design (PED) phase, when designs were finalized and construction staging areas were determined. 3. Section 106 compliance with the NHPA would be conducted separately from NEPA and would not be completed during the current feasibility phase of the project, however would be complete prior to construction. See **Appendix C.5** for correspondence and/or consultation information regarding cultural resources within the project area.

This PIR/EIS meets cultural resources requirements as specified under NEPA. The CEPP will remain in compliance with the NHPA pre and post construction.

Area of Potential Effect

The area of potential effect (APE) for cultural resources differs greatly from the overall CEPP study area. For this project, the APE for cultural resources include the EAA A-2 footprint, portions of the L-6 levee and associated borrow canal, the L-5 canal, the S-8 Pump Station Complex, portions of the L-4 levee and associated canal, the L-28 Triangle, portions of the Seminole Tribe of Florida's Big Cypress Reservation immediately west of L-28 and north of I-75, portions of the Miami Canal, WCA 3A and 3B, L-67A and L67C levee, portions of the L-29 levee, the L-67 Ext levee and associated canal, portions of the Old Tamiami Trail, and portions of the L-31N levee, and Everglades National Park. Refer to **Appendix C.1.1.16** for a summary of the types and quantity of known cultural resources located within the study area versus the APE (see **Table C-1.8** in **Appendix C.1.1.16**).

Evaluation Criteria Specific to Cultural Resources

Impacts to cultural resources vary by individual components within Alts 4R and 4R2. Therefore, impact evaluations were based on a review of the individual components of each Alt to determine if actions would potentially result in impacts to significant cultural resources (which include sites eligible or potentially eligible for NRHP listing), described below. Avoidance of adverse effects to cultural resources is the Corps preference, therefore, throughout the planning process for CEPP, the project archaeologist, engineers, and plan formulators have worked closely to determine alternatives and features of alternatives that reduce or eliminate impacts to cultural resources. Pursuant to 36 CFR 800.1, where possible, the project design will be modified to avoid impacting significant historic properties and culturally significant sites. Where avoidance is not possible, other mitigation measures will be considered, which could include but are not limited to data recovery excavations. The mitigation measures will be developed in consultation with SHPO, tribal groups and other interested parties as established in implementing regulations for Section 106 of the NHPA.

The following significance thresholds have been used in determining whether components proposed for each Alt would result in a significant impact to cultural resources. The use of the term cultural resources includes historic properties eligible or potentially eligible for NRHP listing and culturally significant sites. A cultural resource impact is considered significant if implementation of a component of an Alt would result in any of the following when compared to FWO:

- Result in a change in the significance or eligibility for NRHP, including but not limited to any contributing elements, of a historical resource.

- Result in an adverse change in the significance or eligibility for NRHP of a historic resource.
- Disturb any human remains, including but not limited to those outside of formal cemeteries*
- Disturb memorials determined to hold public significance regardless of age.
- Result in adverse changes to sites identified through consultation with the Seminole Tribe of Florida and/or the Miccosukee Tribe of Indians of Florida as having cultural significance.

* The Corps is currently drafting a policy guidance memorandum to update and expand the 2008 CERP Policy on Human Remains that currently applies to the CEPP study area, to apply to all Civil Works and Regulatory actions within the respective jurisdiction of these Jacksonville District programs in the state of Florida. This document is an internal guidance memorandum designed to consolidate and clarify existing Coprs documents regarding the treatment of human remains pursuant to Section 106 of the NHPA and the Jacksonville District's Federal Trust Responsibilities for the state of Florida.

Comparison of Proposed Action Alternatives 4R and 4R2 and Future Without Conditions

The project schedule (**Section 6.7 and 6.11.2.3**) allows for a phased approach to Section 106 compliance, in that each suite of features will be consulted on as they arise. This will ensure that the most up to date information will be considered in the determination of effect. Also, based on final designs or modifications of the project features, additional work may be required for compliance with the NHPA. *While the Corps is currently in compliance with the procedural requirements of the NHPA, the Corps recognizes that additional consultation and other requirements are not yet complete, but the project will be in full compliance prior to construction.*

Consultation is currently ongoing with regards to the determination of effects and potential mitigation of effects listed below, and therefore should be considered preliminary. The effects associated with each Alt have been preliminarily considered for this feasibility study. A final determination of effects, as required under Section 106 (36 CFR Part 800) of the NHPA, will not be made until the project is authorized and the subsequent PED phase begins.

Engineering Regulation (ER) 1105-2-100 Appendix C paragraph C- 4(d)(6)(a) states that results of cultural resources investigations conducted during the feasibility phase and if needed, the PED phase will "serve as the basis for formulation of plans for management of historic properties prior to or during the construction and operational stages of projects". At which time, as required under ER 1105-2-100 Appendix C, paragraph C-4(d)(6)(b) the USACE will determine effects to historic properties and any need "to mitigate adverse project effects on National Register and eligible properties" and to "serve as the basis for negotiation of a Memorandum of Agreement (MA) (if no MA has been previously prepared) with the SHPO/THPO and, if appropriate, the advisory council on Historic Preservation (ACHP) specifying actions which will be taken by the Corps of Engineers prior to or during the project construction period to mitigate adverse effects on National Register and eligible properties."

For each component discussion below, the environmental effect is determined when compared to the future without conditions (FWO). For this document, the use of the term cultural resources includes significant historic properties that are determined eligible or potentially eligible for NRHP listing, and culturally significant sites. See **Section 10** in the Main Document for definitions of terms.

C.2.2.17.1 Draft Preliminary Operations Manual (DPOM)

This component of CEPP involves the development of a draft preliminary operation plan for each component or feature of the project. More information about the draft preliminary operation plan is recorded in **Section 6.6.5**. It should be noted that currently there are approximately 350 significant or

NRHP eligible cultural resource sites, including five districts and one World Heritage site (ENP) recorded within the APE for CEPP. There are also numerous culturally significant properties to both the Seminole Tribe of Florida and the Miccosukee Tribe of Florida within WCA 3 and Everglades National Park.

Two significant traditional cultural properties (TCP), Airboat Association of Florida (8DA6768A) and Coopertown (8DA6767A), associated with the modern Gladesmen culture group, and one Miccosukee Tribe of Indians of Florida residential camp (Osceola Camp) are located south of the L-29 levee. These properties are considered culturally significant. Also, three structures (8DA6768, 8DA11526, and 8DA115267) are located on and associated with 8DA6768A and are considered significant historic properties.

Effects: For this component of CEPP, there are many uncertainties, some of which are identical to those described in the ERTP EIS. Ongoing ERTP investigations center around uncertainties surrounding the effects fluctuating water would have on subsurface cultural material. Another uncertainty is the velocity that water will be flowing from the L-4 Spreader feature and from within the Blue Shanty flow way. Water velocity can cause erosional effects, which would be considered an adverse major long-term effect to historic properties. Once a determination of effects of fluctuating water on cultural resources has been identified for ERTP (ca. 2016) and the CEPP enters into the PED phase, Section 106 consultation for the CEPP DPOM should continue. Alternatives 4R and 4R2 could potentially affect the TCP 8DA6768A and associated historic properties 8DA6768, 8DA11526, and 8DA115267. Based on the Department of Interiors ongoing mitigation of Coopertown (8BD6767A) as part of Tamiami Trails Next Steps, there will be no effect.

During the PED phase and refinement of the DPOM, consultation with all interested parties will resume and an effects determination will be made prior to operation. Mitigation of Effects: Mitigation for the TCP Airboat Association of Florida (8DA6768A) could potentially involve purchasing any necessary easements, which would reduce any adverse effect. Effect to 8BD6768A associated historic structures, could be reduced by potentially raising the structures. For the remainder of the effects caused by the DPOM, mitigation is unknown at this time.

North of Redline

C.2.2.17.2 Lake Okeechobee

There are no changes from the FWO for this component of Alts 4R and 4R2. Effects: There would be no effect to cultural resources.

C.2.2.17.3 Northern Estuaries

This component of Alts 4R and 4R2 proposes to redirect a percentage of water currently flowing from Lake Okeechobee into the eastern and western northern estuaries, south into the Miami Canal and the North New River Canal. Effects: This decrease of freshwater into the estuaries would have no effect to cultural resources.

C.2.2.17.4 EAA A-2 FEB

The EAA A-2 FEB consists of a perimeter levee to confine the water, potential grading within the interior of the FEB footprint, improvements to existing agriculture canals, and improvements to existing and/or constructing new structures or features. A cultural resource Phase I Survey of this project component was conducted specifically for CEPP in 2013 to identify and assess cultural resources within the FEB footprint. As a result, four historic sites were identified, two of which are considered significant (8PB16039, 8PB16040) under NEPA. Effects: Effects to cultural resources sites 8PB16039 and 8PB16040

for Alts 4R and 4R2 are considered major long-term and adverse. Mitigation of Effects: Due to the lack of knowledge of prehistoric occupation sites within the area, Phase III Investigations are recommended for historic property 8PB16039, which would reduce effect. Site 8PB16040 contains human remains and is therefore a culturally significant resource. Mitigation of effects are unknown at this time and will be determined through consultation once the project is implemented.

A new structure (S-623) associated with the operation of A-2 FEB would potentially be constructed along the NRHP eligible Miami Canal (8PB13369). Effects: There would be no effect to cultural resources for Alts 1 through 4. The proposed new structure would not alter either directly or indirectly the characteristics which make the Miami Canal (8PB13369) significant.

Existing structures G-373, G-372 and G-372HL are associated with the operations of STA 3/4 and date to the 1990's, and are therefore not significant. Effects: There would be no effect to significant cultural resources for Alts 4R and 4R2.

South of the Redline

C.2.2.17.5 L-4 Levee and Canal

This component involves degrading the western 2.9 miles of the southern L-4 levee, resulting in the creation of a water spreader feature at the northwestern most boundary of WCA 3A. A pump station near the western terminus of the L-4 degrade would also be constructed. Exact placement of the pump station has not been determined. Although built in ca. 1957, the L-4 Levee and Borrow Canal (8BD5098) is considered a tertiary canal and not a part of the original reclaimation/drainage activities of the early 20th century, which is considered by SHPO and USACE to be the period of significance for eligibility determination. Therefore, 8BD5098 is not considered eligible for the NRHP, nor significant under NEPA. Effects: There would be no effect to significant cultural resources for Alts 4R or 4R2 in the degrading of the southern L-4 levee, nor for the placement of the proposed L-4 Pump Station, regardless of location along the levee/canal.

C.2.2.17.6 S-8 Complex

This component of Alt 4R and 4R2 involves modifications to the S-8 Pump Station (8BD5092) and potentially other structures (G-357, G-404, and L-5-1 bridge)in the vicinity of the pump station to permit flows to the west. Further work is needed to determine if the S-8 Pump Station (8BD5092) is eligible for NRHP listing and therefore is significant under NEPA. The G-357 Gated Culvert, G-404 Pump Station, and L-5-1 bridge have all been either constructed or replaced in the last 20 years and are not considered significant. Effects: A determination of eligibility is need for the S-8 Pump Station (8BD5092), prior to making a determination of effects. Mitigation of Effects: If the S-8 Pump Station is determined significant and adverse effects to any component of the S-8 Pump Station complex are unavoidable, a qualified architectural historian should conduct a Historic American Engineering Record (HAER) and/or Historic American Buildings Survey (HABS). This documentation packet will then be entered into the Library of Congress as well as Florida Master Site Files. These measures would reduce effects to this potentially historic property if needed.

C.2.2.17.7 L-5 Levee and Canal

This component involves improvements to accommodate L-6 and STA 3/4 conveyances, by deepening the L-5 borrow canal and the placement of a gravity pump. The L-5 southern levee and associated borrow canal (known as site number 8BD5099) are depicted on historic aerial photographs (Armando Ramirez, personal communication), however during the 2011 cultural resources survey (FMSF Suvey #.

20487) of the L-5 levee and canal the levee and associated canal were determined not eligible for NRHP listing.

The L-5-1 bridge that joins the L-5 north levee to the L-5 south levee was replaced in the last 20 years and is not eligible for NRHP, nor is the bridge considered significant under NEPA. Effects: There will be no effects to historic properties for this component of Alts 4R and 4R2.

C.2.2.17.8 L-6 Levee and Canal

This component involves deepening and/or widening the L-6 borrow canal, replacement or redesign of the G-336G culverts and removal of the L-6 canal plug. The G-336G and the L-6 canal plug were originally constructed in association with WCA2 operations and are not historic. The L-6 borrow canal appears on historic aerial photographs (Armando Ramirez, personal communication 2013) and therefore would require additional work to determine significance or NRHP eligibility. Effects: Effects to historic properties for this component of the Alts are unknown. Cultural resource investigations would be needed to assess significance of the L-6 levee and associated borrow canal. Mitigation of Effect: If determined a significant historic property, it is recommended that a Level I Historic American Engineering Record (HAER) document is written and submitted to the Library of Congress and the Florida State Archives. This action would reduce the effect..

C.2.2.17.9 Miami Canal (8BD4840/8BD5097)

To improve sheet flow throughout WCA 3A, a portion of the Miami Canal (8BD4840) would be backfilled using spoil material originally excavated during the construction and maintenance of the canal and dredged material from the L-5 modifications. The Miami Canal and associated features/structures have been investigated during seven separate surveys (FMSF Survey # 5844, 14404, 17583, 19090, 19276, 20328, and 20487). As a result, it has been determined that the Broward County reach of the Miami Canal (8BD4840) is eligible for the National Register of Historic Places (NRHP) and is therefore considered significant under NEPA. Effects: Major long term adverse effects to the the historic Miami Canal within Water Concervation Area 3 (8BD4840 and 8BD5097) for Alts 4R and 4R2. Through consultation with the Tribes (**Appendix C.5**), it has been determined that the spoil mounds associated with the Miami Canal do not contain culturally significant sites (i.e., culturally significant flora and/or other culturally sensitive uses), therefore a determination of no effect to culturally significant sites is listed for the use of the spoil material. Mitigation of Effects: It is recommended that a Level I or II Historic American Engineering Record (HAER) document is written and submitted to the Library of Congress and the Florida State Archives. This would reduce the effects of the proposed action.

Greenline/Blueline

C.2.2.17.10 L-67A Levee and Canal

This component involves the placement of gated structure(s) within the L-67A levee and the removal of spoil material deposited during the original construction or maintenance of the L-67A borrow canal and will span approximately 0.5-miles on each side of the structure(s).

Three cultural resource surveys are listed with the State for WCA 3A, one conducted via aerial photographs (FMSF Survey # 602), a Phase I Survey conducted in 2011 (FMSF # 20487) and a Phase I Sample Survey and Phase II Excavation conducted in 2012 specifically for CEPP (FMSF Survey # 20328). During the 2011 survey, the L-67A levee and associated canal (8BD5100) was assessed and determined to be not significant. Results of the 2012 cultural resources survey conducted specifically for CEPP included testing portions of tree islands impacted by the original levee/borrow canal construction. In some cases this involved portions of tree islands with recorded sites that were identified during Survey #

602 using aerial photography. These sites have not been field verified. Only areas of potential effect for sites recorded during Survey # 602 were investigated for CEPP. It also should be noted that existing As-Built Plans for the L-67A and C show that the area immediately underneath the existing levee, and areas between the levee and borrow canal were degraded prior to construction. During the CEPP specific 2012 Survey (FMSF Survey # 20328), no significant cultural resources were identified.

Two culturally significant sites actively used by the Miccosukee Tribe of Indians of Florida are located on two of the spoil mounds west of the borrow canal. Effects: Potential effects to the culturally significant sites for Alts 4R and 4R2 are considered major to moderate long-term adverse effects. There will be no known effects to historic properties. Mitigation of Effects: Effects to the culturally significant sites could be reduced by avoiding the spoil mounds associated with the sites during the PED and construction phase of CEPP. Also, to avoid potential inadvertent discoveries, it is recommended that should spoil mounds be removed within the historic footprint of tree islands, that degrading be terminated at tree island grade, not marsh grade. Previous research conducted by the Corps' archaeologist has shown that compacted spoil material can extend well below tree island grade. Additionally, a professional archaeologist should monitor construction activity within historic tree island footprints to ensure that any discovery is recorded and assessed for significance.

C.2.2.17.11 L-67C Levee and Canal

This project component involves degrading approximately 8-miles of the L-67C levee to promote sheet-flow into the Blue Shanty flowway, constructing one gated structure north of the newly constructed 8.5-mile levee, and removing 6,000-ft of the L-67C levee in association with the new structure.

Two cultural resource surveys are listed with the State for WCA 3A, one conducted via aerial photographs (FMSF Survey # 602), and a Phase I Sample Survey and Phase II Excavation conducted in 2012 specifically for CEPP (FMSF Survey 20328). For tree islands impacted by the original levee/borrow canal construction, only areas of potential effect were investigated. In some cases this involved portions of tree islands with recorded sites that were identified during Survey # 602 using aerial photography. These sites have not been field verified. Only areas of potential effect for sites recorded during Survey # 602 were investigated for CEPP. It also should be noted that existing As-Built Plans for the L-67 A and C show that the area immediately underneath the existing levee, and areas between the levee and borrow canal were degraded prior to construction. During the CEPP specific 2012 Survey, no significant cultural resources were identified within the APE for this feature. Also the L-67C was built in 1968 and thereforedoes not meet the age criteria of 50-years required for accessing eligiblility. Based on information gathered during the accessment of L-67A, once the age criteria is met, it is probable that the L-67C is not historically significant. Effects: For this component of Alt 4Rs and 4R2, there would be no effect to cultural resources. Mitigation of Effects: To avoid potential inadvertent discoveries, it is recommended that should spoil mounds be removed within the historic footprint of tree islands, that degrading be terminated at tree island grade, not marsh grade. Previous research conducted by Corps archaeologist has shown that compacted spoil material can extend well below tree island grade. Additionally, a professional archaeologist should monitor construction activity to ensure that any discovery is recorded and assessed for significance.

C.2.2.17.12 L-29 Levee

This component involves degrading of approximately 4.3-miles of the L-29 Levee in the Blue Shanty flow way and the placement of a divide structure at the terminus of the western Tamiami Trail bridge. The original construction of the L-29 impacted two large tree islands. Through consultation with the Cultural Resource Representative to the Miccosukee Tribe of Indians of Florida, these islands have been

identified as being culturally significant. Multiple surveys have been conducted to identify cultural resources within WCA 3A and 3B, one conducted via aerial photographs (FMSF Survey # 602), Survey # 17032, Survey # 283, a Phase I Survey conducted in 2011 (FMSF Survey # 20487), and a Phase I and Phase II Survey conducted in 2012 specifically for CEPP (FMSF Survey # 20328). With information gathered from these surveys and others in similar environments, it is highly probably that historic sites will also be located on these islands.

The ValuJet Flight 592 Crash Memorial is also located along the L-29 levee. Although the Memorial is not historic, it is frequently visited by those directly or indirectly affected by the accident. Therefore, the Memorial is considered culturally significant and should be preserved in place. If preservation is not viable, consultation with all family members of the victims, and local residents should occur prior to completion of the design-build phase.

There is also one Miccosukee Tribe of Indians of Florida residential camp (Tigertail Camp) located atop the L-29 levee. The Tigertale Camp is considered culturally significant.

Effects: Alternative 4R and 4R2 could potentially have major long-term adverse effects to two sites deemed culturally significant to members of the Miccosukee Tribe of Indians of Florida. These sites were originally impacted by the levee and borrow canal construction in the mid-late 1960's. Based on previous research, it is highly probable that these two tree islands contain historic resources of unknown significance. Cultural resource investigations on these islands would require further consultation with the Miccosukee Tribe of Indians of Florida (Oceola Camp) prior to fieldwork. Based on preliminary design plans for Alts 4R and 4R2, there would be no effect to the Valujet Flight 592 Crash Memorial, or the Tiger Tail Camp. Mitigation of Effects: Avoid placing structures within known culturally significant sites, significant historic properties, currently occupied camps could reduce the effect. Potential adverse effects to potential historic properties impacted by the original levee construction could be reduced by avoiding tree islands and/or by limiting the depth of levee removal to not exceed tree island grade. Additionally, a professional archaeologist should monitor construction activity within historic tree island footprints to ensure that any discovery is recorded

C.2.2.17.13 S-333 Modifications

This component of Alt 4R and 4R2 involves constructing an additional structure to increase the S-333 capacity. The new structure would be located just north of the S-333. Exact placement of the structure is preliminary.

There are no known high probability areas for archaeological sites located within the area of potential effect. The ValuJet Flight 592 Crash Memorial is also located along the L-29 levee just east of the S-333 structure. Although the Memorial is not historic, it is frequently visited by those directly or indirectly affected by the accident. Therefore, the Memorial is considered culturally significant and should be preserved in place. If preservation is not viable, consultation with all family members of the victims, and local residents should occur prior to completion of the design and build phase. Effects: Based on preliminary design plans for Alts 4R and 4R2, there would be no effect to the Valujet Flight 592 Crash Memorial.

C.2.2.17.14 L-67D Levee and Flow way within WCA 3B (Blue Shanty)

This component involves constructing a levee within WCA 3B to connect the L-67A levee with the L-29 levee, thereby creating a flow-way for water to pass from WCA 3A into Shark River Slough. Working closely with project engineers, areas of concern have been identified in an effort to avoid significant

cultural resources or areas of high probability (i.e. tree islands and areas currently in use by the Miccosukee Tribe of Indians of Florida) within the footprint of the proposed levee. Based on the multiple surveys conducted within the similar environmental areas (FMSF Survey # 602, 286, 1616, 17032, 18093, 1615, 904, 1009, 1014, 1187, 1307, 6968, 7667, 20487, and the CEPP specific 2012 Survey (FMSF Survey # 20328) and in conjunction with consultation with the Tribes, there is a high probability for significant cultural resources to be located within the flow way. Also, modeling results indicate that water depth could exceed current stages to the point that it could prove detrimental to lower elevated tree islands within the flow way that have not undergone a Phase I Survey. The exact footprint of this feature is unknown at this time. Effects: Effects to cultural resources for Alts 4R and 4R2 are unknown. Once the footprint of the L-67D levee and the APE for the flow way is determined, and early during the PED phase, an integrated Phase I and Phase II Survey would be conducted to identify and assess significant cultural resources that may be located on high probability areas (tree islands) within the proposed flow way. Mitigation of Effects: Any adverse effect could be reduced by avoid impacting tree islands.

C.2.2.17.15 Old Tamiami Trail (8DA6453/8DA6510)

This component involves the removal of approximately 6-miles of the original Tamiami Trail from the L-67 Extension west to Shark Valley Loop Road. The original Tamiami Trail is located within Everglades National Park (ENP). The Tamiami Trail and associated features/structures have been reported and evaluated during four separate surveys (FMSF Survey #6687, 12129, 17445, and 18181). As a result, it has been determined that the original Tamiami Trail and specific features/structures associated with the roadway are significant and therefore are eligible for the National Register of Historic Places (NRHP).

Effects: There would be major long-term adverse effects to the Tamiami Trial (8DA6453) and associated features. Mitigation of Effects: Portions of 8DA6453 has previously been impacted by the construction of the 1-mile Tamiami Trail Bridge. Impacts to the site are currently being mitigated with an Memorandum of Agreement (MOA) to be signed by ENP, USACE, and SHPO. Through consultation with ENP, it is probable that the current projects impacts to the original Tamiami Trail could be included in the current mitigation plan. This would reduce the effect. Further consultation is needed.

C.2.2.17.16 L-67 Extension Levee Removal

This component involves the backfilling of the L-67 Extension borrow canal using associated levee material. This component is located within ENP, a recorded World Heritage site. In January 2013, USACE and ENP employees conducted a Phase I Survey (FMSF # pending) of potential high probability areas impacted by the original construction of the L-67 Extension levee and associated borrow canal. The L-67 Ext. levee and associated borrow canal (ca. 1967), as well as associated features (S-347 (1987)and S-346 (1987)) do not meet the age criteria of 50-years required for accessing NRHP eligibility, nor are these features eligible under Criteria G. Based on information gathered during the research of other canals, levees, and features within the CEPP APE, it is highly probable that the L-67 Ext. and associated features are not eligible for NRHP listing and therefore will not be considered historically significant. See SHPO to Corps letter dated 10-15-2013 in Appendix C.5 (FMSF site # pending). No significant cultural resource sites were located. Effects: There would be no effect to cultural resources for Alts 4R and 4R2. However, to avoid potential inadvertent discoveries, it is recommended that should levee material be removed within the historic footprint of tree islands, that degrading be terminated at tree island grade, not marsh grade. Previous research has shown that compacted spoil material can extend well below tree island grade. Additionally, a professional archaeologist should monitor construction activity within historic tree island footprints to ensure that any discovery is recorded.

Yellowline

C.2.2.17.17 L-31N Seepage Barrier / L-31N Pump Station(s)

This component involves the construction of a seepage barrier within the existing L-31N levee and/or the construction of pumps. Three surveys have been conducted along the L-31N Levee (FMSF Survey # 11698, 16709, 18093), which resulted in the identification of one site recommended as potentially eligible for the National Register. The U.S. Army Corps concurs with this recommendation and considers 8BD2104 as eligible for NRHP listing. Effects: There could potentially be major long-term adverse effects to the Levee Cut Site (8BD2104) dependent upon pump location. Mitigation of Effects: Consideration should be given to the placements of these pump stations or structures. If placement avoids direct or indirect impact to site 8DA2104, then a no effect determination would be made. The effect determination for 8DA2104 should be revisited once feature specific plans and specification for the project are developed.

C.2.2.17.18 S-356

This component involves changes to the S-356 Pump Station. Based on examination of historic aerial photographs, the original construction of the pump station did not impact any tree islands within the construction footprint. As previously stated, based on previous research, tree islands are considered high probability for cultural resource locations. Effects: The S-356 Pump Station is not a historic structure, nor did original construction impact areas of high probability areas. Regardless of how the S-356 is changed, there would be no effect to cultural resources for this component of Alt 4R and 4R2.

C.2.2.17.19 G-211 Operational Refinements

This component involves the utilization of current coastal infrastructure (canals and associated features) to convey seepage south. Effects: There would be no effect to cultural resources.

C.2.2.18 Invasive and Native Nuisance Species

Alternatives 4R and 4R2 have the potential and likelihood for establishment and spread of non-native invasive and native nuisance species. Proposed restoration activities may affect ecosystem drivers that directly or indirectly influence the invasiveness of non-native species. These factors may affect invasive species positively or negatively, depending on the unique characteristics of individual species and the environmental conditions for a given biological invasion (Doren et al. 2009). For example, shortened surface water drawdowns may reduce the recolonization rates of melaleuca in sawgrass marsh while increasing habitat suitability for Old World climbing fern on tree islands. Many of the areas where features are proposed are currently inhabited by non-native invasive and native nuisance species. Construction of the proposed features has the potential to spread the existing non-native invasive and native nuisance species on site as well as introduce new invasive species via contaminated equipment. Disturbed areas resulting from construction are likely to become established with non-native invasive and native nuisance species. New flows created by operations of the proposed features may serve as vectors to spread invasive and native nuisance species into new areas. The large number of existing and potential invasive plant and animal species and the often incomplete knowledge of invasive mechanisms for each species create moderate to high uncertainty in this evaluation. Long-term monitoring in an adaptive management framework is critical to ensure efficient management of the most threatening non-native invasive species in the restoration footprint.

C.2.2.18.1 Lake Okeechobee and the Northern Estuaries

Alternatives 4R and 4R2 would reduce freshwater flows from Lake Okeechobee to the Caloosahatchee and St. Lucie estuaries, allowing for slightly higher salinity levels in the estuaries. The reduced freshwater outflows are not expected to have an impact on non-native invasive or native nuisance

species. Existing invasive species under active management are expected to persist at baseline levels if current funding levels are sustained (e.g., melaleuca). Existing species not under active management or which are ineffectively controlled are expected to increase in abundance and spatial extent (tropical American water grass). New invasions of non-native plant and animal species are expected but estimates of species number and severity of impacts are conjectural.

C.2.2.18.2 A-2 Flow Equalization Basin

There are invasive and native nuisance species to consider with the proposed FEB A-2. Species of concern include Brazilian pepper, torpedo grass, tropical American watergrass, water hyacinth, water lettuce, and hydrilla. The proposed A-2 FEB lands currently are agricultural lands. Brazilian pepper exists along the agricultural canals. Once the proposed A-2 FEB is operational, the water levels are likely to inhibit growth and recruitment of Brazilian pepper. All upland sites (e.g., levees) are expected to experience colonization of Brazilian pepper, torpedo grass, paragrass, and other invasive species common in ruderal sites. The proposed four-mile spreader canal would require continual maintenance of floating, emergent and potentially submersed plant species in order to maintain the function of the canal. It is expected that increased sedimentation immediately downstream of the spreader would result in succession to large stands of Carolina willow and cattail and this area may require maintenance to achieve target flow rates. In addition, the seepage canal would require continual maintenance to control both non-native invasive and native nuisance species. Due to eutrophic conditions and variable hydroperiods, many invasive species would aggressively invade and are likely to be costly and difficult to control. Therefore, control efforts focused at maintaining the primary functions of the proposed A-2 FEB (e.g., conveyance capacity) are preferred over aggressive eradication efforts typically applied to natural areas. Invasive/nuisance species in this category include, but are not limited to torpedo grass, hydrilla, water hyacinth, and water lettuce. In all alternatives, these species have the potential to interfere with surface water conveyance immediately upstream of water control structures. There are many species that could establish both in FEBs and WCAs. Establishment of these species in the proposed A-2 FEB could be part of an invasion pathway to natural areas downstream (i.e. WCA 3A/3B, ENP). For this reason, diligent monitoring and rapid response control measures for these species would need to be carried out during construction and operations phases. Examples of such species include tropical American watergrass, Wright's nutrush, West Indian marshgrass, Nile monitor, and bullseye snakehead.

There are two recreational access points proposed to the proposed A-2 FEB. Access points provide opportunity for the introduction of invasive species. Boats and trailers can serve as a vector for new species introductions.

C.2.2.18.3 Diversion of L-6 Flows and L-5 Improvements

Deepening of the L-5 has the potential to reduce productivity of various species of SAV (including hydrilla), but would not eliminate suitable habitat for their establishment and growth (Langeland 1996). Alternatives 4R and 4R2 may improve habitat for non-native tropical fish species which utilize deep water zones to avoid cold temperature events (Trexler et al. 2000).

C.2.2.18.4 L-4 / L-5 – Spreader Canal and Levee Degradation

Northwest WCA 3A has dried out significantly since the area was compartmentalized. The vegetation has shifted from ridge and slough to woody shrubs and small trees including Carolina willow, wax myrtle, Brazilian pepper, and melaleuca. The flows provided by the spreader canal into northwest WCA 3A are expected to increase wet season stages and decrease duration of surface water draw downs in the northern portions of WCA 3A. This may reduce recruitment rates of some invasive or nuisance

species, such as Carolina willow and Brazilian pepper, and may facilitate expansion of other invasive or nuisance species, such as cattail and paragrass. The proposed spreader canal would require continual maintenance of floating, emergent, and, potentially, submersed plant species in order to maintain the function of the canal. It is expected that increased sedimentation immediately downstream of the spreader would result in succession to stands of Carolina willow and cattail and this area may require maintenance to achieve target flow rates. Similar areas in ENP are also invaded by Brazilian pepper and Old World climbing fern. The remaining portions of the levee would offer suitable habitat for Burmese pythons. Invasive species could be introduced into northern WCA 3A with the new flows from the spreader canal. The degraded levee area may be invaded by non-native invasive and native nuisance obligate wetland plant species.

Model output for WCA 3A suggests substantial decreases in dry out periods in the northern reaches of WCA 3A. This is likely to reduce the rate of spread for certain species, especially Brazilian pepper, Australian pine, torpedo grass, and Napier grass. Melaleuca recruitment would also continue but at a reduced rate. Other species more suited to longer periods of inundation may find conditions more favorable for establishment and spread. These include but are not limited to Old World climbing fern, Island apple snail, West Indian marsh grass, paragrass, and potentially Peruvian primrose willow. Diligent monitoring and control efforts would be recommended to minimize establishment of new plant species in these areas.

Continued maintenance of the remaining portions of the L-4 levee is assumed. If regular mowing is not carried out, this segment of levee would become invaded by a number of invasive plants and animals, such as Brazilian pepper, Napier grass, bishopwood, cogongrass, Burmese pythons, feral hogs, and Nile monitors.

C.2.2.18.5 Miami Canal Backfill – S-8 to I-75

Backfilled portions of the Miami Canal may be invaded by non-native invasive and native nuisance wetland plant species. Invasion by paragrass, torpedograss, and cattail is expected if backfill operations result in elevated nutrient availability. Spoil mounds along the Miami Canal in WCA 3A currently supports high densities of Brazilian pepper and other invasive plants. Degradation of these spoil deposits would result in the removal of approximately 200 acres of Brazilian pepper. This would reduce an important seed source and lower bird dispersal to nearby tree islands. While there is uncertainty about the impacts of non-native fish species on native fauna (Trexler et al. 2000), backfilling the canal would reduce available deep water habitat for non-native fish species and could reduce further expansion.

Preserved planted tree islands and the proposed spoil island creation efforts would experience immediate and long-term susceptibility for biological invasion. Elevated nutrient regimes on the new islands would promote invasion of numerous invasive species, including Brazilian pepper, napier grass, climbing cassia, Peruvian primrose willow, and torpedograss. These elevated areas are also expected to provide excellent habitat for Burmese pythons and Nile monitors.

C.2.2.18.6 L-28 Levee Degradation / Backfill

Continued maintenance of the remaining portions of the L-28 levee is assumed. If regular O&M vegetation management is not carried out, fallow segments of levees are likely to be invaded by a number of invasive plants and animals, such as Brazilian pepper, Napier grass, bishopwood, cogongrass, Burmese pythons, feral hogs, and Nile monitors. Backfilled portions and the degraded levee area may be invaded by non-native invasive and native nuisance wetland plant species.

C.2.2.18.7 Increase Capacity of S-333

The additional flows from increasing the capacity of S-333 are expected to have a minimal effect on invasive species populations. Existing invasive species under active management are expected to persist at baseline levels if current funding levels are sustained (e.g., water hyacinth). Existing species not under active management, or which are ineffectively controlled, are expected to increase in abundance and spatial extent (e.g., roundleaf toothcup). New invasions of non-native plant and animal species are expected but estimates of species numbers and severity of impacts are conjectural.

C.2.2.18.8 L-67A Gated Structures / Spoil Removal

The proposed gated structures on the L-67A have the potential to spread cattail, torpedograss, and non-native fish species downstream of the structure and into the gap between L-67A and L-67C. Cattail and torpedo grass are also expected to colonize spoil removal areas. It is expected that non-native fish species would establish at the outflow, where water levels are deeper. Existing non-native fish species could move from the canal into the gap, but they are not expected to maintain substantial populations in the marsh due to seasonal drawdowns. Many non-native fish are documented to move from canals to the marsh during the wet season, but do not venture too far from the canal and return to the canal as water levels recede (Trexler 2000). There is a potential for invasion by new aquatic species capable of tolerating seasonal drawdowns but the number of species and severity is conjectural.

C.2.2.18.9 L-67C Levee Degradation

The proposed gaps would provide a pathway for aquatic species currently present in the L-67C canal to spread into WCA 3B. Existing invasive species under active management in WCA 3B are expected to persist at baseline levels if current funding levels are sustained (e.g., melaleuca). Existing species not under active management or which are ineffectively controlled are expected to increase in abundance and spatial extent (Old World climbing fern). New invasions of non-native plant and animal species are expected but estimates of species numbers and severity of impacts are conjectural. The proposed 6,000-foot gaps in the L-67C levee would provide an open pathway for cattail spread into WCA 3B. The extent of spread is uncertain.

C.2.2.18.10 Outflow structures out of WCA 3B

Agricultural canals in WCA 3B currently release water into the L-29. There is potential for new non-native invasive species to be transferred from WCA 3A or L-67A through the new culverts and levee degrade area into WCA 3B, L-29, and eventually into ENP.

C.2.2.18.11 Build North-South Levee in WCA 3B

The construction of a north-south levee in WCA 3B would cause significant disturbance within the construction footprint and adjacent marsh. Regular maintenance would be required to ensure non-native invasive plant species do not establish along the levee. Cattail is likely to establish along the entire eastern side of the levee. Existing invasive species in the affected area that are under active management should persist at baseline levels if current funding levels are sustained (e.g., melaleuca). Existing species not under active management or which are ineffectively controlled are expected to increase in abundance and spatial extent. New invasions of non-native plant and animal species are expected but number of species and severity of impacts are undetermined.

C.2.2.18.12 L-67 Extension – Levee Degradation / Backfill

The L-67 Extension canal and levee system extends south into ENP. This area is now invaded by numerous non-native invasive plants and also serves as habitat for Burmese pythons and feral hogs.

Removal of the L-67 Extension levee would remove suitable habitat for Brazilian pepper, napier grass, climbing cassia, torpedo grass, guava, and Australian pine. Removal of the L-67 Extension levee would also reduce habitat for the Burmese python, feral hogs, and potentially, the Argentine black and white tegu. Island apple snails may find the degradation footprint as suitable habitat if final grade is lower than the surrounding marsh.

C.2.2.18.13 L-29 Levee Degradation

Degradation of the L-29 levee would open surface water connectivity between the L-29 canal and WCA 3B (Blue Shanty flowway). This is likely to promote the expansion of several invasive species currently limited to the L-29 canal, particularly roundleaf toothcup, island apple snail, and numerous non-native fish species. There is uncertainty whether these species would be able to persist far from the canal since many are unable to tolerate conditions during dry season drawdowns.

C.2.2.18.14 Divide Structure on L-29

This feature is expected to have minimal effect on invasive species. Maintenance of submersed and floating vegetation would be required to ensure operational functionality of the structure.

C.2.2.18.15 Increase S-356 Capacity to 1,000 cfs

The additional flows from increasing the capacity of the S-356 structure may slightly reduce recruitment rates of melaleuca and other invasive plants in northern portions of ENP.

C.2.2.18.16 Remove ~6 Miles of the Old Tamiami Trail roadway from L-67Extension to Tram Road

This area is now heavily invaded by numerous invasive plants and also serves as habitat for Burmese pythons and feral hogs. Alternatives 4R and 4R2 would remove suitable habitat for Brazilian pepper, napier grass, climbing cassia, torpedo grass, guava, and Australian pine. Removal of the old roadway would also reduce habitat for the Burmese python, feral hogs, and potentially, the Argentine black and white tegu. Island apple snails would continue to thrive in the adjacent canal and may spread further south as a result of removing the old road.

C.2.2.18.17 G-211 Operational Modifications / Coastal Canals Conveyance

This feature is expected to have minimal effects on non-native invasive and native nuisance species. Existing invasive species under active management are expected to persist at baseline levels if current funding levels are sustained (e.g., hygrophila). Existing species not under active management or which are ineffectively controlled are expected to increase in abundance and spatial extent (roundleaf toothcup). New invasions of non-native plant and animal species are expected but number of species and severity of impacts are undetermined.

C.2.2.18.18 Penetrating Seepage Barrier

The depth and duration of surface water drawdowns in northeastern ENP are expected to decrease with Alternatives 4R and 4R2. These changes in hydroperiods are expected to reduce recruitment rates of Australian pine, Brazilian pepper, and to a lesser extent, melaleuca. These changes may improve conditions for other invasive plant species such as tropical American water grass, West Indian marsh grass, and roundleaf toothcup.

C.2.2.19 Cumulative Effects

Cumulative effects are defined in 40 CFR 1508.7 as those effects that result from:

the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Cumulative effects for the proposed action were assessed in accordance with guidance provided by the President's Council on Environmental Quality (CEQ). The primary goal of cumulative effects analysis is to determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative effects of other past, present, and future actions. The following summarizes past, present, and projected USACE efforts that cumulatively affect the regional environment of south Florida (**Table C.2.2-16**). In addition, there are efforts underway by other Federal, State, and local agencies, as well as non-governmental organizations, that are too numerous to mention, that are all working towards similar restoration goals. **Table C.2.2-17** shows the net cumulative effects of the various resources which are directly or indirectly impacted. CEPP is expected to contribute to a net beneficial cumulative impact on the regional ecosystem.

C.2.2.20 Past, Present, and Reasonably Foreseeable Actions Affecting Resources within the Project Area

Prior to drainage and compartmentalization, the Everglades were a shallow wetland conveying water from Lake Okeechobee to the southern coast of Florida. The Everglades Drainage District, encompassing 7,150 square miles, was created in 1907 by Florida Governor Napoleon Bonaparte Broward for the purpose of drainage and reclamation of the Everglades (Light and Dineen 1994). In the early 1900s, the Everglades Drainage District constructed several canals that impacted Lake Okeechobee and the Greater Everglades. By 1917, the West Palm Beach, Hillsboro, North New River and Miami Canals had been constructed (Allison et al., 1948). By 1931, the outlet from Lake Okeechobee to the Caloosahatchee River was improved, and the completion of the St. Lucie Canal east to the Atlantic Ocean provided another way of controlling lake levels. The Bolles and Cross canals became connectors to the four major canals south of Lake Okeechobee bringing the total miles of canal excavated to 440 (Light and Dineen 1994). The Everglades Drainage District also constructed 47 miles of levees around the southern rim of Lake Okeechobee during this time (Allison et al., 1948). Within a similar time frame (1915-1928) the construction of Tamiami Trail was completed which linked Miami with Naples on the west coast. Hurricanes in 1926 and 1928 shifted attention from Everglades drainage to controlling flooding around Lake Okeechobee. In 1930, the USACE became a major participant with the state (i.e., Okeechobee Flood Control District) in controlling flooding around Lake Okeechobee. Florida agreed to share a portion of the costs to increase discharges from the lake, improve canal works, and reconstruct and enlarge the levees around it (Light and Dineen 1994). The effect of levees on the agricultural area south of Lake Okeechobee was dramatic and sugarcane production was doubled in 10 years between 1931 and 1941. Drainage of the Everglades and the linkage of the east and west coast, promoted urban growth in south Florida and the population escalated from 22,961 in 1900 to 228,454 by 1930 (Dietrich 1978). During the 1930s and into the 1940s, construction was abandoned and maintenance ceased on Everglades Drainage District works (Light and Dineen 1994).

Although modifications to Lake Okeechobee and the Everglades began in the early 1900s, the greatest influence on the alteration of flow was the Central and Southern (C&SF) Flood Control project, which was originally authorized by Congress in 1948. The C&SF Flood Control project was designed to lower water levels east of the eastern protective levee by 4 to 5 feet (Light and Dineen 1994). Increased flood protection coupled with lowering of the water table east of the levee had a dramatic effect on urbanization and development and acted as a catalyst for a population explosion in south Florida. Between 1952

and 1954 the eastern perimeter levee along the WCAs was constructed from Palm Beach to Dade County in order to stop sheet flow from the Everglades toward the urbanizing eastern coastal areas (Light and Dineen 1994). Between 1954 and 1959 additional levees (L-1, L-2, L-3, L-4, L-5, L-6, and L-7) were constructed to partition the EAA from the remainder of the Everglades and the old Everglades Drainage District Canals (West Palm Beach, Hillsboro, North New River, and Miami) were deepened within the EAA to provide better flood conveyance from the agricultural area into the WCAs (Light and Dineen 1994).

Between 1960 to 1963 substantial portions of the C&SF Flood Control project were completed. Construction of the levees surrounding WCA 3 was completed by 1963 with the L-67A levee dividing WCA 3 into two compartments, WCA 3A and WCA 3B (Light and Dineen 1994). The L-67A levee (completed 1962) and the parallel L-67C levee (completed 1966) were originally constructed for several reasons, including as a step-down system to reduce seepage to the east to allow for urban and agricultural developments in Miami-Dade County, and to increase storage of water in WCA 3A to provide water supply to an expanding urban population to the east. S-151 and S-31 were also constructed during this time period. These two structures improved the discharge capacity of the Miami Canal to coastal communities (Cooper and Roy, 1991), further exacerbating the unnatural drainage of northern WCA 3A. In an attempt to remedy excessive drainage caused by the Miami Canal, two structures, S-339 and S-340, were built across the Miami Canal in 1980 to block water from flowing directly down the canal, except at times of extreme high water or when increased conveyance capacity is needed to deliver water for the ENP and/or the LEC. Upstream from each structure, water was expected to flow laterally from the canal into the marsh through 100-foot gaps that had been left at 500-foot intervals along the Miami Canal sidecast spoil material. In combination with the northern levees of WCA 3A (L-4 and L-5), the Miami Canal has substantially impacted historical sheetflow and natural wetland hydroperiods. As a result, during wet periods, the natural capability of WCA 3A to store water is lost and the Miami Canal effectively over-drains the area. These hydrologic changes have increased the frequency of severe peat fires and have also resulted in the loss of ridge and slough topography that was once characteristic of the area. Northern WCA 3A has become largely dominated by sawgrass, cattail and scattered shrubs and lacks the structural diversity of plant communities seen in central and western WCA 3A.

Completion of the L-29 levee in 1962 led to ponding in the southern portions of WCA 3A. Exacerbating this problem were the major canal systems (i.e. Miami Canal, L-67A) which accelerate the flow of water from north to south within WCA 3A, drying the north while further ponding the south (Zaffke 1983), especially along the L-67A and L-29. As a result of this ponding, extended hydroperiods and increased water depths led to changes in vegetation communities in which wet prairies were displaced by aquatic slough communities (Zaffke 1983, Tanner et al. 1987). In addition, many tree islands within southern WCA 3A were lost due to increased water depths (Craighead 1971), with many of the remaining islands showing signs of stress. Wood and Tanner (1990) documented the trend in southern WCA 3A toward deep water lily dominated sloughs due to impoundment within the southern end of WCA 3A.

Four control structures located along the L-29 were constructed between 1960 and 1963 (S-12A, S-12B, S-12C, and S-12 D). These structures were used to regulate discharge from WCA 3A to the western part of Shark River Slough (Light and Dineen 1994). Construction of the L-67 Extension levee, extending 8 miles south of Tamiami Trail, was completed in 1967 in order to facilitate water delivery from WCA 3A to ENP. Completion of the L-67A and L-67C canal and levee system intercepted water that would otherwise flow to WCA 3B. With its impoundment, WCA 3B became isolated from the rest of the Everglades with inflows and outflows limited to rainfall and levee seepage. Within WCA 3B, the ridge and slough landscape has become severely compromised by the virtual elimination of overland sheetflow and has largely turned into a sawgrass monoculture where relatively few sloughs or tree islands remain.

Loss of sheetflow to WCA 3B has also accelerated soil loss reducing elevations of the remaining tree islands in WCA 3B, making them vulnerable to high water stages. With the construction of WCA 3A, WCA 3B and the L-67 Extension Levee, flows to ENP became subject to water supply deficits during the dry season and excesses during the wet season, resulting in a decline in ecological quality.

Among the first Congressional actions to offset adverse impacts to ENP by improving the supply and distribution of water, the Flood Control Act of 1968 provided for modifications to the C&SF Project through the implementation of the ENP South Dade Conveyance System (SDCS). Additional Congressional actions ensued, including the ENP Protection and Expansion Act of 1989, which expanded ENP to incorporate NESRS and the East Everglades into the Park's boundary for protection and restoration of the natural hydrologic conditions within ENP. This Act also provided authorization for development of the Modified Water Deliveries (MWD) to ENP project. The goal of the MWD Project was to improve water deliveries into ENP and, to the extent practicable, take steps to restore the natural hydrologic conditions within ENP. The Water Resources Development Act (WRDA) of 2000 established CERP to provide for the restoration, protection and preservation of the water resources of central and southern Florida, including the Everglades and Florida Bay (USACE 1999).

CERP contains 68 components that include approximately 217,000 acres of new reservoirs and wetlands-based water treatment areas. A number of operational components have also been identified in CERP and will, in most cases, occur in conjunction with related construction features. The operational features in CERP include: a modified Lake Okeechobee regulation schedule; environmental water supply deliveries to the Caloosahatchee and St. Lucie Estuaries; modifications to the regulation schedules for WCAs 2A, 2B, 3A, 3B, and the current rainfall delivery formula for ENP to implement rain-driven operations; modified Holey Land Wildlife Management Area Operation Plan; Modified Rotenberger Wildlife Management Area Operations Plan; a modification for coastal well field operations in the Lower East Coast (LEC); LEC utility water conservation; and operational modifications to the southern portion of L-31 and C-111.

CERP projects would increase the supply of freshwater for the Everglades and south Florida ecosystem. Large areas within the study area would be used to increase water storage resulting from CERP Projects for the overall gain and long term benefit of the regional system. These project features would provide important storage functions and are essential to the overall restoration of the freshwater marshes and the estuaries of the greater Everglades ecosystem. Project components in the area, especially storage, seepage control, and redirection of point source canal flows to overland flow will act to restore more natural freshwater flows to the northern and southern estuaries, reduce seepage losses from the Everglades, improve recharge of the Biscayne aquifer, and should result in other beneficial environmental effects.

Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Indian River Lagoon-South Project, the Picayune Strand Restoration Project, and the Site 1 Impoundment Project. The second generation of CERP projects, authorized in WRRDA 2014, includes the Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, the Caloosahatchee River (C-43) West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. These projects will result in significant environmental benefits to the CERP project area, improving the quantity, quality, timing and delivery of water to the natural system. Further information on the above mentioned CERP projects assumed to be in the future without project conditions are provided in **Section 2** (**Existing and Future Without Project Conditions**) and **Appendix C.1** (**Existing and Future Without Project Conditions**).

Non-CERP projects assumed to be in the future without project condition for CEPP, which incorporate similar restoration goals of improving flow and water quality to the Everglades, include the DOI Tamiami Trail Modifications Next Steps (TTMNS) Project and the Restoration Strategies Regional Water Quality Preliminary Plan (SFWMD 2012). The DOI through the National Park Service (NPS) and ENP completed a study to evaluate the feasibility of additional Tamiami Trail bridge length, beyond that to be constructed pursuant to the MWD Project, to restore more natural water flow to ENP and Florida Bay and for the purpose of restoring habitat within the ENP. The TTMNS project was authorized by Congress in the Consolidated Appropriations Act, 2012. The Restoration Strategies Regional Water Quality Preliminary Plan describes resulting projects developed to address water quality concerns associated with existing flows to the Everglades Protection Area (EPA) to achieve water quality standards established for the Everglades. The SFWMD is implementing a technical plan to complete six projects that will create more than 6,500 acres of new STAs and 110,000 acre feet of additional water storage through construction of FEBs.

The C&SF Flood Control project has numerous water management structures consisting of culverts, spillways, and pump stations that have specified operating criteria for managing or regulating water levels for Congressionally-authorized project purposes. Regulation schedules have been, and will continue to be, designed to balance multiple, and often competing, project purposes and objectives. Managing for better performance of one objective often lessens the effectiveness of performance of competing objectives. For example, for Lake Okeechobee, higher regulation schedules tend to benefit water supply, but may increase the risk to public health and safety, and can harm the ecology of the lake. By contrast, lower lake schedules may produce lake levels more desirable for the lake ecology and improved flood protection, but reduce water supply potential.

Since April 2008, Lake Okeechobee has been operated in accordance with the 2008 Lake Okeechobee Regulation Schedule (2008 LORS). Prior to the 2008 LORS, Lake Okeechobee operations were managed under the "Water Supply and Environment (WSE) Regulation Schedule" since July 2000. The 2008 LORS operational study was initiated to address high lake levels, high estuarine discharges, estuary ecosystem conditions, and lake ecology conditions that occurred during the 2003 to 2005 time period. The study considered the back-to-back historically significant 2004 and 2005 hurricane seasons' effects on the recognized structural integrity issues of HHD along with effects to other project purposes. The 2008 LORS was identified to be effective at decreasing the risk to public health and safety, reducing the number of high-volume discharges to the estuaries, and providing critical flexibility to perform water management operations. When it was approved, LORS 2008 was identified as an interim schedule. The USACE expected to operate under the interim schedule until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operations to accommodate early CERP projects (Band 1 projects) or (2) completion of the modifications to HHD.

In addition to CERP and non-CERP projects previously specified, the CEPP future without project condition includes implementation of the Everglades Restoration Transition Plan (ERTP) for WCA 3A, ENP, and the SDCS, which replaced the Interim Operational Plan (IOP) for Protection of the Cape Sable Seaside Sparrow (CSSS). From July 2002 through October 2012, WCA 3A was regulated according to a seasonally varying 8.75 to 10.75 feet, NGVD regulation schedule and the Rainfall Plan (initiated in 1985), as per IOP. The primary objective in implementing IOP was to adhere to a 1999 FWS Jeopardy Opinion to reduce damaging high water levels within CSSS habitat west of SRS (i.e. CSSS-A). The purpose of IOP was to provide an improved opportunity for CSSS nesting by maintaining water levels below ground level for a minimum of 60 consecutive days between March 1 and July 15, corresponding to the CSSS breeding season. In addition, a secondary purpose of IOP was to allow CSSS habitat to recover from prolonged flooding

during the mid-1990s. The ERTP superseded the IOP in October 2012 and is intended to define water management operating criteria for the C&SF project features and constructed features of the MWD and Canal-111 South Dade Projects (C-111 SD) until a Combined Operational Plan (COP) is implemented following completion of the MWD and C-111SD projects. ERTP objectives include improving conditions in WCA 3A for the endangered Everglade snail kite, wood stork and wading bird species while maintaining protection for the endangered Cape Sable seaside sparrow (CSSS) and Congressionally-authorized purposes of the C&SF Flood Control project.

Table C.2.2-16. Past, Present, and Reasonably Foreseeable Actions and Plans Affecting the Action Area.

	Past Actions/Authorized Plans	Current Actions and Operating Plans	Reasonably Foreseeable Future Actions and Plans
Status of Non-CERP Projects	- C&SF Project (1948) - ENP Protection and Expansion Act (1989) - Modified Water Deliveries (MWD) General Design Memorandum (GDM) and Final Environmental Impact Statement (1992)	- MWD 8.5 Square Mile Area General Reevaluation Report (2000) - MWD Tamiami Trail Modifications Limited Reevaluation Report (2008) - MWD 8.5 Square Mile Area Interim Operating Criteria Environmental Assessment (2011) - C&SF C-51 West End Flood Control Project - Kissimmee River Restoration - Seepage Barrier near the L-31 N Levee (Miami-Dade Limestone Products Association)	- Tamiami Trail Modifications Next Steps (TTMNS) Project - SFWMD Restoration Strategies Project MWD Closeout -- C-11 South Dade Project (Contracts 8 and 9)
Operations Plan for Lake Okeechobee, WCA 3A, ENP and the South Dade Conveyance System	- Water Supply and Environment (WSE) Lake Okeechobee Regulation Schedule (2000) - Interim Operational Plan***** (IOP) 2002 to Present	- Lake Okeechobee Regulation Schedule (LORS 2008) - SFWMD LEC Regional Water Supply Plan - Everglades Restoration Transition Plan (ERTP) October 2012 to present*****	- LORS 2008 to be replaced by revised Lake Okeechobee Regulation Schedule - SFWMD periodically revises the LEC Regional Water Supply Interim Plan - ERTP to be replaced by Combined Operational Plan to be completed to include MWD and C-111 components.
CERP Projects		Awaiting Authorization by Congress: - Biscayne Bay Coastal Wetlands Project - Broward County Water Preserve Areas Project - Caloosahatchee River (C-43) West Basin Storage Reservoir - C-111 Spreader Canal Western Project. Congressional Authorization Received and Construction in Progress: - Indian River Lagoon-South Project - Picayune Strand Restoration Project - Site 1 Impoundment Project	- Future CERP Projects

***** The 2006 IOP for Protection of the CSSS was the governing regulation schedule for the project area at the start of the CEPP planning process. In addition, existing hydrologic conditions within the project area are a result of IOP operations from 2002 to 2012. Therefore, for planning purposes, the existing

condition includes IOP as the operational plan. The current approved operational plan for southern WCA 3A, ENP, and the SDCS as of October 2012 is known as the ERTP. For planning purposes, the CEPP FWO project condition includes ERTP as the operational plan.

Table C.2.2-17. Summary of Cumulative Effects.

Hydrology	
Past Actions	Flood and water control projects have greatly altered the natural hydrology.
Present Actions	Federal and state agencies are coordinating on and implementing projects to improve hydrology.
Proposed Action	Reductions in high discharge events from Lake Okeechobee to the Northern Estuaries. Significant beneficial hydrologic effects are anticipated within the Greater Everglades through restoration of sheetflow and rehydration of previously drained areas. Improved hydrologic conditions will result from increasing depths and extending hydroperiods in WCA 3A, WCA 3B, and ENP.
Future Actions	Additional CERP projects propose to restore hydrology to more natural conditions.
Cumulative Effect	Although it is unlikely that natural hydrologic conditions would be fully restored to pre-drainage conditions, improved hydrology would occur. CERP is expected to improve the quantity, quality, timing and distribution of freshwater flow.
Threatened and Endangered Species	
Past Actions	Water management practices and urbanization have resulted in the degradation of existing habitat function and direct habitat loss leading to negative population trends of threatened and endangered species.
Present Actions	Ongoing efforts have been made by Federal and state agencies to implement projects to improve hydrology within the project area. Ongoing projects have been implemented to maintain CSSS populations. The FWS recovery plan is used as a management tool.
Proposed Action	May affect the eastern indigo snake, Florida panther, wood stork, Everglade snail kite, Everglade snail kite critical habitat, Florida manatee, Florida manatee critical habitat, crocodile, crocodile critical habitat, CSSS, CSSS critical habitat, , green sea turtle, leatherback sea turtle, Hawksbill sea turtle, loggerhead sea turtle, Kemp's ridley seat turtle, small tooth sawfish, and small tooth sawfish critical habitat (See **Annex A**).
Future Actions	Ongoing projects would be implemented to maintain threatened and endangered species within the project area. ERTP implementation represents a paradigm shift from single species to multi-species management. ERTP includes performance measures specifically directed at managing water levels and releases for the protection of multiple species and their habitats within the project area.
Cumulative Effect	Habitat improvement, monitoring and management of threatened and endangered species are anticipated to allow populations to be maintained. Improvement of degraded populations is expected to be facilitated by the restoration and enhancement of suitable habitat through efforts to restore more natural hydrologic conditions within the project area.
Fish and Wildlife Resources	
Past Actions	Water management practices have resulted in aquatic vegetation community changes and a resultant disruption of aquatic productivity and function that has had repercussions through the food web, including effects on wading birds, large predatory fishes, reptiles and mammals.
Present Actions	Ongoing efforts have been made by Federal and state agencies to implement projects to improve hydrology within the project area to restore habitat conditions for fish and wildlife resources.
Proposed Action	Negligible effects to fish and wildlife resources within Lake Okeechobee, and the EAA. Reductions in the number of high discharge events to the Northern Estuaries are anticipated to improve suitable habitat for key indicator species such as oysters. Significant beneficial effects are anticipated within the Greater Everglades. Rehydration within previously dry areas of WCA 3A, 3B, and ENP would increase the spatial extent of suitable habitat for several fish and wildlife resources. Increases in forage prey availability (crayfish, other invertebrates, and fish)

	would directly benefit amphibian, reptile, small mammal, and wading bird species. Nesting and foraging activities of resident bird species are anticipated to be significantly improved. Although mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades, there is an increased potential that mammals currently utilizing upland habitat may be negatively affected. Increased freshwater flows to Florida Bay would aid in improving suitable habitat for pink shrimp, juvenile spotted seatrout, sea turtles, manatee and crocodiles among other species.
Future Actions	Some level of improvement to fish and wildlife resources is expected to occur as a result of implementation of projects with the capability of improving the timing, quantity, quality and distribution of freshwater flow to the study area. Hydrologic restoration planned as part of CERP would further improve fish and wildlife habitat.
Cumulative Effect	Habitat improvement efforts are anticipated to benefit fish and wildlife resources.
Vegetation and Wetlands	
Past Actions	Drainage of Florida's interior wetlands, conversion of wetlands to agriculture, and urban development has reduced the spatial extent and quality of wetland resources.
Present Actions	Efforts are being taken by state and Federal regulatory agencies to reduce wetland losses.
Proposed Action	Negligible effects to vegetation within Lake Okeechobee and the EAA are anticipated. Reductions in the number of high discharge events to the Northern Estuaries are anticipated to improve conditions for seagrass beds. Significant beneficial effects are anticipated within the Greater Everglades. Improved hydroperiods and sheetflow within WCA 3A, 3B and ENP would result in reduced soil oxidation, promoting peat accretion necessary to rebuild the complex mosaic of habitats across the landscape. Increased freshwater flows to Florida Bay would aid to lower salinity levels, benefiting mangrove communities and seagrass beds.
Future Actions	Some level of improvement to vegetative communities is expected to occur as a result of implementation of projects with the capability of improving the timing, quantity, quality and distribution of freshwater flow to the study area. More natural hydrology as part of the CERP would assist in restoring natural plant communities.
Cumulative Effect	While the spatial extent of natural plant communities would not be restored to historic proportions, the quality of vegetative communities would be improved.
Cultural Resources	
Past Actions	Flood and water control projects, conversion of wetlands into agriculture and urban development have had adverse unmitigated effects to cultural resources either directly or indirectly.
Present Actions	Ongoing efforts have been made by Federal and state agencies to implement projects to improve hydrology within the project area, thereby stabilizing the tree islands which are known to have a high potential for cultural resources.
Proposed Action	While effects of the proposed action have been evaluated, a final determination of effects on cultural resources is not complete. Consultation with stakeholders, including the State Historic Preservation Office, Advisory Council on Historic Preservation, Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida is currently ongoing.
Future Actions	Continued improvement to hydroperiods and sheetflow within WCA 3A, 3B and ENP could reduce soil oxidation, which could stabilize the environment, and this in turn could stabilize tree islands containing cultural resources. Investigations mandated in the Programmatic Agreement for ERTP will be completed (ca. 2016) and will determine the effects of fluctuating water on subsurface historic properties.

Cumulative Effect	Cumulative effects to historic properties and culturally significant sites will potentially be long-term adverse effects if not avoided. Mitigation measures for effects to historic properties could potentially reduce the cumulative effect to minor long-term adverse effects. Mitigation measures for culturally significant sites is unknown.
Water Quality	
Past Actions	Water quality has been degraded from urban, suburban, commercial, industrial, recreational and agricultural development.
Present Actions	Efforts to improve water quality from agricultural areas are ongoing. Federal and state projects can temporarily elevate localized levels of suspended solids and turbidity.
Proposed Action	Implementation of the project is not expected to significantly affect the water quality of Lake Okeechobee or the Northern Estuaries. Changes in the quantity, timing, and distribution of flows within WCA 3A and WCA 3B may result in temporary increases in phosphorus concentrations at some TP Rule monitoring stations; however, this should not significantly affect TP Rule compliance. Over the long-term, distributing the flow over the northern WCA-3A marsh, reducing short-circuiting down the canals, adding more flow from the lake that is treated to the WQBEL, should result in improved water quality within WCA 3 and a reduction in flow weighted mean total phosphorous concentration entering the Park. Southern Estuaries salinity conditions are expected to be improved by the project.
Future Actions	Actions by the State of Florida's Restoration Strategies will decrease nutrient concentration and loadings to the project area. If authorized in the next Water Resources Development Act (WRDA), the Broward County WPA Project, (Record of Decision signed in 2012) would reduce storm runoff deliveries to WCA 3 and improve water quality coming across Tamiami Trail.
Cumulative Effect	While anthropogenic effects on water quality are unlikely to be eliminated, water quality is expected to slowly improve over existing and recent past conditions. During detailed planning and design, the USACE and SFWMD are committed to ensuring that project feature implementation will not result in violations of water quality standards.
Water Supply/Flood Control	
Past Actions	Water supply and flood control for agricultural and urban users has benefited from construction and operation of the C&SF project.
Present Actions	Availability of water from Lake Okeechobee for agricultural users were recently diminished through implementation of LORS 2008. Availability of water for urban and agricultural users were recently diminished through implementation of ERTP. The SFWMD has implemented Restricted Allocation Area Rules to cap users dependent on water supplies from Lake Okeechobee and the regional system (the Everglades).
Proposed Action	Implementation of the project would likely have no effect on water supplies to agricultural users dependent on Lake Okeechobee. Agricultural, municipal, and industrial water supply in LECSA 2 and 3 will increase slightly in the future.
Future Actions	Future supplies would not change in the future unless additional CERP storage or hydrologic improvements to the Everglades are implemented and increase water availability.
Cumulative Effect	While effects on water supplies are unlikely to improve, water supplies available for agricultural and urban users are expected to remain stable until additional storage mechanisms are implemented.

C.2.2.21 References

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APPENDIX C.3

PERTINENT CORRESPONDENCE INFORMATION

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List of Tables

C.3.1 National Environmental Policy Act (NEPA) Scoping

A NEPA scoping letter dated November 23, 2011 was mailed to stakeholders soliciting comments for this action. The scoping letter was used to invite comments from Federal, State, and local agencies, affected Indian Tribes, and other interested private organizations and individuals. Comments were accepted through January 20, 2011. Public scoping meetings were held December 14, 2011 in Plantation, Florida and December 15, 2011 in Clewiston Florida. A Notice of Intent (NOI) to prepare the Environmental Impact Statement (EIS) for the CEPP was published in the Federal Register (76 FR Volume 75539) December 2, 2011.

C.3.1.1 NEPA Scoping Letters

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

NOV 23 2011

TO WHOM IT MAY CONCERN:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Central Everglades Planning Project. The goal of the Central Everglades Planning Project is to develop an integrated, comprehensive technical plan, including the first increment of project features to be recommended for authorization, for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem.

The Everglades ecosystem encompasses a system of diverse wetland landscapes that are hydrologically and ecologically connected across more than 200 miles from north to south and across 18,000 square miles of southern Florida. In 2000, the U.S. Congress authorized the Federal government, in partnership with the State of Florida, to embark upon a multi-decade, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) to further protect and restore the remaining Everglades ecosystem while providing for other water-related needs of the region. CERP involves modification of the existing network of drainage canals and levees that make up the Central and Southern Florida Flood Control Project to restore the south Florida ecosystem.

Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Picayune Strand Restoration, the Indian River Lagoon South and Site 1 Impoundment projects. Project Implementation Reports have been completed, or are nearing completion, for the second generation of CERP projects for Congressional authorization, including Biscayne Bay Coastal Wetlands-Phase 1, the Broward County Water Preserve Areas, the Caloosahatchee River (C-43) West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. All of these CERP projects utilize lands that were acquired by the State and Federal government to meet CERP goals of increasing the extent of wetlands, reducing damaging freshwater discharges to the coastal estuaries, and reducing seepage losses from the natural system. These projects contribute significant ecological benefits to the system and the specific regional habitats in which they are located. These initial CERP projects were intended to provide initial and immediate ecological benefits and set the conditions along the margins of the system that help ensure increased water flows to the interior of the system will not cause adverse effects.

The next step for implementation of CERP is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park and Florida Bay. The Central Everglades Planning Project (Figure 1) will develop the initial increment of the project features that provide for storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3 and seepage management features to retain water within the natural system. The CERP Projects identified to accomplish this include the Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park Seepage Management, and Everglades Rain-Driven Operations. These projects make up the heart of CERP aimed at restoring more natural quantity, quality, timing and distribution of water flows to the remaining portions of the river of grass. An integrated study effort on these projects is needed to set the direction for the next decade of CERP implementation.

The Corps will hold a Public Workshop December 14 from 6:30 to 9:00 p.m. at the Sheraton Suites Plantation, Plantation I/II Room, 311 North University Drive, Plantation, Florida and December 15, 2011 from 6:30 to 9:00 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, Florida. The formal portion of the workshop will begin at 7:30 p.m. The Central Everglades Planning Project team will be available prior to and after the formal presentation to provide information and answer questions about the projects and development of a proposed plan. Interested attendees can call 904-232-1613 for Spanish translation or other special services.

We invite the participation of Federal and State agencies, Native American Tribes, local agencies, interested parties and individuals in providing comments and identifying any issues or concerns. Please share this notice with any interested party. Please send any comments you may have to the attention of Gina Paduano Ralph, Ph.D. (904-232-2336) at the letter head address or email gina.p.ralph@usace.army.mil no later than 30 days from the date of this letter. All individuals providing comments will be included in future mailings. Others may be added to the mailing list by making a written request (postcard) to the same address or by email.

Sincerely,

Stuart J. Appelbaum
Chief, Planning and Policy Division

Enclosure

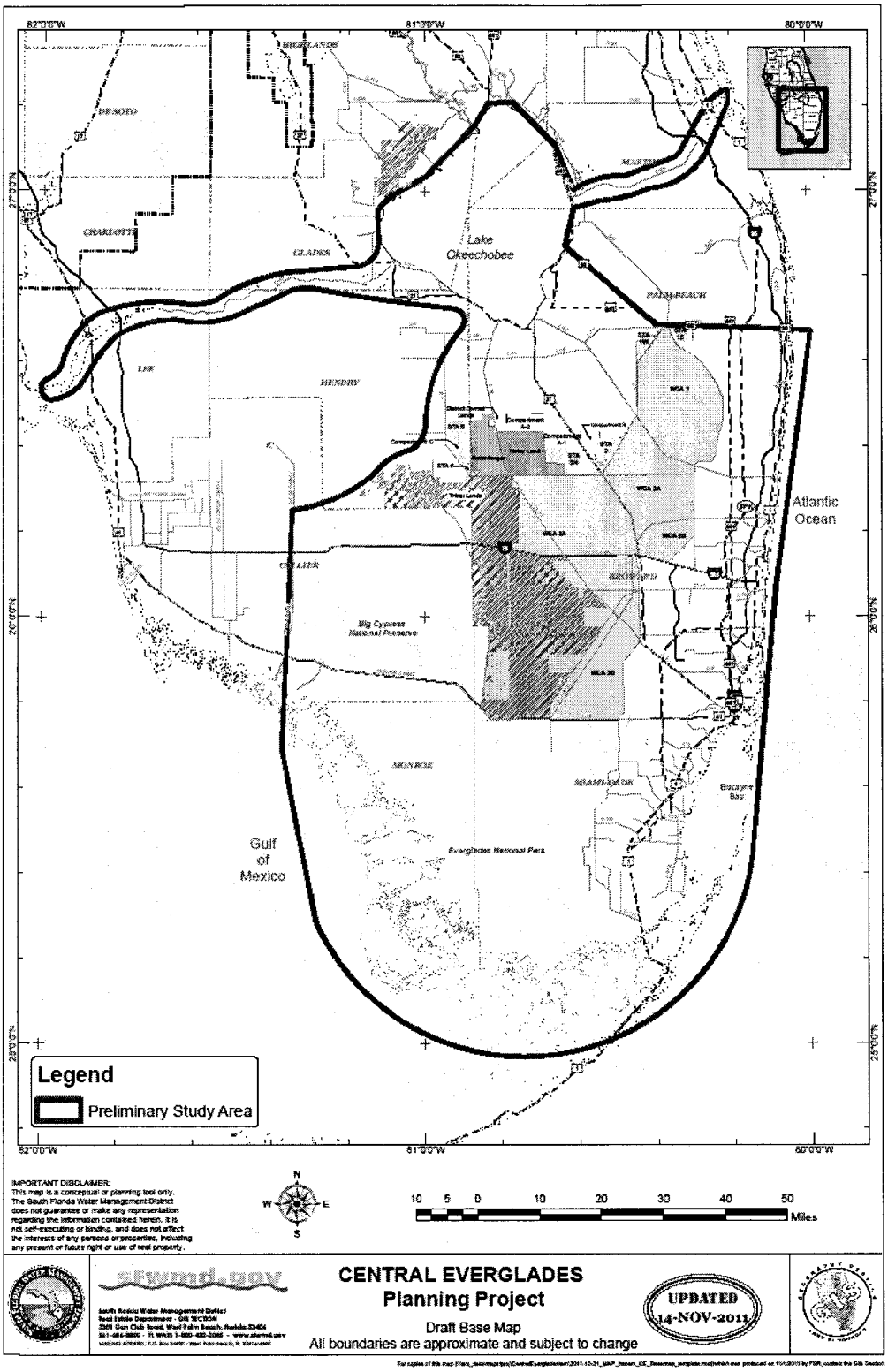

Figure 1. Central Everglades Planning Project Preliminary Study Area.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

DEC 07 2011

Planning and Policy Division
Environmental Branch

Honorable Colley Billie
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021, Tamiami Station
Miami, Florida 33144

Dear Chairman Billie:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Central Everglades Planning Project. The goal of the Central Everglades Planning Project would be to develop an integrated, comprehensive technical plan for the first increment of project features to be recommended for authorization for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem. The Corps respectfully requests to meet with you and your staff routinely throughout this planning process to ensure any issues or concerns the Tribe may have are identified and we receive your input regarding the development of this plan. Additionally, the Corps would also like to invite you or your designated staff to participate on the Project Delivery Team that will be conducting the technical analyses and evaluations in support of plan development and selection. I, along with select staff, would be pleased to meet with you to discuss Central Everglades Planning Project.

The Everglades ecosystem encompasses a system of diverse wetland landscapes that are hydrologically and ecologically connected across more than 200 miles from north to south and across 18,000 square miles of southern Florida. In 2000, the U.S. Congress authorized the Federal government, in partnership with the State of Florida, to embark upon a multi-decade, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) to further protect and restore the remaining Everglades ecosystem while providing for other water-related needs of the region. CERP involves modification of the existing network of drainage canals and levees that make up the Central and Southern Florida Flood Control Project.

Since 2000, much progress has been made. Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Picayune Strand Restoration, the Indian River Lagoon South and Site 1 Impoundment projects. Project Implementation Reports have been completed, or are nearing completion, for the second generation of CERP projects for Congressional authorization, including Biscayne Bay Coastal Wetlands – Phase 1, the Broward County Water Preserve Areas, the Caloosahatchee River (C-43) West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. All of these CERP projects utilize lands that were acquired by the State and Federal government to meet CERP goals of increasing the extent of wetlands, reducing damaging freshwater discharges to the coastal estuaries, and reducing seepage losses from the natural system. These projects contribute significant ecological benefits to the system and the specific regional habitats in which they are located. These initial CERP projects were intended to provide initial and immediate ecological benefits and set the conditions along the margins of the system that help ensure increased water flows to the interior of the system will not cause adverse effects.

The next step for implementation of CERP is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park and Florida Bay. The Central Everglades Planning Project (Figure 1) will develop the initial increment of project features that provide for storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3, and seepage management features to retain water within the natural system. The CERP projects identified to accomplish this include the Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park (ENP) Seepage Management, and Everglades Rain-Driven Operations. These projects make up the heart of CERP aimed at restoring more natural quantity, quality, timing and distribution of water flows to the remaining portions of the river of grass. An integrated study effort on these projects is needed to set the direction for continued CERP implementation.

The Corps will also hold a Public Workshop December 14 from 6:30 to 9:00 p.m. at the Sheraton Suites Plantation, Plantation I/II Room, 311 North University Drive, Plantation, Florida and December 15, 2011 from 6:30 to 9:00 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, Florida. The formal portion of the workshop will begin at 7:00 p.m. The CES team will be available prior to and after the formal presentation to provide information and answer questions about the projects and development of a proposed plan. Interested attendees can call 904-232-1613 for any special services.

We look forward to the opportunity to meet with you. Please contact Kim Taplin 561-801-0285 at your earliest convenience to schedule.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
12/07/11

Enclosure

Copy Furnished:

Bernie Roman, Miccosukee Tribal Attorney; PO Box 440021 Tamiami Station; Miami, Florida 33144
Fred Dayhoff, Section 106 and NAGPRA Consultant; PO Box 440021 Tamiami Station; Miami, Florida 33144
James Erskine, Water Resources Director; PO Box 440021 Tamiami Station; Miami, Florida 33144
Rory Feeney, Miccosukee Wildlife Director; PO Box 440021 Tamiami Station; Miami, Florida 33144
Terry Rice, Colonel (Ret'd), PhD, PE; Miccosukee Everglades Consultant; 6526 S Kanner Highway, PMB 316; Stuart, Florida 34997

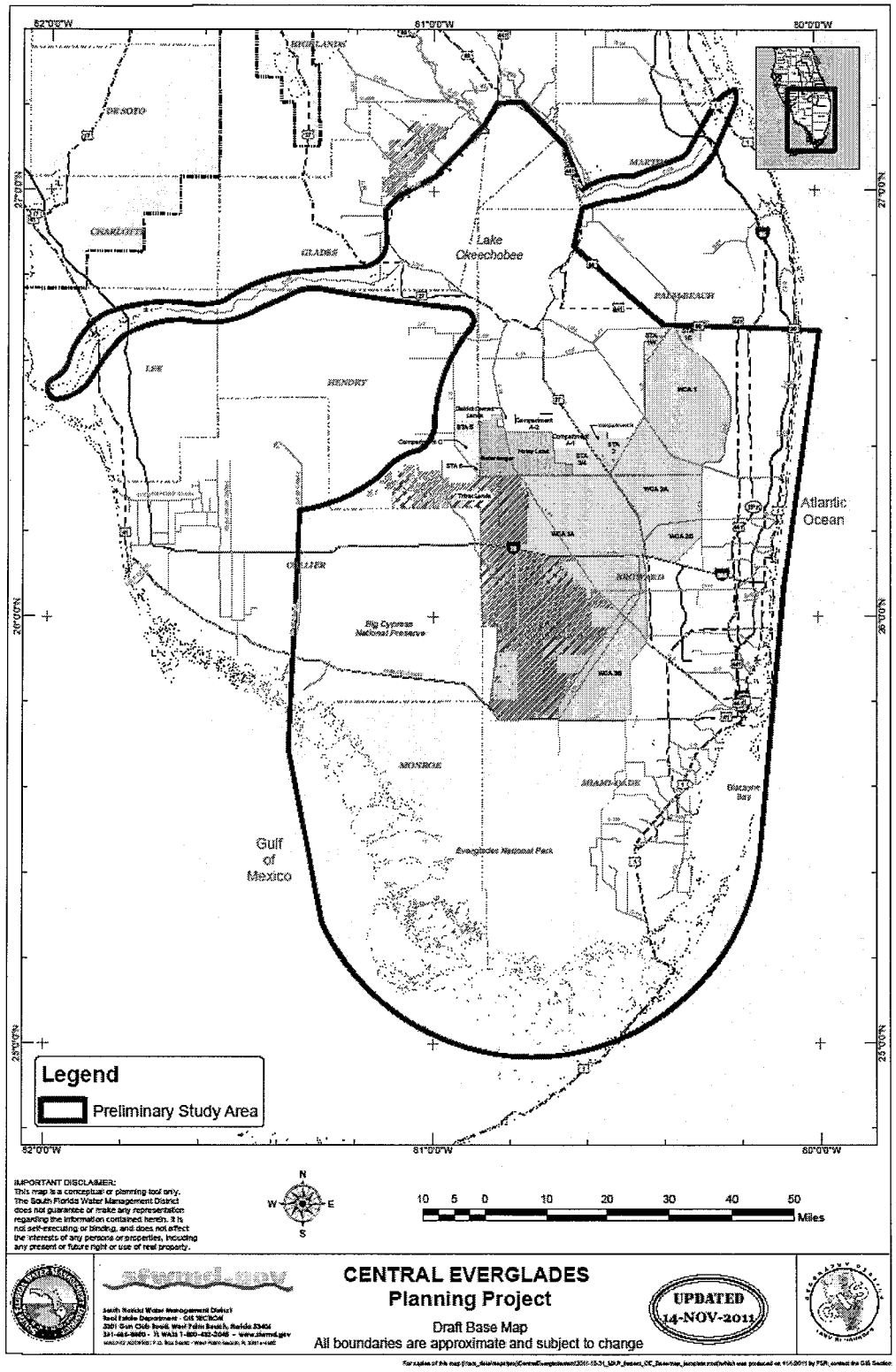

Figure 1. Central Everglades Planning Project Preliminary Study Area.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

DEC 07 2011

Planning and Policy Division
Environmental Branch

Honorable James Billie
Chairman, Seminole Tribe of Florida
6300 Stirling Boulevard
Hollywood, Florida 33024

Dear Chairman Billie:

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The Everglades ecosystem encompasses a system of diverse wetland landscapes that are hydrologically and ecologically connected across more than 200 miles from north to south and across 18,000 square miles of southern Florida. In 2000, the U.S. Congress authorized the Federal government, in partnership with the State of Florida, to embark upon a multi-decade, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) to further protect and restore the remaining Everglades ecosystem while providing for other water-related needs of the region. CERP involves modification of the existing network of drainage canals and levees that make up the Central and Southern Florida Flood Control Project.

Since 2000, much progress has been made. Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Picayune Strand Restoration, the Indian River Lagoon South and Site 1 Impoundment projects. Project Implementation Reports have been completed, or are nearing completion, for the second generation of CERP projects for Congressional authorization, including Biscayne Bay Coastal Wetlands – Phase 1, the Broward County Water Preserve Areas, the Caloosahatchee River (C-43) West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. All of these CERP projects utilize lands that were acquired by the State and Federal government to meet CERP goals of increasing the extent of wetlands, reducing damaging freshwater discharges to the coastal estuaries, and reducing seepage losses from the natural system. These projects contribute significant ecological benefits to the system and the specific regional habitats in which they are located. These initial CERP projects were intended to provide initial and immediate ecological benefits and set the conditions along the margins of the system that help ensure increased water flows to the interior of the system will not cause adverse effects.

The next step for implementation of CERP is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park and Florida Bay. The Central Everglades Planning Project (Figure 1) will develop the initial increment of project features that provide for storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3, and seepage management features to retain water within the natural system. The CERP components identified to accomplish this include the Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park (ENP) Seepage Management, and Everglades Rain-Driven Operations. These components make up the heart of CERP aimed at restoring more natural quantity, quality, timing and distribution of water flows to the remaining portions of the river of grass. An integrated study effort on these projects is needed to set the direction for the next decade of CERP implementation.

The Corps will also hold a Public Workshop December 14 from 6:30 to 9:00 p.m. at the Sheraton Suites Plantation, Plantation I/II Room, 311 North University Drive, Plantation, Florida and December 15, 2011 from 6:30 to 9:00 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, Florida. The formal portion of each workshop will begin at 7:00 p.m. The Central Everglades Planning Project team will be available prior to and after the formal presentation to provide information and answer questions about the projects and development of a proposed plan. Interested attendees can call 904-232-1613 for any special services.

We look forward to the opportunity to meet with you. Please contact Kim Taplin 561-801-0285 at your earliest convenience to schedule.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
12/17/14

Enclosure

Copy Furnished:

Craig Tepper, Director of Water Resource Management, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Jim Shore, General Counsel, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Willard Steele, Seminole Tribe of Florida, Tribal Historic Preservation Officer, 30290 Josie Billie Highway, PMP 1004, Clewiston, Florida 33440

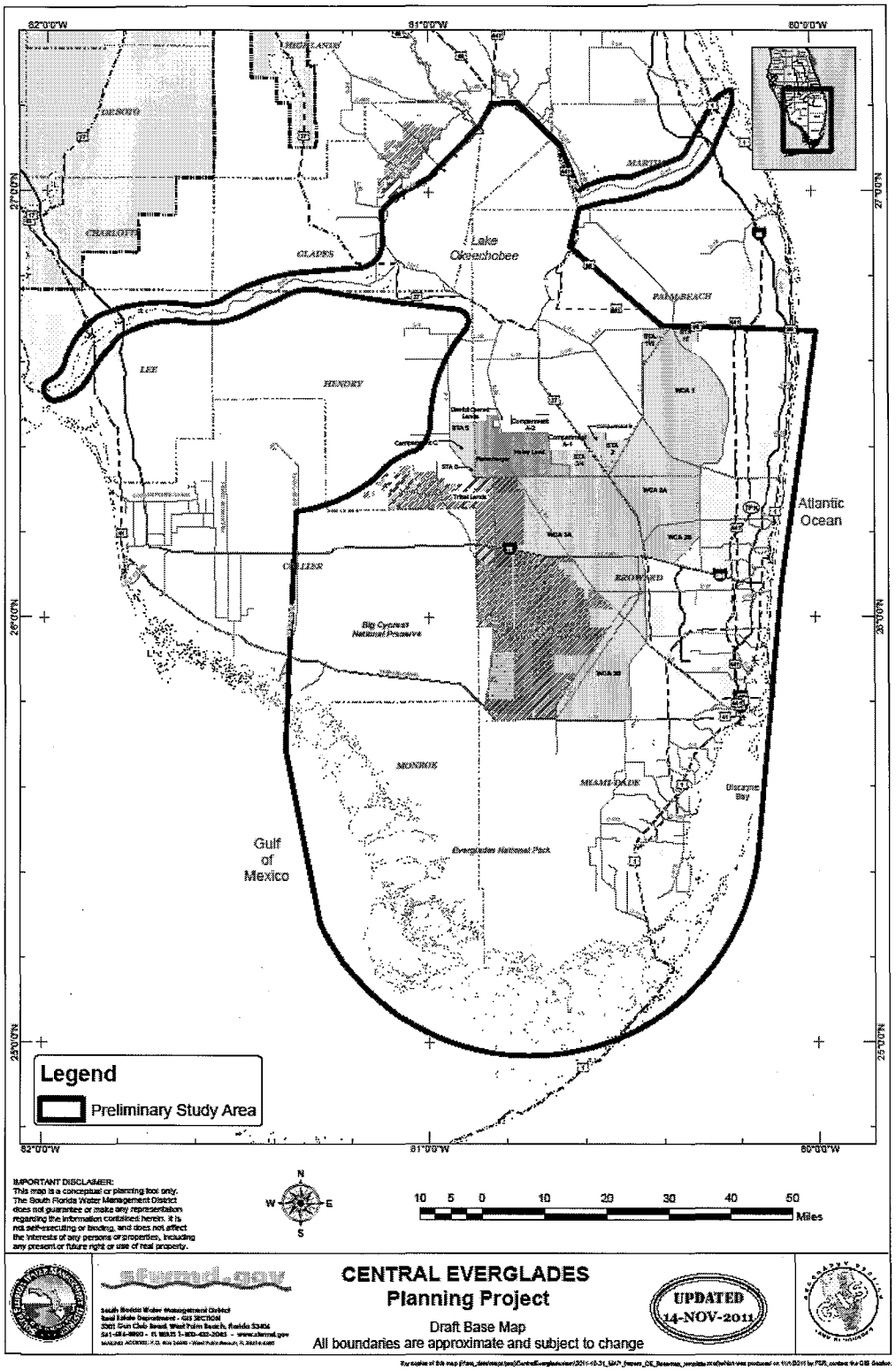

Figure 1. Central Everglades Planning Project Preliminary Study Area.

C.3.1.2 Notice of Intent

Dated: November 29, 2011.

Morgan F. Park,

Alternate OSD Federal Register Liaison Officer.

[FR Doc. 2011-30986 Filed 12-1-11; 8:45 am]

BILLING CODE 5001-06-P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Intent To Prepare an Environmental Impact Statement for the Central Everglades Planning Project, Okeechobee, Glades, Martin, Palm Beach, Broward, Miami-Dade and Monroe Counties, FL

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DOD.

ACTION: Notice of intent.

SUMMARY: The Everglades ecosystem encompasses a system of diverse wetland landscapes that are hydrologically and ecologically connected across more than 200 miles from north to south and across 18,000 square miles of southern Florida. In 2000, the U.S. Congress authorized the Federal government, in partnership with the State of Florida, to embark upon a multi-decade, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) to further protect and restore the remaining Everglades ecosystem while providing for other water-related needs of the region. CERP involves modification of the existing network of drainage canals and levees that make up the Central and Southern Florida Flood Control Project.

Since 2000, much progress has been made. Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Picayune Strand Restoration, the Indian River Lagoon South and Site 1 Impoundment projects. Project Implementation Reports have been completed, or are nearing completion, for the second generation of CERP projects for Congressional authorization, including Biscayne Bay Coastal Wetlands—Phase 1, the Broward County Water Preserve Areas, the Caloosahatchee River (C–43) West Basin Storage Reservoir, and the C–111 Spreader Canal Western Project. All of these CERP projects utilize lands that were acquired by the State and Federal government to meet CERP goals of increasing the extent of wetlands, reducing damaging freshwater discharges to the coastal estuaries, and reducing seepage losses from the natural system. These projects contribute significant ecological benefits to the system and the specific regional habitats in which they are located. These initial CERP projects were intended to provide initial and immediate ecological benefits and set the conditions along the margins of the system that help ensure increased water flows to the interior of the system will not cause adverse effects.

The next step for implementation of CERP is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park and Florida Bay. The Central Everglades Planning Project will develop the initial increment of project features that provide for storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3 and seepage management features to retain water within the natural system. The CERP projects identified to accomplish this include the Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park (ENP) Seepage Management, and Everglades Rain-Driven Operations. These projects make up the heart of CERP aimed at restoring more natural quantity, quality, timing and distribution of water flows to the remaining portions of the river of grass. An integrated study effort on these projects is needed to set the direction for the next decade of CERP implementation.

ADDRESSES: U.S. Army Corps of Engineers, Planning Division, Environmental Branch, P.O. Box 4970, Jacksonville, FL 32232–0019.

FOR FURTHER INFORMATION CONTACT: Dr. Gina Ralph at (904) 232–2336 or email at *Gina.P.Ralph@usace.army.mil.*

SUPPLEMENTARY INFORMATION:

a. The goal of the Central Everglades Planning Project effort would be to develop an integrated, comprehensive technical plan, including the first increment of projects, for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem.

b. A scoping letter will be used to invite comments from Federal, State, and local agencies, affected Indian Tribes, and other interested private organizations and individuals.

c. A scoping meeting will be held December 14, 2011 from 6:30 to 9 p.m. at the Sheraton Suites Plantation, Plantation I/II Room, 311 North University Drive, Plantation, Florida and December 15, 2011 from 6:30 to 9 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, FL. Assistance for individuals with special needs or language translation will be available as needed by calling (904) 232–1613.

d. All alternative plans will be reviewed under provisions of appropriate laws and regulations, including the Endangered Species Act, Fish and Wildlife Coordination Act, Clean Water Act, and Farmland Protection Policy Act.

e. The Draft Environmental Impact Assessment is expected to be available for public review in the 1st quarter of 2013.

Brenda S. Bowen,

Army Federal Register Liaison Officer.

[FR Doc. 2011-31010 Filed 12-1-11; 8:45 am]

BILLING CODE 3720-58-P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings #1

Take notice that the Commission received the following electric corporate filings:

Docket Numbers: EC12–38–000.

Applicants: TPW Petersburg, LLC, Gestamp Eolica S.L.

Description: Application of TPW Petersburg, LLC and Gestamp Eolica S.L. for Authorization Pursuant to Section 203 of the Federal Power Act and Request for Confidential Treatment, Expedited Consideration and Waivers.

Filed Date: 11/21/11.

Accession Number: 20111121–5279.

Comments Due: 5 p.m. ET 12/12/11.

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER11–4674–001.

Applicants: Midwest Independent Transmission System Operator, Inc.

Description: Vectren-IMPA FCA Amendment to be effective 9/29/2011.

Filed Date: 11/21/11.

Accession Number: 20111121–5193.

Comments Due: 5 p.m. ET 12/12/11.

Docket Numbers: ER12–351–001.

Applicants: Midwest Independent Transmission System Operator, Inc.

Description: 11–21–11 MRES Attachment O, GG, and MM Amendment to be effective 1/1/2012.

Filed Date: 11/21/11.

Accession Number: 20111121–5234.

C.3.1.3 NEPA Scoping Comment Response Matrix

Table C.3.1-1. CEPP NEPA Scoping Comment Response Matrix

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
FEDERAL		
UNITED STATES FISH AND WILDLIFE SERVICE (FWS)		
FWS-1	While the Service [FWS] fully supports this effort and approach, it is necessary to point out that there are many restoration opportunities within the Central Everglades that would not be captured by simply undertaking the three specific projects suggested: EAA [Everglades Agricultural Area] storage component, DECOMP [WCA-3 Decompartmentalization and Sheetflow Enhancement] of PIR1 [Project Implementation Report] Project; and ESM [Everglades Seepage Management] Project. ▪ Primarily, the reconnection of WCA-3B [Water Conservation Area 3B] as a flow-through system connecting WCA-3A to ENP [Everglades National Park] is the most critical part of Everglades restoration remaining to be planned. The Service suggests, and will provide alternative scenarios, that this critical element be made a core component of CEPP. ▪ Additional opportunities that should be included in CEPP are the relaxation of the G-3273 constraint, integration of the S-356 pump station to control seepage in the L-30 and L-31N canals, and expansion of the S-333 structure to allow greater flow out of the ponded areas in WCA-3A into Northeast Shark River Slough [NESRS]. ▪ Also, if the Combined Operational Plan is going to be delayed or absorbed into CEPP then an operational plan that utilizes the newly constructed 1-mile bridge should be incorporated. ▪ Other opportunities include defining environmental water regulation	The Corps supports reconnecting WCA-3B as a functioning component of the Everglades ecosystem. Alternatives to accomplish this will be evaluated within CEPP. The CEPP alternatives will include operational changes to the L-29 canal stages, along with opportunities for delivering additional water to Everglades National Park (ENP). All Modified Water Deliveries (MWD) to ENP Project components currently constructed or under construction will be included within CEPP planning process. Under a separate effort, the Corps plans to move forward with a field test for relaxation of the G-3273 restraint, with a goal of increasing and/or removing the G-3273 stage constraint to increase water deliveries from WCA-3A to ENP through Northeast Shark River Slough (NESRS) for the benefit of natural resources. This test will include use of the S-356 pump station. Also under a separate effort, the Corps will formulate an operational plan that utilizes the newly constructed 1-mile bridge. Rain driven operations will also be examined as part of CEPP in order to improve water deliveries into the Everglades Protection Area and ENP to restore more natural hydrologic conditions. Due to high rates of seepage, a regulation schedule is currently not utilized for WCA-3B, as it is an impounded area whose water management function is to reduce seepage from WCA-3A to the east.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	schedules for WCAs 2 and 3B and refining the schedule for 3A.	Operational criteria for WCA-3B will be reviewed within CEPP. A revised regulation schedule for WCA-2 will not be included in CEPP.
FWS-2	…as quickly as possible, determine the size and type of available storage and treatment areas in the EAA to help guide the team in formulating downstream project features. There is a considerable speculation as to the amount of water that the project will deliver south which is entirely predicated on the amount of storage and treatment available in the EAA. The Corps should notify the Service regarding the best time to provide important information regarding the design and detailed operations of stormwater treatment areas and storage reservoirs and their effects on listed species, migratory birds, and other wildlife resources.	The Corps concurs with this statement and is currently developing management measures and screening criteria to determine the size and type of storage and treatment features within the EAA. The Corps will continue to coordinate with FWS throughout CEPP process.
FWS-3	The Service does not feel that a completed seepage management project, without the delivery of additional water for the environment, constitutes a valid restoration project.	The formulation of CEPP components will incorporate a "systems thinking approach" to ensure compatibility with the Comprehensive Everglades Restoration Plan (CERP) and any potential future updates to restoration goals and targets. This will also highlight the interdependency of CERP components targeting restoration in the Central Everglades study area. A holistic system is any set (or grouping) of interdependent or temporally interacting parts. These parts are generally systems themselves and are composed of other parts (i.e. management measures and components). Systems thinking emphasizes the linkages and interactions between the parts that compose the entirety of a complex system. A common way to understand a complex system is to evaluate the system by analyzing the parts composing that system. Yet, focusing solely on management measures or

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		components in isolation could potentially lead to a disconnection between the function of the management measures and components and the functionality of the entire system. Systems thinking incorporates the examination of measures by themselves (similar to traditional Project Implementation Reports) and the synthesis of these parts. The CEPP plan formulation strategy will emphasize the interdependency of the components and articulate the strategy for maximizing their compatibility into a system, while incorporating design that is flexible and amenable to change.
FWS-4	A project feature that should not be considered during the CEPP is further modification of the S-12 structures closure regime for protection of the Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*). Once the Everglades Restoration Transition Plan (ERTP) is authorized (Record of Decision scheduled late February 2012) the S-12 closure regime will be relaxed due to the addition of year-round operational capability at S-12C. With the additional "untested" risk to the Cape Sable seaside sparrow subpopulation A and its habitat from ERTP operations, the Service strongly recommends that restoration become more focused on shifting flow eastward towards the original flow path of WCA 3B to NESRS. No further management changes to the S-12s should be considered until more flow has been restored into northeastern ENP.	As part of the Corps plan formulation and National Environmental Policy Act (NEPA) assessment process, system-wide benefits and impacts of each alternative will be analyzed and compared in order to select a recommended plan.
FWS-5	An area of concern regarding the expedited process is how PDT [Project Delivery Team] meetings are being conducted. As we approach the 3-month mark there have only been two PDT meetings. These were conducted as short (~3 hour) meetings prior to public workshops. Dialogue among PDT members and between the team and project management regarding critical	The initial phase of the process was focused on scoping. This is essentially development of the scope of the effort and development of the Project Management Plan (PMP). The PMP is the document of activities and funding required to conduct the study and is developed primarily between the Corps and the Non-Federal sponsor, SFWMD.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	project planning elements was restricted. Draft language, such as project objectives, on which the PDT members were asked to comment, was not shared prior to the meeting. The Service suggests that the Corps and SFWMD [South Florida Water Management District] convene a PDT meeting in the style previously used during CERP to discuss critical project elements as soon as possible.	During this phase we conducted two PDT meetings and two NEPA public workshops to gather input about the study scope. Now that the Corps has received approval to enter into the execution phase, the PDT will meet regularly to discuss all aspects of the study during the process. Due to the expedited schedule, the Corps does not anticipate having read-aheads prior to PDT meetings. However, all materials will be made available to participants after the meetings.
FWS-6	The Service encourages the Corps and SFWMD to seek out and use available ecological planning tools to help to ensure that evaluations include both hydrologic and ecologic information. Consideration should be given to ecological planning tools in Florida Bay and Biscayne Bay as well as Greater Everglades.	The Corps concurs with this statement and has requested for full participation from our DOI partners with respect to utilization of current DOI ecological planning tools for assistance in determining potential ecological impacts of the CEPP alternatives. Ecological planning tools currently under consideration include the Cape Sable Seaside Sparrow Model, the Everglades Landscape Vegetation Succession Model (ELVes), the Apple Snail Population Model, and Prey Based Freshwater Fish Density Model. In order to be included within CEPP, however, all planning tools will need to undergo the appropriate level of Corps review and certification process.
FWS-7	The Service recommends that development of an adaptive management plan occur in conjunction with the CEPP planning process.	The Corps concurs with this statement and in accordance with the 2011 CERP Adaptive Management Integration Guide; an adaptive management plan will be developed and included in CEPP Project Implementation Report (PIR) and Environmental Impact Statement (EIS).
FWS-8	The Corps and SFWMD project managers should refine the scope and study area to more precisely fit the first increment of the CEPP as soon as possible. This will allow the team to refine the objectives and identify PMs [Performance Measures] and model applications that will be useful in determining project benefits.	The study area for CEPP encompasses the Northern Estuaries (St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary), Lake Okeechobee, a portion of the EAA, the Water Conservation Areas, ENP, the Southern Estuaries (Florida Bay and Biscayne Bay), and the Lower

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		East Coast (LEC). As CEPP plan formulation progresses, refinements to the original scope and study area as stated in the Corps NEPA scoping letter dated November 23, 2011 are anticipated.
FWS-9	Specific comments on the draft project objectives are as follows: ▪ "Reduce water loss out of the natural system..." We assume that this is referring to seepage loss since the Seepage Management project was identified as a core component of CEPP but it is not clear. It may refer to the loss of freshwater to tide. The seepage component is not primarily for wildlife benefit but for flood protection and the objective should reflect this. Please clarify this objective. ▪ "Restore more natural water level responses to rainfall predicted by project modeling..." This needs to be reworded or better explained. Does this imply that the model predicts rainfall? We assume the desire is to have the system respond more naturally to rainfall patterns. ▪ "Increase oyster habitat and seagrass populations in the Northern Estuaries by reducing salinity fluctuations from freshwater regulatory pulse discharges." There is a misconception contained within this objective that by reducing salinity fluctuations you increase oyster and seagrass habitats. This is not the case as additional management actions are needed for this to occur. The Service also suggests this objective be reworded to include the restoration of the overall ecological function of the estuaries as measured by oyster and sea-grass populations. Detailed questions regarding this objective are as follow: • What is meant by	The project objectives have been revised since the NEPA scoping letter was mailed in November 2011. ▪ The reduce water loss in the quoted text refers to seepage losses, not discharges to the northern estuaries. However, another objective of CEPP is to reduce damaging discharges to the Northern Estuaries. ▪ The phrase "predicted by rainfall" was removed from the objective. The desire is for the system to respond more naturally to rainfall patterns. ▪ The objective has been revised to "Reduce high volume discharges from Lake Okeechobee to improve the quality of oyster and SAV [submerged aquatic vegetation] habitat in the northern estuaries." The team has not fully established methods to analyze changes to the northern estuaries, beyond using the RECOVER performance measures that assesses salinity envelopes in the St. Lucie and Caloosahatchee estuaries based on discharges from Lake Okeechobee. The CEPP team intends to work with agency biologists and RECOVER to identify performance metrics to address these types of questions.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	seagrass population, species composition, density, acreage increase, etc? • Is Vallisneria included under seagrass since it is an important component of the Caloosahatchee River restoration? • Which Northern Estuaries will the CEPP improve (St. Lucie, Caloosahatchee, etc.)? • Will muck removal in estuaries or addition of artificial substrates (oyster cultch) be included in the Management Measures as part of the CEPP to claim maximum ecological benefits for Northern Estuaries oyster and seagrass health and abundance?	
FWS-10	Concerns we have at this point are whether the RECOVER approved and vetted PMs previously used in CERP can be modified to use RSM [Regional Simulation Model] output.	The majority of the CEPP identified RECOVER approved PMs have already been utilized with RSM output during the CERP DECOMP Phase 1 project. Any RECOVER approved PMs identified for use by CEPP that do not currently work with RSM output will be modified by the CEPP team and verification testing demonstrating reasonable outcomes (e.g. compared to South Florida Water Management Model outputs) will be available for review.
FWS-11	Also of concern is how output from the additional ecological tools will be used to formulate alternatives to optimize benefits for natural resources throughout the system. The Service recommends that conclusions and recommendations drawn from these specialized tools be considered between alternative runs to make the next iteration more beneficial for natural resources.	The Corps has requested full participation from our DOI partners with respect to utilization of current DOI ecological planning tools for assistance in determining potential ecological impacts and refining CEPP alternatives. In order to be included within CEPP, however, all planning tools will need to undergo the appropriate level of Corps review and certification process.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
FWS-12	There are some concerns with using the RESOPS model in conjunction with the Regional Simulation Model — Glades Lower Ease Coast Service Area (RSM-Glades LECSA) model. RSM-Glades LECSA is a daily time-step model that will be using output from RESOPS which utilizes a monthly time-step. This will automatically create inherent errors in the model results.	The RESOPS model will only be utilized during screening model application to CEPP. All final array alternatives will be run with the RSM Basins and RSM Glades LESCA models, both of which are daily time-step models capable of exchanging boundary conditions at a consistent temporal scale. The modeling tools for CEPP will be used for relative comparison. Extensive numerical analysis to reduce qualitative or quantitative uncertainties will not be conducted. Levels and degrees of uncertainties are recognizably inherent to the planning process. Some uncertainty will be addressed in cost contingencies which will help to account for uncertainty in the modeling tools and the expedited planning process.
FWS-13	A similar concern exists for the RSM Glades-LECSA model which simulates hydrology within 1-square mile grid cells without providing individual gauge data. Since the Corps and SFWMD water management sections base their management actions on individual gauge data as the Service bases its nondiscretionary terms and conditions on gauge data, a cross-walk between simulated hydrology across a large area to that at specific gauges will be needed. The hydrologic effects of the proposed action at key gauge sites identified by the Service during this and previous consultations should be provided.	While the RSM is a regional scale hydrologic model and results should be interpreted as such, the model does generate information for gauge locations and this information will be used in CEPP. Through review of RSM calibration results, it is possible to identify differences in the modeled representation of gauges of interest and the observed field responses.
FWS-14	L-29 levee concerns have presented a human health and safety constraint in WCA-3A, thus a levee assessment with flood event modeling will likely become necessary especially since more water is predicted to move south though the system into WCA-3A.	Based on the results of a preliminary Phase 1 review and analysis, as documented in the December 2011 ERTP Final EIS, the Corps determined the current configuration of WCA-3A would result in a predicted increase in the Standard Protective Flood (SPF) stage for WCA-3A of between 1.3 and 1.4 feet, due primarily to a reduced outlet capacity from the S-12s

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		compared to design assumptions. This significant change to the original design assumptions, with the additional diminished extent of emergent vegetation within WCA-3A, led the Corps to identify WCA-3A high water stages as a potential cause for concern. Although the preliminary analysis does not provide a quantifiable risk assessment, the hydrologic insights gained from the analysis made it prudent for the Corps to recommend the lowering Zone A of the WCA-3A Regulation Schedule as an interim risk reduction measure. The ERTP analysis did not identify a human health and safety constraint in WCA-3A. CEPP would conduct preliminary levee safety screening by looking at stages based on the Period of Record (POR) output from RSM; this screening level assessment would be contained in the CEPP PIR, consistent with the POR-based Savings Clause assessment of levels of service for flood protection within the LEC. Design Storm/SPF analyses (levee design criteria) would be conducted, if warranted, during the preconstruction engineering design (PED) phase of CEPP. Appropriate resources, scope and analysis tools have not been identified at this time. Once the existing conditions baseline and Future Without (FWO) modeling is done, CEPP team should know the levee safety screening baseline conditions for WCA-3A, WCA-3B, and ENP. If water levels within the natural areas increase under CEPP during POR high water events, further evaluation of potential effects on the levee design criteria in the affected areas would likely be needed (depending on the upstream storage components and WCA-3B conveyance, water levels in WCA-3A may not increase) in PED.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		During PED, the Corps would look at options to maintain benefits and not increase levee modification costs (i.e. levee redesign, construction or mitigation).
FWS-15	The planning team should evaluate available tools and information that can be used to assess future impacts of climate change including sea level rise and changes in urbanization (which may affect water supply).	A sea level rise evaluation will be conducted on the tentatively selected plan (TSP), using a static scenario based geographic conformations system (GIS) sea level rise mapping effort similar to previous CERP PIRs. The future conditions for the CEPP planning effort holds consumptive use (i.e. water supply) fixed at current levels due to state-rulemaking.
TRIBAL		
MICCOSUKEE TRIBE (M-TRIBE)		
M-TRIBE-1	**EIS [Environmental Impact Statement] Required:** CEPP formulation and implementation will have a "significant impact on the human environment." Therefore, the document that is required to be prepared by the Corps under the National Environmental Policy Act ("NEPA") must be an Environmental Impact Statement ("EIS") rather than an Environmental Assessment ("EA").	An EIS will be prepared for CEPP in accordance with NEPA.
M-TRIBE-2	**All Applicable Law Must be Followed.**	As with all Corps' projects, CEPP will be planned and implemented in accordance with all applicable laws.
M-TRIBE-3	**ERTP [Everglades Restoration Transition Plan], Not IOP [Interim Operational Plan for protection of the Cape Sable Seaside Sparrow], Should be the Base Condition:** The Corps concluded in the Final Environmental Impact Statement (FEIS) on the Everglades Restoration Transition Plan that "IOP is no longer a viable option" for water management within WCA-3A and the South Dade Conveyance System." ERTP FEIS at xiii. The Corps argued when it stopped using the Test 7 operational plan as a base condition in the EIS process that it could no longer be used because it was contrary to the ESA [Endangered Species	The CEPP existing condition has been defined as conditions existing as of January 27, 2011. As the Record of Decision for ERTP is not expected until June 2012, 2006 IOP will serve as the CEPP existing conditions. Upon ERTP Record of Decision, ERTP will serve as the future without project condition.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	Act]. Similarly here, the Corps cannot rely on IOP as the base condition for CEPP in the NEPA process, because it is not viable. In addition, the ERTP should be replacing IOP in the very near future and prior to any NEPA document being produced.	
M-TRIBE-4	**Ensure No Adverse Impacts to the Miccosukee Tribe Culture and Cultural Resources: The Corps must perform a comprehensive review of all potential adverse impacts of all proposed actions under the CEPP on the Miccosukee Tribe's Culture and Cultural Resources in the action area, which includes WCA-3 and the Park [Everglades National Park, ENP], and ensure that any adverse impacts are eliminated prior to implementation of the selected alternative. Certainly, the assurance of the "health and safety" of the Tribe must be paramount.**	The Corps is currently in consultation with both Tribes and State Historic Preservation Office to develop methods to perform any inventories required under NEPA and Section 106 and an initial review of potential impacts to cultural resources. The Corps considers public health and safety as its highest priority, and WCA-3A will continue to be managed by the Corps in accordance with this priority.
M-TRIBE-5	**Must Produce Benefits for Tribal Lands in WCA 3A:** The CEPP process should incorporate a revised WCA-3A regulation schedule targeted at the restoration of the entire central Everglades that incorporates a multispecies management approach building upon what was achieved with the ERTP and hopefully will be achieved under COP [Combined Operational Plan].	Modifications to the WCA-3A Regulation Schedule, including rain-driven operations, will be examined as part of CEPP in order to improve water deliveries into the Everglades Protection Area and ENP and to restore more natural hydrologic conditions. The CEPP will include a multispecies approach to water management.
M-TRIBE-6	**CEPP Must Decrease WCA 3A Flooding: CEPP must reduce damaging high water levels in WCA 3A even more than the proposed ERTP and the anticipated COP. So-called "new science," which in many cases is old science that has been discarded, must not be misused as an excuse to drown the Tribal Everglades to provide more water to the Park downstream.**	Restoration of more natural water flows, water levels and habitat conditions within WCA-3A is an important focus of CEPP. One objective of CEPP is to restore seasonal hydroperiods and freshwater distribution to support a natural mosaic of wetland and upland habitat in the Everglades system. Tree islands support a diverse array of upland (land-requiring) species and are an important focus of Everglades restoration. By restoring appropriate hydrologic conditions, tree islands and other short hydroperiod environments (e.g. marl prairie) will be restored and thereby provide suitable habitat for both wetland and upland species.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
M-TRIBE-7	**<u>Health and Safety Must Be a Priority:</u> any CEPP water management actions that may impact water levels in WCA-3 must account for specific flood stage of the L-29 levee system as detailed in the US Army Corps of Engineers 2011 General Design Memorandum for WCA-3A. Finally, any safety studies that have been, or are being, conducted on the L-31 levee and the Lake Okeechobee dike must also be taken into account. Health and safety of the Miccosukee Tribe, and the public, must be the top priority in the CEPP process.**	The Corps considers public health and safety as its highest priority. The CEPP would conduct preliminary levee safety screening by looking at stages based on the POR output from RSM; this screening level assessment would be contained in the CEPP PIR, consistent with the POR-based Savings Clause assessment of levels of service for flood protection within the LEC. Design Storm/SPF analyses (levee design criteria) would be conducted, if warranted, during the PED phase of CEPP. Appropriate resources, scope, and analysis tools have not been identified at the current time. Once existing conditions baseline and FWO modeling is done, CEPP team should know the levee safety screening baseline conditions for WCA-3A, WCA-3B, and ENP. If water levels within the natural areas increase under CEPP during POR high water events, further evaluation of potential effects on the levee design criteria in the affected areas would likely be needed (depending on the upstream storage components and WCA-3B conveyance, water levels in WCA-3A may not increase) in PED. During PED, the Corps would look at options to maintain benefits and not increase levee modification costs (i.e. levee redesign, construction or mitigation).
M-TRIBE-8	**<u>CEPP Must Incorporate Storage As a Priority:</u>** Incorporating storage facilities must be a central component of the CEPP and should be scheduled for construction and implementation early in the sequencing process. **Constructing storage at the soonest must be a priority if CEPP is to succeed.**	The Corps concurs with this statement and is currently developing management measures and screening criteria to determine the size and type of storage and treatment features within the EAA.
M-TRIBE-9	**<u>Rehydrate Only with Clean Water to Protect Northern WCA-3A and WCA-3B:</u> In general, CEPP should never permit rehydration with dirty water and should always strive for natural flows and levels**	The Corps concurs that water that does not meet water quality standards should be avoided to the maximum extent practicable for rehydration of unnaturally dried out areas. As part of

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	to the greatest extent practicable.	the Corps plan formulation and NEPA assessment process, system-wide benefits and impacts of each alternative will be analyzed and compared in order to select a recommended plan.
M-TRIBE-10	**CEPP Must Incorporate Solutions to Stop Western Basins Pollution:** Recent data from the 2011 South Florida Environmental Report shows that the combined discharge from the S-140 and S-190 water control structures comprised nearly 30% of the total phosphorus load discharged to WCA-3A. The Central Everglades Planning Process is the time to initiate the long overdue planning process for the CERP [Comprehensive Everglades Restoration Plan] Big Cypress- L-28 Interceptor Modifications and provide a solution for the devastating discharges from the L-28 Interceptor Canal and the S-140 water control structure.	The CEPP Project Team will coordinate with the implementing agencies on efforts to improve water quality in the Western Basins and the Seminole Tribes' Water Conservation Plan (Critical Project).
M-TRIBE-11	**No More Dirty Water, No Rehydration with Dirty Water, & No Use of WCAs As *De Facto* STAs [stormwater treatment areas]: ...the Tribe does and will not support a CEPP that 1) increases the amount of dirty water brought into the Everglades Protection Area, or 2) restores flows to the Everglades Protection Area with dirty water, until the restoration water meets the 10 ppb P [phosphorus] criterion mandated by the Clean Water Act. Even more, Tribal land will not be utilized as an STA. The 10 ppb P criterion must be a major performance measure in CEPP and water quality must be thoroughly analyzed and evaluated in the CEPP process.**	The CEPP will formulate appropriate water quality treatment facilities needed to ensure any new water moving into the everglades will meet the required 10 parts per billion (ppb) long-term geometric mean.
M-TRIBE-12	**No Trade-Offs Permitted:** ..."trade-offs between water quality and water quantity" which opens the door wide for those who would destroy one part of the Everglades for the benefit of another. At the heart of this is the utilization of vast areas of the Everglades (both WCAs and Tribal Land) as *de facto* STAs in the restoration process. The Tribe is concerned that under the guise	As part of the Corps plan formulation and NEPA assessment process, system-wide benefits and impacts of each alternative will be analyzed and compared in order to select a recommended plan.

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	of "new science" some will attempt to use the CEPP process to seek a plan that forces large volumes of water through some areas, like WCA-3A, for the possible benefit of some areas, like the Park to the south. **CEPP must endorse as a guiding principle that no area of the Everglades will be destroyed/sacrificed for the benefit of another area of the Everglades by planned CERP projects, or for that matter, any proposed project.**	
M-TRIBE-13	**CEPP Must Not Delay Already Delayed MWD [Modified Water Deliveries to Everglades National Park] Project Components:** The Tribe is concerned that some will attempt to delay important aspects of this project by incorporating them into the CEPP, which may never be authorized. The Tribe will be opposed to any attempt to do so. **Completion and implementation of the MWD Project must be a pre-condition to the CEPP and a "without project condition" under NEPA.**	For planning purposes, the MWD project will be assumed to be complete based upon those features already completed and those features currently under construction. This planning assumption is predicated upon the Corps, in consultation with DOI, first making a determination that the expected benefits for the MWD project have been achieved.
M-TRIBE-14	**Decompartmentalization of WCA-3:** plans for the Decompartmentalization [DECOMP] of WCA-3 should incorporate more than the hydrologic modification features proposed for north of I-75 by the DECOMP PDT [Project Delivery Team]. When incorporating the Decompartmentalization of WCA-3 into the CEPP all of the canals in the L-28 system should be considered for removal in addition to the entire Miami canal and L-67 canal system to truly provide restoration of the "Central Everglades." As the Decompartmentalization of WCA 3 progresses, careful and consistent consultation with the Tribe should take place to ensure that the cultural meeting places of the Miccosukee people and Tribal camps are not adversely affected.	The CEPP will build upon DECOMP project components and will examine an array of management measures for decompartmentalization of WCA-3A.
M-TRIBE-15	**Analyze Expanding the Capacity of S-333:** All water that the Park desires for rehydration of Northeast Shark River Slough cannot flow through WCA-3B without causing significant irreversible destruction. As much water as is naturally	The Corps supports reconnecting WCA-3B as a functioning component of the Everglades ecosystem. Opportunities for increased conveyance into WCA-3B and NESRS will be explored under CEPP.

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	possible should be funneled through WCA-3B, and, if more is available to satisfy the desires of the Park, than it should be provided via S-333, at least until the CERP eastern rehydration projects are completed. In order to provide this additional water, the capacity of S-333 should be increased. It is only prudent to finally increase the size of S-333 in order to ensure the Park can receive higher volumes of water at a faster rate that it claims it needs.	
M-TRIBE-16	**8.5 Square Mile Area [SMA] Must Be Protected:** The Corps must ensure the people of the 8.5 SMA are afforded the protection they are authorized, and must not let another 8.5 SMA debate paralyze the restoration process and stop the CEPP from being implemented.	The Corps concurs with this statement. Flood mitigation will be provided to the 8.5 SMA in accordance with the 2000 MWD 8.5 SMA Record-of-Decision (ROD).
M-TRIBE-17	**CEPP Transitional Plan is Essential:** There remain several components of both the MWD and C-111 projects that must be formulated, designed and constructed. These components will not all be completed at the same time; it will take years for all to be completed. Similarly, the components of the different projects that will constitute the CEPP to deliver what the Corps refer to as "incremental" restoration will also come on line at different times. Thus, the **CEPP should contain a transitional plan that implements beneficial operational changes once each new component of the Pre-CERP and CERP projects is completed.**	Once the TSP is selected, the PDT will develop an implementation plan. The implementation plan for the CEPP TSP will recognize that time will be required to receive funds and complete construction of CEPP features. The implementation plan will consider whether certain features could be "partially operated" to achieve benefits while the remaining CEPP features are still under construction.
M-TRIBE-18	**No Operation of the S-356 Pump Station:** The Miccosukee Tribe will not support the operation of the S-356 pump station as a component of CEPP. There are three primary reasons: 1) water quality issues exist which have not been adequately addressed…2) the net result of the use of S-356 is pumping water in a circle…and 3) most important to the Tribe, the pumping into the L-29 Canal from S-356 reduces the flow through S-333 into the L-29, and, thus results in higher water in WCA-3A and	The S-356 pump station is an authorized and constructed feature of the MWD project, designed to mitigate for the additional seepage from ENP/WCA-3B caused by implementation of MWD. S-356 provides a means of controlling additional inflows to L-31 borrow canal caused by the increased seepage into the canal resulting from MWD implementation.

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	Tribal land. This latter consequence of S-356 utilization results in adverse impacts to Tribal lands in WCA-3A and the endangered snail kite and its critical habitat. **The S-356 pump station has no redeeming value at this point, and probably never will, and it certainly should be eliminated from consideration in the formulation of CEPP.**	The CEPP will also focus on additional management measures to control seepage within the project area.
M-TRIBE-19	**Address Seepage Control As A Critical Requirement:** Seepage out of Northeast Shark River Slough in ENP remains a huge impediment to restoration. Simply and directly stated, the restoration of ENP and the entire Everglades cannot be achieved until the seepage between S-335 and G-211 is adequately managed. **CEPP must recognize this debilitating seepage limitation and be formulated to appropriately account for it.**	Seepage management is a primary CEPP focus.
M-TRIBE-21	**1-Mile Eastern Bridge Should Be Plugged:** …given the facts that additional flows into Northeast Shark River Slough are severely limited by seepage into the L-31 Canal, and that the 1-Mile Eastern Bridge that is now being constructed will concentrate current and additional flows on the eastern side of the Park, it is clear that the bridge should not be utilized until the seepage challenge is met. **The opening under the ridge should either 1) remain blocked by leaving the existing Tamiami Trail in place, or 2) be blocked by fill, sheet pile, or some other technique, until the seepage challenge is appropriately met, thus forcing more of the flow to the west in Shark River Slough where seepage is much less of an issue.**	The Corps concurs that seepage management concerns will need to be further evaluated and addressed as necessary prior to raising the L-29 operational limit to 8.5 feet NGVD following completion of the Tamiami Trail modifications. The S-356 pump station is an authorized and constructed feature of the MWD project, designed to mitigate for the additional seepage from ENP/WCA-3B caused by implementation of MWD. S-356 provides a means of controlling additional inflows to L-31 borrow canal caused by the increased seepage into the canal resulting from MWD implementation.
M-TRIBE-22	**Reduce/Eliminate the "Big Red Arrow":** The "Big Red Arrow", i.e. the arrow depicted on water budget schematics depicting the huge amounts of water forced south out of the L-31N Canal into the area of Homestead and vicinity since the enlargement of the L-31N in the early 1980s, must be reduced to the maximum extent practicable. If not, beyond the level	The Corps concurs that CEPP has the potential to exacerbate the inter-basin transfer of water from the ENP NESRS basin to both the adjacent Miami-Dade area and the C-111 basin, consistent with insights from prior CSOP stakeholder input and CSOP alternative evaluations. As part of the Corps plan formulation and NEPA assessment

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	of protection authorized by Congress, and clearly CEPP has the potential to exacerbate this already bad situation, the people of south Miami-Dade will continue to be flooded. Therefore, CEPP should have as a primary goal the elimination of the "Big Red Arrow".	process, system-wide benefits and impacts of each alternative will be analyzed and compared in order to select a recommended plan. In order to respond to these known issues, the CEPP development will include evaluation of IOP/ERTP Column 2 operations (regulatory transfer from WCA-3A to C-111 detention areas) and Lower East Coast canal stages, NESRS inflow constraints, S-356 and other seepage management operations, G-211 flood control operations, 8.5 SMA flood mitigation operations, and C-111 detention area operations.
M-TRIBE-23	**Maintain the G-3273 Trigger Gage:** Uncontrolled, high volumes of seepage into the L-31N Canal can cause and has exacerbated flooding in the built portion of Miami-Dade County, which includes Miccosukee property. Seepage also causes the "Big Red Arrow", which specifically leads to increased flooding in southern Miami-Dade. Historically, this seepage has been somewhat managed by discontinuing the controllable inflow of water into Northeast Shark River Slough when the G-3273 gauge rises 6.8 feet NVGD [National Geodetic Vertical Datum]. **Until seepage, and, thus, unacceptable flooding, are adequately addressed, there is little reason to believe that G-3273 trigger well is not going to remain a critical part of the water management system under CEPP.**	As part of the CEPP plan formulation process, seepage management measures and operations will be considered in order to meet the project objectives. It is the intent that once seepage issues are addressed that constraints such as the G-3273 trigger stage can be reduced and/or eliminated in order to allow increased flows to NESRS via S-333 and from WCA-3B via the S-355s. Under a separate effort, the Corps plans to move forward with a field test for relaxation of the G-3273 restraint, with a goal of increasing and/or removing the G-3273 stage constraint to increase water deliveries from WCA-3A to ENP through Northeast Shark River Slough (NESRS) for the benefit of natural resources.
M-TRIBE-24	**Clear Downstream of the Culverts to Increase Flows:** …new and independent scientific/engineering findings [Dr. David A. Chin, PE, January 2010] provide great hope for major, quick improvements in the condition of the Everglades at a very reasonable cost. Dr. Chin's work convinced the Superintendent of ENP to conduct an actual Pilot Swale Project to evaluate Dr. Chin's findings in the field; although this pilot project was supposed to be implemented by October of 2010, it	The Corps concurs with the importance of increased flow through existing culverts as practicable as well as other measures to increase the flow out of WCA-3A.

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	appears that the work has been delayed. **Given that the evidence and possibilities are so compelling, and the deteriorating state of the Everglades so dire, the Corps should move forward with full scale swale projects immediately, and analyze the increased flow capabilities of swales as a component of the CEPP EIS.**	
M-TRIBE-25	**Clear Downstream of the S-12s & Implement Other Measures Needed to Increase Flows:** As outlined within the USACE EN-W Position Statement on WCA-3A Regulation Schedule Modifications, 9 September 2010 and within the March 4, 2011 [Everglades Restoration Transition Plan] ERTP Draft [Environmental Impact Statement] EIS, Corps reiterated the importance of clearing the downstream blockages of the S-12 structures, as well as other measures to increase the flow out of WCA-3A. **Additional measures that need to be addressed in the CEPP EIS include: 1) clearing downstream of the S-12 structures, 2) removing as much as possible of Old Tamiami Trail, and 3) further degrading the L-28 levee. These and other measures that might help need to be planned and analyses in the CEPP EIS and implemented at the soonest.**	The Corps concurs with the importance of increased flow through existing culverts as practicable as well as other measures to increase the flow out of WCA-3A.
M-TRIBE-26	**Impact on Endangered Species Must be Assessed-Multi-Species Approach Is Essential: The ERTP model for multi-species management must be a guiding principle of CEPP.**	Concur; the Corps strongly endorses implementation of a multi-species approach to restoration and water management operations.
M-TRIBE-27	**Restoration West of Shark River Slough Must Begin:** The [U.S. Fish and Wildlife Service] FWS has officially decided, and a Federal Judge upheld the FWS decision, that at some point this area will be restored and be wetter. The Tribe, for the sake of its land and culture in particular, and Everglades restoration in general, implores the Corps to begin the of western Shark River Slough via both the COP and CEPP.	The Corps acknowledges the work of Bernhardt and Willard (2006) concluding that the western marl prairie was wetter and historically; in addition, the Corps also acknowledges that modeling has shown that this area will be wetter with CERP implementation; however, the Corps has limited flexibility in removing the S-12A and S-12B gate closures due to the status of the endangered Cape Sable seaside sparrow (CSSS) and its protection under the Endangered Species Act (ESA). This same

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		issue was brought before the 2007 Avian Ecology Workshop when it was suggested that CSSS emergency management measures cease and regulatory releases be allowed through the S-12 structures during the CSSS nesting season. This panel concluded: "Given the extensive previous work on the water level requirements of the sparrow, the panel concludes that without mitigation this action in isolation is likely to result in extirpation of subpopulation A and is unclear as to what extent it will benefit or otherwise impact the other subpopulations or other endangered species. However, because of the interconnected structure of the subpopulations (see below) there may be unintended consequences for the other subpopulations. Ultimately, if any action is expected to have a negative overall effect on the sparrow, its justification as a conservation measure would require a clear demonstration that there would be positive effects on other elements of the Everglades ecosystem." (Sustainable Ecosystems Institute, 2007)
M-TRIBE-28	**Decisive Action Required:** The Colonel must make a final decision for COP based on the best information available in spite of the misguided demands that some may have. No more "kicking the can down the road." Another dead end excursion is not an option for the dying Everglades. Bold, decisive action that results in actual restoration is essential for success.	The Corps intends to make a decision once the hydrological and ecological analyses have been completed and the NEPA document has been coordinated with the public.
STATE		
FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES (FDACS)		
FDACS-1	First, the process for developing the CEPP must clearly recognize the interim status of the current Lake Okeechobee Regulation Schedule; it would be inappropriate to assume that LORS08 [2008 Lake	The future without project condition includes the assumption that the Herbert Hoover Dike (HHD) rehabilitation would be complete. However, the Dam Safety Modification

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	Okeechobee Regulation Schedule] schedule for either the With- or Without-Project scenarios. Planned repairs to the Herbert Hoover Dike should increase storage in the Lake, and the planning process should consider the availability of that additional storage in its analysis of project alternatives. Any additional demands on the Lake must be carefully evaluated in light of existing demands of both water users and the environment, as well as future demands from other CERP components (e.g., the C-43 Reservoir) that rely upon Lake water.	Report is not scheduled for completion until 2015. As such, the analyses of the reduction in risk to be achieved by the rehabilitation have not been assessed. It is recognized that the LORS is an interim schedule and that it is anticipated that the Lake Okeechobee regulation schedule will be re-evaluated once rehabilitation has achieved a sufficient level of risk reduction. Any details regarding modifications to the Lake Okeechobee regulation schedule in the future are currently unknown. In the absence of having a revised schedule to include in the future without project condition, the LORS 08 schedule will be used. The CEPP study will not be the mechanism for changing LORS. Any change in the schedule will be the subject of a separate NEPA process at a later date. Evaluations of alternative plans for CEPP will consider use of the flexibility within LORS to support achievement of benefits and minimization of undesirable impacts.
FDACS-2	Second, the planning process must realistically deal with water quality considerations. The Comprehensive Everglades Restoration Plan (CERP) is built upon assumptions regarding water quality that we cannot continue to accept because water quality constraints can prevent the movement of additional water through the central part of the system. The in-lake phosphorus concentration for Lake Okeechobee is one such constraint, even if one assumes that the total maximum daily load (TMDL) for phosphorus will be met in the foreseeable future. Issues related to the Stormwater Treatment Areas (STAs) must also be addressed. Without resolving the legal and technical uncertainties characterizing the STAs as currently operated, it is hard to envision how additional water made available by the CEPP can be moved southward.	Adequate treatment facilities necessary to achieve the 10 ppb long-term geometric mean for new water delivered to the natural system will be considered in the planning and formulation of CEPP alternatives. The condition of the water in the lake as it exists today will be identified and adequate treatment facilities will be included in alternative plans based upon the current quality of lake water.

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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP)		
FDEP-1	The Department [FDEP] believes that addressing water quality is one of the most critical components of this planning effort. The State of Florida is committed to addressing water quality with regard to the existing flows to the Everglades Protection Area consistent with the requirements of the state's phosphorus criterion. The Department requests that the Corps include, as part of the future without-project condition, the assumption that existing volumes of water will be treated to meet the objectives of the phosphorus criterion prior to discharge to the Everglades Protection Area.	The Corps concurs with these statements.
FDEP-2	With regards to this particular item [Risk Register], the Department recommends that the Corps maintain and provide a list of identified risks to the commenting agencies for their use in early issue resolution.	The risk register is a tool being used in the Pilot Planning Program as a means to identify, discuss and document issues early in the process. A risk register was developed by the study team to identify significant risks attributed to the shortened study period and to project success.
FDEP-3	… the Department requests that the Corps use the existing quality of water flowing from Lake Okeechobee, and the delta between existing flows and future with project flows, through the central flow path as a basis for planning additional treatment, storage or other features identified as part of the expedited planning process. As with the treatment of existing flows, the Corps should assume that any new water flowing to the Everglades Protection Area will be required to be treated to levels consistent with the phosphorus criterion.	The Corps concurs with these statements.
FDEP-4	The Department suggests that the Corps work closely with the local sponsor to establish expectations regarding cost sharing on all new components, or modifications to existing components, that ultimately result from the expedited planning process. In particular, cost sharing expectations for water quality projects	New water is potentially available to be used for CERP purposes. The CEPP planning process will determine what water is available and what should be used for CERP purposes. Cost sharing recommendations will be in accordance with applicable law and policy.

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	need to be identified and resolved early on in the planning process.	
FDEP-5	The Department requests that the Corps focus its planning efforts for storage and treatment projects on lands already owned by the District.	The alternatives analyses will follow NEPA requirements. Through the planning process, the Corps will draw conclusions with regard to the use of lands already acquired for restoration purposes. The Corps understands that the state supports efforts sited on available lands and that the state considers those to be preferable for economic and other reasons.
FDEP-6	The Department suggests that an evaluation of the implementation schedule for second generation CERP projects that may influence the CEPP should be carefully considered as part of the expedited planning process.	The Corps concurs with this statement and these second generation CERP components will be considered in CEPP planning process as part of the implementation plan.
FDEP-7	Any future with-project condition scenario that includes features originally identified under the MWD project should be identified as being the sole responsibility of the federal government, with the exception of cost-share commitments made between the SFWMD and the Corps for operations.	For planning purposes, the MWD project will be assumed to be complete based upon those features already completed and those features currently under construction. This planning assumption is predicated upon the Corps, in consultation with DOI, first making a determination that the expected benefits for the MWD project have been achieved.
SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD)		
SFWMD-1	**Water Quality Requirements, Assumptions and Cost-Share:** *Future Without Project Condition – Existing Water Flows to the Everglades Protection Area:* For the purposes of the Central Everglades Planning Project, the District can only support the Corps' assuming for the "Future Without Project Condition" that the District will treat current annual flows of approximately 850,000 acre-feet of water to a flow-weighted mean for total phosphorus of 13 parts per billion (ppb). All facilities needed to treat existing inflows, as proposed by the State of Florida in response to the U.S. Environmental Protection Agency's Amended	Existing sources and quantities of water to the natural system will be identified. All water (existing and new water) directed to the natural system will meet applicable water quality standards (i.e. 10 ppb long-term geometric mean).

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	Determination, would be non-federally funded.	
SFWMD-2	**Water Quality Requirements, Assumptions and Cost-Share:** *Future With Project Condition – New Water Flows Identified by the Central Everglades Planning Project to the Everglades Protection Area:* As part of its assumptions for the Central Everglades Planning Project, the Corps should use the existing quality of water flowing from Lake Okeechobee through the central flow path as a basis for planning additional treatment facilities. Consistent with the treatment of existing flows, the Corps should also assume that new water flowing to the Everglades Protection Area will be treated to 13 ppb total phosphorus.	Existing sources and quantities of water to the natural system will be identified. All water (existing and new water) directed to the natural system will meet applicable water quality standards (i.e. 10 ppb long-term geometric mean). New water is potentially available to be used for CERP purposes. The CEPP planning process will determine what water is available and what should be used for CERP purposes. The condition of the water in Lake Okeechobee will be considered and adequate treatment facilities will be included in alternative plans based upon the quality of lake water as it exists today. Cost sharing will be in accordance with applicable law and policy.
SFWMD-3	**Use of Existing District-Owned Lands:** To implement the initial increment of restoration for the central Everglades in an expeditious, cost-effective and commonsense manner, formulation of Central Everglades Planning Project features should be undertaken utilizing the lands already acquired by the District	Please refer to FDEP-5 response.
SFWMD-4	**Inclusion of Specific Modified Water Deliveries to Everglades National Park Project** **Features:** The District can support inclusion of these features in the "Future With Project Condition" only if the Corps identifies in the Central Everglades Project Implementation Report and Environmental Impact Statement that construction and operation of these features will be cost-shared in accordance with the terms and conditions of the Project Cooperation Agreement between the District and the Department of the Army to Improve Water Deliveries to Everglades National Park dated September 24, 1994 and its subsequent amendments.	For planning purposes, the MWD project will be assumed to be complete based upon those features already completed and those features currently under construction. This planning assumption is predicated upon the Corps, in consultation with DOI, first making a determination that the expected benefits for the MWD project have been achieved.

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	The District cannot agree to cost-share construction and operation of these features under the CERP authority, Section 601(e) of the Water Resources Development Act of 2000.	
LOCAL		
LEE COUNTY (LC)		
LC-1	Central to a healthy ecosystem in Lee County is the protection and restoration of the Caloosahatchee River and Estuary, and the beneficial management of Lake Okeechobee. Specifically, the reduction of high volume discharges from Lake Okeechobee to improve water quality of oyster and submerged aquatic vegetation in the Caloosahatchee River and Estuary is an objective long sought by Lee County.	Concur; the Corps has included the following objective into CEPP: "Reduce high volume discharges from Lake Okeechobee to improve the quality of oyster and SAV habitat in the northern estuaries."
MIAMI-DADE COUNTY (MDC)		
MDC-1	The "fast-tracked" CEPP represents an opportunity to link together water quality, storage, conveyance and seepage management components, to more holistically reverse ongoing decline in the Everglades system and demonstrate benefits, as compared to the standard compartmentalized and cumbersome planning process.	Concur, the Jacksonville District is excited that CEPP has been selected as a pilot project for the Corps expedited Planning Process Pilot Program. The pilot program focuses the detail on the key drivers of the decisions that are to be made and reduces unnecessary detail that results in a longer process and one that may not deliver a better solution.
MDC-2	…it is important that the scope of plan formulation in CEPP be comprehensive, both in geographic scale and in addressing the three principal interests of Miami-Dade County in an integrated fashion: local and system wide ecological benefits, water supply, and seepage management.	Prior planning efforts and the development of scientific goals and targets for CERP have led to a determination that some components are in fact interdependent features that necessitate formulation from a systems approach. Recently authorized CERP projects are "perimeter" projects that generally do not greatly depend upon or influence other CERP projects. However, the components in the Central Everglades are hydraulically connected from Lake Okeechobee to Florida Bay, and are reliant on one another for both inflows and outflows. These interdependencies require system plan formulation and analysis in order to

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		optimize structural and operational components, rather than formulating separable components that may not be compatible when looking at the cumulative impacts.
MDC-3	… the scope of CEPP formulation should address: Water quality, ecological and hydrological benefits, including effects on plant community, habitat structure, and listed species and other wildlife in Florida and Biscayne Bays, as well as within WCA3a and b, and ENP.	The Corps concurs with this statement. As part of the NEPA analysis, a full assessment of potential effects on water quality, listed species and other wildlife and their habitat within CEPP project area will be conducted. Impacts in one area may be offset by habitat improvements in other areas of the system. Modeling and ecological planning tools will be utilized to perform these assessments.
MDC-4	… the scope of CEPP formulation should address: Water quality and quantity with respect to Miami-Dade public wellfields, including surface groundwater interactions and saltwater intrusion, particularly during dry season or in prolonged drought, and in view of sea level rise projections.	In accordance with Section 601(h)(5) of the Water Resources Development Act (WRDA) 2000, CEPP will avoid any elim-ination or transfer of any existing legal sources of water beyond those existing in December 2000. Similar to previous CERP projects, a sea level rise evaluation will be conducted on the tentatively selected plan using a static scenario based GIS sea level rise mapping effort.
MDC-5	… the scope of CEPP formulation should address: Flood protection under various canal stages and high water conditions, including operational criteria and modeling of distribution of peak stages and flows at critical gauges (such as S-357, S-338, S-196, S-194, S-380, C6-Palm, S-26 and T5) and at reference residential and agriculture lands.	In accordance with Section 601(h)(5) of the WRDA 2000, CEPP will avoid any impact to levels of service for flood protection beyond that existing in De-cember 2000.
MDC-6	Early public presentations about CEPP by USACE and SFWMD staff suggest that modeling tools for plan formulation will not address flood protection, water quality, wellfields, or Florida Bay and Biscayne Bay in detail or with defined "performance measures". This approach represents a serious concern to Miami-Dade. However, we believe that unnecessary delays and costs, caused by repeated modeling efforts,	The majority of the CEPP identified RECOVER approved PMs will be utilized with RSM output including performance measures for Florida Bay, Biscayne Bay and water supply for other water related needs. While the RSM is a regional scale model and results should be interpreted as such, the model does generate information for gauge locations and canals and this

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	revisions of alternatives, or challenges can be avoided by including all of the above issues from the outset in developing and evaluating a suite of restoration alternatives. This can be addressed in part through appropriate inclusion of sub-regional or local hydrologic dynamic models, particularly in areas where seepage management features are contemplated, and through extension of evaluation transects or targets to coastal transition zones and lands to the east of the L-30/31 boundary.	information will be used in CEPP. Through review of RSM calibration results, it is possible to identify differences in the modeled representation of gauges and canals of interest and the observed field responses. This will be helpful when evaluating changes in flood protection.
MDC-7	…evaluation models should also be capable of addressing consensus sea level rise projections.	Similar to previous CERP projects, a sea level rise evaluation will be conducted on the tentatively selected plan using a static scenario based GIS sea level rise mapping effort.
MDC-8	It is also strongly recommended that CEPP build upon modeling tools, as wells as evaluation factors, including surrogates for water quality and hydrologic targets for tree islands and protected species, that have been developed or extensively reviewed by earlier Project Development Teams working on DECOMP [Decompartmentilization and Sheet Flow Enhancement], ERTP [Everglades Restoration Transition Plan], C-111 [Canal 111 Spreader Canal], and BBCW [Biscayne Bay Coastal Wetlands]..	The CEPP will incorporate and build upon lessons learned for these previous projects.
MDC-9	Miami-Dade County also recommends that the scope of benefits and cost analyses in CEPP include non-traditional approaches, such as valuation of ecosystem "services" that may derive from restoration, such as savings on costs of flood protection or drinking water treatment, and economic benefits of recreational or aesthetic values of natural habitats, fish and wildlife.	CEPP will develop a methodology to capture the existing and future without project condition ecosystem services values for potentially impacted ecosystem service sectors in WCA-3A, WCA-3B and ENP. The marginal change in ecosystem services will then be evaluated for the recommended plan. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through a review process.
MDC-10	…we request that one or more CEPP public meetings or workshops directed at local stakeholders and their concerns be held in Miami-Dade and recommend that similar	The Corps will hold future public NEPA meetings throughout the study area to gather stakeholder input.

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	regional meetings be held in other local jurisdictions south of Lake Okeechobee.	
PRIVATE		
ARTHUR R. MARSHALL FOUNDATION & FLORIDA ENVIRONMNETAL INSTITUTE (MARSHALL)		
MARSHALL-1	Scoping should include more focus on CERP Table 5-1 Goals & Objections (pointing out what was now on the Conference Room Table). It seems like such focus would go a long way in meeting Susan Markley's concerns, also Laura Brant's concern about ecological considerations. Table 5-1 is still not in any of the written material / presentations other than what has been put on the conference table.	Table 5-1 of the Central and Southern Florida Project (C&SF) Restudy, lists two general goals for the south Florida ecosystem: enhance ecologic values, and enhance economic values and social well being. The goal of the CEPP is to improve the quantity, quality, timing and distribution of water in the Northern Estuaries, Water Conservation Area 3, and Everglades National Park in order to restore the hydrology, habitat and functions of the natural system. The CEPP team finds the project level goals and objectives to be consistent with the goals and objectives presented in Table 5-1 of the C&SF Restudy. The Corps will provide the PDT the crosswalk between CERP Goals and Objectives and the CEPP project objectives to provide additional clarity and include this information in the PIR.
MARSHALL-2	The top level performance measure being considered by the CEPP scoping process per Table 5-1 objective 1 ought to be total increase in acres, of increase in total spatial extent of natural area. This would allow engagement of the Costanza Synthesis.	A methodology will be developed to quantify the acreage of ecosystem benefits produced as a result of implementation of the tentatively selected plan. This methodology will utilize habitat unit (HU) scores produced from Habitat Suitability Indices (HIS) corresponding to each project performance measure. The project team is not planning on formulating to maximize ecosystem services, but is planning on putting together a work plan to capture resulting ecosystem service lift from TSP. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process.
MARSHALL-3	Before the presentations, I was going to ask	As the planning effort for the CEPP

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	how or what habitat units are assigned to various biomes [Stormwater Treatment areas; Ridge & Slough landscapes, flow-way for sheetflow; forested wetlands; reservoirs, etc.]. After the HU presentation, I think I am starting to get it. [More on this in next comments below].	continues, a methodology will be developed to calculate HU values for the study area. The HU are used as the basis to compare alternatives and identify a selected plan for ecosystem restoration projects. Typically, PM scores are aggregated and average to produce a habitat quality index. The PM scores are obtained from a hydrologic model and are indicators of conditions in the natural system that have been determined to be characteristic of a healthy restored ecosystem. The PMs scores cover all regions of the study area. The HIS is then multiplied by acreage to generate a HU for each alternative. Where necessary, additional tools or metrics may be utilized to supplement HU scores and assist in plan comparison.
MARSHALL-4	There is a lot of fuzziness about the CEPP boundaries (physical and fiscal). A regional CEM might sort out some of the fuzziness by establishing CEPP geographic boundary limits [consistent where CEPP construction costs will be incurred], while considering cause-effect upstream/down stream relationships [i.e., considering connectivity where all things are connected].	The study area for the CEPP encompasses the Northern Estuaries (St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary), Lake Okeechobee, a portion of EAA, the Water Conservation Areas, ENP, the Southern Estuaries (Florida Bay and Biscayne Bay), and LEC. Both structural and non-structural features or activities that address one or more planning objectives will be formulated for the study area. The PDT will utilize PMs to evaluate alternative plans. These PMs were developed from the Lake Okeechobee, Northern Estuaries and Greater Everglades Ridge and Slough Conceptual Ecological Models (CEM) which identify the major anthropogenic drivers and stressors on natural systems, the ecological effects of these stressors, and the best biological attributes or indicators of these ecological responses.
MARSHALL-5	Weighting methods are most times argumentative. The HU weighting scheme may prove difficult to explain to the public [and decision makers]. While the HU	The methodology recently developed for DECOMP PIR 1 to quantify ecosystem benefits weighted project performance measures relative to their

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	approach may justify alternative selection [as stated earlier], it does not monetize the ecological benefits such that the benefits can be compared to costs [as the means to get to return on investment] for decision makers. On Fred Sklar's comment: That the Everglades is more complex, is an indication that a better approach to Synthesis is needed, understandable by OMB, Congress, and the public, and especially the National Research Council CERP Peer Review Panel.	importance in achieving the project objectives. This methodology may be used and/or adapted for the CEPP, however it is not anticipated that the same approach to weighting project performance measures will be used. Cost Effectiveness and Incremental Cost Analyses (CEICA) will be used to determine the most cost effective plan.
AUDUBON OF FLORIDA/AUDUBON SOCIETY OF THE EVERGLADES/CLEAN WATER ACTION/DING DARLING WILDLIFE SOCIETY/EVERGLADES FOUNDATION/FLORIDA WILDIFE FEDERATION/FLORIDA OCEANOGRAPHIC SOCIETY/LEAGUE OF WOMEN VOTERS OF FLORIDA/NATIONAL PARKS CONSERVATION ASSOCIATION/NATURAL RESOURCES DEFENSE COUNCIL/SIERRA CLUB/SOUTH FLORIDA AUDUBON SOCIETY/TROPICAL AUDUBON SOCIETY (NGOs)		
NGOs-1	First, the CEPP must decompartmentalize a significant majority of Water Conservation Area (WCA) 3, improve the quality of water headed south, and help resolve seepage management issues to the east.	The goal of the CEPP is to improve the quantity, quality, timing and distribution of water in the Northern Estuaries, WCA-3, and ENP in order to restore the hydrology, habitat and functions of the natural system. In order to accomplish this goal, CEPP will examine potential components within the EAA, WCA-3 and ENP. The formulation of CEPP components will incorporate a "systems thinking approach" to ensure compatibility with CERP and any potential future updates to restoration goals and targets. Prior planning efforts and the development of scientific goals and targets for CERP have led to a determination that some components are in fact interdependent features that necessitate formulation from a systems approach. These interdependencies require system plan formulation and analysis in order to optimize structural and operational components, rather than formulating separable components that may not be compatible when looking at the cumulative impacts.
NGOs-2	… to help expedite current planning efforts, the CEPP should build on data and tools developed in previous Decomp Project De-	The CEPP will build upon modeling and ecological evaluation tools utilized in previous CERP projects, including

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	livery Team (PDT) efforts. Incorporating previous planning efforts will allow CEPP to move forward at a speed needed to provide a PIR by 2013. In particular, the CEPP should: ▪ Incorporate the findings of the Decomp Physical Model as they become available in the next 18 months. ▪ Explore including the Decomp hydropattern restoration feature (i.e. spreader canals) along the northern border of WCA 3A. ▪ Consider innovative partial backfill and plugging opportunities of the L-67A and L-67C canals that could provide increased access and continued fishing opportunities, while at the same time ensuring the canals do not interfere with sheetflow in ways that have adverse ecological consequences, or result in adverse water quality impacts. ▪ Assess options to degrade, including by partially backfilling or plugging, the Miami Canal in order to allow water into WCA 3B. ▪ Analyze options to degrade the L-29 levee, including by way of new outlets and culverts. ▪ Explore phasing alternatives for planned additional elevation and bridging of Tamiami Trail, using information from the Department of Interior's November 2010 Tamiami Trail Modifications: Next Steps Final Environmental Impact Statement. ▪ Evaluate the use of available levee material to recreate tree islands.	DECOMP PIR 1 in order to examine an array of management measures for decompartmentalization of WCA-3A and to meet other CEPP objectives.
NGOs-3	CEPP must evaluate implementing increased storage, treatment and conveyance in the Everglades Agricultural Area (EAA). Specifically, we urge Corps to include the following in its CEPP scoping: ▪ An evaluation of (1) the use of the	The Corps concurs with this statement and is currently developing management measures and screening criteria to determine the size and type of storage and treatment features within the EAA.

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	lands known as the A1 and A2 parcels, which were purchased by the federal government pursuant to the Talisman Land Acquisitions Grant Agreement, as storm water treatment areas (STAs) and (2) the potential replacement acreage of any acres used for STAs with lands or other options (as required under the grant agreement) that would enable increased water flows to the central Everglades and ENP including Florida Bay. ▪ An estimation of storage needed to enable increased water flows to the central Everglades and ENP including Florida Bay and a discussion of options to provide needed additional storage.	
NGOs-4	In order to manage increased flows, it will be necessary to include improved seepage management. Specifically, we urge the Corps to: ▪ Evaluate the miners' proposed L-31N seepage pilot project, designed to resolve significant seepage out of ENP. ▪ Evaluate whether additional seepage components are needed to resolve seepage out of the central Everglades and ENP.	The Corps concurs with this statement and is currently developing management measures and screening criteria to address seepage management concerns.
NGOs-5	… we recommend that the CEPP assess the operational changes occurring or being considered as part of the Everglades Restoration Transition Plan and the Combined Operations Plan. In particular, the CEPP should: ▪ Consider opening the S-151 structure to allow additional flow into WCA 3B. ▪ Consider raising L-29 levels during short-term high-water emergencies. ▪ Evaluate the need for more appro-	Please refer to FWS-1 response.

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	priate water levels in WCA 3A, 3B, and ENP, as opposed to stair-step levels now often found moving among the areas and damaging the ecosystem.	
NGOs-6	While the CEPP cannot take on the challenges posed by the many related projects that are in operation or in planning stages, it should review the status and operations of projects such as the 8.5 Square Mile Area and C-111 Western and South Dade projects and highlight needed adjustments to ensure that they meet their stated goals and achieve ecological objectives.	The Corps concurs with this statement and will review as appropriate the status and operations of previous CERP and non-CERP projects.
DADE COUNTY FULLTRACK CONSERVATION CLUB (DCFCC)		
DCFCC-1	We want to make sure that the recreational aspect of the area remains and that recreational opportunities are not lost as a result of the project, particularly within northern WCA-3A.	Recreation will be considered as part of CEPP. A recreational sub-team has been formed to explore potential impacts on recreational opportunities as well as the potential for new recreational access. The CEPP will also continue to be discussed at future Water Resources Advisory Commission Recreation meetings to engage stakeholders.
EVERGLADES COALITION (EVCO)		
EVCO-1	Resolution Supporting Central Everglades Planning Project	The Corps appreciates the Everglades Coalition's endorsement of this project.
SUGAR CANE GROWERS COOPERATIVE OF FLORIDA (SUGAR)		
SUGAR-1	While we support your efforts to streamline the process to produce a Project Implementation Report (PIR), the desire for expeditious completion of a PIR must not outweigh the necessity for careful, comprehensive evaluation of alternatives, uninhibited by arbitrary or unrealistic constraints and assumptions.	A comprehensive evaluation of alternatives will be conducted for the CEPP; the Jacksonville District is excited that CEPP has been selected as a pilot project for the Corps expedited Planning Process Pilot Program. The pilot program focuses the detail on the key drivers of the decisions that are to be made and reduces unnecessary detail that results in a longer process and one that may not deliver a better solution.
SUGAR-2	The planning scope must recognize that the present Lake Okeechobee Regulation Schedule is an interim one necessitated by concerns with levee integrity. Additional water storage in the Lake should therefore	Raising water levels within Lake Okeechobee would require substantial modifications to HHD. The Corps is currently conducting a project to strengthen and secure the existing

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	be evaluated as part of the project's alternatives analyses.	dike, and any increase in water levels would require a commensurate increase in the dike dimensions for human health and safety concerns. As stated in the 2008 LORS EIS, the Lake Okeechobee Regulation Schedule is interim and LORS will be revisited upon completion of HHD modifications. Higher water levels within Lake Okeechobee would also cause significant impacts to the littoral zone. The lake's natural resources are dependent on the littoral zone since it provides nursery areas, spawning areas, foraging areas, and roosting areas required for the completion of life cycles. The frequency and duration of inundation of the lake littoral zone would increase with higher lake levels under a revised regulation schedule. High lake stages result in loss of beneficial littoral zone plant communities in favor of introduced exotics (e.g., torpedo grass) as well as impacts to wading birds and other water-dependent wildlife.
SUGAR-3	While CERP used the Run 25 Lake Schedule, the WSE [Water Supply and Environment] Schedule was approved concurrent with CERP and should be used as the with-out project condition for the CEPP.	The Corps respectfully disagrees with the statement and intends to utilize LORS2008 as the existing and FWO condition. The Corps may undertake sensitivity analyses of the TSP in comparison to WSE to ascertain potential improvements to the plan under a revised Lake Schedule scenario. However, any analyses conducted during the study will not predetermine a change to the lake schedule that will be undertaken as a result of completion of necessary HHD rehab efforts or updates to System Operations Manual as a result of additional CERP project implementation.
SUGAR-4	Assumptions concerning water quality must be based in reality. To assume Lake Okeechobee water meets the TDML [Total	The CEPP planning process will determine what water is available and what should be used for CERP

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	Daily Mean Limit] for the lake, without any project features on the horizon to accomplish that, seems foolhardy. The TMDL is designed to meet a much reduced load target for phosphorus flowing into Lake Okeechobee, not an in-lake concentration.	purposes. The condition of the water in lake as it exists today will be identified and adequate treatment facilities will be included in alternative plans based upon the quality of lake water as it exists today.
SUGAR-5	Assuming that the without-project condition Stormwater Treatment Areas are meeting some un-defined target that's tied up in two federal court cases, and the new water made available by CEPP will meet that same unknown target is inappropriate. The CEPP should integrate water quality and water quantity planning to ensure the most effective use of available land resources and achieve the best balance among the four aspects of water flow essential to restoration-quantity, quality, timing and distribution. In evaluating the cost-effectiveness of various alternatives tradeoffs will be necessary, and the federal agencies must be prepared to make them.	The Corps concurs with the statement that integration of water quality and water quantity is a necessity for CEPP planning, and therefore is currently developing management measures and screening criteria to determine the size and type of storage and treatment features within the EAA.
SUGAR-6	In considering increased storage, the examination of alternatives must be comprehensive. The Aquifer Storage and Recovery Projects (ASR) as envisioned by CERP have a compelling advantage over surface storage in avoiding loss of water due to evapotranspiration as well as having minimal land requirements.	Preliminary results from the ASR Pilot Study that is currently being finalized seem to indicate that ASR may be feasible in regards to possible toxicology issues, groundwater migration, etc. ASR will be evaluated as a management measure for the proposed project and will be considered for incorporation into alternatives during plan formulation.
SUGAR-7	Another alternative for providing increased water storage that must be addressed is increased use of Lake Okeechobee for storage beyond that provided historically.	Please refer to SUGAR-2 response.
SUGAR-8	…it is essential that the scope of the CEPP track very closely with the conceptual plans covered by Congress. With respect to the EAA, the actual footprint of the project in the final CERP document matches well with the land now owned by the District [SFWMD], and limiting the planning scope to that property meets the stated intent for the CEPP. Going beyond that footprint	Please refer to FDEP-5 response.

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	would trigger the need for a CERP Update as specified in the Programmatic Regulations and should not be part of this plan.	
SUGAR-9	…the scale of the Everglades flow values now being discussed in some circles is well beyond anything contemplated in WRDA [Water Resources Development Act] 2000 and would clearly require a formal CERP update. The Central Everglades Plan must stay close to the flow volumes expected with the plan approval in WRDA 2000.	It is highly unlikely that CEPP volumes exceed the flows projected from CERP. It is much more likely that subsequent restoration efforts will be required to achieve the scale of water envisioned in CERP. Each PIR updates CERP.
SUGAR-10	… we remind the Corps that the savings clause imposes a constraint on plans based on conditions prevailing at the time of the enactment of WRDA 2000 and is an accounting calculation separate from the projections based on the present prevailing situation and the future most-likely without project condition.	Correct, the savings clause analysis is performed subsequent to initial plan formulation efforts and TSP selection. Specifically, an analysis of the elimination or transfer existing legal sources and levels of flood protection by TSP is performed before the plan can be recommended.
SUGAR-11	…the CEPP must include options that evaluate returning sheet flow to the Holey Land and Rotenberger proprieties adjacent to WCA-3A. To continue to isolate those areas will require additional engineering features to flow water around, rather than through, those areas, and severely limit the restoration of Everglades sheet flow over a large portion of the historic Everglades.	The Corps will consider information from previous studies undertaken by the SFWMD to consider this option and determine if applicable for inclusion in the CEPP
FLORIDA FARM BUREAU FEDERATION (FFBF)		
FFBF-1	The intended purpose of the Comprehensive Everglades Protection Plan (CERP) within WRDA 2000 is the restoration and protection of the remaining Everglades while continuing to meet the water consumption needs of permitted users. The stated scope of the CEPP is very vague in how the goal will be accomplished. The vagueness along with the expedited CORP [Corps] schedule provides concern that the proper assurances will be in place to minimize impact to landowners in the region south of Lake Okeechobee.	The savings clause analysis is performed subsequent to initial plan formulation efforts and TSP selection. Specifically, an analysis of the elimination or transfer existing legal sources and levels of flood protection by TSP is performed before the plan can be recommended.
FFBF-2	Key to movement of additional water south is additional water storage. Thus far, the CORPS operation of the current Lake	The Corps concurs with this statement and is currently developing management measures and screening

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	Okeechobee Regulation Schedule has not allowed the flexibility to increase water storage for proper timing of additional flows to the south. Without a noted change in operation, the CEPP must denote additional storage to create the proper timing needed to redirect water south.	criteria to determine the size and type of storage and treatment features within the EAA.
FFBF-3	Water quality has been an impediment to moving water into Everglades National Park and the current water conditions in Lake Okeechobee must be considered within the scoping process.	Concur; the CEPP planning process will determine what water is available and what should be used for CERP purposes. The condition of the water in lake as it exists today will be identified and adequate treatment facilities will be included in alternative plans based upon the quality of lake water as it exists today.
FFBF-4	Past single species management of Endangered Species such as the Cape Sable Seaside Sparrow must be addressed within the scoping process of the CEPP. Creating the mechanism to move water south only to have it blocked from entering the Everglades National Park will result in ultimate failure and the potential to flood lands in the EAA.	CEPP will include a multispecies approach to water management.
FLORIDA WILDIFE FEDERATION (FWF)		
FWF-1	As a member of the Everglades Coalition, we embrace the Coalition's recitation of necessary projects and request that special attention be paid to dealing with seepage management issues.	The Corps is currently developing management measures and screening criteria to address seepage management concerns.
FWF-2	In addition, we believe that the COE [Corps] should include in the scope of the CEPP a goal of delivering its recommendations in time to be incorporated into the federal-budget cycle commencing in January 2014.	The CEPP has been selected as a pilot project for the Corps expedited Planning Process Pilot Program. A Chief's Report to be submitted for Congressional authorization is anticipated to be complete by August 2013.
FWF-3	In addition the Federation urges the COE to include in its design studies and make recommendations about maintaining freshwater-fishing habitat in Water Conservation Area 3B, the L-67 canals and L-29 (Tamiami Trail) canal and public access. We ask that this planning include consideration of creating depressions	The Corps supports reconnecting WCA-3B as a functioning component of the Everglades ecosystem. Alternatives to accomplish this will be evaluated within CEPP. As part of the Corps plan formulation and NEPA assessment process, system-

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	similar to alligator holes, slopes to establish "littoral zones" around borrow pits/canals, and the use of fill to stabilize, re-generate or create tree islands mimicking the Everglades' natural ridge and slough landscape. As the COE is aware, over the years water has tended "to pond" in WCA 3B. This has resulted in establishing a thriving bass fishery that South Florida sportsmen have come to prize. The proximity to urban South Florida, which otherwise offers limited freshwater recreational fishing opportunities, enhances its recreational value. At this point we believe that fishery enhances the area for wading birds and wildlife and can be incorporated into proposed projects without harm to restoration goals.	wide benefits and impacts (including impacts to recreation and wildlife) of each alternative will be analyzed and compared in order to select a recommended plan.
THE INSTITUTE FOR ENVIRONMENTAL MONITORING (IEM)		
IEM-1	The federal register notice and online Central Everglades Planning Project (CEPP) documents do not provide specific information about how best available science will be incorporated into decision making or into the hydrologic scenario generation/evaluation process.	There are several ways that up-to-date science will be included in the planning, formulation, implementation, and continued adaptive management of CEPP, including but not limited to: 1) agency scientists including several members of the RECOVER science group were integral in setting goals, objectives, constraints, and PMs for CEPP; 2) PMs and modeling tools have been developed using the best available science; 3) model parameter settings are determined based on best available science to constantly improve the accuracy of model output for viewing alternative plans for CEPP; 4) several ecological planning tools developed by agency scientists may be used to view potential impacts of CEPP alternatives on species; 5) the Eco-subteam may develop qualitative ratings of CEPP alternative plans that will include current scientific understanding of the Everglades ecosystem; and 6) the Adaptive Management and Monitoring plan for CEPP will include monitoring to continually improve the scientific

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		understanding of the ecosystem and the effects of CEPP on it, as well as informing future decisions with the best scientific understanding of the ecosystem.
IEM-2	The Corp's Planning Process Transformation Pilot Program, upon which the CEPP EIS is based, appears to be an experimental and untested paradigm. We question the choice of the Everglades - a complex and highly degraded ecosystem - as a testing ground for this planning paradigm, given the potentially non-reversible nature of unsound decisions that could result from this process.	The Corps has continually heard from stakeholders that its planning process is overly detailed, expensive and that it takes too long; the amount of time and data being invested in studies are not leading to a better product or decision. As a result, the Corps is considering looking at ways to transform the planning process and fortunately, CEPP has been selected as a pilot project for this program. The pilot program focuses the detail on the key drivers of the decisions that are to be made and reduces unnecessary detail that results in a longer process and one that may not deliver a better solution.
IEM-3	CEPP scenario hydrology will apparently be generated by the South Florida Regional Simulation Model (RSM). CEPP documents provide insufficient detail about RSM calibration data, scenario generation, incorporation of biotic models in the evaluation process, and continued monitoring of key ecosystem components to provide assurances that science will continue to have an appropriate role in decision-making.	RSM calibration information will be made available through the CERP Data Access Storage and Retrieval (DASR) site or upon written request for those without DASR access. CEPP continues to provide information on plan formulation strategy and scenario generation through regular PDT meetings. The CEPP updates are also provided to stakeholders through the South Florida Ecosystem Task Force Working Group Sponsored Workshops, Water Resources Advisory Commission and SFWMD Governing Board meetings. The identified RECOVER PMS will be generated from the RSM to evaluate alternative plans. To make the correlation between hydrologic output and ecosystem functions, the project team will utilize PMs developed from the Lake Okeechobee, Northern Estuaries and Greater Everglades Ridge and Slough CEM. These CEM have been extensively peer reviewed and provide the framework for the

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		planning and assessment of CERP and are used to identify the major anthropogenic drivers and stressors on natural systems, the ecological effects of these stressors, and the best biological attributes or indicators of these ecological responses.
IEM-4	The documents do not discuss a mechanism for how biotic assessments are to be carried out, how alternative planning is to be developed based upon these assessments, nor how scientific input from the expansive collection of biotic system models developed as part of CERP are to be supported and incorporated in the EIS.	Wildlife species in CEPP area will be considered in several ways during the planning of CEPP. Examples include: current scientific understanding of species needs were strongly considered for the development of performance measures that will be used by CEPP, and agency-developed ecological planning tools will be used to view potential impacts of CEPP alternatives on species, the Eco-subteam may develop qualitative ratings of CEPP alternative plans that will include species considerations, and the Adaptive Management and Monitoring plan for CEPP will include monitoring of the biotic system that is appropriate for showing effects of CEPP over time.
IEM-5	We are particularly concerned that monitoring has been discontinued or reduced for key components of the Everglades biota (including white-tailed deer and the Florida panther in Everglades National Park) despite the fact that there is still insufficient understanding of these species responses to accurately project the impacts of hydrologic changes on their populations. For those species still being monitored, no central data repository has been established, although such a repository was a major element in CERP planning to provide for continued incorporation of best available science into models.	White-tailed deer and Florida panther are not monitored in the ecosystem-wide CERP monitoring program ("Monitoring and Assessment Plan or MAP) but may be monitored by individual restoration projects within CERP. For example, CERP's Picayune Strand restoration project includes monitoring for Florida panther and white-tail deer. The interagency CEPP team will consider the interest in white-tailed deer, panther, and other key biota during the development of CEPP's monitoring program. Repository for monitoring data: The CERP Integrated Database (CID) has been developed to house, or connect to, all hydrologic and ecologic monitoring data for CERP that cannot be housed in the SFWMD's DBHydro

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		database. Information in CID is accessed through the user interface named "EverGlades Restoration data Extraction Tool" (EGRET). EGRET is a GIS mapping application that shows CERP monitoring project locations and provides access to associated data. EGRET allows for data queries by spatial parameters or type of data. Project abstracts and data tables can be viewed within the application, or be exported to .csv files for further use. Access to EGRET is only available to the CERP partner agencies through the CERPZone. All RECOVER partnering agencies and CERP Projects are in the process of adding data into the database as resources become available.
IEM-6	Shortening the time period for management decision-making for CEPP relative to the CERP process makes the transparent incorporation of best available science and continued monitoring to assess biotic impacts all the more urgent.	The Corps concurs with this statement.
FLORIDA CRYSTALS CORPORATION (CRYSTALS)		
CRYSTALS-1	<u>Scoping is Premature in the Absence of a Specific Proposal:</u> To date, the Corps has not proposed any specific plan for the CEPP. While these comments are meant to provide constructive, meaningful input into the CEPP, in light of the lack of a specific project at this point, we reserve the right to supplement these scoping comments in the future.	The Corps respectfully requests your continued participation and feedback throughout the CEPP planning process.
CRYSTALS-2	<u>The Corps Should Clarify Which CERP Projects Are Part of the CEPP:</u> It is important that The Corps clearly define which projects from the 1999 Approved Plan are included in the CEPP. Moreover, the Project Implementation Report will have to demonstrate that the CEPP design is "consistent with the [1999 Approved] Plan," 33§CFR 385.26(a)(3)(i), and "[i]nclude a discussion of any significant	The scope of the CEPP will include increments of the following components that were part of the Yellow Book Plan: ▪ Everglades Agricultural Storage Reservoirs (G)Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement (AA, QQ and SS)

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	changes in cost or scope of the project from that presented in the "Final Integrated Feasibility Report and Programmatic Environmental Impact Statement,' dated April 1, 1999," id. -(a)(3)(xiii).	▪ Dade-Broward Levee/Pennsuco Wetlands (BB) ▪ Bird Drive Recharge Area (U) ▪ L-31N Improvements for Seepage Management and S-356 Structures (V and FF) ▪ Everglades Rain-Driven Operations (H)
CRYSTALS-3	<u>The Corps Should Limit the CEPP to the Scope Approved by Congress in WRDA 2000:</u> It would be inappropriate for the Corps to design a project that would significantly depart from the 1999 Approved Plan in the Project Implementation Report for the CEPP. In the particular case of the Everglades Agricultural Storage Reservoirs (G)' project, it would be improper for the agency in the CEPP to develop a proposal, and analyze alternatives to such a proposal, that would call for significantly larger land footprints in the EAA.	The purpose of the CEPP is to improve the quantity, quality, timing and distribution of water flows to the central Everglades (WCA 3 and ENP). Utilizing the Incremental Adaptive Restoration (IAR) approach recommended by the National Research Council (NRC) and new science and technological information gained to date, the CEPP will be composed of increments of project components that were identified in the CERP Comprehensive Review Study (Yellow Book), reducing the risks and uncertainties associated with project planning and implementation. The term "increment" is used to underscore that this study will formulate an initial portion of individual CERP components. It is envisioned that later studies will further refine this "increment" and develop subsequent CERP components to achieve the level of restoration envisioned for CERP. This study approach is consistent with the recommendations from the NRC to utilize IAR to both achieve timely, meaningful benefits of CERP and to lessen the continuing decline of the Everglades ecosystem. Prior planning efforts and the development of scientific goals and targets for the CERP have led to a determination that some components are in fact interdependent features that necessitate formulation from a systems approach. Recently

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		authorized CERP projects are "perimeter" projects that generally do not greatly depend upon or influence other CERP projects. However, the components in the Central Everglades are hydraulically connected from Lake Okeechobee to Florida Bay, and are reliant on one another for both inflows and outflows. These interdependencies require system plan formulation and analysis in order to optimize structural and operational components, rather than formulating separable components that may not be compatible when looking at the cumulative impacts.
CRYSTALS-4	Congress Approved a Specific Plan in WRDA 2000, and the Corps Lacks Authority to Go Beyond That Plan:	Please refer to CRYSTALS-2 and CRYSTALS-3 responses.
CRYSTALS-5	The Corps Cannot Prepare a Project Implementation Report If There Will Be Significant Changes to the CERP Projects:	Please refer to CRYSTALS-2 and CRYSTALS-3 responses.
CRYSTALS-6	Significant Changes to CERP Projects in the CEPP Will Require Additional Programmatic NEPA Compliance:	Please refer to CRYSTALS-2 and CRYSTALS-3 responses. An integrated PIR/EIS will be prepared for CEPP.
CRYSTALS-7	Proposed Planning Constraints and Performance Measures Should Be Revised: A. Lake Okeechobee Water Storage and Operations It would be inappropriate for the CEPP to make LORS 2008 a planning constraint for the CEPP. First, it would be inconsistent with the 1999 Approved Plan. Second, using LORS 2008 as a planning constraint for the CEPP would be inconsistent with the regulation schedule itself. Third, making LORS 2008 a planning constraint would violate Savings Clause of WRDA 2000. The only valid approach for the CEPP would be to allow for changes in the Lake Okeechobee Regulation Schedule as	Please refer to FDACS-1 response.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	necessary to achieve project objectives. To summarize, the Without-Project Condition must assume either the WSE or Run 25 regulation schedules are in effect, while the With-project Condition can utilize the WSE schedule, or a proposed new schedule recommended by the CEPP.	
CRYSTALS-8	Proposed Planning Constraints and Performance Measures Should Be Revised: B. Water Quality The role of water quality standards in the CEPP needs to be reconsidered. The CEPP plans also need to be developed based upon the actual quality of water in Lake Okeechobee.	The CEPP planning process will determine what water is available and what should be used for CERP purposes. The condition of the water in lake as it exists today will be identified and adequate treatment facilities will be included in alternative plans based upon the quality of lake water as it exists today.
CRYSTALS-9	Proposed Planning Constraints and Performance Measures Should Be Revised: C. Water Supply Assuring adequate water supply for existing and future uses should be a planning constraint for the CEPP. There should also be a performance measure that evaluates the extent to which the CEPP alternatives increase water supplies for users other than the natural system.	Planning constraints protecting existing sources of water, consistent with federal and state law, have been included in CEPP. In addition, a new goal and objective has been added to CEPP to address water supply for other water related needs. Specifically the new goal reads, "Enhance Economic Values and Social Well Being", while the objective is to "Increase availability of fresh water (agriculture/municipal/industrial)". Corresponding PMs to evaluate the ability to meet existing and future uses will be applied during plan formulation.
CRYSTALS-10	Proposed Planning Constraints and Performance Measures Should Be Revised: D. Flood Protection A planning constraint for flood protection therefore would be appropriate for the CEPP. The CEPP should include as a performance measure the degree to which proposals improve flood protection.	Planning constraints protecting existing levels of flood protection, consistent with federal and state law, have been included in CEPP. Key metrics will be evaluated during plan formulation to identify potential changes, improvements or declines in flood protection. A more thorough analysis will be performed on TSP.
CRYSTALS-11	Proposed Planning Constraints and Performance Measures Should Be Revised: E. Economic and Social Disruption	The Corps agrees that economic and social disruption should be a consideration during the planning process and feature siting analysis, and

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	Consistent with the Reconnaissance Report, the CEPP should include minimization of economic and social disruption as a planning constraint, using the proxy of reduced agricultural production and property removed from the tax rolls.	any impacts to agricultural production and tax rolls will be identified.
CRYSTALS-12	Alternatives: ..the Corps should consider opportunities for additional water storage in Lake Okeechobee.	Please refer SUGAR-2 response.
CRYSTALS-13	Alternatives: …the Corps should consider restoration/rehydration of the Holey Land and Rotenberger Wildlife management Areas. These lands are publicly-owned by the State of Florida and are perfectly positioned to store and release water needed for the restoration of WCA-3A and Everglades National Park. At a minimum, the CEPP should consider restoring sheetflow to those areas, since they are located immediately north of WCA 3A.	Please refer to SUGAR-11 response.
CRYSTALS-14	Alternatives: …to the extent that the CEPP concludes that Lake Okeechobee water will need to be treated before delivery to the WCAs, the CEPP should consider a wide variety of alternative ways to treat that water. For each alternative treatment option, analyses should evaluate the effectiveness of each treatment option in reaching target phosphorus levels, the true long-term cost of each option, and the resulting effects on the Northern Estuaries associated with greater and lesser flows from the lake associated with the effectiveness of different options.	The CEPP planning process will determine what water is available and what should be used for CERP purposes for the next increment of restoration. The condition of the water in lake as it exists today will be identified and adequate treatment facilities will be included in alternative plans based upon the quality of lake water as it exists today.
PRIVATE CITIZENS		
CITIZEN-1; Comment 1	No future bridging projects on ModWaters should be done without emergency pull-off lanes for U.S. 41 motorists within a construction zone.	Comment forwarded to Modified Water Deliveries project managers.
CITIZEN-1; Comment 2	One thing that is worrisome is the expedited process and reducing the level of detail, I don't agree with that.	The Corps has continually heard from stakeholders that its planning process is overly detailed, expensive and that it

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		takes too long; the amount of time and data being invested in studies are not leading to a better product or decision. As a result, the Corps is considering looking at ways to transform the planning process and fortunately, CEPP has been selected as a pilot project for this program. The pilot program focuses the detail on the key drivers of the decisions that are to be made and reduces unnecessary detail that results in a longer process and one that may not deliver a better solution.
CITIZEN-2	THERE IS ONE EVERGLADES. THATS IT! We believe a few very important points are vital to the glades health. #1, The Urban Development Boundary Dade Co. must remain where it is. #2, The dike around the Lake will NOT break free as proposed by people. A waste of money to repair. It isn't the ocean, and even a severe 'cane won't provide waves like it would in an ocean! New Orleans simply caused this panic! The rim canal would barely be affected. It's a ridiculous notion! I bring this up because of the wasteful funds it could use up. #3, we don't want TOO much water where there shouldn't be much and vice versa! land animals need dry land! #4, the "glades people" although very important, may have to adapt IF this affects them negatively! A few people, although very important, sometimes have to sacrifice livelihood for the greater good of something greater...THE GLADES AND EARTH'S FUTURE! #5, I'm hoping, having worked there, that Arch Creek, one of only a few natural rivers left, and of extreme historical significance, can once again flow! Its stagnant still, last I heard, and this should be of utmost importance- to let it flow again...it's a polluted mess! It would bring a lot of happiness and add a little touch of personality to the CERP program! How will the Cape Sable Sparrow fare?	1. This is outside the Corps' authority. 2. The primary compilation of information and documentation of the condition of the dike was prepared in the 2000 HHD Major Rehabilitation Report. The original plan for Reach 1 rehabilitation was developed before Hurricane Katrina's devastating impact on levees in New Orleans in August 2005. Even though construction had begun on Reach 1, it was determined lessons learned in Katrina's aftermath should be used to ensure that the HHD would continue to protect lakeside communities. In 2006 and 2007 Independent Technical Review (ITR) panels were convened to review the structural integrity of the HHD and aid in developing a long-term solution for rehabilitation. The findings of the ITR panels confirmed the Corps' earlier findings that the HHD is in need of rehabilitation. 3. The impoundment of the natural system and construction of drainage and conveyance has disrupted the annual pattern of rising and falling water depths in the remaining wetlands. Hydropatterns have been disrupted causing the erosion of valuable tree islands and the once uniform system is now too wet in some areas and too dry in others. One

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		objective of the CEPP is to restore seasonal hydroperiods and freshwater distribution to support a natural mosaic of wetland and upland habitat in the Everglades system. 4. Traditional cultural practices, cultural resources and recreation will all be considered during CEPP planning process. 5. Although listed on the National Register of Historic Places, Arch Creek is outside the CEPP project area and area of potential effects for cultural resources. 6. A thorough evaluation of endangered species needs, impacts and benefits will be conducted under CEPP.
CITIZEN-3	We welcome the Corps and other agencies' push to "move water South" at long last, having studied the issues since the early 1980s. I note that SFRestore's "New" science "discovery" repeats what the Corps has known at least since its independent scientist panel published the Reconnaissance Report in 1994. CERP Table 5-1 "Goals and Objectives" applies just as much today as it did when adopted in 1999 and should be followed. That seems to be the major flaw in the current CEPP: not restoring the natural flow instead of relying on new engineered "plumbing" projects. Without restoring the pond apple forest and the sawgrass sheet flow through the "River of Grass", we'll never achieve cleaning enough nutrients out of the water as it moves South to make it suitable for re-charging the Everglades.	The goals and objectives developed for the CEPP are fully consistent with those that were developed for the CERP. In regards to the restoration of the natural, or rather historical flow of the Everglades and system attributes, Section 385.8(c) of the Programmatic Regulations states that: "The restored South Florida ecosystem will be significantly healthier than the current system; however it will not completely replicate the undisturbed South Florida ecosystem and some areas may more closely replicate the undisturbed ecosystem than others." Although the CEPP is intended to restore, preserve, and protect the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection, it is accepted that a fully restored south Florida ecosystem may not completely resemble the historical Everglades as a whole. Restoration of a pond apple forest and sawgrass plain is outside of the scope of planning for the next increment of the CERP features under consideration. Due

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		consideration will be given to compatibility of CEPP features to future increments of these CERP components.
CITIZEN-4	I'm concerned that the Environmental Justice issues may not be adequately included in the plans for each project. With this in mind: What efforts are planned for the evaluation and management of the Environmental Justice issues for each project? How are the low income and minority communities impacted by each project being considered and compensated?	Environmental Justice will be assessed as part of NEPA process. The Corps plans to utilize the CERP Ethnographic Study to identify and address potential adverse impacts to minority and low income populations. Each CEPP alternative will be designed and analyzed to consider the plan that best meets the overall project objectives while identifying and addressing any disproportionate adverse impacts.
CITIZEN-5; Comment 1	As the only family thus recognized with a designation as a TCP [Traditional Cultural Property] by the CERP project by the Army Corps, we are truly concerned for the health of our Everglades, the River of Grass. All flora and fauna, likewise our family and our eight children depend on the health of this precious ecosystem. We've done our best to maintain and improve the health of our resources. The changes to be imposed around my family's dwelling are of great concern, especially for the next generation of the Gladesmen. We need to know that our traditional cultural ways of life will continue so as to be the bearers of a culture not to be forgotten by the wayside of progress in the name of restoration. The children of the Everglades rely on our decisions today for their cultural rights of tomorrow.	Impacts to historic sites and traditional cultural properties and practices will be assessed as part of NEPA and the National Historic Preservation Act process. Each CEPP alternative will be designed and analyzed to consider the plan that best meets the overall project objectives while minimizing adverse impacts.
CITIZEN-5; Comment 2	With reference to the hydroperiods, the definitions you guys are going by, I'd like to know whether they're based on historic data or if they're based on current flow chart data and whether or not if they're for primarily, basically municipal demand?	Hydroperiods throughout the majority of the Everglades are based upon historical data of predrainage conditions except in areas where deviations have been deemed ecologically beneficial (Loxahatchee Wildlife Refuge, marl marshes and Corbett Wildlife Management Area) and are not based upon municipal

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		demand. Hydroperiod targets differ throughout the Everglades landscape based upon the ecological community to be restored. For example, a wet prairie will have a shorter hydroperiod requirement than an aquatic slough.
CITIZEN-5; Comment 3	With reference to the surface water, what depths of the surface water are you talking about holding within the conservation areas and for what durations of time? It says on one of your boards that it's in order to diminish the damage to tree islands and reduce fire frequencies. Fires are cleansing for the Everglades. They remove invasive exotics and give the natural flora a chance to re-procreate. So how do you plan to mitigate seasonal sheetflow and what is the maximum depth of surface water going to be?	The project will not attempt to maintain a specific depth throughout the water conservation areas. Water depths within the water conservation areas will vary according to ground surface elevation, time of year, and location within the system. For example, average water depths within water lily-dominated slough communities should be between 2 to 3 feet during the wet season (June-October) and approximately 1.5 to 3 feet during the dry season (November-May). Similarly, hydroperiods will also vary according to the ecological community to be restored. For example, accretion of peat soils typical of ridge and slough landscape requires prolonged flooding, characterized by 10 to 12 month annual hydroperiods; while muhly grass-dominated marl prairies are characterized by a hydroperiod of 3 to 5 months. Water depths will also vary by season and year based upon hydro-meteorological and climatological conditions. The impoundment of the natural system and construction of drainage and conveyance has disrupted the annual pattern of rising and falling water depths in the remaining wetlands. Hydropatterns have been disrupted causing the erosion of valuable tree islands and the once uniform system is now too wet in some areas and too dry in others. Prolonged hydroperiods and water depths, particularly within southern WCA-3A, have led to degradation of tree islands and shifts in plant communities from

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		wet prairies to open water sloughs. Shortened hydroperiods, particularly within northern WCA-3A, have directly affected plant communities by enabling invasion of nuisance native (e.g. willow) and exotic (e.g. melaleuca, Brazilian pepper) plant species and altering plant community species composition. Restoration is focused instead on reducing the frequency of peat fires, which can cause long-term destruction of the important ridge-slough pattern. Exacerbated by prolonged dry seasons due to shortened hydroperiods, fires that are too frequent or severe can further alter plant communities, lead to loss of peat soils and native hardwood species and can promote the spread of exotics (e.g. Melaleuca releases seeds as a result of fire).
CITIZEN-5; Comment 4	How do you define wildlife utilization? One of your charts out there mentions that a lot of the study is based on wildlife utilization. I don't understand the definition or how you guys define wildlife utilization.	Wildlife utilization is defined as the use of the landscape by wildlife species. It is another way of asking: Is the habitat suitability of the Everglades for a diverse population of wading birds, mammals, fish, amphibians, etc. improving? One objective of the Central Everglades Planning Project is to reduce water loss out of the natural system to promote appropriate dry season recession rates for wildlife utilization. For example, wading birds, including the endangered wood stork, nest during the dry season and rely upon a seasonal pattern of drying wetlands to concentrate prey items. By reducing water loss out of the natural system and promoting appropriate dry season recession rates, areas of appropriate water depths for feeding would be available and wildlife utilization would be expected to increase.
CITIZEN-5; Comment 5	It makes mention of increases in productivity in the north estuaries, both of the oyster beds and the sea grass. I was wondering, are there considerations in	The restoration goal is to re-establish salinity regimes suitable for the maintenance of healthy, naturally-diverse and well-balanced estuarine

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	place for the bordering reefs and the other marine habitats in the scope of these projects because the bordering reefs and the other marine wildlife beyond the oyster beds and the sea grass are much -- equally, if not much more vital, to the overall ecosystem. That's the final piece of the ecosystem the Everglades touches.	ecosystems. Accomplishing restoration will require reducing canal discharges (including regulatory releases from Lake Okeechobee) and insuring sufficient dry-season flows necessary to avoid ecologically damaging high and low salinity extremes. Oysters, sea grasses, bordering reefs and other marine habitats will all directly benefit from restoration of appropriate salinity regimes.
CITIZEN-5; Comment 6	I'd like to know what the timeline is for this significant increase in aquatic food chain. Also, why is there no mention of the animal population increase of land-requiring animals, such as mammals, deer, panthers, foxes, things of that nature? It all makes reference to aquatic animal life. It makes no mention whatsoever of animals that require dry land.	One objective of CEPP is to restore seasonal hydroperiods and freshwater distribution to support a natural mosaic of wetland and upland habitat in the Everglades system. Tree islands support a diverse array of upland (land-requiring) species and are an important focus of Everglades restoration. By restoring appropriate hydrologic conditions, tree islands and other short hydroperiod environments (e.g. marl prairie) will be restored and thereby provide suitable habitat for both wetland and upland species. Within the project area, there are over 50 Federally-listed threatened and endangered species, including Florida panther, eastern indigo snake; Audubon's crested caracara and Everglade snail kite. These species depend upon both wetland and upland habitat and their needs will be incorporated into the Central Everglades Planning Project. The aquatic food web is mentioned because fish, amphibians and other aquatic species serve as essential prey resources for many larger predators such as those mentioned within the ecosystem. The timeline for the CEPP is to have a recommended plan for Congressional approval by August 2013. Implementation of the plan will then be dependent upon Congressional

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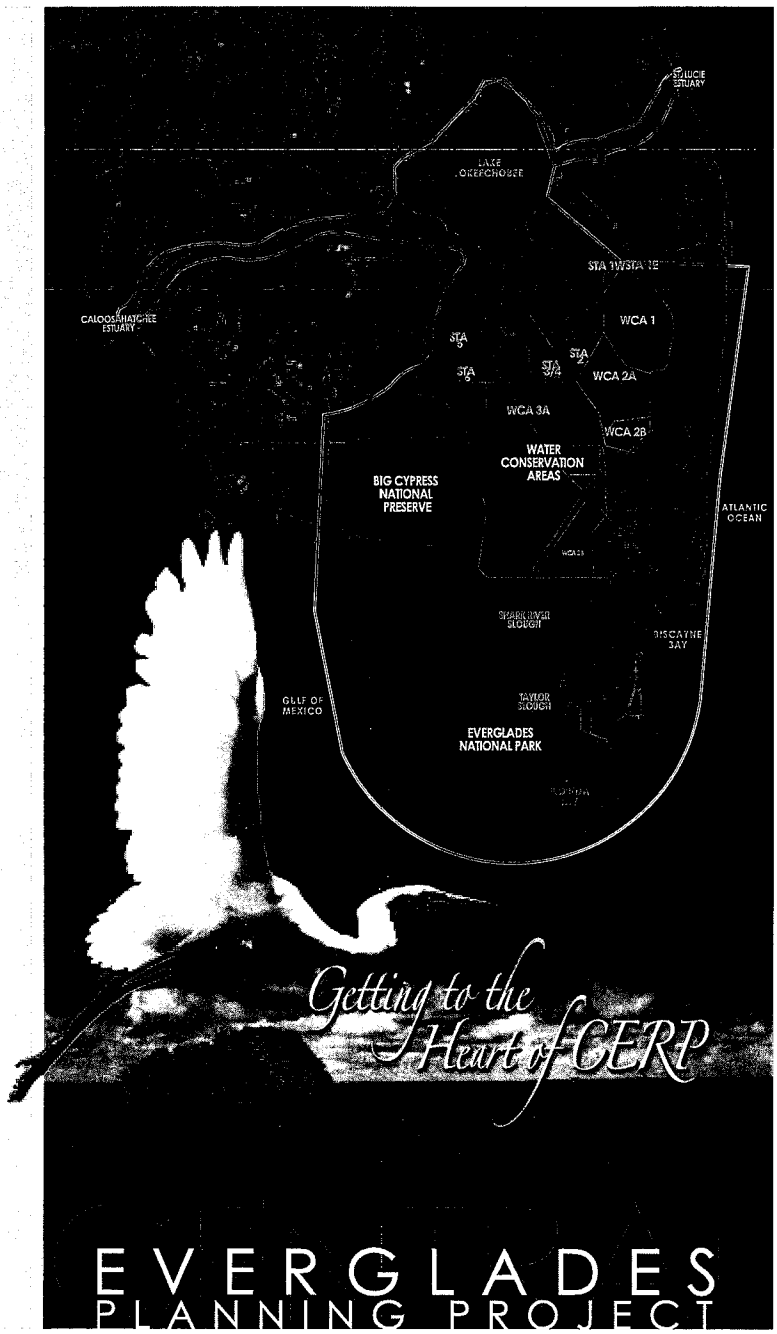
		authorization and funding. The timeline for actual increase in the food chain as a function of restoration (if that is what you were asking) will be estimated for each simulated/modeled alternative plan from a suite of environmental PMs.
CITIZEN-5; Comment 7	I'm all for the increase of water quality. But at what cost economically and environmentally?	Water quality must meet all applicable state and federal water quality standards prior to its discharge from EAA into the Water Conservation Areas and ENP.
CITIZEN-6; Comment 1	I do have a lot of concerns here in the name of restoration we could destroy the whole thing, and I know at one point there was a lot of concern about the amount of water that people were going to put out there, and the Everglades, it's not only how much water you put out there, but it's how long you hold the water.	The project will not attempt to maintain a specific depth throughout the water conservation areas. Water depths within the water conservation areas will vary according to ground surface elevation, time of year, and location within the system. Similarly, hydroperiods will also vary according to the ecological community to be restored.
CITIZEN-6; Comment 2	Concerned with putting a discharge canal on the south side of the L-5 levy. That would impact hundreds if not thousands of acres and cut off recreational access to the area.	The CEPP planning process is in the initial stages of plan formulation. At this point in the process, specific management measures or project features have not been developed. Recreation is one component that will considered as part of CEPP. A recreational sub-team has been formed to explore potential impacts on recreational opportunities as well as the potential for new recreational access. A recreational plan will be developed as part of CEPP to mitigate some potential impacts. CEPP will also continue to be discussed at future Water Resources Advisory Commission Recreation meetings to engage stakeholders.
CITIZEN-6; Comment 3	Concerned with filling of Miami River and loss of natural tree species that have been planted along the banks and loss of wildlife that depends upon it.	The CEPP planning process is in the initial stages of plan formulation. At this point in the process, specific management measures or project features have not been developed.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-6; Comment 4	We're not here to work against this project, but to work with you to make sure it's implemented properly.	The Corps appreciates and welcomes your participation in CEPP planning process.
CITIZEN-6; Comment 5	The Everglades is not meant to be a reservoir. I was involved in the Everglades Agricultural Reservoir on that project, and I know there was litigation over it to stop the project. We're all for that project. We're for the STA's. That puts more tools in your box, so you can, you know, put the water into the area more naturally, and we're all for those projects.	The goal of the CEPP is to improve the quantity, quality, timing and distribution of water in the Northern Estuaries, Water Conservation Area 3, and ENP in order to restore the hydrology, habitat and functions of the natural system.
CITIZEN-6; Comment 6	We've lost probably 60 percent of our tree islands due to either too much water or too little water. So it's important to get the hydrology right. We've seen too much water; you kill off all the fur-bearing animals. You kill off all the hardwood trees. We've seen that happen firsthand. Too little water, we have these muck fires, and then everything burns down to the cap rock, and it's really a sad thing to see.	Please refer to Corps Response to CITIZEN- 5, Comment 6.
CITIZEN-6; Comment 7	Concern with loss of public recreational abilities.	Recreation is one component that will considered as part of CEPP. A recreational sub-team has been formed to explore potential impacts on recreational opportunities as well as the potential for new recreational access. A recreational plan will be developed as part of CEPP to mitigate some potential impacts. The CEPP will also continue to be discussed at future Water Resources Advisory Commission Recreation meetings to engage stakeholders.
CITIZEN-7	We're very concerned about the bridging and would like to know what level of bridging we're going to have. It appears to be from the comments of some of the people here that there's a lot of concern about the flooding and the fact that water is backing up, and of course the solution to that is the bridging so that water can flow into Everglades National Park rather than backing up on Tamiami Trail. So we think	The Corps will assume for FWO condition that the Tamiami Trail Next Steps Project, which includes an additional 5.5 miles of bridging along Tamiami Trail, will be completed. As part of the CEPP alternatives analysis, some increment of bridging (in addition to the 1-mile bridge currently under construction) will be included.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	it's very important that this process include successful bridging so that we can get water moving south. We can do everything up north, but, if we can't get the water past Tamiami Trail, it's not going to do Everglades National Park any good.	
CITIZEN-8	We have a lot of confidence that two years is adequate time to get something good going and build it and when we get these systems running we can fine tune them and add on later, but let's make some progress.	Concur, the Corps is excited that CEPP has been selected as a pilot project for the Corps expedited Planning Process Pilot Program. The pilot program focuses the detail on the key drivers of the decisions that are to be made and reduces unnecessary detail that results in a longer process and one that may not deliver a better solution.
CITIZEN-9	Hendry-Glades Audubon favors projects that can be developed and managed effectively to improve water quality and supply while meeting the diverse needs of wildlife, ecosystems, private land owners and the public interest.	Concur, the Corps looks forward to Audubon's participation throughout CEPP planning process.
CITIZEN-10	Here are some options that should be considered within the CEPP PIR to partially substitute for or complement other proposed options: 1. In-ground Storage Reservoirs in lieu of above ground reservoirs 2. Deep In-ground cells within any reservoirs (above or below ground) for chemical water treatment (perhaps with alum) and sequestration of removed Phosphorus in deepest parts of the cell 3. ASR wells to store water when there is excess water in the EAA and reservoirs and/or Lake Okeechobee are at or near capacity (having good connections to use Lake Okeechobee water would be important). 4. Deep (boulder zone) disposal wells to remove water that cannot be stored and treated (e.g. brackish water in new in-ground reservoir cells and excess water	The CEPP planning process is in the initial stages of plan formulation. At this point in the process, specific management measures or project features have not been developed. The Corps appreciates and welcomes your participation in CEPP planning process.

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	imported from Lake Okeechobee during periods of regulatory discharge) (having good connections to use Lake Okeechobee water would be important). 5. Facilities to move and discharge water along the northern and western boundaries of Water Conservation Area 3. The first 4 options are less land intensive than the options of above-ground reservoirs and STAs. They may well be cost-competitive. They are also less likely to engender conflicts between their planned uses and environmental values. The fifth option is necessary to distribute water to rehydrate WCA 3 and establish proper flows to achieve restoration.	

C.3.1.4 NEPA Scoping Comments/Letters



COMMENTS/ QUESTIONS

EVENT: **Central Everglades Planning Project Workshop**

DATE: **December 14-15, 2011**

COMMENTS/QUESTIONS

Addition to verbal comments-
No future bridging projects on Mod Waters should be done without Emergency Pull-Off lanes for US 41 motorists within A construction zone.

REPRESENTING (Check one)

___ ELECTED OFFICIAL
___ TRIBAL
___ CONGRESSIONAL
___ FEDERAL AGENCY
___ STATE LEGISLATURE
___ STATE AGENCY
___ LOCAL GOVERNMENT
___ ENVIRONMENTAL
___ AGRICULTURE
___ GROUP
___ SELF
___ MEDIA
___ OTHER

DO YOU WISH TO HAVE YOUR NAME INCLUDED ON THE MAILING LIST FOR FUTURE INFORMATION? ___ YES ___ NO

PRIVACY ACT STATEMENT

AUTHORITY: 42 USC 4321, 4331-4335

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CESAD FORM 935, OCT 98

FRANK DENNINGER
NAME AND TITLE (PLEASE PRINT)

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MAILING ADDRESS

[redacted]
CITY STATE ZIP CODE

[redacted]
PHONE NUMBER

[redacted]
EMAIL ADD

-----Original Message-----
From: [redacted]
Sent: Tuesday, December 20, 2011 10:27 AM
To: [redacted] cerpprojectsprogram@evergladesplan.org
Cc: [redacted]
Subject: Re: [cerpprojectsprogram] Public scoping meetings for Central Everglades Planning Project (CEPP) in Plantation Dec. 14 and Clewiston Dec. 15

I was unable to participate in the Public Scoping Meetings. Howevr, I'm concerned that the Environmental Justice issues may not be adequately included in the plans for each project. With this in mind:

What efforts are planned for the evaluation and management of the Environmental Justice issues for each project? How are the low income and minority communities impacted by each project being considered and compensated?

C. R. Lee

Ralph, Gina P SAJ

From: martha musgrove [redacted]
Sent: Friday, January 20, 2012 9:49 PM
To: CEPPComments, SAJ
Cc: Manley Fuller
Subject: comments re CEPP scoping

Jan. 20, 2012

Att: Dr. Gina Padua Ralph

Re: Scope of the Central Everglades Project

The Florida Wildlife Federation supports the announced Corps of Engineers' expedited process to develop a suite of projects to increase the volume and flow of freshwater, which meets established water quality standards of 10 ppb phosphorus, into Everglades National Park. The Federation fully supports restoration of the Everglades, including the Everglades National Park and the Water Conservation Areas.

As a member of the Everglades Coalition, we embrace the Coalition's recitation of necessary projects and request that special attention be paid to dealing with seepage management issues. In addition, we believe that the COE should include in the scope of the CEPP a goal of delivering its recommendations in time to be incorporated into the federal-budget cycle commencing in January 2014.

In addition the Federation urges the COE to include in its design studies and make recommendations about maintaining freshwater-fishing habitat in Water Conservation Area 3B, the L-67 canals and L-29 (Tamiami Trail) canal and public access. We ask that this planning include consideration of creating depressions similar to alligator holes, slopes to establish "littoral zones" around borrow pits/canals, and the use of fill to stabilize, re-generate or create tree islands mimicking the Everglades' natural ridge and slough landscape. As the COE is aware, over the years water has tended "to pond" in WCA 3B. This has resulted in establishing a thriving bass fishery that South Florida sportsmen have come to prize. The proximity to urban South Florida, which otherwise offers limited freshwater recreational fishing opportunities, enhances its recreational value. At this point we believe that fishery enhances the area for wading birds and wildlife and can be incorporated into proposed projects without harm to restoration goals.

Manley Fuller, president

Florida Wildlife Federation

PO Box 6870

Tallahassee, FL 32314

850-656–7113

wildfed@gmail.com

sent by:
Ms. Martha Musgrove
Director, Florida Wildlife Federation
[redacted]

Ralph, Gina P SAJ

From: Shinn, Charles [Charles.Shinn@ffbf.org]
Sent: Wednesday, January 18, 2012 11:14 AM
To: CEPPComments, SAJ
Cc: [redacted]
Subject: Central Everglades Planning Project Public Comments on behalf of Florida Farm Bureau Federation

Attn: Dr. Gina Paduano Ralph

U.S. Army Corps of Engineers

Florida Farm Bureau Federation (FFBF) is the Sunshine State's largest general interest agricultural organization with more than 140,000 member-families representing farmers throughout Florida on various issues that may impact farming operations. We have numerous farmers in Central and South Florida that potentially may be impacted by the Central Everglades Planning Project (CEPP), therefore please accept the following comments on behalf of our farmer members.

We depend on the Central & South Florida Flood Control Project and the associated partners for water supply as well as flood protection as noted in the Water Resources Development Act of 2000 (WRDA 2000). The intended purpose of the Comprehensive Everglades Protection Plan (CERP) within WRDA 2000 is the restoration and protection of the remaining Everglades while continuing to meet the water consumption needs of permitted users. The stated scope of the CEPP is very vague in how the goal will be accomplished. The vagueness along with the expedited CORP schedule provides concern that the proper assurances will be in place to minimize impact to landowners in the region south of Lake Okeechobee.

Key to movement of additional water south is additional water storage. Thus far, the CORPS operation of the current Lake Okeechobee Regulation Schedule has not allowed the flexibility to increase water storage for proper timing of additional flows to the south. Without a noted change in operation, the CEPP must denote additional storage to create the proper timing needed to redirect water south.

Water quality has been an impediment to moving water into Everglades National Park and the current water conditions in Lake Okeechobee must be considered within the scoping process. It has been said that even if no additional loading is introduced to the lake, it will take a period of 50+ years for the lake to meet Federal standards. Ignoring the current condition of the lake will result in ultimate failure of any plan. Additionally, Federal Judge court orders must be considered and addressed.

Past single species management of Endangered Species such as the Cape Sable Seaside Sparrow must be addressed within the scoping process of the CEPP. Creating the mechanism to move water south only to have it blocked from entering the Everglades National Park will result in ultimate failure and the potential to flood lands in the EAA.

Florida Farmers are at their core environmentalists and the success of any farming operation depends on a healthy adjoining ecosystem. We fully support the concept of moving additional water south instead of releasing it to tide from via C-43 and C-44 thus harming fragile estuaries. The realities of the current conditions (quality/quantity/timing/distribution) must be fully addressed and vetted in any comprehensive plan such as CEPP. We look forward to working with the CORPS and other interested parties to develop a plan that will accomplish these goals.

Sincerely,

Charles Shinn

Assistant Director of Government & Community Affairs

Florida Farm Bureau Federation

P.O. Box 147030

Gainesville, Florida 32614

(772) 778-0932 office

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“The Voice of Florida Agriculture”

Florida Crystals Corporation
One North Clematis Street
Suite 200
West Palm Beach, FL 33401

William F. Tarr
Vice President
P: 561-366-5157
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January 20, 2012

VIA E-MAIL AND U.S. MAIL

Dr. Gina Padua Ralph
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, Florida 32232-0019

Re: Scoping Comments on the Central Everglades Planning Project

Dear Dr. Ralph:

Please accept this letter and its attachment as our initial comments on the proposed Central Everglades Planning Project (CEPP) as presented in the scoping announcement in the Federal Register and the presentations given at public scoping meetings.

Florida Crystals and its affiliates, including Okeelanta Corporation and New Hope Sugar Company, have consistently supported restoration of the South Florida ecosystem, along with protection of economic and social interests in the region. We own a large amount of farmland, employ many people in the Everglades Agricultural Area (EAA), and are significant contributors to the economy of South Florida. A significant number of our products are certified organic, we produce the first sugar certified as "CarbonFree" by Carbonfund.org, and we operate the United States' largest biomass power plant. We have been active participants in farm-level Best Management Practices that have reduced phosphorus in stormwater runoff from the EAA by over 50 percent.

We applaud the premise of the CEPP, as we understand it, to bring important restoration projects on-line sooner, and sincerely hope that the process evolves into a project we can actively support. At this time, however, we are not sure what the CEPP is expected to accomplish and how it will affect the interests of Agriculture. In that respect, we feel that the scoping initiative

may be premature because the agencies have not yet proposed a plan with enough detail on which Florida Crystals can fully comment. Nevertheless, enclosed for your review is a series of detailed comments based on what we have seen so far.

Please do not interpret these comments to mean that we do not support the CEPP. We are hopeful that it can be a significant step forward, and we intend to stay engaged in the process to promote both Everglades restoration and to protect Agriculture.

Thank you for considering these comments. With kind regards, I am,

Yours truly,

William F. Tarr
Vice President
Florida Crystals Corporation

/jcd
Enclosure
Copy w/ encl. via e-mail to:
Mr. Joe Collins, SFWMD, Chair
Mr. Kevin Powers, SFWMD, Vice Chair
Ms. Sandy Batchelor, SFWMD Board Member
Mr. Daniel DeLisi, SFWMD Board Member
Mr. James J. Moran, SFWMD Board Member
Mr. Daniel O'Keefe, SFWMD Board Member
Mr. Juan M. Portuondo, SFWMD Board Member
Mr. Timothy Sargent, SFWMD Board Member
Mr. Glenn J. Waldman, SFWMD Board Member
Ms. Melissa Meeker, SFWMD
Mr. Matt Morrison, SFWMD
Mr. Tom Teets, SFWMD
Ms. Kimberly Taplin, USACE
Mr. Steven Kopecky, USACE
Mr. Dennis Duke, Interior
Mr. Tom MacVicar
Mr. Neal McAliley
Mr. Galen Miller

Florida Crystals Corporation's Detailed Comments on the CEPP (based on public scoping materials available to date)

January 20, 2012

1. Scoping is Premature in the Absence of a Specific Proposal

As an initial matter, it is premature to request scoping comments in the absence of a specific proposal by the U.S. Army Corps of Engineers (Corps) for the CEPP.

Scoping is required when an agency initiates preparation of an Environmental Impact Statement (EIS) pursuant the National Environmental Policy Act (NEPA). 40 CFR § 1502.4(d). Any NEPA process inherently begins with a proposal. *United States v. SFWMD,* 28 F.3d 1563, 1573 (11th Cir. 1994) ("It would be premature and serve no useful purpose to now require preparation of an EIS when no specific federal action has been proposed. ... NEPA does not require evaluation of hypothetical proposals, impacts and alternatives concerning a nonexistent federal proposal."); 40 CFR § 1502.4(a), -(d) ("Agencies shall make sure the proposal which is the subject of an Environmental Impact Statement is properly defined."). The purpose of scoping is to seek input from the public about what the agency should study with regard to that proposal. 40 CFR § 1501.7 ("There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues *related to the proposed action.* This process shall be termed scoping.") (emphasis added); CEQ, Draft Guidance on Improving the Process for Preparing Efficient and Timely Environmental Reviews under NEPA, 76 Fed. Reg. 77492, 77496 (Dec. 13, 2011) ("In scoping, the lead agency determines the issues its EA or EIS will address and identifies the significant issues *related to the proposed action* that will be considered in the analysis.") (emphasis added).

To date, the Corps has not proposed any specific plan for the CEPP. Instead, the Corps has stated that it intends to use the CEPP process to *develop* a proposal. USACE, Notice of Intent to Prepare EIS on CEPP, 76 Fed. Reg. 75539 (Dec. 2, 2011) ("The goal of the CEPP would be to *develop* an integrated, comprehensive technical plan..."). This is reflected in the changing name for the CEPP: originally, it was referred to in public announcements as the "Central Everglades Study," then it was called the "Central Everglades Planning Process," and now it is referred to as the "Central Everglades Planning Project." Despite the current label of the CEPP as a "project," the Corps has not yet proposed any specific project.

Conducting scoping now is inconsistent with NEPA and the Programmatic Regulations for the Comprehensive Everglades Restoration Plan (CERP). The government-wide regulations governing NEPA contemplate scoping *after* a proposal has been announced. *See* 40 CFR § 1501.7. The Corps' NEPA regulations call for the scoping notice itself to describe both the specific proposal and reasonable alternatives. 33 CFR Part 230, App. C. The CERP Programmatic Regulations also require the Corps to involve public "in such a way to ensure meaningful consultation." 33 CFR § 385.10(d). Since the Corps has not identified any specific proposal for the CEPP, members of the public cannot provide meaningful input regarding the environmental issues raised by, and alternatives to, the nonexistent proposal. While the Corps

wants to pursue an accelerated schedule for the CEPP, the Corps has also stated that it will follow all laws and regulations pertaining to other CERP projects.

While these comments are meant to provide constructive, meaningful input into the CEPP, in light of the lack of a specific project at this point, we reserve the right to supplement these scoping comments in the future.

2. The Corps Should Clarify Which CERP Projects Are Part of the CEPP

The Corps needs to clarify which CERP projects are going to be considered part of the CEPP. The CERP approved by Congress in the Water Resources Development Act of 2000 (WRDA 2000) consisted of 68 specific projects, which together were designed to help benefit the South Florida ecosystem while providing for the other water-related needs of the region. 67 Fed. Reg. 50540 (Aug. 2, 2002). Congress directed the Corps to prepare a Project Implementation Report (PIR) for each individual project to be authorized. WRDA 2000, § 601(b)(2)(D)(i), -(d), -(h)(4)(A)(i). The purpose of a Project Implementation Report is to "bridge[] the gap between the conceptual level of detail contained in the [the 1999 Final Integrated Feasibility Study and Programmatic EIS (1999 Approved Plan)] and the detailed design necessary to prepare plans and specifications required to proceed to construction." 33 CFR § 385.26(a)(1). The starting point for any Project Implementation Report therefore must be to identify the projects from the 1999 Approved Plan which will be addressed in the report.

It is not clear at this point which projects from the 1999 Approved Plan are being included in the CEPP. The announced purpose of the CEPP is to design the individual projects for the Central Everglades. The December 2, 2011 notice in the Federal Register states that "[t]he CERP projects identified to accomplish [the agency's objectives] *include* the Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park (ENP) Seepage Management, and Everglades Rain-Driven Operations." 76 Fed. Reg. 75539 (Dec. 2, 2011) (emphasis added). The December 2, 2011 notice states that these projects are only the

> "*initial increment of project features* that provide for storage, treatment, and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3 and seepage management features to maintain water within the natural system." 76 Fed. Reg. 75539 (Dec. 2, 2011) (emphasis added).

Based on the Corps' description of potential CEPP features at initial public meetings, it appears that the CEPP may include even more projects identified in the 1999 Approved Plan. Potentially, all (or parts) of the following individual projects might fit within the general description CEPP provided to date:

- "Everglades Agricultural Storage Reservoirs (G)," 1999 Approved Plan, section 9.1.5 (identified in the Dec. 2, 2011 Federal Register notice)
- "Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement (AA, QQ and SS)," 1999 Approved Plan, section 9.1.7.2 (identified in the Dec. 2, 2011 Federal Register notice),

- "L-31N Improvements for Seepage Management and S-356 Structures (V and FF)" (later renamed, at least in some places, "ENP Seepage Management"), 1999 Approved Plan, section 9.1.8.21 (identified in the Dec. 2, 2011 Federal Register notice),
- "Everglades Rain Driven Operations (H)," 1999 Approved Plan, section 9.2.4.1 (identified in the Dec. 2, 2011 Federal Register notice)
- "Flows to Northwest and Central Water Conservation Area 3A (II and RR)", 1999 Approved Plan, section 9.1.7.1,
- "Water Conservation Areas 3A and 3B Levee Seepage Management (Q)", 1999 Approved Plan, section 9.1.8.13,
- "Lake Okeechobee Regulation Schedule (F)", 1999 Approved Plan, section 9.2.1.1,
- "Modified Holey Land Wildlife Management Area Operation Plan (DD)", 1999 Approved Plan, section 9.2.4.2,
- "Modified Rotenberger Wildlife Management Area Operation Plan (EE)", 1999 Approved Plan, section 9.2.4.3,

It is important that the Corps clearly define which projects from the 1999 Approved Plan are included in the CEPP. The public needs to know how much of the overall CERP is being packaged into the CEPP, if for no other reason than to enable them to provide meaningful comment. Moreover, the Project Implementation Report will have to demonstrate that the CEPP design is "consistent with the [1999 Approved] Plan," 33 CFR § 385.26(a)(3)(i), and "[i]nclude a discussion of any significant changes in cost or scope of the project from that presented in the 'Final Integrated Feasibility Report and Programmatic Environmental Impact Statement,' dated April 1, 1999," *id.* –(a)(3)(xiii). The sooner the agency identifies the specific CERP projects included in the CEPP, the better the public will be able to provide meaningful input.

3. The Corps Should Limit the CEPP to the Scope Approved by Congress in WRDA 2000

The 1999 Approved Plan presented to Congress specifically described the projects included in the plan, and the CEPP should only consider projects consistent with that plan. Agricultural interests in EAA supported approval of the CERP by Congress and the Florida Legislature based, in part, on the expectation that the agencies had identified a limited and reasonable amount of farm land to be sacrificed for water management purposes. The South Florida Water Management District currently owns the land in the EAA identified for CERP in the 1999 Approved Plan. This means that the Corps can implement the CEPP in the EAA consistent with the 1999 Approved Plan, using land the government already owns. For planning purposes, this would make the EAA portion of the CEPP manageable and more realistic and appears to be the Corps' plan, based on statements in early scoping meetings that it will "focus on lands purchased for CERP." Agency CEPP Powerpoint Presentation, p. 31 (Dec. 16, 2011).

It would be inappropriate for the Corps to design a project that would significantly depart from the 1999 Approved Plan in the Project Implementation Report for the CEPP. In the particular case of the "Everglades Agricultural Storage Reservoirs (G)" project, it would be improper for the agency in the CEPP to develop a proposal, and analyze alternatives to such a proposal, that would call for significantly larger land footprints in the EAA.

A. Congress Approved a Specific Plan in WRDA 2000, and the Corps Lacks Authority to Go Beyond That Plan

The Corps lacks authority to depart from the 1999 Approved Plan in development of the CEPP. In WRDA 2000, Congress approved the specific plan contained in the Final Integrated Feasibility Report and Programmatic Environmental Impact Statement, dated April 1, 1999. WRDA 2000, § 601(b)(1)(A) ("Except as modified by this section, the Plan is approved as a framework for modifications and operational changes to the Central and Southern Florida Project..."); *id.* § 601(a)(4) ("The term 'Plan' means the Comprehensive Everglades Restoration Plan contained in the 'Final Integrated Feasibility Report and Programmatic Environmental Impact Statement,' April 1, 1999, as modified by this section."). Congress affirmatively directed the Corps to implement that specific plan (with some modifications). WRDA 2000, § 601(b)(2)(A)(i) ("The Secretary shall carry out the projects included in the Plan in accordance with paragraphs (B), (C), (D), and (E)."). Congress also made a point of *not* approving a portion of the plan that was developed late in the process, and specifically indicated that water generated by that portion of the plan was *not* "water included in the Plan." WRDA 2000, § 601(g). While the Corps indicated in the 1999 Approved Plan that it would continue to refine and optimize the CERP based on new information and changed circumstances, *see, e.g.,* 1999 Approved Plan at 10-19 ("The purpose of the Project Implementation Report is to affirm, reformulate or modify a component, or group of components, in the recommended Comprehensive Plan."), it never told Congress that it would seek to significantly change the overall plan through individual project authorizations. In accordance with WRDA 2000, the Corps therefore needs to limit the scope of the CEPP to the approximate parameters of the projects approved by Congress in WRDA 2000.

B. The Corps Cannot Prepare a Project Implementation Report If There Will Be Significant Changes to the CERP Projects

The CEPP cannot consider significant changes to the 1999 Approved Plan in the context of a Project Implementation Report. In its December 2, 2011 public notice, the agency indicated that it will prepare a Project Implementation Report for the CEPP. Project Implementation Reports take the preliminary parameters of the projects contained in the 1999 Approved Plan and fill in the details. Programmatic Regulations, Six Program-Wide Guidance Memoranda, at 1-B-1 (July 2007) ("CERP Guidance Memoranda") ("Each component or project of the Plan has previously been formulated to a certain level and the component or project has been developed to accomplish specific CERP goals. As such, formulation in the PIR always begins with the formulations already completed in developing the plan."). Congress specifically directed that such reports must be consistent with the Plan. WRDA 2000, § 601(h)(4)(A)(iii)(I) ("A project implementation report shall ... be consistent with the Plan..."); *see also* 33 CFR § 385.6.

Although a Project Implementation Report may consider "minor adjustments in the Plan," a significant change in the plan would require preparation of a Comprehensive Plan Modification Report. 33 CFR § 385.32(c); CERP Guidance Memoranda, at 1-4 ("Minor adjustments to the Plan may therefore be accomplished through PIRs."). To date, the Corps has not identified a need for a significant change to the CERP which could be the basis of a Comprehensive Plan Modification Report. The Programmatic Regulations require the Corps to have prepared Periodic CERP Updates in 2004 and again in 2009, which could have been the basis for "modifying the design or operational plan for a project of the Plan not yet

implemented" or preparing a Comprehensive Plan Modification Report. 33 CFR § 385.31(c), -(d)(1)(ii), -(d)(2). Since the Corps has never prepared such a Periodic CERP Update there would be no basis to make significant departures from the 1999 Approved Plan in the detailed design of projects in the CEPP.

For the CEPP, this means that the Project Implementation Report should be limited to proposals and alternatives that would optimize the projects identified in the 1999 Approved Plan, making only limited adjustments. To take one project, the "Everglades Agricultural Storage Reservoirs (G)" was to be used for storage of local runoff and Lake releases to be delivered to the Water Conservation Areas at a total price of approximately $436,648 million (in 1999 dollars and cost of construction). The EAA features are at the heart of the CERP, and at the time the 1999 Plan was issued, the land needed for that project already had been acquired by government agencies. Developing the CEPP consistent with those parameters would be appropriate for a Project Implementation Report. The agency could also analyze different ways of using the available land that would balance deliveries to agricultural users and the WCAs, and that would meet the requirements of the Savings Clause of WRDA 2000 concerning the transfer of existing sources of water supply and levels of flood protection.

C. Significant Changes to CERP Projects in the CEPP Will Require Additional Programmatic NEPA Compliance

If the CEPP exceeds the scope of the 1999 Approved Plan, it will trigger the need for a new Programmatic EIS for the CERP. The 1999 Approved Plan was prepared with a Programmatic EIS, in part so that subsequent NEPA documents prepared for individual CERP components could tier-off of the original Programmatic EIS. 33 CFR § 385.26(d)(1). To the extent that the Corps makes significant changes to the 1999 Approved Plan in the CEPP, then it will need to prepare a new Supplemental Programmatic EIS for the overall CERP. If the agency wants to move expeditiously with the CEPP, then it should avoid making significant changes to the 1999 Approved Plan.

4. Proposed Planning Constraints and Performance Measures Should Be Revised

A. Lake Okeechobee Water Storage and Operations

The Corps must change its planning constraints related to operations of water control structures around Lake Okeechobee. In initial public meetings on the CEPP, the Corps has identified as a planning constraint "Lake Okeechobee Regulation Schedule – LORS 2008." *E.g.*, Agency CEPP Powerpoint Presentation, at 29 (Dec. 16, 2011). The agency apparently will assume that LORS 2008 will be in effect until at least 2050, because it is identified as part of the "Future Without Project Condition – 2050." *See, e.g., id.* at 33.

It would be inappropriate for the CEPP to make LORS 2008 a planning constraint for the CEPP. First, it would be inconsistent with the 1999 Approved Plan. The 1999 Approved Plan assumed that a former lake regulation schedule, Run 25 Lake Schedule, was the CERP 2050 Without-Project condition. This was the basis of the Corps' analysis of the overall benefits of the CERP compared to the status quo. If the Corps now treats LORS 2008 as the "Without-Project Condition," it would change every benefit analysis that was performed for the CERP and

clearly require a CERP Update or Comprehensive Plan Modification Report as envisioned in the Programmatic Regulations. At most, it might be appropriate to utilize the former WSE Schedule as the Without-Project Condition since it was developed concurrent with the 1999 Approved Plan, but in no case can the LORS 2008 schedule be used for that condition.

Second, using LORS 2008 as a planning constraint for the CEPP would be inconsistent with the regulation schedule itself. When the Corps adopted LORS 2008, the agency acknowledged that "Lake Okeechobee is a multi-purpose project with often competing project purposes....The recommended plan attempts to balance these project purposes, but public health and safety, related to concerns with HHD structural integrity were a dominant factor in the plan formulation." LORS 2008 ROD, at 2. The ROD further stated that it would only be an interim schedule for the Lake. LORS 2008 ROD, at 6 ("The final SEIS also explains that the recommended plan will be an interim schedule, and a new study will begin immediately following completion of this Lake Okeechobee Regulation Schedule Study which will take into consideration upcoming Comprehensive Everglades Restoration Plan (CERP) projects. ... The recommended plan identifies an interim solution..."). By making that "interim schedule" a planning constraint in the CEPP, the Corps effectively would convert it to a permanent regulation schedule. That would lock-in for purposes of the CEPP analysis a performance for the Lake that was never intended to be in place in the future when the CEPP projects will be in operation.

Third, making LORS 2008 a planning constraint would violate Savings Clause of WRDA 2000. The Savings Clause of WRDA 2000 provides, in part, that "[u]ntil a new source of water supply of comparable quantity and quality as that available on the date of enactment of this Act is available to replace the water to be lost as a result of implementation of the Plan, the Secretary and the non-federal sponsor shall not eliminate or transfer existing legal sources of water, including those for an agricultural or urban water supply." WRDA 2000, § 601(h)(5). "Existing legal source" means the "quantity and quality of water available within a basin ... used for a water supply, which is legally protected..., as of December 11, 2000, for ... [a]n agricultural or urban water supply." CERP Guidance Memoranda, at 3-3. The Programmatic Regulations provide that the Corps "shall determine if implementation of the project will cause an elimination or transfer of existing legal sources of water by comparing the availability of water with the recommended project with the pre-CERP baseline developed in accordance with § 385.35(a) [through guidance]." 33 CFR § 385.36. This determination should be done through "a preliminary screening analysis" at the start of the process. CERP Guidance Memoranda, at 3-1. The Pre-CERP Baseline developed under the Programmatic Regulations "is a description of assumed hydrologic conditions on the date of enactment of WRDA 2000 (December 11, 2000)," which for Lake Okeechobee was the "Lake Okeechobee Regulation Schedule WSE according to WSE decision trees." Programmatic Regulations, Pre-CERP Baseline Memorandum, at 8, 14 (April 2005). "Although regional models and model versions may change over time, the assumptions that define the Pre-CERP Baseline will not be changed." CERP Guidance Memoranda, at 3-6. Since the LORS 2008 regulation schedule was adopted in 2008, it is not part of the Pre-CERP Baseline. The apparent decision in the CEPP to make the "interim" LORS 2008 regulation schedule permanent, by treating it as the Without-Project Condition, will effect a permanent loss of water supply for agriculture (and other users). WRDA 2000 prohibits such a transfer of water supply until alternative water is made available, and the CEPP therefore cannot treat the LORS 2008 as an unchangeable constraint.

The only valid approach for the CEPP would be to allow for changes in the Lake Okeechobee Regulation Schedule as necessary to achieve project objectives. That would be consistent with the agency's initial outline of measures to be considered in the CEPP, which include "operational changes." It would also allow the agency to avoid transferring existing legal sources of water away from agricultural users in the EAA, by adjusting the lake schedule as appropriate to avoid adverse impacts to agricultural users. To summarize, the Without-Project Condition must assume either the WSE or Run 25 regulation schedules are in effect, while the With-Project Condition can utilize the WSE schedule, or a proposed new schedule recommended by the CEPP.

B. Water Quality

The role of water quality standards in the CEPP needs to be reconsidered. In initial public meetings on the CEPP, the Corps has identified as a planning constraint "Meet Applicable Water Quality Standards." *E.g.,* Agency CEPP Powerpoint Presentation, p. 29 (Dec. 16, 2011). This formulation of the planning constraint is quite vague, in that it does not identify which standards need to be met at what locations. To the extent that the Corps means that water from Lake Okeechobee delivered to the WCA's should meet applicable phosphorus effluent limitations for discharges from Stormwater Treatment Areas, those effluent limitations have not yet been fully determined. To the contrary, the precise effluent limitations for Stormwater Treatment Area discharges, and how those effluent limitations would be measured, is the subject of ongoing litigation which may not be fully decided for years. The CEPP therefore is being tied to a planning constraint which is undefined. Furthermore, the potential projects that may be required to meet the limitations resulting from the litigation may be incompatible with the plan recommended by the CEPP, and the South Florida Water Management District may not have the financial resources to satisfy both courts and participate in the CEPP.

The CEPP plans also need to be developed based on the actual quality of water in Lake Okeechobee. We have heard that some in the federal government are considering an assumption that the Lake water phosphorus concentration is at 44 parts per billion. According to recent data from the South Florida Water Management District, average phosphorus concentration within the Lake ranges from 100 to 200 ppb. The quality of water in Lake Okeechobee is not the responsibility of the EAA, because virtually all of the water entering the Lake comes from other basins. The CEPP should include in its analysis a defensible Lake Okeechobee phosphorus concentration based on reasonably foreseeable phosphorus levels over the course of the study period, not an assumption based on a goal where there is no expectation of that goal being met.

C. Water Supply

Assuring adequate water supply for existing and future uses should be a planning constraint for the CEPP. This has always been a planning constraint for CERP-related processes. It was a planning constraint to minimize loss of service for water supply in the C&SF Project Reconnaissance Report (Nov. 1994) (p. 200-201). The Governor's Commission for Sustainable South Florida, which Congress directed the Corps to consider in development of the CERP, made a planning objective of "ensur[ing] adequate water supply and flood protection for ... agricultural needs." 1999 Approved Plan, at 6-4. In WRDA 2000, Congress included the Savings Clause which prohibits the elimination or transfer of an existing legal source of water

for agricultural or urban water supply until replacement water is available that is of comparable quantity and quality. WRDA 2000, § 601(h)(4)(A). For plan development purposes, the CEPP therefore should include a constraint that it will assure adequate water supplies for existing and future uses.

There also should be a performance measure that evaluates the extent to which the CEPP alternatives increase water supplies for users other than the natural system. When the 1999 Approved Plan was developed, many agricultural and urban water users supported the plan because the analyses showed that it would develop additional water for new human uses. *See, e.g.,* CERP Guidance Memoranda, at 3-2 ("It is anticipated that if more water is made available for the natural system in South Florida through implementation of the Plan, more water should also be available for other existing and future uses."). When the Florida Legislature approved the CERP in 2000, it expressly stated that one of the Plan's purposes was "the enhancement of water supplies." § 373.470(3)(b)(2), Fla. Stat. The project "Everglades Agricultural Storage Reservoirs (G)," for instance, in part was designed to provide water for agricultural uses in the EAA. *See* 1999 Approved Plan, at 6-14 to 6-15, 9-9 to 9-10. The Corps' presentation at the initial CEPP scoping meetings mentioned the Savings Clause for existing uses, but did not mention that water for new uses was to be provided by other elements of the CERP that could be affected by this project. The CEPP should consider this issue, and include the development of additional water supplies as a performance measure.

D. Flood Protection

The CEPP also should embrace the same purposes as the Everglades Agricultural Storage Reservoirs in CERP which included "increasing flood protection in the Everglades Agricultural Area." (1999 Approved Plan, at 9-9) In the WRDA 2000 Savings Clause, Congress directed that "[i]mplementation of the Plan shall not reduce levels of service for flood protection that are in existence on the date of enactment of this Act, and in accordance with applicable law." WRDA 2000, § 601(h)(4)(B). A planning constraint for flood protection therefore would be appropriate for the CEPP. Moreover, like water supply, one of the authorized features of the 1999 Approved Plan was improved levels of service for flood protection. (1999 Approved Plan, at 9-9) The CEPP should include as a performance measure the degree to which proposals improve flood protection.

E. Economic and Social Disruption

There should be an additional planning constraint that the agencies minimize regional economic and social disruption. This, too, has long been a planning goal of the Corps' South Florida ecosystem restoration planning. It was a planning constraint for the C&SF Project Reconnaissance Report (Nov. 1994) (p. 201). The Reconnaissance Report acknowledged that "reduced agricultural production" was a "negative impact," and "a proxy of acres of land removed from production, and similarly from county tax rolls, was used to measure the potential economic and social disruption" (p. 201). The 1999 Approved Plan identified as one of the "Planning Goals and Objectives" "Enhance Economic Values and Social Well Being." 1999 Approved Plan, at 5-24. Consistent with the Reconnaissance Report, the CEPP should include minimization of economic and social disruption as a planning constraint, using the proxy of reduced agricultural production and property removed from tax rolls.

5. Alternatives

As indicated above, it is very difficult for the public to identify alternatives for analysis in the absence of a specific proposal from the Corps. However, there are at least three types of alternatives that the agency should consider as it develops the CEPP.

First, the Corps should consider opportunities for additional water storage in Lake Okeechobee. The Lake was used to store significantly more water before implementation of LORS 2008. The only significant water storage that will be available in the CEPP timeframe will be provided by the Lake. To the extent that storage there is limited by condition of the Herbert Hoover Dike, the Corps could consider supplementing the dike rehabilitation funds as part of the funding appropriated for the CEPP, since many of the benefits to be derived from the CEPP will be dependent on storage capacity in Lake Okeechobee above what can be provided under the LORS 2008 schedule. This would be consistent with some of the "fundamental general concepts" of the Governor's Commission for Sustainable South Florida, which set a planning objective that "[t]he burden and responsibility of water storage should be shared across the system." 1999 Approved Plan, at 6-5.

Second, the CEPP should consider restoration/rehydration of the Holey Land and Rotenberger Wildlife Management Areas. These lands are publicly-owned by the State of Florida and are perfectly positioned to store and release water needed for the restoration of WCA-3A and Everglades National Park. The Rotenberger Wildlife Management Area is 28,760 acres, and Holey Land Wildlife Management Area is 35,350 acres. At a minimum, the CEPP should consider restoring sheetflow to those areas, since they are located immediately north of WCA 3A. There are two projects in the 1999 Approved Plan which seek to accomplish just that. These areas potentially could more than double the total acreage available to the government for water deliveries from Lake Okeechobee to the Everglades and the CEPP should consider how best to address those areas as it considers alternative measures for the Central Everglades.

Third, to the extent that the CEPP concludes that Lake Okeechobee water will need to be treated before delivery to the WCAs, the CEPP should consider a wide variety of alternative ways to treat that water. Potential options could include stormwater treatment areas, chemical treatment, and potential methodologies to deal with phosphorus within the Lake. For each alternative treatment option, analyses should evaluate the effectiveness of each treatment option in reaching target phosphorus levels, the true long-term cost of each option, and the resulting effects on the Northern Estuaries associated with greater and lesser flows from the lake associated with the effectiveness of different options.

* * *

We look forward to providing additional comments as the CEPP moves forward and the agencies develop a specific proposal for public review.

Everglades Coalition

1000 Friends of Florida
Arthur R. Marshall Foundation
Audubon of Florida
Audubon Society of the Everglades
Audubon of Southwest Florida
Caloosahatchee River Citizens Association/ Riverwatch
Clean Water Action
Clean Water Network
Collier County Audubon Society
Conservancy of Southwest Florida
Defenders of Wildlife
Ding Darling Wildlife Society
Earthjustice
Environment Florida
The Environmental Coalition
Everglades Coordinating Council
Everglades Foundation
Everglades Law Center
Florida Conservation Alliance
Florida Defenders of the Environment
Florida Keys Environmental Fund
Florida Native Plant Society
Florida Oceanographic Society
Florida Wildlife Federation
Friends of the Arthur R. Marshall Loxahatchee Wildlife Refuge
Friends of the Everglades
Hendry Glades Audubon Society
Izaak Walton League Florida Division
Izaak Walton League Florida Keys Chapter
Izaak Walton League Mangrove Chapter
Izaak Walton League of America
Last Stand
League of Women Voters of Florida
Loxahatchee River Coalition
Martin County Conservation Alliance
National Audubon Society
National Parks Conservation Association
National Wildlife Federation
National Wildlife Refuge Association
Natural Resources Defense Council
The Ocean Conservancy
The Pegasus Foundation
Sanibel-Captiva Conservation Foundation
Save It Now, Glades!
Sierra Club
Sierra Club Broward Group
Sierra Club Calusa Group
Sierra Club Central Florida Group
Sierra Club Florida Chapter
Sierra Club Loxahatchee Group
Sierra Club Miami Group
The Snook and Gamefish Foundation
South Florida Audubon Society
Tropical Audubon Society
The Urban Environment League
World Wildlife Fund

January 20, 2012

Attn: Gina Paduano Ralph, Ph.D
Department of the Army
Planning and Policy Division
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Dr. Ralph:

Please see the attached Resolution Supporting Central Everglades Planning Project for inclusion in scoping. We look forward to working with you on this endeavor. Please contact us with any questions or comments.

Sincerely,

Julie Hill-Gabriel
State Co-Chair
305-371-6399 x136
Jhill-gabriel@audubon.org

Dawn Shirreffs
National Co-Chair
954-961-1280 x 205
dshirreffs@npca.org

Everglades Coalition

RESOLUTION SUPPORTING CENTRAL EVERGLADES PLANNING PROJECT

WHEREAS, the Everglades Coalition is committed to protecting lands critical to the future of Florida's environment, drinking water, economy, recreation, and quality of life; and

WHEREAS, the Everglades ecosystem has continued to decline in the face of restoration delays and an expedited solution is needed to increase the quality, quantity, timing and distribution of freshwater flows into the central Everglades, Everglades National Park and Florida and Biscayne Bay; and

WHEREAS, increased deliveries of water south of Lake Okeechobee will reduce damaging discharges to the Caloosahatchee and St. Lucie estuaries; and

WHEREAS, the goal of the Central Everglades Planning Project (CEPP) is to significantly reduce planning times and deliver a finalized plan, for a suite of restoration projects in the central Everglades within 18 months,

WHEREAS, the ecological goals and objectives of the Comprehensive Everglades Restoration Plan (CERP) include increasing the total spatial extent of natural area, improving habitat and functional quality, and improving native plant & animal species abundance & diversity:

THEREFORE BE IT RESOLVED that the Everglades Coalition supports the completion of a project implementation report (PIR) through the CEPP using CERP adaptive management protocols by May 2013 that addresses key obstacles for restoring freshwater flows and implements meaningful ecological and economic benefits toward restoring America's Everglades.

Approved January 5, 2012.

Julie Hill-Gabriel
State Co-Chair
305-371-6399 x136
Jhill-gabriel@audubon.org

Dawn Shirreffs
National Co-Chair
954-961-1280 x 205
dshirreffs@npca.org

Streamlining Central Everglades Project Planning (CEPP) using CERP Adaptive Management Protocols

Executive Summary: Streamline CEPP using CERP ***Adaptive Management Integrated Guide*** protocols by:

- Incorporating a CEPP Conceptual Ecological Model (CEM) to arrive at restoration valuation measures
- Focusing on CERP 1999 Table 5-1 Goals & Objectives as the basis for top level valuation measures
- Valuing ecosystem services based on measured increases in total special extent per CERP Objective 1

Assumption: CEPP Time-lines & public support mandate streamlining by synthesis all can understand.

PROGRESS: Adding CEPP to CERP using CERP Adaptive Management Protocols resulting in CERP(+).

- Central Everglades Project Planning (CEPP) Positives:
  - The Project Delivery Team (PDT) Goes in the direction of CERP(+)
  - Federal Register/CEPP Workshops wording has this restoring flow, etc.:
    - Details at www.sfrestore.org;
    - See Federal Register handout (Attachment 1, A-1, next page)
  - Noted in Nov 30 CEPP Workshop: CEPP Federal agencies are considering ecosystem services valuation (ESV) for decision-support, per the July, 2011 White House Report – *Sustaining Natural Capital: Protecting Society & The Economy*
- Streamline the process using the CEPP evaluation tool box with 3 E-Z evaluation tool box additions per the CERP 2011 ***Adaptive Management Integration Guide*** protocols (See protocols in Attachment 2):
  1. CEPP Conceptual Ecological Model (CEM) (See Attachment 3 case for a CEPP CEM)
     a. A CEPP CEM is required by Activity 4 and lead-in to other required PDT activities;
     b. Note: Measures posted in Nov 30 CEPP Workshop were borrowed from other CEM's, but other regions do not include historical *attributes* of a pond apple forest, sawgrass plains, and 40 mi+ wide expanse of sheet flow; the *drivers* and *stressors* are also different.
  2. CERP 1999 Table 5-1 Goals & Objectives (see attachment 4 and "posting on the wall");
     a. Establish measures based on CERP Table 5-1 Total system goals and objectives per CEM process, e.g., what is the increase in total spatial extent of natural area in acres?
  3. Add Ecosystem Services Valuation Approach & Methodology to the evaluation tool box
     a. Calculate ESV of alternatives based on dollars per acre per year using Costanza Synthesis dollar values per acre, number of acres of increased spatial extent, and CERP life-cycle, e.g. economic and ecologic value for an alternative configuration looks something like:
     b. ESV = Costanza Synthesis Biome type value per acre per year x 100,000 acres x 40 years
        ESV ~ $10,000 x 100,000 acres x 40 years
     c. Compare benefits calculated by ESV to costs for a B:C ratio that provides return on investment (ROI) decision-support for decision makers.
     d. NOTES, especially for those critical of the benefits transfer approach based on the Costanza Synthesis, the most widely referenced peer-reviewed paper on ESV:
        i. Alternative approaches to a more ESV localized analysis are data and modeling intensive, and likely not achievable in a streamlined CEPP set time-frame
        ii. Literature that documents localized ESV modeling approaches appear to borrow data from other regions with even more benefits transfer than occurs using the Costanza Synthesis
        iii. CONCLUSION: The a.b.c. approach above has the distinct result of ***quicker, cheaper, better*** analysis of alternative and falls into the category of *close enough for government work*
        iv. Also goes in the direction of the White House Report recommending the feds apply ESV in projects like CERP as a means to get to return on investment for astute decision-support.

- POSSIBLE SUPPORT by up-start orgs in the news in November, 2011, and presently: Public Comment Request to Everglades Legislative Caucus; Member request to Florida Conservation Coalition (FCC): Push Streamlined CEPP
- Everglades Coalition Conference, ESV Breakout Session, Jan 7 (Push Streamlined CEPP using ESV)
- Apply ESV to Proposed Everglades Headwaters National Wildlife Refuge (Push Costanza Synthesis)
- Summer Intern Program Recruiting begins at EvCo Conference; project assignment = ESV Theme applied to CEPP

Dated: November 29, 2011.

Morgan F. Park,

Alternate OSD Federal Register Liaison Officer.

[FR Doc. 2011–30986 Filed 12–1–11; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Intent To Prepare an Environmental Impact Statement for the Central Everglades Planning Project, Okeechobee, Glades, Martin, Palm Beach, Broward, Miami-Dade and Monroe Counties, FL

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DOD.

ACTION: Notice of intent.

SUMMARY: The Everglades ecosystem encompasses a system of diverse wetland landscapes that are hydrologically and ecologically connected across more than 200 miles from north to south and across 18,000 square miles of southern Florida. In 2000, the U.S. Congress authorized the Federal government, in partnership with the State of Florida, to embark upon a multi-decade, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) to further protect and restore the remaining Everglades ecosystem while providing for other water-related needs of the region. CERP involves modification of the existing network of drainage canals and levees that make up the Central and Southern Florida Flood Control Project.

Since 2000, much progress has been made. Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Picayune Strand Restoration, the Indian River Lagoon South and Site 1 Impoundment projects. Project Implementation Reports have been completed, or are nearing completion, for the second generation of CERP projects for Congressional authorization, including Biscayne Bay Coastal Wetlands—Phase 1, the Broward County Water Preserve Areas, the Caloosahatchee River (C–43) West Basin Storage Reservoir, and the C–111 Spreader Canal Western Project. All of these CERP projects utilize lands that were acquired by the State and Federal government to meet CERP goals of increasing the extent of wetlands, reducing damaging freshwater discharges to the coastal estuaries, and reducing seepage losses from the natural system. These projects contribute significant ecological benefits to the system and the specific regional habitats in which they are located. These initial CERP projects were intended to provide initial and immediate ecological benefits and set the conditions along the margins of the system that help ensure increased water flows to the interior of the system will not cause adverse effects.

The next step for implementation of CERP is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park and Florida Bay. The Central Everglades Planning Project will develop the initial increment of project features that provide for storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3 and seepage management features to retain water within the natural system. The CERP projects identified to accomplish this include the Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park (ENP) Seepage Management, and Everglades Rain-Driven Operations. These projects make up the heart of CERP aimed at restoring more natural quantity, quality, timing and distribution of water flows to the remaining portions of the river of grass. An integrated study effort on these projects is needed to set the direction for the next decade of CERP implementation.

ADDRESSES: U.S. Army Corps of Engineers, Planning Division, Environmental Branch, P.O. Box 4970, Jacksonville, FL 32232–0019.

FOR FURTHER INFORMATION CONTACT: Dr. Gina Ralph at (904) 232–2336 or email at *Gina.P.Ralph@usace.army.mil.*

SUPPLEMENTARY INFORMATION:

a. The goal of the Central Everglades Planning Project effort would be to develop an integrated, comprehensive technical plan, including the first increment of projects, for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem.

b. A scoping letter will be used to invite comments from Federal, State, and local agencies, affected Indian Tribes, and other interested private organizations and individuals.

c. A scoping meeting will be held December 14, 2011 from 6:30 to 9 p.m. at the Sheraton Suites Plantation, Plantation I/II Room, 311 North University Drive, Plantation, Florida and December 15, 2011 from 6:30 to 9 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, FL. Assistance for individuals with special needs or language translation will be available as needed by calling (904) 232–1613.

d. All alternative plans will be reviewed under provisions of appropriate laws and regulations, including the Endangered Species Act, Fish and Wildlife Coordination Act, Clean Water Act, and Farmland Protection Policy Act.

e. The Draft Environmental Impact Assessment is expected to be available for public review in the 1st quarter of 2013.

Brenda S. Bowen,

Army Federal Register Liaison Officer.

[FR Doc. 2011–31010 Filed 12–1–11; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings #1

Take notice that the Commission received the following electric corporate filings:

Docket Numbers: EC12–38–000.

Applicants: TPW Petersburg, LLC, Gestamp Eolica S.L.

Description: Application of TPW Petersburg, LLC and Gestamp Eolica S.L. for Authorization Pursuant to Section 203 of the Federal Power Act and Request for Confidential Treatment, Expedited Consideration and Waivers.

Filed Date: 11/21/11.

Accession Number: 20111121–5279.

Comments Due: 5 p.m. ET 12/12/11.

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER11–4674–001.

Applicants: Midwest Independent Transmission System Operator, Inc.

Description: Vectren-IMPA FCA Amendment to be effective 9/29/2011.

Filed Date: 11/21/11.

Accession Number: 20111121–5193.

Comments Due: 5 p.m. ET 12/12/11.

Docket Numbers: ER12–351–001.

Applicants: Midwest Independent Transmission System Operator, Inc.

Description: 11–21–11 MRES Attachment O, GG, and MM Amendment to be effective 1/1/2012.

Filed Date: 11/21/11.

Accession Number: 20111121–5234.

A-1

Adaptive Management Integration Guide

The Comprehensive Everglades Restoration Plan

March 2011

the journey to restore America's Everglades

A-2

STREAMLINING CENTRAL EVERGLADES PLANNING

Adaptive Management Activity	Inputs CEPP	Outputs CEPP	Decision Maker(s) & How Decisions are Made
Activity 4 – Apply Conceptual Ecological Models, and Develop Hypotheses and Performance Measures	MAP CEMs and hypothesis clusters RECOVER System-wide performance measures and targets including interim goal and targets	RECOVER and PDT: Use CEMs and hypotheses, identify evaluation methods (model tools and performance measures), refine targets ECOSYSTEM SERVICES VALUATION? (ESV)	Program – RECOVER approves CEMs, system-wide hypotheses and performance measures. Project – Hypotheses, models and performance measures approved by DCT.
Activity 5 – Integrate Adaptive Management Principles into Alternative Plan Development and Implementation	Yellow Book and project goals and objectives Uncertainties Hypotheses Performance measures: PER CERP TABLE 5-1 ↓ ESV ↓ BENEFITS ↓ BENEFIT : COST ROI	PDT: project designs to test hypotheses; performance measures to evaluate benefits; develop adaptive management plans that include potential management options matrix and costs; develop project operating manuals. USACE and SFWMD led interagency program teams: develop Comprehensive Plan Modification Report, System Operating Manual, and sequencing plan.	Program – USACE and SFWMD approve Comprehensive Plan Modification Report, Sequencing Plan, System operating manual Project – selected plan and adaptive management plan approved by DCT, JPRB, and USACE & SFWMD
Activity 6 – Monitoring	Management options matrix Performance measures and targets (BENEFITS?) Interim goals/targets CERP TABLE 5-1 GOALS / OBJECTIVES	RECOVER: Update and refine Monitoring and Assessment Plan, identify thresholds and timing (decision criteria) for reporting. PDT: Develop project-level monitoring plan, and identify costs, thresholds, and timing (decision criteria) for reporting.	Program – RECOVER approve MAP changes Project – Project-level monitoring plan and costs approval at DCT, JPRB, USACE & SFWMD

Additional Inputs not limited to these:
To PBCC & WRAC Mar 30, 06; To USACE, 3 Apr
To River of Grass Workshop & SCG, 2009
To GEER Conf '06, '08, '10 as Top 10 need
To SCG, 15, Sept 2010; To UF IFAS , Sept, 2010;
Back to WRAC, Oct 7, 2010; Gov Board, Oct 14, 2010

Environmental Action Committee => Central Everglades Project Planning (CEPP) Stakeholders

June 12, 2002 => Jul, 2010 (GEER) => SCG/WG, Sept 15, 2010=> Oct 7, 2010 => WRAC => Dec 16, CEPP Proj Dev Team
Repeat of an earlier EAC Recommendation, recycled, still a CERP(+)Science Need/gap, now a CEPP Need/Gap!

RECOMMENDED: That a Central Everglades Project Planning (CEPP) Conceptual Ecological Model (CEM) be established as part of the Comprehensive Everglades Restoration Plan (CERP) collection of CEM's:

WHEREAS, The CEMs have been declared the basis for CERP science, identifying stressors, drivers, attributes, cause and effect relationships, gaps in knowledge, and a means to establish CERP needs & requirements;

WHEREAS, CEMs exist for all other major regions of the Greater Everglades Ecosystem to be restored;

WHEREAS, The Central Everglades is part of the South Florida Ecosystem to be restored, and includes Lake Okeechobee, the Loxahatchee River Watershed, the Lake Worth Lagoon Watershed as well as the St Lucie and Indian River Lagoon Watershed, and the historic "River of Grass" that includes the sawgrass plains;

WHEREAS, The Central Everglades Watershed estuaries and the historic "river of grass" need to be given integrated consideration in CERP RECOVER Monitoring and Assessment Plan (MAP) proceedings;

WHEREAS, Without a Central Everglades Watershed CEM – drivers, stressors, and attributes (past, present, and future) will be overlooked; cause and effect relationships with respect to various components will be overlooked as if components, such as the pond apple swamp and sawgrass plains did not exist, and that the absence thereof is having serious negative impacts on CERP Implementation, including the River of Grass workshops per the attached impact analysis; and whereas a CEM serves as a historical reality check.

WHEREAS, Some of the attributes here included a massive pond apple forest south of the lake, which acted as a filter forest as noted in the 2010 Biennial Report; and this is a part of an integrated ecosystem in need of being addressed in the River of Grass (ROG) Workshops.

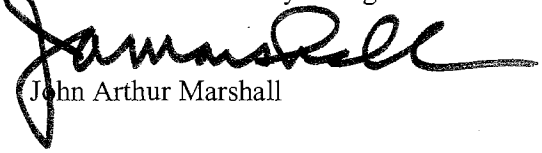
WHEREAS, The hydrologic continuum must be considered in the Central Everglades Watershed, along with the interdependence among biologic forms on the hydrologic continuum, same as the rest of the South Florida Ecosystem, in terms of habitat and function objectives of CERP Table 5-1 objectives; and;

WHEREAS, Consideration of a Conceptual Ecological Model (CEM) is Activity 4 is a PDT requirement of project development, per the CERP Adaptive Management Integration Guide, pages 13, 14, 16 and D-10.

WHEREAS, It is axiomatic that not addressing what's missing holds no possibility of restoration at all!

SO NOW BE IT HEREBY RECOMMENDED by Stakeholders, that a Central Everglades Planning Project CEM be formulated to provide an integrated approach to restoration of the Central Everglades Watershed Region as well as the integration of this region into the rest of the South Florida Everglades Ecosystem.

Respectfully resubmitted on behalf of Stakeholder Groups including the Arthur R. Marshall Foundation/FEI Science & Technology Committee, and the River of Grass Estuary/Everglades Restoration (ROGER) Group,



John Arthur Marshall

Attachment: Impact Assessment

A-3

Additional Inputs not limited to these:
To PBCC & WRAC Mar 30, 06; To USACE, 3 Apr
To River of Grass Workshop & SCG, 2009
To GEER Conf '06, '08, '10 as Top 10 need
To SCG, 15, Sept 2010; To UF IFAS , Sept, 2010;
Back to WRAC, Oct 7, 2010; Gov Board, Oct 14, 2010

MISSING IN ACTION: Central Everglades Planning Project (CEPP) Conceptual Ecological Model (CEM)

IMPACT ASSESSMENT of NO CEPP CEM in the PDT Planning Process

ASSUMPTION: Strategy for the future of the Central Everglades is being generated absent a CEPP CEM.

- Absence of CEPP CEM means environmental impacts of development will be handled out of context of total ecosystem consideration, and the PB County Commission is likely to continue to ignore CERP/CEPP needs & requirements.
- How can the future of the Central Everglades Watershed and a CERP configuration to restore same be fully considered without a CEPP CEM that considers what's missing (attributes) and the need to overcome stressors?

Restoration of Florida's Ancient Forests that previously existed as an *attribute* is not a visible consideration in CERP/CEPP

- Habitat & functional value of 1000's of acres of custard apple south of Lake OK, should be a part of CEPP
- Central Everglades Watershed had more forested wetland acreage than any other region in CERP
- Restoration of forested wetlands meets all CERP Table 5-1 Goals & Objectives, as proposed in ROG Workshop.

Estuary Attributes cannot be fully considered without a CEPP CEM

- Lake Worth Lagoon, Indian River Lagoon, Loxahatchee River being considered as separate watersheds v. interdependent subsystems of the Central Everglades region, i.e., Central Everglades Watershed.

Increasing spatial extent of natural area per CERP Table 5-1, and the ecosystem service value, is not being fully considered.

- Total increase of natural area resulting from CEPP ought to be the primary performance measure, and primary benefit.
- Without a CEM footprint, decreased spatial extent is a possibility due to development pressures
- RECOVER Job 1, Per Monitoring & Assessment Plan, is to measure to what extent CERP Goals & Objectives are met!
- CERP Table 5-1 Goals and Objectives need more consideration

Solution to *Dynamic Storage and Sheet Flow* per CERP Section 2.3.1 has not been fully considered, because lack of sheet flow was not been fully identified as a Central Everglades Watershed stressor, including potential flood control in extreme events, owing to lack of a CEPP CEM

- NAS CROGEE discussion indicated that restoration of flow need can be summarized as a "no-brainer"
- *Dynamic Storage & Sheet Flow* remains the fundamental characteristic of the Everglades, thus it remains the major requirement to achieve Everglades Restoration and flood control, per ROG Workshop objectives.
- Fundamental Flaw in CERP implementation: RECOVER MAP is not fully CERP requirements driven
- Object of CEPP CEM is to identify ecologic and economic needs & requirements for CERP(+)
- CERP Table 5-1 Goals and Objectives need more consideration as the central organizing theme.

SB626 Phosphorous Standard Regression and statements that on 10% of Everglades is impacted does not take the Central Everglades into consideration, i.e., total system view integrated approach remains absent, in absence of CEPP CEM.

- CERP Premise is that Ecosystem should be managed as a whole, i.e., as a watershed.
- Loxahatchee River is > 50% impacted; Watershed maps of the region are inconsistent
- CERP Implementation continues to be managed on the component level, with a bottom up approach.
- TOP-DOWN approach needed, using CERP Table 5-1 goals & objectives as central organizing theme; top-level measures resulting from the CEM ought to start here, but both the CEM and Table 5-1 are missing from the tool box.
- Economic benefits of a restored missing link River of Grass also need consideration as a performance measure

CEPP Stressors and missing attributes must be compensated for, but in absence of CEPP CEM are not fully considered:

- Soil Subsidence; Soil accretion and sustainable agriculture; Development pressures; heavy contaminant sources
- Need for *Dynamic Storage & Sheet Flow* (CERP 2.3.1) to fully restore the system (The *Marshall Plan*, again)

CONCLUSION: In CEPP PDT "***Ecological Evaluation Tools Under Consideration***" – tool box should include:

- CERP TABLE 5-1 Goals & Objectives
- CEPP Conceptual Ecological Model

IMPACT OF NOT INCLUDING THE ABOVE: "C" in CERP is less than 80% comprehensive

CERP TABLE 5-1

[What should be the Central Organizing Theme, Annotated]

GOALS & OBJECTIVES FOR THE C&SF RESTUDY

***[The $20[1] billion dollar+ CERP Promise* (1999)] !**

Is Everglades Restoration headed in this direction? [2]

GOAL 1: Enhance Ecological Values[3];

OBJECTIVES[4]:

- **Increase total spatial extent of natural areas [1.1] ⇔ FLOW**
- **Improve habitat and functional quality [1.2] ⇔ FLOW**
- **Improve native plant & animal species abundance & diversity [1.3][5]**

GOAL 2: Enhance Economic Values & Social Well-Being;

OBJECTIVES:

- **Increase availability of fresh water (agriculture, municipal and industrial) [2.1] [6] ⇔ [(FLOW + WQ) V. (ASR – WQ)]**
- **Reduce flood damages (agricultural and urban) [2.2][7] ⇔ ditto[8]**
- **Provide recreational, navigation opportunities [2.3]**
- **Protect cultural, archeological resources & values [2.4]**

---

[1] Does not include O&M costs, including heavy use of fossil fuel. CERP implementation needs to be energy efficient.

[2] From Conceptual Everglades Restoration Plan, CERP SECTION 5.5, page 5-21, "Yellow Book", also "Overview", April, 1999, Page 15 = ***THE PROMISE*!**, per the NEPA/WRDA process; a major deficiency of implementation is that these goals lack full attention. These Goals & Objectives should be the central organizing theme; the absence of same begets more process; process subsumes focus; the result is that confusion and more process is the central organizing theme.

[3] Define Ecosystem Services Value in economic terms, to show total system benefits, relative to cost, for B:C analysis!

[4] Essentially a reiteration of 1993 Science Subgroup Report/1994 USACE Reconnaissance Study plan objectives. (Plan 6)

[5] ***WHERE ARE THE TREES IN CERP?*** Everglades Consolidated Report Peer Review 2003: Forested wetland pilot program needed to calculate P reduction! Consideration for carbon sequestration is not in the current focus.

[6] Objective 2.1 for the environment, implied, is to be covered in programmatic regulations; well, not exactly; Aquifer Storage & Recovery (ASR) does not do much for water quality (WQ), and is being viewed as hi-cost, hi-risk technology.

[7] Ditto, "shared adversity" applies, Tradeoff = buy land with ASR $$$ for "shared prosperity" The Governor's missing link initiative goes in this direction, but, there is no visible B/C analysis of alternatives per CERP Section 7.5.3 yet either!

[8] Bottom Line: BUY LAND & ***GO WITH THE FLOW per the Marshall Plan (1981) to restore the missing link and revitalize the river of grass…!*** For optimum water quantity & quality solutions. The Central Everglades Planning Project (CEPP) appears to be the answer we have been waiting for if executed & measured according to Table 5-1 Objectives.

-----Original Message-----
[redacted]
Sent: Thursday, January 12, 2012 12:03 PM
[redacted]
Subject: Public Comment on Today's CEPP Presentation to the Gov Board

Dear Gov Board members, et al;

As a response to the discussion on Central Everglades Planning Project (CEPP) which I viewed on Webcast, on behalf of the Arthur R. Marshall Foundation, the following comments.

For the ArtMarshall.org this is one of the most important CERP thrusts since CERP 1999. There has been a long standing CERP deficiency of lack of connectivity between Lake O and WCA-3. We call the addition of CEPP, CERP(+).

In previous workshops, the CEPP has been briefed appropriately as an adaptive management "re-adjustment" project based on new information (a wetter Everglades, than was considered in CERP 1999).

The re-connection of Lake O and WCA-3 with a flow-way of some sort is the key to the Art Marshall vision of restoring sheet-flow from the Kissimmee Basin to FL Bay to the extent feasible. We call my late Uncle's vision FULL DECOMP. This also traces back to Plan 6 in the 1994 USACE Recon study, and the 1993 Science Subgroup report.

A CEPP approach also provides much fuller relief of the estuaries, and a possible spill way for heavy storm events, i.e., flood control, a major objective of CERP Table 5-1, discussed in the attached power point.

Using the adaptive management approach as described in the SFWMD 2011 Adaptive Management Integration Guide, we see an opportunity to streamline the CEPP process. We have mentioned this approach in all PDT meetings and workshops thus far. More attention and compliance with the AM protocols are needed in the scoping process and beyond, as amplified in the attached.

As mentioned by one of the commentors, we also see CEPP as an extension of the River of Grass workshops, regarding the need to come up with a configuration to flow clean water south.

We also made a power point presentation on streamline CERP at the recent Everglades Coalition Conference. The presentation is attached for additional consideration.

As mentioned by other EvCo members, we look forward to further participation in the CEPP process, with the same message in the attached.

We very much appreciate the "enhanced public inclusion" in the CEPP process.

Thanks for your consideration, and a read of this comment, which is about three minutes worth, less the attachment.

For the Art Marshall approach, Semper Fi!

John Arthur Marshall, Chairman of the Board, Chair, Science & Technology Committee, Arthur R. Marshall Foundation & Florida Environmental Institute, Inc.
A Hands-on grassroots.org (www.ArtMarshall.org <http://www.artmarshall.org/>) Declaring 2012 the Year of "It's my Everglades, too"

NOTE THE DATES - Busy Start of 2012: Happy New Year Jan 5-8, Everglades Coalition Conference; Jan 7 Breakout Session Jan 13, Science Coordination Group meeting, SFWMD Jan 17-18, Water Supply Summit, Tallahassee Jan 18, Marshall Foundation Canoe River of Grass Expedition begins at the Arthur R. Marshall Lox National Wildlife Refuge Jan 20, Final Comments on Central Everglades Project Scoping process due Jan 25-26, Central Everglades Project Planning Meeting & Workshop, SFWMD Feb 4, Spruce-up At the Arthur R. Marshall Refuge in Prep for Everglade Day Feb 11, Everglades Day at the Arthur R. Marshall Refuge

EVERGLADES RESTORATION: Our Passion! Our Mission! Our Legacy!

1028 N Federal Hwy, Lake Worth, Fl 33460
Phone: 561-233-9004; Fax: 561-233-9989

Classification: UNCLASSIFIED
Caveats: NONE

Sustaining Natural Capital: Protecting Society & the Environment

January 17, 2012

John Arthur Marshall, Arthur R. Marshall Foundation

Presentation to the Everglades Legislative Caucus

Demonstration of an approach & methodology

for

Streamlining Central Everglades Project Planning

based on

Ecosystem Services Value of a Restored River of Grass

What's this all about?

- Problem: Insufficient consideration of economic value of natural capital resources for decision-support requiring trade-offs
- Solution: Calculate the total economic value of natural capital for project decision-makers
  - Use to Streamline Central Everglades Planning Project (CEPP) as a demonstration
  - Legislate State requirements along lines of federal recommendations and peer-reviewed approach

Streamlining CEPP using three essential evaluation tools per PDT* AM protocols

- CEPP Conceptual Ecological Model (CEM)
- CERP Table 5-1 Yellow Book Goals & Objectives
- Ecosystem Services Valuation (ESV) using the Costanza, et al, Synthesis.

*REFERENCE: CERP 2011 ***Adaptive Management Integrated Guide*** protocols (p. 13, 14, 16, D-10) for the Project Delivery Team (PDT); see:

http://www.evergladesplan.org/pm/pm_docs/adaptive_mgmt/062811_am_guide_final.pdf

D-10* AM Activity 4, 5 in Project Development

- Activity 4 requirement: Develop a CEPP CEM
- Establish CEPP valuation measures based on CEM Drivers, Stressors, and Attributes, and
- Activity 5 requirement:
  - *Pursue CERP Table 5-1 goals & objectives* , emphasizing ecological goals, especially first stated objective: *Increase total spatial extent of natural area* (acres)
  - Compare Ecosystem Service Benefits and Costs

CERP Table 5-1 Goals & Objectives

Goal: Enhance Ecologic Values; Objectives:

- **Increase the total spatial extent of natural areas**
- Improve habitat (biomes) and functional quality
- Improve native plant & animal species abundance & diversity

Goal: Enhance Economic Values And Social Well Being

- Increase availability of fresh water (ag/municipal & industrial
- Reduce flood damages (agricultural/urban)
- Provide recreational and navigation opportunities
- Protect cultural and archeological resources and values

CEPP process
Boundaries

Presently Defined as a Wish Bone to connect the head bone with the foot bone via the back bone

Adaptive Management Activity 5 Requirements: Consider Benefits and Costs

Apply Costanza $ynthesis values to get Benefits

- Calculate Ecosystem Service Value (benefits) in terms of $$$ per acre per year based on:
  - Costanza value of $/acre/yr (benefits transfer)
  - Total spatial extent of natural area added (acres)
  - 40 year CERP life-cycle (conservative)
- Notional example ($40 billion in benefits based on avg value)

  ESV = $10,000/Acre/yr x 100,000 acres x 40 yrs = $40 Billion
- Compare Benefits to Cost (B:C) for return on investment decision-support; 6:1 is conservative

ESV Demonstration by 2010 Summer Interns

- The Colorful Slides are theirs
- Also presented previously
  - Poster paper at the 2010 GEER Conference
  - Presentation at the 2011 & 2012 EvCo Conference
  - Presentation to FGCU Sustainability class
- Here it comes again with credible ”peer review” as the means to streamline the CEPP Process with $ynthesis that all can understand

Everglades Coalition Conference, January 7, 2011; Weston, FL

- The Honorable Rock Salt, Deputy Assistant Secretary of the Army (Civil Works):
  - *From what I have seen in my travels, your 2010 Interns came up with the best illustration of how Ecosystem Services Valuation [ESV] should be applied of any I have seen.*
    - *Secretary Salt has attended and spoken at A Conference on Ecosystem Services (ACES) in 2008 and 2010, and is on the White House Committee inducting an ESV approach as a matter of national policy.*

Valuing Ecosystem Services of a Restored "River of Grass"

GEER 2010: *Ecosystem Services Valuation as a Method to Guide Future Planning, Policy, and Science*

WRAC Meeting: July 8, 2010

Arthur R. Marshall Foundation Summer Interns:
Angelique Giraud, Ed Pritchard, Dylan Scott, Adrienne Smith, Jim Wally

The Honorable Rock Salt gives the 2010 Summer Intern Team a thumb's up on their ESV "How-to-do-it" Demonstration Project!

C.3-108

Introduction

- Valuing ecosystem services = ESV is an aid to environmental decision-making
- Six configurations are from ROG stakeholders
- Analysis uses Costanza, et al, synthesis of planetary ecosystem services value with benefits in terms of $$$ per acre per year
- Benefit-to-cost (B:C) ratios are indicators of optimum value

Features	Annual Value ac ($ $ac^{-1}yr^{-1}$)
STA	$8,643
Deep Water Reservoir	$6,590
Flow-Way	$10,499
Forested Wetland	$11,470

Table 3. The annual economic value of features in $ $ac^{-1}yr^{-1}$.

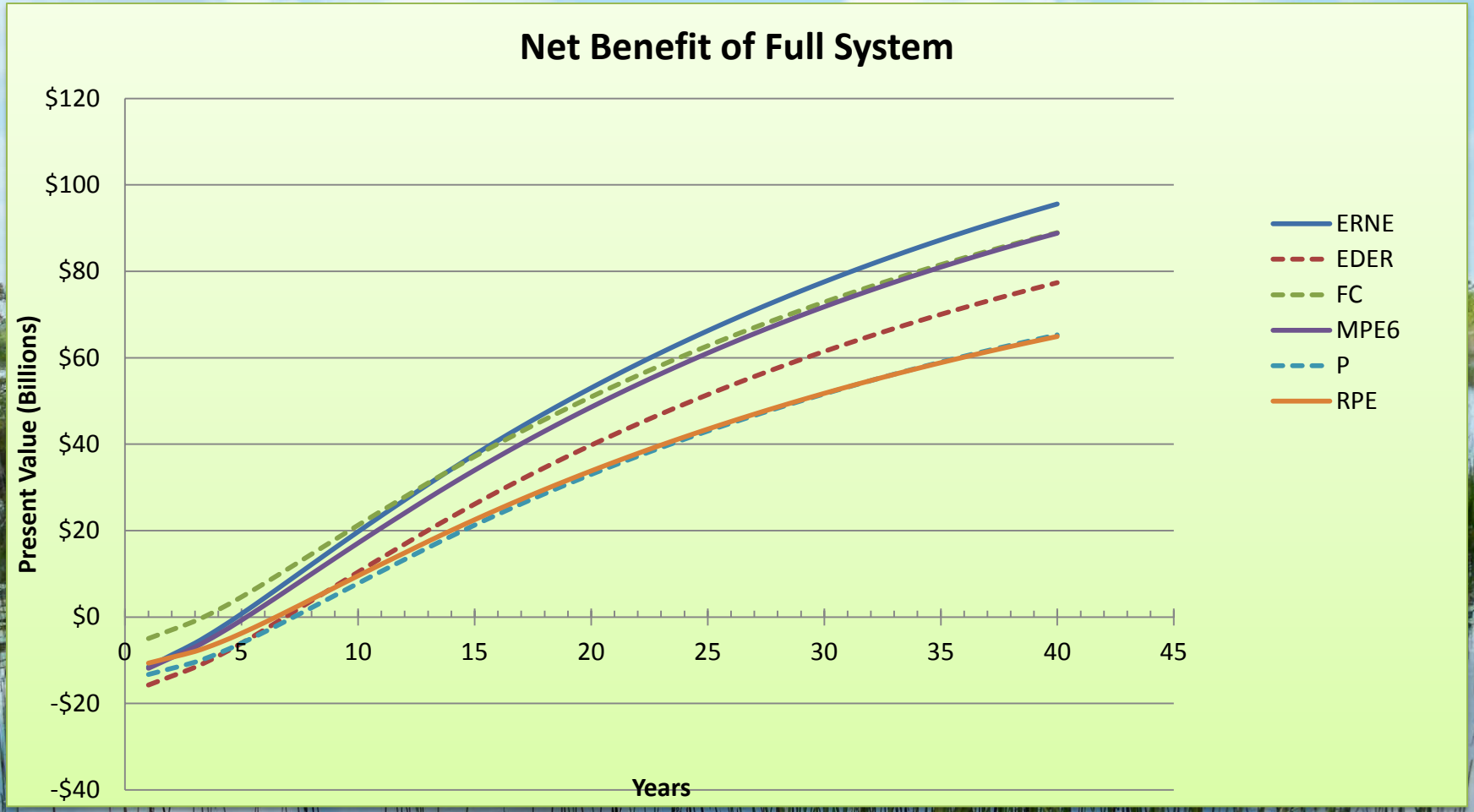


Figure 3. Net benefit of "river of grass" including benefits to estuaries. The Everglades River of Grass Northern Expansion (ERNE) configuration provides the estuaries with the greatest ecosystem benefit. EDER=ERDC

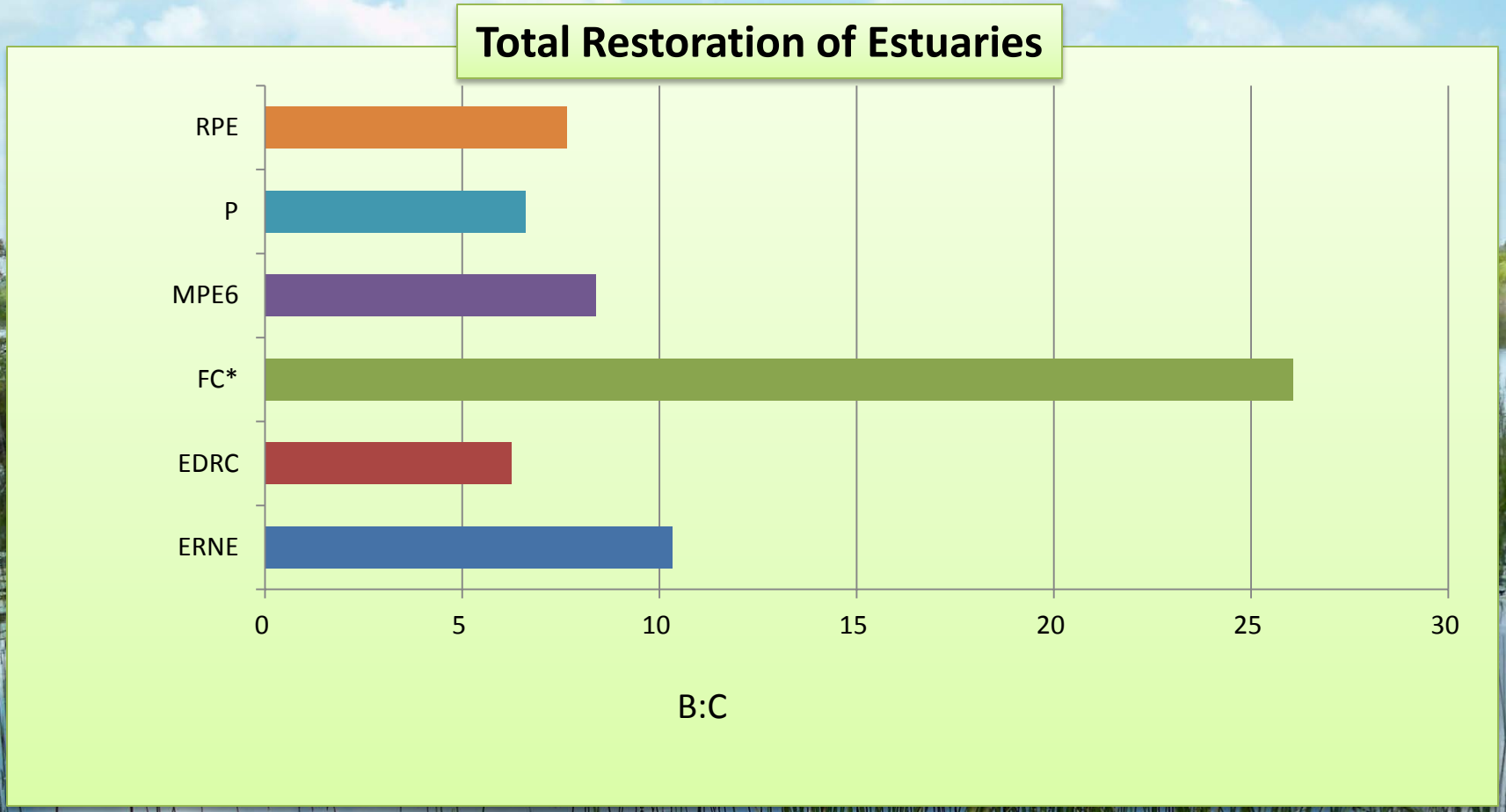


Figure 4. The benefit-to-cost ratio of configurations for the total restoration of affected estuaries. *Florida Crystals (FC) has the highest B:C ratio due to the absence of a deep water reservoir, resulting in a low capital and O&M cost.

Benefits Transfer Pro's and Con's

- First the bad news: BT is controversial because not every biome (ecosystem) type is the same, locally. Alternative analysis is data and modeling intensive incurring significant time and costs; may result in more BT than using the Costanza Synthesis
- Now the good news: BT using the Costanza Synthesis can be done in weeks v. years; meets ***quicker, better, cheaper*** method needed for a streamlined approach, close enough for Govt Work, perfect being the enemy of good enough.

Final Points

- Numerous NGO studies and robust B:C ratios > 6:1 indicate viability of Ecosystem Services Valuation for better decision-support, understandable by Office of Management & Budget, Congress and the Public
- When ecosystem services are not given a dollar value, the default value is zero (NRC 2005);
  - Does this place policy of *no net loss of wetlands* at risk?
- CEPP implementers should adopt the ESV approach and make the Everglades restoration Total Economic Value calculation an example to follow.
  - **Take-Home Assignment: Pester CERP *principals* to do so!**

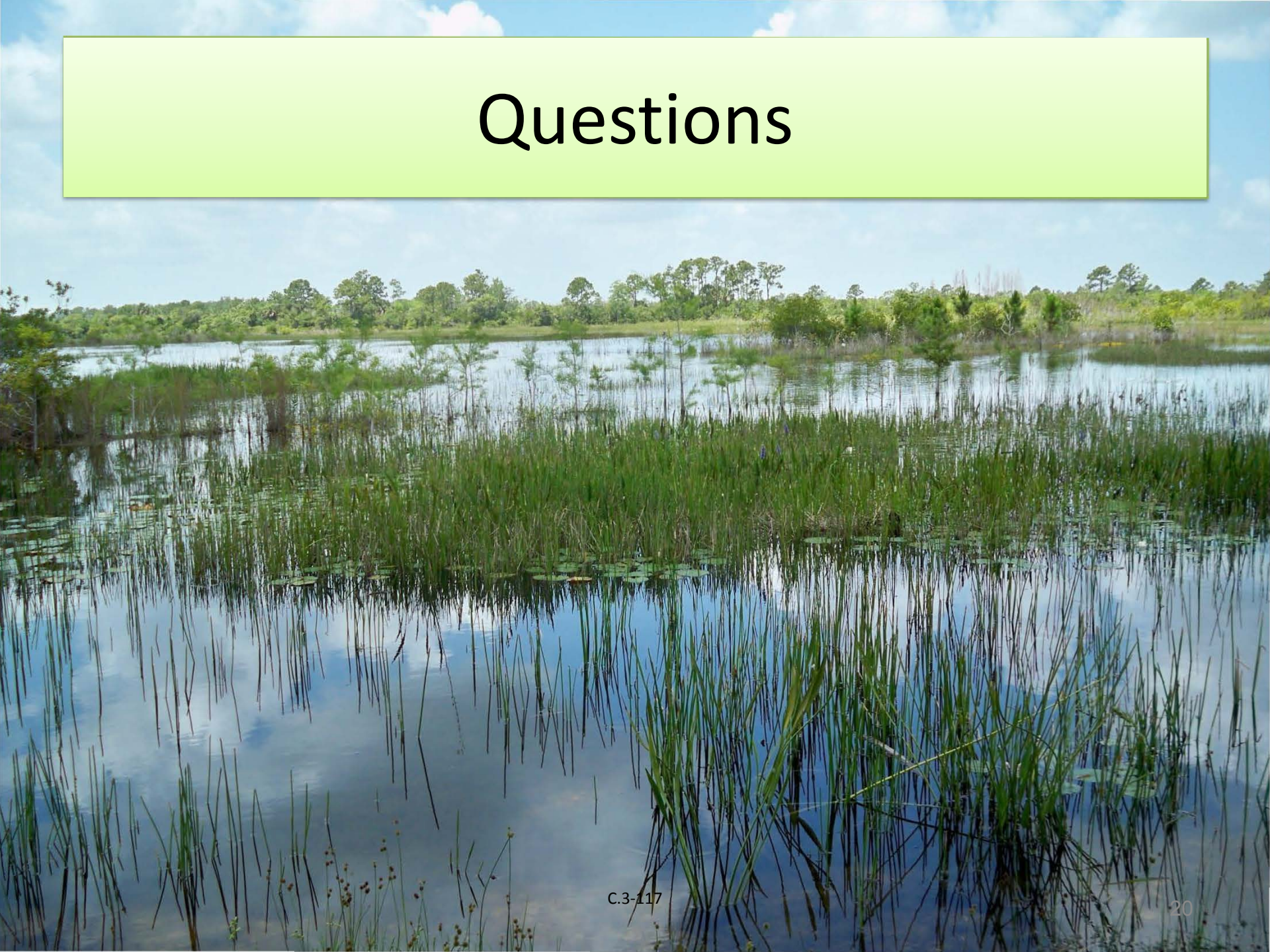
On Benefit:Cost Ratios

- A notional average is a conservative B:C = 6:1
- When the Ecosystem is given back to nature to the max, Florida Crystals Corp has calculated that the B:C approaches 26:1
- In calculating the ESV of the EH NWR, based on maximum preservation at minimum cost, B:C ratios may approach 100:1.
  - Literature confirms; See Wakefield on Costanza: http://www.uvm.edu/research/?Page=news&storyID=1153&category=uvmresearch

PRIMARY REFERENCES

- White House Report, July, 2011: Sustaining Natural Capitol – Protecting Society and the Economy http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_sustaining_environmental_capital_report.pdf
- Costanza, et al, Report on value of the planet's 18 biomes; Google ***Nature 387***, or http://www.uvm.edu/giee/publications/Nature_Paper.pdf
- Valuing Ecosystem Services – *Towards Better Environmental Decision-making*, NRC 2005; See http://www.nap.edu/catalog.php?record_id=11139
- For Additional information and more references:
  - Go to www.ArtMarshall.org; Contact JAMinfo@AOL.com
  - See: http://www.palmbeachpost.com/opinion/letters/return-on-saving-everglades-90-billion-883668.html?cxtype=ynews_rss

Questions



Gators are an Indicator Species!

Go Gators!

C.3-118

Ralph, Gina P SAJ

From: [redacted]
Sent: Friday, January 20, 2012 12:03 PM
To: [redacted]
Cc: [redacted]
Subject: Public Comments on Central Everglades Planning Project (CEPP) Scoping
Attachments: StreamliningCEPP-ELC-17 Jan.ppt

Dear CEPP Project Delivery Team, et al;

On behalf of the Arthur R. Marshall Foundation and Florida Environmental Institute, we are most pleased to participate in CEPP enhanced public involvement by submitting the following comments on the CEPP scoping process.

The following five points are essentially the same points we made at the PDT webinar, Dec 22, 2011. These comments appear to remain applicable, given the Science Coordination Group (SCG) meeting Jan 13, 2012, regarding CEPP Agenda item comments. The attached power point program encapsulates comments we made at the SCG meeting, and relates to the five comments that follow.

1. Scoping should include more focus on CERP Table 5-1 Goals & Objections (pointing out what was now on the Conference Room Table). It seems like such focus would go a long way in meeting Susan Markley's concerns, also Laura Brant's concern about ecological considerations. Table 5-1 is still not in any of the written material / presentations other than what has been put on the conference table.

2. The top level performance measure being considered by the CEPP scoping process per Table 5-1 objective 1 ought to be total increase in acres, of increase in total spatial extent of natural area. This would allow engagement of the Costanza Synthesis.

3. Before the presentations, I was going to ask how or what habitat units are assigned to various biomes [Stormwater Treatment areas; Ridge & Slough landscapes, flow-way for sheetflow; forested wetlands; reservoirs, etc.]. After the HU presentation, I think I am starting to get it. [More on this in next comments below].

4. There is a lot of fuzziness about the CEPP boundaries (physical and fiscal). A regional CEM might sort out some of the fuzziness by establishing CEPP geographic boundary limits [consistent where CEPP construction costs will be incurred], while considering cause-effect

upstream/down stream relationships [i.e., considering connectivity where all things are connected].

5. Weighting methods are most times argumentative. The HU weighting scheme may prove difficult to explain to the public [and decision makers]. While the HU approach may justify alternative selection [as stated earlier], it does not monetize the ecological benefits such that the benefits can be compared to costs [as the means to get to return on investment] for decision makers. On Fred Sklar's comment: That the Everglades is more complex, is an indication that a better approach to Synthesis is needed, understandable by OMB, Congress, and the public, and especially the National Research Council CERP Peer Review Panel.

Regarding using an ESV approach, SFWMD economist Ian Miller has been looking at the ESV Approach, per a brief to our Summer Interns. Given that the HU approach includes acreage we will have our 2012 Summer Interns make another pass as demonstrating the ESV approach, same as the analysis we did for the ROG workshops.

P.S. We plan on presenting our CEPP Streamlining approach at the Everglades Coalition Conference, and have submitted an abstract to present the same approach at the GEER/INTERCOL Conference in June.

As noted above, we presented our Streamlining CEPP approach as a power point program in the Everglades Coalition Conference Breakout session titled: Sustaining Natural Capital Protecting Society and the Economy. At the invitation of the Florida Everglades Legislative Caucus (ELC), we also presented essentially the same program, to the first ELC meeting in Tallahassee, Jan 17, 2012. The Streamlining CEPP power point is attached as amplification of the Arthur R. Marshall Foundation position on Streamlining CERP/CEPP using adaptive management protocols as defined in the 2011 Adaptive Management Integration Guide.

Thanks for your consideration. We look forward to continued discussion at future CEPP PDT meetings and workshops.

Finally, as a matter of considerable public interest in CEPP and enhanced publc involvement policy, we requested that the National Research Council CERP Peer Review Panel webcast their Jan 26, 2012 open meeting regarding CEPP presentations and considerations. Apparently this is beyond current NRC logistics, but would be much appreciated in the future, for meetings at remote locations, as is done by the SFWMD.

Respectfully Submitted,

John Arthur Marshall, Chairman of the Board, Chair, Science & Technology Committee, Arthur R. Marshall Foundation & Florida Environmental Institute, Inc.

A Hands-on grassroots.org (www.ArtMarshall.org <http://www.artmarshall.org/>) Declaring 2012 the Year of "It's my Everglades, too"

NOTE THE DATES OF BREAKING EVENTS;
Jan 5-8, Everglades Coalition Conference; Jan 7 Breakout Session Jan 13, Science Coordination Group meeting, SFWMD Jan 17, Everglades Legislative Caucus meeting, Capital, State of Florida Jan 17-18, Everglades Foundation Water Supply Summit, Tallahassee (Very Well done!)

Jan 18, Marshall Foundation Canoe River of Grass Expedition begins at the Arthur R. Marshall Lox National Wildlife Refuge; tune in at 8 AM Jan 20, 23 and 10AM Jan 24 for finale, at <http://breeze.palmbeach.k12.fl.us/riverofgrass2012/>
http://breeze.palmbeach.k12.fl.us/riverofgrass2012/

Jan 20, Final Comments on Central Everglades Project Scoping process due Jan 25, Central Everglades Project Planning Meeting & Workshop, SFWMD webcast Jan 26, National Research Council Peer Review Panel to review CEPP process, Wash, DC Jan 31, Central Everglades Project Planing Meeting & Workshop, Local Govt, SFWMD Feb 4, Spruce-up At the Arthur R. Marshall Refuge in Prep for Everglade Day Feb 11, Everglades Day at the Arthur R. Marshall Refuge

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Phone: 561-233-9004; Fax: 561-233-9989

Ralph, Gina P SAJ

From: mike xxxxxxxxx [redacted]
Sent: Thursday, December 15, 2011 7:32 PM
To: CEPPComments, SAJ
Subject: Suggestions

Hello,

I attended the meeting last nite in Plantation and found it very positive and informative. Id like to add a few comments and suggestions.

Im a native Miamian and my dad as well. He was born in Miami in 1940. He can remember when the Miami River had rapids and 27th Ave was the last paved road to the west. He also remembers fishing in the glades and knows very well he had fished in spots that no one had ever stepped foot at before. He was a boy scout and as a kid would camp behing Long Pine Key campground in Everglades National Park. He grew up poor and became an AC repairman. He loved the outdoors and is one of the best self made south florida naturalists I know. He was also a vice president of the Tropical Audubon Society in the late 70s. WE LOVE THE ENVIRONMENT and nature in general. We dont hunt but we do fish and are active birders. My parent owned cheap property in the Big Cypress years ago (for pennies) and had to sell it to the oil companies about 20 yrs ago.

I went to FIU and received an Environmental Studies degree. I became a naturalist for Dade County Parks and currently work for the City of Ft Lauderdale. My family thinks that protecting the one and only glades for generations to come, after having lost a majority of it already, is the most important thing Florida can do. The Army Corps has already crippled the glades and they owe it to us to repair what they can. Over population has cleared almost all the pinelands and tainted our waters with mercury (why we stopped fishing in the glades 25 yrs ago). The water situation has caused havoc with the wood storks in Corkscrew and caused mercury levels in panthers and gators to be over the top.

THERE IS ONE EVERGLADES. THATS IT! We believe a few very important points are vital to the glades health. #1,The Urban Development Boundary Dade Co. must remain where it is.#2, The dike around the Lake will NOT break free as proposed by people. A waste of money to repair. It isnt the ocean, and even a severe 'cane wont provide waves like it would in an ocean! New Orleans simply caused this panic! The rim canal would barely be affected. Its a ridiculous notion! I bring this up because of the wasteful funds it could use up.#3, we dont want TOO much water where there shouldnt be much and vice versa! land animals need dry land! #4, the "glades people" although very important, may have to adapt IF this affects them negatively! A few people, although very important, sometimes hve to sacrifice livelihood for the greater good of something greater...THE GLADES AND EARTH'S FUTURE! #5, Im hoping, having worked there, that Arch Creek, one of only a few natural rivers left, and of extreme historical significance, can once again flow! Its stagnant still, last I heard, and this should be of utmost importance- to let it flow again...its a polluted mess! It would bring a lot of happiness and add a little touch of personality to the CERP program!

Thanks! I wrote this in a hurry but I hope our points have been made and will be taken into consideration. We generally support what the Sierra Club, Audubon, and Friends of the Everglades support.

We need to speak for the things that can speak for themselves and this is one of those cases! ONE EVERGLADES...ITS OUR WATCH. DO IT RIGHT!

I once met Marjorie Stoneman Douglas...I hope if shes looking down that shes proud of me for sticking up for her (and our native indian's) baby!

Sincerely,

Michael Pafford

Ralph, Gina P SAJ

From: mike xxxxxxxxx [redacted]
Sent: Monday, December 19, 2011 7:50 AM
To: CEPPComments, SAJ
Subject: Glades plans

One more thing: how will the Cape Sable Sparrow fare?
Thanks again,
Mike

Miccosukee Tribe of Indians
of Florida

Business Council Members
Colley Billie, Chairman

Jasper Nelson, Ass't. Chairman
Jerry L. Cypress, Treasurer

Andrew Bert Sr., Secretary
William M. Osceola, Lawmaker

January 20, 2012

Colonel Alfred Pantano (Alfred.A.Pantano@usace.army.mil)
United States Army Corps of Engineers
701 San Marco Blvd.
The Prudential Building
Jacksonville, Florida 32207-8175

Via E-Mail and Express Mail

Re: Comments by the Miccosukee Tribe of Indians of Florida on the NEPA Scoping for the Central Everglades Planning Project (CEPP)

Attention: Dr. Gina Paduano Ralph at CEPPComments@usace.army.mil

Dear Colonel Pantano:

Enclosed, please find the official comments of the Miccosukee Tribe of Indians of Florida in response to your request regarding scoping for the Central Everglades Planning Project (CEPP) under the National Environmental Policy Act (NEPA).

For over 13 years, allegedly to protect the Cape Sable seaside sparrow, discriminatory water management actions have flooded and degraded hundreds of thousands of acres of Tribal Everglades in Water Conservation Area 3A that are vital to the culture and way of life of the Tribe. The high water levels caused by these actions also posed a threat to the health and safety of the Miccosukee community and brought the Snail Kite to the verge of extinction. Sadly, a vast area of the Everglades, which the government promised to preserve in a natural state *in perpetuity* for the Tribe, has been severely degraded.

Based upon our experts' review of the Corps' selected plan for the Everglades Restoration Transition Plan (ERTP) as presented in your recently released Final Environmental Impact Statement dated March 4, 2011, the Tribe is cautiously optimistic that the ERTP should begin to alleviate some of the harm in Water Conservation Area 3A caused by more than a decade of discriminatory water management actions. In addition, the Corps has an opportunity under the Combined Operational Plan for the Modified Water Deliveries and C-111 projects to move Everglades Restoration even further ahead. While this plan has yet to be developed, a water management plan that moves us farther toward

P.O. Box 440021, Tamiami Station, Miami, Florida 33144, (305) 223-8380, fax (305) 223-1011

Constitution Approved by the Secretary of the Interior, January 11, 1962

restoration would make significant strides in protecting the Miccosukee culture and cultural resources once implemented.

Now, the Corps is proposing the Central Everglades Planning Project to develop a plan for a suite of projects in the Central Everglades to prepare for Congressional authorization as Comprehensive Everglades Restoration Plan (CERP). As you know, the Tribe has long raised concerns that vital restoration projects were being delayed and that the Central Everglades was being left out of the CERP process. Therefore, the Tribe is pleased to see an emphasis on projects for the central Everglades, which is the Tribe's traditional homeland. The Tribe, which has participated in more than twenty years of restoration planning, is concerned that to date no CERP projects that would benefit the Central Everglades, including Tribal lands, have been built. The Tribe is hopeful that the CEPP process will not turn into yet another planning process that produces no restoration results. In addition, care must be taken to ensure that projects are designed and implemented in such a way that they follow all applicable law. Finally, any so-called "new science" must not be used to attempt to justify sacrificing the Tribal Everglades in WCA-3A for the Park downstream. Thus, we believe it is very important that you sincerely consider, and adequately address, during your NEPA process, all the issues and concerns that have been identified by our experts if you are to actually achieve success.

As always, the Tribe expects that all agencies not only comply with all federal environmental statutes, but also with their Trust Responsibility to the Miccosukee people.

Finally, the Tribe hopes that the plan that is devised will treat all parts of the Everglades, and all species, equally and will only deliver water that is clean. Only by protecting all parts of the Everglades equally, and delivering clean water, will the goal of Everglades Restoration be achieved.

Sincerely,

Colley Billie
Chairman

MEMORANDUM

TO: Chairman Colley Billie
Miccosukee Tribe of Indians of Florida

FROM: Mr. James Erskine, Acting Miccosukee Water Resources Director; Mr. Rory Feeney, Miccosukee Wildlife Director; Col. (Ret'd) Terry L. Rice, PhD, PE; Ms. Joette Lorion, Environmental Consultant

DATE: January 13, 2012

SUBJECT: Identification of Issues and Concerns to Be Addressed in the Central Everglades Planning Project ("CEPP") National Environmental Policy Act ("NEPA") Document Proposed by the US Army Corps of Engineers.

The following memorandum includes our expert analyses of the issues and concerns that the Army Corps of Engineers ("Corps") should address in the National Environmental Policy Act ("NEPA") document that the Corps plans to prepare related to the Central Everglades Planning Project ("CEPP"). The Notice of Intent to prepare an Environmental Impact Statement ("EIS") for CEPP was issued in the Federal Register on December 2, 2011. A Public Notice sent by the Corps stated that: "Public comments on the Central Everglades Planning Project are being accepted through January 20, 2012. Thus, we recommend that this memorandum be submitted to the U.S. Army Corps of Engineers on or before January 20, 2012, as the Miccosukee Tribe's issues and concerns.

Background: Beginning as early as the 1880s, humans began modifying the natural hydrology of South Florida and the Everglades. Over the years, anthropogenic changes have, among other things, removed areas from the natural system, caused some areas to flood while others are dried out, and, in general, stopped the natural flow of water through the Greater Everglades Ecosystem.

Finally in 1989, the U.S. Congress directed the U.S. Army Corps of Engineers to begin the restoration of flows through the Everglades "to the extent practicable" in Public Law 101-229, the Everglades National Park Protection and Expansion Act, which authorized the Modified Water Deliveries ("MWD") project. The February 1991 Environmental Impact Statement ("EIS") on the MWD project stated that the Everglades National Park Protection and Expansion Act authorized construction of the project based on "the environmental benefits to be derived by the Everglades ecosystem in general and by the park in the particular." EIS at 3. The 1992 Final EIS promised that the project would benefit approximately 100,000 acres of wetlands in NESR, 600,000 acres of wetlands in WCA-3, and 200,000 acres within the Shark River Slough Basin of the Park. FEIS at EIS-32. The expectation of Congress was that this project would be completed

by approximately 1997. Despite a Government Accountability Office ("GAO") Report and Congressional hearings on the delay of the MWD project, it is now 2013 and the Corps is still years away from total completion given the original scope of the project.

On a parallel track with the MWD project, the Corps agreed to modify C-111 South Dade components of the Central and South Florida project ("C&SF") in order to restore flows through Taylor Slough, which eventually enter Florida Bay. As with the MWD project, the C-111 modifications have been in the works for over two decades without being completed. The completion of both the MWD and C-111 projects, and an operational plan to implement them, are extremely important to the Miccosukee Tribe. This is primarily because they will permit increased water to move south through the historic flow path of the Everglades, thus relieving Tribal land in WCA 3A north of Tamiami Trail from unnatural inundation and ongoing, irreversible destruction.

While these two projects were being planned and implemented at a snail's pace, the Fish and Wildlife Service ("FWS") declared jeopardy on the Cape Sable seaside sparrow ("the Sparrow") in 1997 under the provisions of the Endangered Species Act ("ESA"). The draconian and discriminatory water management changes, which the Corps made at the behest of the FWS, further exacerbated the flooding of Tribal land. The Corps began with emergency deviations in December 1997, and followed these with the Interim Structural and Operational Plan ("ISOP") in 1999, and the Interim Operational Plan ("IOP") in 2002; each made the flooding of Tribal land progressively worse. As preposterous as it sounds, all of these operational plans moved the Everglades further away from the restoration and have not helped the "Sparrow."

In 2003, the Corps began planning operational rules for the day that the MWD and C-111 projects would be completed. This effort was dubbed the Combined Structural and Operational Plan ("CSOP"). Tribal representatives participated in more than 22 meetings of a CSOP advisory team formed by the Task Force under the mistaken assumption that all the interests actually supported the goal of finally operating these projects in a manner that would begin the restoration process. After four years of intensive work on the part of many, to include the Tribe's representatives, and a consensus agreement on the part of a large majority of participants, the Corps abandoned the CSOP effort. ENP, with the support of their environmental allies, refused to support the plan for clearly unjustifiable reasons, including that the proposed Alternative 5R would allegedly harm the western "Sparrow" subpopulation A. As discussed herein, this issue is both a red herring and contrary to Everglades restoration.

In reality, the CSOP hydrologic modeling had revealed the obvious: The implementation of the MWD project and more natural flows would make the "Sparrow" habitat south of the Miccosukee Reserved Area ("MRA"), which has been unnaturally dried out since 1997, much wetter. This revelation was in diametric opposition to the FWS demands to artificially dry this area out over the past 13 years. The dilemma that the Tribe had realized and expounded for years, was now front and center; water managers could either continue to 1) unnaturally dry out the western side of the Park or 2) restore the area … not both.

During this same period, the FWS was responding to a lawsuit which required the Service to consider this area for designation as "critical habitat" under the provisions of the ESA. If this area was in fact designated "critical habitat," then it would have to be unnaturally dried out forever, and Everglades restoration would be permanently blocked. Based primarily on the Tribe's technical and scientific arguments, along with the Corps' modeling, the FWS rejected the establishment of this area as "critical habitat." The FWS was challenged in Federal Court, but, again, due to the Tribe's support in that case, the Judge upheld the FWS decision to not establish "critical habitat" and to permit Everglades restoration to move forward. The only question that remains now is when does the Corps start allowing more flows into this area, including through the S-12 gates under the contemplated Combined Operational Plan ("COP"), and eventually CERP, so that restoration can in fact commence both north and south of Tamiami Trail?

In 2010, after 13 years of discriminatory water management actions, purportedly for the "Sparrow," the Corps finally listened to two major points the Miccosukee Tribe had been making for years regarding these operations: 1) WCA 3A was being severely impacted by IOP and the previous "Sparrow" operations, as evidenced by the destruction that had been experienced, which is highlighted by the continuing loss of tree islands, the plummeting of the snail kite population from over 3,500 birds in 2000 to less than 700 in 2008, and the conversion of Everglades marsh habitat into a shallow lake, and 2) by far the most important, the "health and safety" of the Miccosukee Tribe was being threatened by operating WCA 3A at water levels well above its design specifications. This recognition by the Corps stemmed from the Tribe's Equal Protection lawsuit in which Tribal members and representatives, to include Chairman Colley Billie, gave testimony and resulted in the Corps' development of the Everglades Restoration Transition Plan ("ERTP"). As a result, the Corps issued a Final Environmental Impact Statement ("FEIS") in December of 2011, which proposed major changes to address the "health and safety" of the Tribe and the high water in WCA 3A. If the ERTP is finally implemented as proposed in the FEIS, the Tribe may finally be provided some relief from the damaging, discriminatory water management actions that have been going on for over 13 years.

In June 22, 2011, while the ERTP was in process, the Tribe provided NEPA scoping comments on the Combined Operational Plan ("COP"), which is the new acronym that replaced CSOP for the (CSOP operational plan that will be implemented once the construction of the MWD and C-111 projects is completed, which was once called CSOP. The COP will replace the ERTP when completed. If the Issues/Concerns that were provided to the Corps by the Tribe are adequately addressed, the COP has the potential of providing even more benefits for the Everglades and Tribe than the proposed ERTP promises to accomplish. However, since the COP has yet to be developed, and structures still need to be constructed, that remains to be seen.

In October 2011, with some CERP projects having been abandoned and others seriously delayed, the Corps and other announced yet another new planning effort to push forward certain central Everglades components of CERP. Yet another acronym was created and the Central Everglades Planning Project (CEPP) was announced with great fanfare. To date, the details of CEPP are

limited to power points, "fact" sheets, letters and a Federal Register Notice. The Federal Register Notice states that the goal of the CEPP effort is "to develop an integrated, comprehensive technical plan, including the first increment of projects, for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem." It identifies the CERP components that are included as the following projects: Everglades Agricultural Area Storage Reservoirs; Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement; Everglades National Park Seepage Management; and Everglades Rain Driven Operations. According to a Corps fact sheet, "The goal of the Central Everglades Planning Project is to deliver within two years a finalized plan, known as a Project Implementation Report, for a suite of restoration projects in the central Everglades to prepare for Congressional authorization as part of the Comprehensive Everglades Restoration Plan (CERP)." It is difficult to discern from the scanty information whether CEPP will be just another endless planning effort or projects will actually be built.

The statement in the Federal Register Notice that, "Since 2000 much progress has been made," is highly misleading. Nothing could be farther from the reality of missed deadlines and abandoned projects. The Tribe has been contending for almost a decade that projects were being seriously delayed, and that the "heart of the Everglades," including Tribal Everglades, was being left out of CERP. Even the Committee on Independent Scientific Review of everglades Progress (CISRERP) echoed the Tribe's concerns. In its 2006 Biennial Review, CISRERP found that important projects necessary to re-establish sheet flow in the Everglades are, ***"far behind the original schedule."*** It further recognized that, ***"anticipated restoration progress in the Water Conservation Areas and Everglades National Park appears to be lagging behind the production of natural system benefits in other parts of the Everglades."*** The 2008 Biennial Review warned that, ***"Ongoing delay to South Florida ecosystem restoration not only has postponed improvements to the hydrological condition but also has allowed ecological decline to continue."*** The Review concluded that, ***"It's too early to evaluate the response of the ecosystem to CERP Projects because none have been implemented."*** It is disingenuous based on reality for the Corps to attempt to fool the public into thinking that "much progress has been made" or that it is expediting projects that have been seriously delayed.

While the Tribe is pleased to see after all these years that there is finally a focus on creating a plan to move projects for the Central Everglades forward, it remains to be seen whether CEPP will be yet another new acronym for yet another endless planning effort or whether projects to restore the Central Everglades will actually be built. The Tribe, whose entire culture and way of life depends on a healthy Everglades ecosystem has long sought for its traditional homeland to be restored. Yet, the Tribe cannot help but have any optimism that it might have tempered by the many plans that it has worked on for so many years, only to see them cast aside when politics intervened. In the Tribe's experience, it remains to be seen whether projects necessary to restore the "heart of the Everglades" will ever be authorized and implemented. Moreover, depending on how the plan is designed, and implemented, the CEPP could either benefit or harm Tribal lands and interests in the Everglades, especially since the State failed to meet the December 31, 2006

deadline to meet water quality standards in the Everglades Protection Area. Thus, the following comments are provided in response to a Public Notice by the Corps requesting scoping comments and must be addressed in the CEPP NEPA process.

Miccosukee Tribe Issues/Concerns
That Must Be Addressed in the NEPA Process Include:

- **An EIS Is Required:** The CEPP formulation and implementation will have "*a significant impact on the human environment.*" Therefore, **the document that is required to be prepared by the Corps under the National Environmental Policy Act ("NEPA") must be an Environmental Impact Statement ("EIS").**

- **All Applicable Law Must be Followed:** While the Tribe is not opposed to the significantly delayed CERP process becoming more efficient, it is opposed to any streamlining that comes at the expense of compliance with all applicable laws. As always, the Tribe expects the Corps to comply with the National Environmental Policy Act ("NEPA"), the Endangered Species Act ("ESA"), the Federal Advisory Committee Act ("FACA"), the Clean Water Act, the U.S. Constitution, the Corps' Trust responsibility to the Tribe, and all other applicable laws.

- **ERTP, Not IOP, Should Be the Base Condition:** The Corps concluded in the Final Environmental Impact Statement (FEIS) on the Everglades Restoration Transition Plan ("ERTP") that, due to safety and endangered species concerns, that "IOP is no longer a viable option" for water management within WCA-3A and the South Dade Conveyance System." ERTP FEIS at xiii. The Corps argued when it stopped using the Test 7 operational plan as a base condition in the EIS process that it could no longer be used because it was contrary to the ESA. Similarly here, the Corps cannot rely on IOP as the base condition for CEPP in the NEPA process, because it is not viable. In addition, the ERTP should be replacing IOP in the very near future and prior to any NEPA document being produced.

- **Ensure No Adverse Impacts to Miccosukee Tribe Culture & Cultural Resources:** Corps' analysis and planning often do not adequately take into consideration the impacts of Corps project operations on the Miccosukee Tribe's Culture and Cultural Resources, before most projects/actions are authorized for implementation. **The Corps must perform a comprehensive review of all potential adverse impacts of all proposed actions under the CEPP on the Miccosukee Tribe's Culture and Cultural Resources in the action area, which includes WCA-3 and the Park, and ensure that any adverse impacts are eliminated prior to implementation of the selected alternative. Certainly, the assurance of the "health and safety" of the Tribe must be paramount.**

- **Must Produce Benefits for Tribal Lands in WCA 3A:** The CEPP process should incorporate a revised WCA-3A regulation schedule targeted at the restoration of the entire central Everglades that incorporates a multispecies management approach building upon what was achieved with the ERTP and hopefully will be achieved under COP. Any regulation scheduled developed in the CEPP process must provide restoration of the Tribal Everglades in

WCA-3A, as well as the Park. The Corps must be careful during the NEPA process not to succumb to unreasonable demands by the Park, or any other interests, to provide more water than the CEPP can reasonably deliver without sacrificing other areas of the Everglades, such as the Tribal Everglades in WCA-3A. **The pursuit of the unnecessary, unreasonable, and impossible often prevents the achievable.** The Tribal Everglades must benefit from CEPP.

- **CEPP Must Decrease WCA 3A Flooding:** WCA-3A water levels must become more natural as defined by the Natural Systems Model ("NSM") and the CERP documented -1 foot below to +2.5 feet above ground envelope to protect the few remaining tree islands. According to the December 2011 FEIS on the ERTP, for WCA-3, the result of lowering Zone A and extensions of Zones E1 and D can be seen in the modeling for the southern areas of WCA 3, such as Indicator Region 124, Figure A-H-7 and Figure A-H-8. FEIS at 4-36. The FEIS explains that the stages show a significant reduction (by as much as 0.2 or 0.3 feet) from about the highest 5 percent to about the 50% of the time range. *Id.* The results of lowering the zones under the ERTP Alternative 9E1 can be seen in Figure A-H-10 for the southern areas of WCA 3A. The number of high weeks (392) under the current condition (IOP) was reduced to 252 weeks under Run 9E1. *Id.* According to the FEIS, this equated to a 36 per cent reduction in exceedance of the high water stage criterion with no increase of low water events. *Id.* The modeling also shows that the numbers of weeks of sustained high water above 2.5 ft. in Indicator Region 14 has been reduced from 412 weeks under IOP to 260 weeks under ERTP 9E1. *See* FEIS at B-1-99. The Corps concluded: "The alternative that best met the ERTP objectives of improving conditions within WCA 3A for the snail kite, wood stork and other wildlife species, while maintaining protection for the CSSS and meeting Congressionally-authorized C&SF Project purposes, became the ERTP." FEIS at 2-31. Alternative 9E1 is the recommended plan. FEIS at *xiii.* ***CEPP* must reduce damaging high water levels in WCA 3A even more than the proposed ERTP and the anticipated COP. So-called "new science," which in many cases is old science that has been discarded, must not be misused as an excuse to drown the Tribal Everglades to provide more water to the Park downstream.**

Health And Safety Must Be a Priority: The Corps' recent FEIS for the ERTP quotes a letter of Miccosukee Tribal Chairman Colley Billie which states: ***"For far too many years, as a direct result of discriminatory water management actions, hundreds of thousands of acres of Tribal everglades in Water Conservation Area 3A have been flooded and degraded ... It has threatened the health and safety of the Miccosukee community."*** FEIS at 4-89. In 2008, the Tribe filed an Equal Protection lawsuit, pending in the Eleventh Circuit Court of Appeals, that detailed the threats that these discriminatory water management actions posed to the Tribal Everglades in WCA-3A, and to the health and safety of the Miccosukee people. In July 2010, the USACE Water Resources Engineering Branch (EN-W) conducted a review of the original General Design Memorandum for WCA-3A. *See* ERTP FEIS at 1-19; *see* Memo of Sean Smith as Exhibit A. Based upon the results of this review, the Corps concluded that a rigorous evaluation of the Standard Project Flood conditions within WCA-3A should be conducted. *Id.* As a result of the Corps' Phase I analysis of high water events, the Corps discovered that "based on

current system conditions as simulated in the water budget spreadsheet, the current configuration of WCA-3A would result in an increase in the SPF stage for WCA-3A of between 1.3 and 1.4 feet compared to the WCA-3A design assumptions." *Id.* Through this analysis, the Corps also discovered the blindingly obvious: "that peak SPF stage is increased over the original design due to the reduction in outlet capacity from WCA-3A through the S-12s." *Id.* The Corps recognized that the "Discharge through the S-12 structures is essential for managing the WCA-3A SPF peak stage." FEIS at A-5-33. The FEIS concluded that: "Leaving IOP in place is not an acceptable option due to the snail kite habitat issues and L-29 levee high stage concerns." FEIS at G-1-10. In light of this safety analysis, the FEIS concluded that it is "prudent for the USACE to recommend the lowering of Zone A of the WCA-3A Regulation Schedule as a risk reduction measure." FEIS at 1-20. The FEIS further concluded that the 1960 WCA-3A 9.5 to 10.5 feet, NGVD Regulation Schedule is a "required component for the interim water management criteria for WCA-3A Zone A under ERTP, necessary to mitigate for the observed effects of the discharge limitations of the S-12 spillways." *Id.* In light of these findings, **any CEPP water management actions that may impact water levels in WCA-3 must account for the specific flood stage of the L-29 levee system as detailed in the US Army Corps of Engineers 2011 General Design Memorandum for WCA-3A.** (see Exhibit A attached). This is vital to protecting the Miccosukee community located downstream of the L-29 levee. Finally, any safety studies that have been, or are being, conducted on the L-31 levee and the Lake Okeechobee dike must also be taken into account. **Health and safety of the Miccosukee Tribe, and the public, must be the top priority in the CEPP process.**

- **CEPP Must Incorporate Storage As a Priority:** As with water quality treatment, storage must also be incorporated. The nutrient enriched flows that are discharged from Lake Okeechobee could easily overload the current stormwater treatment system, and impact the Everglades wetlands. Incorporating storage facilities must be a central component of the CEPP and should be scheduled for construction and implementation early in the sequencing process. It is a tragedy that the Everglades Agricultural Area ("EAA") Reservoir Phase 1, one of the first CERP projects, was abandoned after many months of construction and an expenditure of more than $250 million dollars. If the EAA Reservoir Phase 1 had not been abandoned, both it and the Bolles and Cross Canal Projects, could have been completed by December 2009. Additionally, although the EPA Amended Determination stated that a Flow Equalization Basin ("FEB") built on this site could meet the Water Quality Based Effluent Limit in WCA-3 by 2013, no action has been taken to build an FEB on this site that was paid for by federal tax dollars. **Constructing storage at the soonest must be a priority if CEPP is too succeed.**

- **Rehydrate Only With Clean Water to Protect Northern WCA-3A and WCA-3B:** Flows into the dry areas of northern WCA-3A and through WCA-3B should be restored to the greatest extent practicable toward achieving historical flows and levels and only if the water is clean. Dirty water, *i.e.* water containing concentrations of phosphorus greater than 10 ppb should never be utilized for rehydration of unnaturally dried out areas. **In general, CEPP should never**

permit rehydration with dirty water and should always strive for natural flows and levels to the greatest extent practicable.

- **CEPP Must Incorporate Solutions to Stop Western Basins Pollution:** Any project truly geared at delivering more water clean water to the *"Central Everglades"* must incorporate solutions for the western basins. Discharges through the S-140 and the S-190 water control structures continually deliver phosphorus laden waters onto Tribal lands and into WCA-3A. Recent data from the 2011 South Florida Environmental Report shows that the combined discharge from the S-140 and S-190 water control structures comprised nearly 30% of the total phosphorus load discharged to WCA-3A. The S140 water control structure discharged 9.2 metric tons of phosphorus with a FWMC of 55 ppb directly onto Tribal lands and into WCA-3A. This was the single largest structure discharge into WCA-3A in 2010. The S-190 water control structure discharged 7.6 metric tons of phosphorus with a FWMC of 73 ppb directly into the L-28 Interceptor canal, which terminates on Tribal lands in WCA 3A (2011 SFER Appendix 3A-5). The SFWMD inflow station at the terminal end of the L-28 Interceptor canal had a discharge geometric mean phosphorus concentration of 65.2 ppb in WY 2010 (SFER 2011; Appendix 3-4).

The combined impacts and phosphorus load from these discharges has had a devastating effect on Tribal lands and WCA-3A. The Central Everglades Planning Process provides an invaluable opportunity to develop and implement solutions that will cooperatively benefit Tribal lands and the water conservation area. These solutions were outlined in the Comprehensive Everglades Restoration Plan (CERP) and in the Big Cypress - L-28 Interceptor Modifications Project description which calls for canal modifications and water quality treatment for these basins:

> *Big Cypress - L-28 Interceptor Modifications Project (www.evergladesplan.org)*
>
> *Modification of levees and canals, water control structures, pumps, and stormwater treatment areas (with a total storage capacity of 7,600 acre-feet) will re-establish sheetflow from the West Feeder Canal across the Big Cypress Reservation and into the Big Cypress National Preserve, maintain flood protection on Seminole Tribal lands, and ensure that inflows to the North and West Feeder Canals meet applicable water quality standards. Upstream flows entering the West and North Feeder Canals will be routed through two stormwater treatment areas to be located at the upstream ends of the canals. Sheetflow will be re-established south of the West Feeder Canal consistent with the Seminole Tribe's Conceptual Water Conservation System master plan.*

The Central Everglades Planning Process is the time to initiate the long overdue planning process for the CERP Big Cypress - L-28 Interceptor Modifications and provide a solution for the devastating discharges from the L-28 Interceptor Canal and the S-140 water control structure..

- **No More Dirty Water, No Rehydration with Dirty Water, & No Use of WCAs As *De Facto* STAs:** Unlike a lake or a stream in which pollutant discharges undergo relatively quick

and complete mixing, the Everglades is being eaten away by P pollution like a cancer. Cancer starts at a point and eventually spreads throughout the body unless stopped. Like a cancer, phosphorus pollution eats away from the points it enters the Glades, and continuously spreads further and further into unimpacted areas. It will eventually destroy the vast majority of what's left, if not the entire Everglades, unless it is stopped.

If damage occurred until the cause of the damage was stopped, and was then reversed in approximately the same time it took to cause that damage, this damage would be considered reparable, or reversible. This is not what occurs in the Everglades. Recreating tree islands and extracting high concentration of phosphorus from the soil may never be achieved by nature except in geological timeframes; and extirpated species will never be replaced. Even if humans could reverse the damage in a shorter time, which at present they cannot, it would certainly be cost prohibitive, and require many, many years to complete. Whether these restorations can be achieved is unknown, and, if they could, the time to achieve them is centuries, millennia, or longer. Even in the best case scenario, this damage is, for all intents and purposes, irreparable. It only makes sense that stopping this irreparable damage is the prudent first step to restoration, and, in the minds of many, including the Miccosukee Tribe, the mandatory first step.

It should be clear to all that restoration of the Everglades has not begun, as the Everglades continues today to be irreversibly destroyed. Restoration can only begin once the irreversible damage is stopped, and that day is, at best, far in the future.

The water quality issue was supposed to have been resolved by December 31, 2006 when the State, now under an Order of the Court, was supposed to have achieved inflows into the Everglades that ensured the Water Quality Standard was being met. The State's meeting this deadline in a timely fashion was a base assumption of the CERP Restudy, and the success of CERP, in accordance with the projected schedule, depended on it. However, this has yet to be achieved, and under the current best case scenario, may not be achieved until 2020. There is a possibility under the EPA Amended Determination that the Water Quality Based Effluent Limitation ("WQBEL") for WCA could be met by 2013 if a Flow Equalization Basin ("FEB") on the Talisman land was constructed, but no such reservoir is even being planned let alone being constructed. Moreover, as all who work on Everglades restoration know, the best case scenario is rarely, if ever, realized.

In addition, CISRERP has invited an analysis of "trade-offs between water quality and quantity," which opens the door wide for those who would destroy one part of the Everglades for the benefit of another. At the heart of this is the utilization of vast areas of the Everglades (both WCAs and Tribal Land) as *de facto* STAs. To permit the State to utilize Tribal Land as STAs in order to achieve 10 ppb P in the Park is diametrically opposed to actually restoring the Everglades, contrary to the Consent Decree and the Clean Water Act, and anathema to the Miccosukee Tribe. The Tribe will not permit Tribal land to be utilized as an STA.

Therefore, the Tribe does and will not support a CEPP that 1) increases the amount of dirty water brought into the Everglades Protection Area, or 2) restores flows to the

Everglades Protection Area with dirty water, until the restoration water meets the 10 ppb P criterion mandated by the Clean Water Act. Even more, Tribal land will not be utilized as an STA. The 10 ppb P criterion must be a major performance measure in CEPP and water quality must be thoroughly analyzed and evaluated in the CEPP process.

- **No More Dirty Water - Water Quality Must Be Met:** The Federal Register defines the primary objective of the CEPP as follows: "*The next step for the implementation of CERP is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore flow to the South...*" The CEPP process cannot attempt to restore more water into the central Everglades from the north, *i.e.* from the Everglades Agricultural Area ("EAA") and Lake Okeechobee until the State meets water quality standards in the water being delivered to the Everglades Protection Area. The State of Florida failed to meet the December 31, 2006 deadline, as recognized by Judge Gold, to ensure that waters discharged to the Everglades Protection Area meets water quality standards, including a numeric criterion of 10 ppb Phosphorus ("P"). Thus, waters discharged from Lake Okeechobee are laden with pollution. The most recent data for the 2011 South Florida Environmental Report shows that the open water Lake total phosphorus concentrations were 118 ppb for WY2010 and had a five year average of 172 ppb (2011 SFER; Table 10-12). To accomplish the stated goal of redirecting Lake Okeechobee flows south, while maintaining the water quality standards as a constraint, as presented and discussed at the Water Resources Advisory Commission (WRAC) on Thursday, January 6, 2012, treatment must incorporated. Without the appropriate treatment, redirected flows from Lake Okeechobee will greatly increase the nutrient loads to the water conservation areas, causing further degradation of Tribal lands within the Everglades ecosystem." **Once flow at natural rates, levels, and quality is "practicable," then, and only then, should more water be brought into the Everglades; given the current rate of progress, this is many years into the future, if ever.**

- **No Trade-Offs Permitted:** One hears discussions at times about trade-offs" in Everglades restoration. Although not clearly nor precisely framed, CISRERP has invited an analysis of "trade-offs between water quality and quantity," which opens the door wide for those who would destroy one part of the Everglades for the benefit of another. At the heart of this is the utilization of vast areas of the Everglades (both WCAs and Tribal Land) as *de facto* STAs in the restoration process. The Tribe is concerned that under the guise of "new science" some will attempt to use the CEPP process to seek a plan that forces large volumes of water through some areas, like WCA-3A, for the possible benefit of other areas, like the Park to the south. These are not new arguments, but old ones previously rejected and now being recirculated. There was much discussion during the Restudy process about how too much water could devastate the last vast expanse of sawgrass left in existence in WCA-3A. It was decided that all areas of the Everglades were to be restored. The Tribe is deeply concerned by the so-called "new science" that some are using to support sending greater volumes of water through the Everglades than was envisioned by CERP. It should be noted that much of the modeling on this new science that was done did not take into account any constraints for water supply, flood control, or the fact that half of the

Everglades is gone. The Tribe will resist any effort to drown the Tribal Everglades for the alleged benefit of the Park downstream. As discussed in the section on endangered species, Tribal lands and the endangered snail kite have suffered from the high water effects of discriminatory water management. The Miccosukee Tribe never endorsed "trade-offs", which is essentially *"Animal Farm"* equality for the Everglades, or the use of Tribal land as a *de facto* STA. Using the Tribe's Everglades in WCA-3A as a *de facto* STA to clean the water before it gets to the Park is also specifically prohibited by the Consent Decree (Judge Moreno's Court). **CEPP must endorse as a guiding principle that no area of the Everglades will be destroyed/sacrificed for the benefit of another are of the Everglades by planned CERP projects, or for that matter, any proposed project.**

- **CEPP Must Not Delay Already Delayed MWD Project Components:** According to the Congressional Research Service ("CRS") Report to Congress dated March 17, 2005, ***"Mod Waters was originally estimated to be completed by 1997, yet some now argue it is unclear when or even whether the project will be completed."*** Another study on the delay of the Modified Water Deliveries Project ("MWD Project") conducted by the Inspector General of the Department of the Interior dated March 2006, discusses the cost of delay: ***"The Corps estimates that damage to tree islands resulting from the current high water levels could be as much as 246 acres per year and the cost to restore the islands ranges from $12.3 million to $123 million per year."*** The CRS Report further stated that: "***Section 601(b)(2)(D)(iv) of WRDA 2000 provides that Mod Water must be completed before appropriations can be made to construct other restoration projects in the east Everglades."*** Moreover, the 2006 Biennial Review by CISRERP warned that: "***Since the Mod Waters Project is an assumed precursor for the WCA-3A Decomprtmentalization and Sheetflow Enhancement part 1 (Decomp) project, further delays in the project's completion may ultimately delay funding appropriations for Decomp.***" The committee recommended that: ***"Mod Waters should be completed without further delay."*** In its 2008 Biennial Review CISRERP warned, "***If this relatively modest restoration project cannot proceed and provide some restoration benefits, the outlook for CERP is dismal.***" The CEPP must not be used as an excuse to bypass Congressional intent or to delay the construction of vital MWD Project components, which have already been seriously delayed. The Tribe is concerned that some will attempt to delay important aspects of this project by incorporating them into the CEPP, which may never be authorized. The Tribe will be opposed to any attempt to do so. **Completion and implementation of the MWD Project must be a pre-condition to the CEPP and a "without project condition" under NEPA.**

- **Decompartmentalization of WCA-3:** The Tribe agrees with the CISRERP that, if MWD does not get completed, the outlook for CERP is dismal and, unfortunately, the MWD Project is still far from completion. The CERP Decompartmentalization Project is also well behind the scheduled January 2010 completion date for construction of certain components contained in Section 10 of the Yellow Book. The Tribe cannot help but wonder if this new planning effort, with a new acronym, was devised to obfuscate this important fact. However, in the event that the

CEPP planning effort actually moves forward, plans for the Decompartmentalization of WCA-3 should incorporate more than the hydrologic modification features proposed for north of I-75 by the DECOMP PDT Team. When incorporating the Decompartmentalization of WCA-3 into the CEPP all of the canals in the L-28 system should be considered for removal in addition to the entire Maimi canal and L-67 canal system to truly provide restoration of the "Central Everglades." As the Decompartmentalization of WCA 3 progresses, careful and consistent consultation with the Tribe should take place to ensure that the cultural meeting places of the Miccosukee people and Tribal camps are not adversely impacted.

- **Analyze Expanding the Capacity of S-333:** All water that the Park desires for rehydration of Northeast Shark River Slough cannot flow through WCA-3B without causing significant irreversible destruction. As much water as is naturally possible should be funneled through WCA-3B, and, if more is available to satisfy the desires of the Park, then it should be provided via S-333, at least until the CERP eastern rehydration projects are completed. In order to provide this additional water, the CEPP should look at increasing the capacity of S-333. During the development of "Sparrow" deviations in the late 1990s, it was decided to increase the S-333 capacity from 1,350 cfs to 2,000 cfs, as documented in the 2002 IOP Final EIS, but this was never accomplished. The tentatively selected plan for COP also included the same increase in capacity for the S-333 structure, but COP was abandoned. **It is only prudent to finally analyze increasing the size of S-333 in order to ensure the Park can receive the higher volumes of water at a faster rate that it claims it needs.**

- **8.5 Square Mile Area Must Be Protected:** After years of debate, a project to protect the people of the 8.5 Square Mile Area ("8.5 SMA") from project induced flooding was authorized by Congress and constructed by the Corps of Engineers. There still are many associated with the Park that would like to see the remaining homes removed; under the mandate of Congress, this is not going to happen. **The Corps must ensure the people of the 8.5 SMA are afforded the protection they are authorized, and must not let another 8.5 SMA debate paralyze the restoration process and stop the CEPP from being implemented.**

- **CEPP Transitional Plan Is Essential:** There remain several components of both the MWD and C-111 projects that must be formulated, designed, and constructed. These components will not be all completed at the same time; it will take years for all to be completed. Similarly, the components of the different projects that will constitute the CEPP to deliver what the Corps refers to as "incremental" restoration will also come on line at different times. Thus, the **CEPP should contain a transitional plan that implements beneficial operational changes once each new component of the Pre-CERP and CERP projects is completed.**

- **No Operation of the S-356 Pump Station:** The Miccosukee Tribe will not support the operation of the S-356 pump station as a component of CEPP. There are three primary reasons: 1) water quality issues exist which have not been adequately addressed (Note: Among the potential/existing water quality issues, testing and analysis to date of S-356 pumped water have

found zero dissolved oxygen, along with a very strong odor of sulfur; changes in the concentration, load, and distribution of P flows into the Park resulting from the use of S-356 have not been analyzed rigorously *vis-à-vis* the Consent Decree, and there is clear potential for an increase in the number of Consent Decree violations), 2) the net result of the use of S-356 is pumping water in a circle, *i.e.* S-356 pumps into L-29 Canal, L-29 water flows into NE Shark River Slough in the Park, then seepage of this water enters the L-31N, and, then again, S-356 into L-29 Canal, which is clearly not restoration, and 3) most important to the Tribe, the pumping into the L-29 Canal from S-356 reduces the flow through S-333 into the L-29, and, thus, results in higher water in WCA 3A and Tribal land. This latter consequence of S-356 utilization results in adverse impacts to Tribal lands in WCA 3A and the endangered snail kite and its critical habitat. **The S-356 pump station has no redeeming value at this point, and probably never will, and it certainly should be eliminated from consideration in the formulation of CEPP.**

- **Address Seepage Control As A Critical Requirement:** Seepage out of Northeast Shark River Slough in ENP remains a huge impediment to restoration. Simply and directly stated, the restoration of ENP and the entire Everglades cannot be achieved until the seepage between S-335 and G-211 is adequately managed. **CEPP must recognize this debilitating seepage limitation and be formulated to appropriately account for it.**

- **1-Mile Eastern Bridge Should Be Plugged:** The Tribe continues to strenuously object to the construction of the 1-Mile Eastern "Bridge to Nowhere" and contends that it is a waste of taxpayer money that will continue to delay the MWD project. Moreover, given the facts that additional flows into Northeast Shark River Slough are severely limited by seepage into the L-31N Canal, and that the 1-Mile Eastern Bridge that is now being constructed will concentrate current and additional flows on the eastern side of the Park, it is clear that the bridge should not be utilized until the seepage challenge is met. The Corps even predicts that the flow across Tamiami Trail will increase by over 15% once this bridge is complete without even changing operations, *i.e.* the seepage challenge will be exacerbated just by merely constructing the bridge. The proposed COP and CEPP NEPA processes must analyze this potential flooding threat, which could adversely impact the Miccosukee Resort, and other Miami-Dade County properties. **The openings under the bridge should either 1) remain blocked by leaving the existing Tamiami Trail in place, or 2) be blocked by fill, sheet pile, or some other technique, until the seepage challenge is appropriately met, thus forcing more of the flow to the west in Shark River Slough where seepage is much less of an issue.**

- **Reduce/Eliminate the "Big Red Arrow":** The "Big Red Arrow," *i.e.* the arrow depicted on water budget schematics depicting the huge amounts of water forced south out of the L-31N Canal into the area of Homestead and vicinity since the enlargement of the L-31N in the early 1980s, must be reduced to the maximum extent practicable. If not, the people of South Miami-Dade will be continue to be flooded beyond the level of protection authorized by Congress, and

the CEPP clearly has the potential to exacerbate this already bad situation. **Therefore, CEPP should have as a primary goal the elimination of the "Big Red Arrow."**

- **Maintain the G-3273 Trigger Gage:** Uncontrolled, high volumes of seepage into the L-31N Canal can cause and has exacerbated flooding in the built portion of Miami-Dade County, which includes Miccosukee property. Seepage also causes the "Big Red Arrow," which specifically leads to increased flooding in southern Miami-Dade. Historically, this seepage has been somewhat managed by discontinuing the controllable inflow of water into Northeast Shark River Slough when the G-3273 gage rises 6.8 feet NGVD. **Until seepage, and, thus, unacceptable flooding, are adequately addressed, there is little reason to believe that G-3272 trigger well is not going to remain a critical part of the water management system under CEPP.**

- **Clear Downstream of the Culverts to Increase Flows:** In 2009, the Park commissioned a professor from the University of Miami to evaluate the effectiveness of culvert swales in increasing flows from the WCAs to ENP. The culvert-swale approach is one method for effectively clearing the accumulation of sediment, vegetation (to include invasive exotics), detritus, and, literally, garbage downstream of the Tamiami Trail culverts that is significantly reducing the flows from north to south, *i.e.* rather than actually remove the blockage, swales enable the water to move around it. In January 2010, Dr. David A. Chin, PE, published his report. Dr. Chin's analysis indicates that the Miccosukee long-held position is correct, *i.e.* clearing downstream of the culverts will significantly increase flows (Note: It also reconfirms at least 2 prior studies done by the Corps). Key points from the report follow:

  - Even the most modest swale considered, *i.e.*, 500' by 30', at a constant L-29 stage of only 6.0 feet NAVD, will likely increase flows by 60% at one culvert set and 250% at the other … the most robust swale considered, *i.e.*, 1500' by 30', will provide for a 200% and 560% increase at the same culvert sets, respectively.
  - Even a worst case scenario for both culvert sets during sensitivity analysis provided for a 48% and 200% increase in flows with the 1500' by 30' swale option, while an equally plausible, but more favorable, marsh resistance increased flows by 520% and 830% for the same swale option.
  - Adding another culvert set at the swale locations provided only a little improvement in increased flows.
  - Replacing the culverts by bridges at the swale provided improvements, but not nearly as great as the increased flows predicted for simply building the swale.
  - When a bridge is simulated to replace the existing culvert set: "… it should be noted that, for a given spreader-canal configuration, water deliveries are independent of the bridge span as long as stage differences across the bridge opening are relatively small [which is the normal condition]."

These new and independent scientific/engineering findings provide great hope for major, quick improvements in the condition of the Everglades at a very reasonable cost. Dr. Chin's work convinced the Superintendant of ENP to conduct an actual Pilot Swale Project to evaluate Dr. Chin's findings in the field; although this pilot project was supposed to be implemented by October of 2010, it appears that the work now been cancelled. **Given that the evidence and possibilities are so compelling, and the deteriorating state of the Everglades so dire, the Corps should move forward with full scale swale projects immediately, and analyze the increased flow capabilities of such swales as a component of the CEPP EIS.**

- **Clear Downstream of the S-12s & Implement Other Measures Needed to Increase Flows:** The same hydraulic principles employed by Dr. Chin to the culvert swales also apply to the S-12s. Clearing downstream of these structures provides more opportunities for further increasing flows through the Everglades. Especially increasing flows from WCA 3A, which is flooded much of the time, to an area in the Park that has been unnaturally dried out over many years. In preparation for the development of the ERTP, the Corps performed an analysis of current water levels in WCA 3A *vis-à-vis* the 1960 and 1972 design specifications and expectations, and reported the results in MEMORANDUM FOR SAJ LEVEE SAFETY OFFICER (DUBA), Subject: EN-W Position Statement on WCA-3A Regulation Schedule Modifications, 9 September 2010. Major findings are [emphasis added]:

  - **Actual water levels are much higher than those for which WCA 3A was designed –** *"The analysis illustrated that under the current system conditions, as represented in the spreadsheet, the peak SPF S-12 headwater stage was computes 13.76 ft, NGVD and the peak SPV WCA-3A three gage average stage was computed as 15.20 ft, NGVD. The comparison of peak stages between the 1960 GDM WCA-3A design and the 2010 WCA-3A volumetric spreadsheet predictions indicate that the predicted SPF stage is higher than the WCA-3A design stages established in the original GDM and used to set the as-built crest elevation of L-29: 1.36 feet higher at the headwater of the S12 structures; 1.3 feet higher at the three station average for WCA-3A."*
  - **S-12 flows are crucial achieving lower water levels** – *"Sensitivity analysis performed utilizing the 2010 WCA-3A volumetric spreadsheet tool illustrated that the peak SPF stage is most sensitive to the amount of outflows being discharged from WCA-3A, with the primary outlet being the S-12s ..."*
  - **Must lower top of regulation schedule to the design envelope of 9.5 – 10.5 feet to mitigate for the S-12 discharge limitations –** *"... EN-W has concluded that the lowering of Zone A of the current WCA-3A Regulation Schedule to the 9.5-10.5 feet NGVD regulation schedule line from the 1960 GDM will provide an interim step to mitigate for the observed effects of the S-12s discharge limitations."*
  - **Much more than reducing the top of the regulation schedule is needed to lower water in WCA 3A** – *"The inclusion of the lowering of Zone A of the current WCA-3A Regulation Schedule within the proposed alternatives of the ongoing ERTP NEPA effort*

is a minimum requirement to demonstrate compatibility with the required interim water management criteria for WCA-3A. Additional water management operating criteria to further reduce the frequency and duration of high stages within WCA-3A should also be considered within the context of other ERTP Project considerations."

- **Decisive and prescribed measures are needed now to decrease the risk to "human health and safety"** – *"The ERTP Project's water management operating criteria should include the establishment of operational constraints at the S-12 structures based upon safety considerations for WCA-3A features and pertinent downstream areas, including the identification of infrastructure modifications to be implemented on a temporary basis to allow the reduction of risk to human health and safety. The stability analysis of the S-12s is predicated on a maximum design headwater stage of elevation 12.4 feet NGVD with the differential head across the structure limited to 5.5 feet; also, the as-built crest elevation of L-29 and crown elevation of Tamiami Trail (US-41) in the S-12A to S-12D reach has been established to protect against the risk of overtopping from an adjacent flood stage of elevation 12.4 feet NGVD. The exceedances of these design conditions should be considered an immediate increase in risk to the human, health and safety afforded by the project feature and would require decisive and prescribed measures to reduce the WCA-3A stage."*

- **ERTP alone will not sufficiently reduce the risk to human health and safety ... more is needed!** – *"Outside of the ERTP project, additional NEPA assessment would be required to implement infrastructure modifications on a temporary basis to allow the reduction of risk to human health and safety, or to implement other permanent structural alternative which may result from the future phase 2 analyses. Considering the limitations on discharge through the S-12 structures, downstream conveyance improvements at the S-12 structures (potentially including removal of portions of the old Tamiami Trail) or additional outlets are required to mitigate for increased SPF stages within WCA-3A."*

In the Corps Draft ERTP EIS published on March 4, 2011, the Corps reiterated the importance of clearing the downstream blockages of the S-12 structures, as well as other measures to increase the flow out of WCA 3A.

5.0 Conclusions *(DEIS at A-5-41)* [emphasis added]:

- *The predicted SPF stage is higher than the WCA-3A design stages established in the original GDM and used to set the as-built crest elevation for L-29.*

- *Outlet capacity of the S-12s has either reduced over time OR[1] was never as large as assumed for the original design routings.*

[1] The Tribe's takes exception to the word "OR" which should be "AND" as it is clear from the evidence, including e-mails from Corps Staff, that: 1) the S-12 design flows were never achieved and 2) the capacity of the S-12s has decreased over time based on analysis of the rating curves over time.

- *The peak SPF stage is not sensitive to modifying the top (i.e. Zone A) of the WCA-3A Regulation Schedule. The peak SPF stage is most sensitive to the amount of outflows being discharged from WCA-3A, with the primary outlet being the S-12s.*
- *Considering the limitations on discharge through the S-12 structures, additional outlets are required to mitigate for increased SPF stages.*
- *The most effective additional measure investigated to alleviate the problem involves further degradation of the L-28 to increase outflows; however, the downstream effects of this action cannot be adequately addressed with the spreadsheet model routing and would require a more robust hydraulic analysis.*
- *Implementation of the Modified Water Deliveries Conveyance and Seepage Control Features would also provide additional outlet capacity.*

7.0 Recommendations for Future High Water Control

- *Remove key sections of the Old Tamiami Trail to reduce current impediments to flow out of WCA-3A.*
- *Investigate the possibility of changing the operating criteria at S-343A, S-343B, and S-344.*
- *Perform S-12 downstream conveyance improvements, such as vegetation cleanout.*

ERTP has proposed major steps to decrease water levels in WCA 3A. If the Recommended Plan for the ERTP is implemented it should lessen the now recognized and documented risk to human "health and safety," to include a major threat to the members of the Miccosukee Tribe. But clearly, the Corps' own analyses specifies that more must be done to increase flows out of WCA-3A. **Additional measures that need to be addressed in the CEPP EIS include 1) clearing downstream of the S-12 structures, 2) removing as much as possible of Old Tamiami Trail, and 3) further degrading of the L-28 levee. These, and other measures that might help, need to be planned and analyzed in the CEPP EIS and implemented at the soonest.**

• **Impact on Endangered Species Must be Assessed – Multi-Species Approach Is Essential:** The CEPP EIS must analyze the impacts of operation of these CERP projects on all endangered and threatened species in the action area, which includes Lake Okeechobee, the northern estuaries, all of the WCAs and the Park. Such an analysis would include the impact of operations on the Tribal lands in WCA-3A, and on the endangered snail kite and its critical habitat there. Both the snail kite, and its critical habitat in WCA-3A, have suffered an alarming decline under the past thirteen years of discriminatory water management. These draconian actions, purportedly for the Cape Sable seaside sparrow ("Sparrow)., moved the Everglades, including Tribal lands, further away from restoration. As a result of these water management actions, which include IOP, the Everglade snail kite that lives on Tribal lands has suffered an

alarming decline reported at more than 50%, which is actually even greater.[2] *See* ERTP FEIS at 3-26. This decline is a direct result of more than thirteen years of S-12 gate closures, which degraded thousands of acres of snail kite critical habitat on Tribal lands in WCA-3A.

The Miccosukee Tribe, whose members have called the Everglades home since time immemorial, objected to these single-species water management actions on grounds that they would cause the damage the Tribe has witnessed. The ERTP FEIS confirms that damage to both WCA-3A and the snail kite has taken place. The FEIS states, ***"the snail kite population has progressively and dramatically decreased since 1999 ... the snail kite population essentially halved between 2000 and 2002 from approximately 3,400 birds to 1,700 birds; and halved again from approximately 1,500 to 1,600 birds in 2006, to approximately 685 birds in 2008."*** FEIS at 3-26. The estimated 2009 population size of 662 birds indicates that there is no sign of recovery (Cattau et al. 2009)." *Id.* A review of Table 3-1 in the FEIS shows that number of successful nests, and young fledged, have declined dramatically since the Corps began implementing the S-12 gate closings in 1998. *Id.* and *Table 3-3.* ***"WCA- 3A has been previously identified as the most critical component of snail kite habitat in Florida"*** and the lack of reproduction in this area in recent years is of principal concern. *Id.* ***"A population viability analysis conducted in 2006 predicts very high extinction probabilities within the next 50 years (Martin 2007).*** Given the 2009 population estimate (i.e. 662 birds) the extinction risk may be even greater than the previous estimate (Cattau et al. 2009)." 3-26 to 3-27. It is clear that the Tribe's concerns about the snail kite have been proven correct. The FEIS also recognizes that the alarming decline of the vegetation on snail kite critical habitat in WCA-3A. **"However, high water levels and extended hydroperiods have resulted in vegetation shifts within WCA-3A, degrading snail kite critical habitat."** FEIS at 3-28. A multi-species approach that builds on the ERTP process and scientific information is essential. The ERTP was the first process to actually take a real multi-species approach to water management. Before this, as described above, it has typically been single-species management. **The ERTP model for multi-species management must be a guiding principle of the CEPP.**

• **Restoration West of Shark River Slough Must Begin:** As discussed earlier, "critical habitat" for the "Sparrow" was not designated by FWS for western Shark River Slough, because this area is currently being unnaturally dried out for subpopulation A of the "Sparrow" when under restoration it will be made much wetter. Declaring critical habitat would have effectively blocked the future restoration of the Everglades. Based largely on the written defense of the FWS's Final Rule by the Tribe, and concerns that the proposed designation would not only stop Everglades Restoration, but cause the continued destruction of Tribal Land, a Federal Judge ruled in 2011 that the FWS was correct not to designate this area as "critical habitat." In addition

[2] While some government documents have reported a 50% decline, the drop from approximately 3,400 snail kites in 2000 to 662 in 2009 actually represents a startling population decline of 81%. This is considerably more than the 50% stated.

to stopping Everglades restoration, the Judge unequivocally recognized the damage being done to Tribal land by "Sparrow" deviations:

> *"Under the grip of the law of unintended consequences, however, these corrective plans* [*i.e.* deviations for the "Sparrow"] *produced untoward results. Some argue that the greater retention of water for longer periods of time in WCA 3A, intended for Sparrow conservation, precipitated abnormally high water levels in WCA 3A. The higher water levels in WCA 3A are thought to have imposed adverse effects on other endangered species and on members of the Miccosukee Tribe of Indians of Florida ("Tribe")—who reside on more than 100,000 acres of WCA 3A land—by flooding culturally significant sites."* Collyer Order at p. 13.

Settled: CERP is formulated to restore the Everglades and the CEPP process purports to begin the incremental restoration of the Central Everglades. The best science in the form of modeling and field studies show that restoration of the Everglades will result in the western portion of Shark River Slough being wetter. In contrast, the last 13 years of draconian water management actions allegedly for the "Sparrow" have made this area dryer and moved it away from restoration, while not helping the "Sparrow." The designation of "critical habitat" for this area would have required it to be dried out in perpetuity. The FWS has officially decided, and a Federal Judge upheld the FWS decision, that at some point the CSSS-A area will be restored and be wetter.

Unsettled: The only question that remains at this time is when does the Corps start allowing more flows into the area of western Shark River Slough so that restoration can in fact commence both for the areas north and south of Tamiami Trail? **Thus, the Tribe, for the sake of its land and culture in particular, and Everglades restoration in general, implores the Corps to begin the restoration of western Shark River Slough via both the COP and CEPP.**

- **Decisive Action Required:** From 2003 to 2007, the Miccosukee Tribe participated in the 4-year CSOP effort to attempt to achieve essentially the same outcomes that a new acronym, COP, is now supposed to achieve. At the end of the day, because of the unjustified non-support of a few, the consensus of many was rejected, and, to the detriment of the Tribe, nothing was implemented. This endless restoration planning without concrete results must not be repeated under either the COP or CEPP. **The Colonel must make a final decision for the CEPP based on the best information available in spite of the misguided demands that some may have. No more "kicking the can down the road." Another dead end excursion is not an option for the dying Everglades. Bold, decisive action that results in actual restoration is essential for success.**

CESAJ-EN-W 09 September 2010

MEMORANDUM FOR SAJ LEVEE SAFETY OFFICER (DUBA)

SUBJECT: EN-W Position Statement on WCA-3A Regulation Schedule Modifications

The USACE Jacksonville District Water Resources Engineering Branch (EN-W) has conducted a thorough review of the Central and South Florida Project (C&SF) Part 1 Supplement 33: General Design Memoranda (GDM) for Water Conservation Area 3 (June 1960) and the C&SF Part 1 Supplement 49: Agricultural and Conservation Areas General and Detail Design Memorandum (August 1972). The 1960 GDM documents the WCA-3A design criteria and design assumptions, including the 9.5-10.5 feet NGVD regulation schedule for WCA-3A that managed water levels in WCA-3A prior to the start of the Experimental Program of Water Deliveries to Everglades National Park in 1983. Under the Experimental Program, the WCA-3A Regulation Schedule zones and operational rules were initially modified as part of the two-year test of the Rainfall Plan starting in 1985. The modified WCA-3A Regulation Schedule and Rainfall Plan remained in effect through the end of the Experimental Program in 2000. As an outcome of the deliberations during development of the Interim Structural and Operational Plan (ISOP 2000-2002) and the Interim Operational Plan (IOP 2002-present), the WCA-3A regulation schedule was further changed with the modification of Zone D and the establishment of Zone E1.

Based on the review of WCA-3A design documents and in conjunction with the hypothesis that the S-12s are not capable of achieving the original design discharge of 32,000 cfs, EN-W has concluded that a detailed engineering assessment of the effects of the potential S-12s discharge limitations and the WCA-3A Regulation Schedule modifications on the frequency and duration of high water events was warranted. The engineering assessment should include a rigorous evaluation of Standard Project Flood (SPF) conditions within WCA-3A as these conditions have not been evaluated by the USACE Jacksonville District since the original 1960 and 1972 design documents.

EN-W has proposed a two-phase analysis approach for WCA-3A high water events including: phase 1(ongoing) - identification and assessment of interim water management criteria for WCA-3A, including operational changes proposed as part of the ongoing

Everglades Restoration Transition Plan (ERTP) NEPA efforts; and phase 2(future) - a WCA-3A flood routing hydraulic analysis, incorporating current USACE risk analysis requirements focusing on potential human health and safety concerns resulting from WCA-3A stages, with identification of proposed water management operating criteria and potential infrastructure modifications to address identified concerns. The phase 1 effort was limited to hydrology and hydraulics assessment, while the phase 2 analysis will include additional engineering analysis conducted by hydrology and hydraulics, geotechnical, and structural design disciplines.

Findings of Phase 1 - To determine the ERTP interim water management criteria for WCA-3A, EN-W has completed a preliminary assessment based on the methodology identified in the 1960 GDM design document. The original design headwater of the S-12 structures is 12.4 feet and the peak three station average for WCA-3A under the SPF event was 13.90 ft, NGVD (C&SF Part I, Supplement 33). Since the current configuration of WCA-3A inflow and outflow structures differs from the 1960 GDM design document, a simple volumetric spreadsheet was developed of WCA-3A to determine the peak Standard Project Flood (SPF) stage within WCA-3A and at the S-12 structures based on current system conditions. Multiple inflow and outflow variables were identified and quantified to refine the calculations of the peak flows and stages for the SPF evaluation. The latest USGS rating curve for each of the S-12 structures was utilized in the analysis to incorporate the most current stage discharge measurements to more accurately incorporate present flow conditions. The analysis illustrated that under the current system conditions, as represented in the spreadsheet, the peak SPF S-12 headwater stage was computed as 13.76 ft, NGVD and the peak SPF WCA-3A three gage average stage was computed as 15.20 ft, NGVD. The comparison of peak stages between the 1960 GDM WCA-3A design and the 2010 WCA-3A volumetric spreadsheet predictions indicate that the predicted SPF stage is higher than the WCA-3A design stages established in the original GDM and used to set the as-built crest elevation of L-29: 1.36 feet higher at the headwater of the S12 structures; 1.3 feet higher at the three station average for WCA-3A. Sensitivity analysis

performed utilizing the 2010 WCA3A volumetric spreadsheet tool illustrated that the peak SPF stage is most sensitive to the amount of outflows being discharged from WCA-3A, with the primary outlet being the S-12's, and that the peak SPF stage is less sensitive to the configuration of the WCA-3A Regulation Schedule Zone A.

The schedule and scope for completion of the ongoing ERTP NEPA analysis precludes consideration of potential structural alternatives which would be proposed and evaluated in Phase 2. For immediate implementation through ERTP, prior to completion of the Phase 2, EN-W has concluded that the lowering of Zone A of the current WCA-3A Regulation Schedule to the 9.5-10.5 feet NGVD regulation schedule line from the 1960 GDM will provide an interim step to mitigate for the observed effects of the S-12s discharge limitations. Preliminary SFWMM modeling indicated that the following reductions in WCA-3A three station average high water frequency (as a percentage of the SFWMM 36-year period-of record, 1965-2000) may be reasonably expected from the lowering of Zone A: no significant change for stages above 11.75 feet NGVD (corresponds to S-12 headwater stage of 10.92 feet NGVD, based on historical regression); 1% reduction in stages exceeding 11.5 feet NGVD; 2-3% reduction in stages exceeding 11.0 feet NGVD; and 6-7% reduction in stages exceeding 10.5 feet NGVD.

The inclusion of the lowering of Zone A of the current WCA-3A Regulation Schedule within the proposed alternatives of the ongoing ERTP NEPA effort is a minimum requirement to demonstrate compatibility with the required interim water management criteria for WCA-3A. Additional water management operating criteria to further reduce the frequency and duration of high stages within WCA-3A should also be considered within the context of other ERTP Project considerations.

The ERTP Project's water management operating criteria should include the establishment of operational constraints at the S-12 structures based upon safety considerations for WCA-3A features and pertinent downstream areas, including the identification of infrastructure modifications to be implemented on a temporary

basis to allow the reduction of risk to human health and safety. The stability analysis of the S-12's is predicated on a maximum design headwater stage of elevation 12.4 feet NGVD with the differential head across the structure limited to 5.5 feet; also, the as-built crest elevation of L-29 and crown elevation of Tamiami Trail (US-41) in the S-12A to S-12D reach has been established to protect against the risk of overtopping from an adjacent flood stage of elevation 12.4 feet NGVD. The exceedance of these design conditions should be considered an immediate increase in risk to the human, health and safety afforded by the project features and would require decisive and prescribed measures to reduce the WCA-3A stage. In addition, application of the FDOT road base impact criteria to this reach of Tamiami Trail (estimated crown elevation of 14.95 feet) would result in a not to exceed regulated water stage of approximately elevation 11.5 feet NGVD adjacent to the roadbed (corresponds to S-12 headwater stage of 12.45 feet NGVD, based on historical regression). While this water stage could be temporarily exceeded and does not present the immediate risk of the SPF stage violation, nevertheless, it should be considered adverse with operational measures applied to reduce its duration.

Outside of the ERTP project, additional NEPA assessment would be required to implement infrastructure modifications on a temporary basis to allow the reduction of risk to human health and safety, or to implement other permanent structural alternatives which may result from the future phase 2 analyses. Considering the limitations on discharge through the S-12 structures, downstream conveyance improvements at the S-12 structures (potentially including removal of portions of the old Tamiami Trail) or additional outlets are required to mitigate for increased SPF stages within WCA-3A. The most effective additional measure investigated under phase 1 to alleviate the problem involves further degradation of the L-28 to increase outflows, although the potential for downstream effects, including impacts to the Tamiami Trail roadway and hydro-period/nesting condition effects on Cape Sable Seaside Sparrow Sub-population A, would require further investigations. Implementation of the Modified Water Deliveries Conveyance and

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Seepage Control Features and Tamiami Trail Improvements would also provide additional outlet capacity.

If you have any questions or require additional information, please contact me directly at extension 2105.

SEAN L. SMITH, P.E.
Chief, Water Resources Engineering Branch

OFFICE OF THE MAYOR
MIAMI-DADE COUNTY, FLORIDA

CARLOS A. GIMENEZ
MAYOR

January 18, 2012

Dr. Gina Paduano Ralph, Ph.D
Department of the Army, Jacksonville District Corps of Engineers
Planning Division, Environmental Branch
P.O. Box 4970
Jacksonville, FL 32232

RE: Scoping comments on the Central Everglades Planning Project (CEPP)

Dear Dr. Ralph:

Miami-Dade County has supported the Comprehensive Everglades Restoration Plan (CERP) and foundation projects, including initial components of the Biscayne Bay Coastal Wetlands (BBCW) and C-111 Spreader (West) that are on the way to completion. The County recognizes that improvements in the heart of the central Everglades are necessary to achieve ecological restoration benefits in the Water Conservation Areas (WCA), Everglades National Park (ENP), and estuaries. We also expect that improved quantity and quality of freshwater flow will not only benefit hydrology and the marsh ecosystem, but will also enhance potential for water deliveries for human water supply and to the southern estuaries. Increased stages in eastern portions of the WCA and ENP and in certain canals could affect flood protection level of service to the east, and seepage management must be included simultaneously with flow enhancement. However, seepage management components must also maintain both quality and quantity of water reaching wellfields, particularly during dry or drought periods. The "fast-tracked" CEPP represents an opportunity to link together water quality, storage, conveyance and seepage management components, to more holistically reverse ongoing decline in the Everglades system and demonstrate benefits, as compared to the standard compartmentalized and cumbersome planning process.

Although the CEPP promises a more timely and efficient procedure, it is important that the scope of plan formulation in CEPP be comprehensive, both in geographic scale and in addressing the three principal interests of Miami-Dade County in an integrated fashion: local and system wide ecological benefits, water supply, and seepage management. As a county uniquely situated among two National Parks, a National Marine Sanctuary, aquatic preserves, one of the world's most transmissive aquifers, and globally imperiled natural systems, Miami-Dade has a demonstrated commitment to environmental restoration, water quality, wellfield and flood protection, conservation land acquisition, and sustainability. The CEPP formulation should evaluate unique characteristics on a local scale, and not relegate them to a lesser standing at the terminus of the Everglades system. More specifically, the scope of CEPP formulation should address:

- Water quality, ecological and hydrological benefits, including effects on plant community, habitat structure, and listed species and other wildlife in Florida and Biscayne Bays, as well as within WCA3a and b, and ENP.

- Water quality and quantity with respect to Miami-Dade public wellfields, including surface-groundwater interactions and saltwater intrusion, particularly during dry season or in prolonged drought, and in view of sea level rise projections.

- Flood protection under various canal stages and high water conditions, including operational criteria and modeling of distribution of peak stages and flows at critical gauges (such as S-357, S-338, S-196, S-194, S-380, C6-Palm, S-26 and T5) and at reference residential and agriculture lands.

County staff understands that in the traditional USACE process, many of the issues of concern to Miami-Dade and other stakeholders are viewed as "constraints" rather than project objectives or targets for formulating alternatives. Early public presentations about CEPP by USACE and SFWMD staff suggest that modeling tools for plan formulation will not address flood protection, water quality, wellfields, or Florida Bay and Biscayne Bay in detail or with defined "performance measures". This approach represents a serious concern to Miami-Dade. However, we believe that unnecessary delays and costs, caused by repeated modeling efforts, revisions of alternatives, or challenges can be avoided by including all of the above issues from the outset in developing and evaluating a suite of restoration alternatives. This can be addressed in part through appropriate inclusion of sub-regional or local hydrologic dynamic models, particularly in areas where seepage management features are contemplated, and through extension of evaluation transects or targets to coastal transition zones and lands to the east of the L-30/31 boundary. In view of the potential benefits of increased freshwater flows as a climate-change adaptation strategy to address saltwater intrusion into both wetlands and groundwater wellfields, evaluation models should also be capable of addressing consensus sea level rise projections.

It is also strongly recommended that CEPP build upon modeling tools, as wells as evaluation factors, including surrogates for water quality and hydrologic targets for tree islands and protected species, that have been developed or extensively reviewed by earlier Project Development Teams working on DECOMP, ERTP, C-111, and BBCW. Information derived from these types of analyses, even if not labeled as "performance measures", should be used to evaluate, refine and recommend a preferred alternative suite of restoration elements and operations, including seepage management features. Miami-Dade County also recommends that the scope of benefits and cost analyses in CEPP include non-traditional approaches, such as valuation of ecosystem "services" that may derive from restoration, such as savings on costs of flood protection or drinking water treatment, and economic benefits of recreational or aesthetic values of natural habitats, fish and wildlife. Miami-Dade conducts surface and groundwater monitoring programs in Miami-Dade County, has extensive experience in stormwater management master planning, and has a robust collaboration with USGS focusing on development and application of ground and surface water modeling for wellfield protection. Miami-Dade may have water quality data or hydrologic modeling information that would be of assistance in the development of your EIS.

Lastly, Miami-Dade recognizes the importance of engaging stakeholders in the CEPP and that the fast-track presents challenges. However, we request that one or more CEPP public meetings or workshops directed at local stakeholders and their concerns be held in Miami-Dade, and recommend that similar regional meetings be held in other local jurisdictions south of Lake Okeechobee. Our staff is willing to assist you in locating an appropriate venue.

Technical staff in the Miami-Dade Permitting, Environment, and Regulatory Affairs (PERA) department and the Water and Sewer Department (WASD) can provide additional detailed input on modeling and hydrologic or ecological targets. Please contact Mr. Lee Hefty, Assistant Director of PERA Environmental Services at 305-372-6754 or via email at heftyn@miamidade.gov if you need additional information.

Sincerely,

Jack Osterholt
Deputy Mayor

c: Stuart J. Appelbaum, Chief, Planning and Policy Division
Charles Danger, PE, Interim Director, PERA
John Renfrow, PE, Director WASD
Lee N. Hefty, Assistant Director, PERA

Ralph, Gina P SAJ

From: Lou Gross [gross@nimbios.org]
Sent: Friday, January 20, 2012 11:18 AM
To: CEPPComments, SAJ
Cc: [redacted]
Subject: Comments on CEPP EIS from The Institute for Environmental Modeling

To: Dr. Gina Padua Ralph
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, FL 32232-0019
CEPPComments@usace.army.mil

From: Dr. Louis J. Gross
James R. Cox and Alvin and Sally Beaman Distinguished
Professor of Ecology and Evolutionary Biology and Mathematics
Director, National Institute for Mathematical and Biological
Synthesis (NIMBioS.org)
Director, The Institute for Environmental Modeling
University of Tennessee
Knoxville, TN 37996
gross@nimbios.org

I am responding to the request for comments to the CEPP Environmental Impact Statement (EIS) in my role as the Director of the Across Trophic Level Systems Simulation (ATLSS) project here at the University of Tennessee. ATLSS, supported by the USGS and the National Science Foundation, has been developed and utilized since 1995 to synthesize the best available scientific knowledge and utilize this in conjunction with hydologic models to assess the relative impacts of alternative restoration plans on key biotic components of the South Florida freshwater systems.

Adaptive management has been the operative paradigm for incorporating science into CERP decision making for Everglades restoration. The roles of monitoring, hydrologic and biotic modeling, and the generation/evaluation of alternative hydrologic scenarios were well defined and vetted under this process. If adaptive management has been replaced by another paradigm, a clear and straight-forward description of that process is needed.

The federal register notice and online Central Everglades Planning Project (CEPP) documents do not provide specific information about how best available science will be incorporated into decision making or into the hydrologic scenario generation/evaluation process. The Corp's Planning Process Transformation Pilot Program, upon which the CEPP EIS is based, appears to be an experimental and untested paradigm. We question the choice of the Everglades - a complex and highly degraded ecosystem - as a testing ground for this planning paradigm, given the potentially non-reversible nature of unsound decisions that could result from this process.

The South Florida Water Management Model (SFWMM) was used in the past to provide hydrologic modeling for alternative CERP scenarios. SFWMM scenarios were accompanied by calibration data generated using historical rainfall and transpiration data and historical water management schedules and structures. These data allowed output from the SFWMM to be compared to historical gauging station data and also provided an approximation of historical water depths over all spatial cells of the model area. Calibration/verification hydrologic data could then be used - in conjunction with monitoring data for species numbers and distribution - to

calibrate and verify the biotic models used to evaluate relative impacts of alternative scenarios on Everglades biota.

CEPP scenario hydrology will apparently be generated by the South Florida Regional Simulation Model (RSM). CEPP documents provide insufficient detail about RSM calibration data, scenario generation, incorporation of biotic models in the evaluation process, and continued monitoring of key ecosystem components to provide assurances that science will continue to have an appropriate role in decision-making.
The documents do not discuss a mechanism for how biotic assessments are to be carried out, how alternative planning is to be developed based upon these assessments, nor how scientific input from the expansive collection of biotic system models developed as part of CERP are to be supported and incorporated in the EIS.

We are particularly concerned that monitoring has been discontinued or reduced for key components of the Everglades biota (including white-tailed deer and the Florida panther in Everglades National Park) despite the fact that there is still insufficient understanding of these species responses to accurately project the impacts of hydrologic changes on their populations. For those species still being monitored, no central data repository has been established, although such a repository was a major element in CERP planning to provide for continued incorporation of best available science into models.

Shortening the time period for management decision-making for CEPP relative to the CERP process makes the transparent incorporation of best available science and continued monitoring to assess biotic impacts all the more urgent.

--
Louis J. Gross
James R. Cox and Alvin and Sally Beaman Distinguished Professor of Ecology and Evolutionary Biology
and Mathematics
Director, National Institute for Mathematical and Biological
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January 20, 2012

Dr. Gina Padua Ralph
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Central Everglades Planning Project

Dear Dr. Padua Ralph:

Please accept this letter as formal comments regarding the Central Everglades Planning Project (CEPP) on behalf of Lee County Division of Natural Resources.

Lee County wishes to express its full support of the CEPP. Lee County is an 804-square-mile metropolitan area of approximately 600,000 residents located along the Gulf Coast of Southwest Florida. Known for its 50 miles of white sand beaches on the Gulf of Mexico, Lee County receives approximately 5 million visitors a year that generates approximately $3 billion in economic impacts. Lee County tourism employs 1 out of every 5 people within the County. To be sure, protection of our precious natural and water resources is critical to Lee County and its residents, as well as to our tourism industry. While the economic impact of the tourism industry can be measured in dollars and cents, we also benefit from the quality of life to which a healthy ecosystem contributes.

Central to a healthy ecosystem in Lee County is the protection and restoration of the Caloosahatchee River and Estuary, and the beneficial management of Lake Okeechobee. Thus, the stated goals and objectives of the Central Everglades Planning Project are strongly supported and have long been pursued by Lee County. Improving the quantity, quality, timing and distribution of water in the Northern Estuaries and throughout the Everglades will lead to a more naturally functioning system and restore natural habitat within the Caloosahatchee River and Estuary. Specifically, the reduction of high volume discharges from Lake Okeechobee to improve water quality of oyster and submerged aquatic vegetation in the Caloosahatchee River and Estuary is an objective long sought by Lee County.

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Lee County applauds the efforts of the Army Corps of Engineers and the South Florida Water Management District for taking on such an ambitious project – both in scope and in time. The CEPP is a tremendous opportunity to take a large step forward in the progress of protecting and restoring the Caloosahatchee River and Estuary.

Lee County appreciates the opportunity to submit comments on the CEPP.

Sincerely,

Jed R. Schneck

JRS/bt

c. Roland Ottolini, P.E., Director – Lee County
Kurt Harclerode, Operations Manager – Lee County
John J. Fumero, Esquire – Sundstrom, Friedman & Fumero, LLP

Ralph, Gina P SAJ

From: carl woehlcke [redacted]
Sent: Friday, January 20, 2012 3:31 PM
To: CEPPComments, SAJ
Subject: Options to Consider in the Project PIR

Here are some options that should be considered within the CEPP PIR to partially substitute for or complement other proposed options 1. In-ground Storage Reservoirs in lieu of above ground reservoirs 2. Deep In-ground cells within any reservoirs (above or below ground) for chemical water treatment (perhaps with alum) and sequestration of removed Phosphorus in deepest parts of the cell 3. ASR wells to store water when there is excess water in the EAA and reservoirs and/or Lake Okeechobee are at or near capacity (having good connections to use Lake Okeechobee water would be important).
4. Deep (boulder zone) disposal wells to remove water that can not be stored and treated (e.g. brackish water in new in-ground reservoir cells and excess water imported from Lake Okeechobee during periods of regulatory discharge) (having good connections to use Lake Okeechobee water would be important).
5. Facilities to move and discharge water along the northern and western boundaries of Water Conservation Area 3.

The first 4 options are less land intensive than the options of above-ground reservoirs and STAs. They may well be cost-competitive.They are also less likely to engender conflicts between their planned uses and environmental values. The fifth option is necessary to distribute water to rehydrate WCA 3 and establish proper flows to achieve restoration.

Louis Carl Woehlcke, Ph.D.

GLADES SUGAR HOUSE

Sugar Cane Growers Cooperative of Florida

POST OFFICE BOX 666 BELLE GLADE, FLORIDA

33430-0666

January 19, 2012

U. S. Army Corps of Engineers
Dr. Gina Paduano Ralph
Email: CEPPcomments@usace.army.mil

Dear Dr. Ralph:

As sugar cane growers and refiners located in the Everglades Agricultural Area, we have a continuing and vital interest in the Comprehensive Everglades Restoration Plan and in the CEPP. Our interest is from two perspectives: we are major landowners and farmers in the region, and we depend on the operations of the Central & Southern Florida Flood Control project for water supply and flood protection. We worked hard supporting the Congressional approval of CERP as part of the Water Resources Development Act of 2000. We fully endorse WRDA 2000's statement of CERP's purpose: *"The overarching objective of the Plan is the restoration, preservation, and protection of the South Florida Ecosystem while providing for other water-related needs of the region, including water supply and flood protection."* The stated purpose of CERP in the Federal register's scoping document is the restoration and protection of the remaining Everglades while meeting the water related needs of the region. It goes on to describe the authorized project purposes of the C&SF project.

We endorse the CEPP goal of combining several conditionally authorized project components to develop an increment of CERP that will contribute to enhancing sheetflow through the Water Conservation Areas. CEPP recognizes the system wide nature of CERP and hence the need to address quantity, quality, timing, and distribution in an integrated manner through the construction and operation of multiple project components.

Telephone (561) 996-5556 Fax No. (561) 996-4747

We support streamlining the planning process though improved vertical integration of decision making within the Corps and this initiative's focus on balancing the level of detail in the planning process with the level of uncertainty appropriate for restoration planning. Nevertheless this new nationwide pilot program to modify the Corps' planning process must include the overarching commitment to meet all requirements of law and regulation albeit in an accelerated fashion.

We have several concerns with the scope of this project as we understand it. First, from the scoping letter it is not apparent what federal action is being proposed, therefore it is difficult to know what to comment on. We have been attending the public workshops hosted by the South Florida Ecosystem Restoration Task Force staff and Water Resource Advisory Commission (WRAC) briefing in an effort to learn more about the Central Everglades Planning initiative.

While we support your efforts to streamline the process to produce a Project Implementation Report (PIR), the desire for expeditious completion of a PIR must not outweigh the necessity for careful, comprehensive evaluation of alternatives, uninhibited by arbitrary or unrealistic constraints and assumptions.

We have the following specific comments on the planning assumptions and constraints:

- The planning scope must recognize that the present Lake Okeechobee Regulation Schedule is an interim one necessitated by concerns with levee integrity. A continuing program of levee improvements is underway that will allow the return to the previous storage capacity in the Lake. Recent statements by Col. Pantano indicate that the most important Dike repairs will be completed during the same time frame described for the CEPP. Additional water storage in the Lake should therefore be evaluated as part of the project's alternative analyses.

- Further, to be in accordance with the basic assurances afforded to stakeholders in WRDA 2000, the CERP without-project condition, and thus

the CEPP without-project condition should be comparable. While CERP used the Run 25 Lake schedule, the WSE Schedule was approved concurrent with CERP and should be used as the without-project condition for the CEPP.

- Assumptions concerning water quality must be based in reality. To assume Lake Okeechobee water meets the TMDL for the lake, without any project features on the horizon to accomplish that, seems foolhardy. The TMDL is designed to meet a much reduced load target for phosphorus flowing into Lake Okeechobee, not an in-lake concentration. The scientific discussion by government staff when the TMDL was developed made it clear that even if by some magic the load reduction limit could be achieved it would still take decades, if not centuries, for the in-lake phosphorus concentrations to reach 40 ppb. There would seem to be no need to accelerate the federal planning for this project if it is based on an assumption that cannot possibly be met for several decades, if ever.

- Assuming that the without-project condition Stormwater Treatment Areas are meeting some un-defined target that's tied up in two federal court cases, and the new water made available by CEPP will meet that same unknown target is inappropriate. Without-project conditions should be predicated on forecasts of the most likely conditions to prevail over the life of the project. Water quality improvement must be associated with the specific facility investments and regulatory actions necessary to achieve them. This is essential to the planning process as these activities may impact the availability of land for water storage and other purposes. The CEPP should integrate water quality and water quantity planning to ensure the most cost-effective use of available land resources and achieve the best balance among the four aspects of water flow essential to restoration—quantity, quality, timing and distribution. In evaluating the cost-effectiveness of various alternatives tradeoffs will be necessary, and the federal agencies must be prepared to make them.

- In considering increased storage, the examination of alternatives must be comprehensive. The Aquifer Storage and Recovery Projects (ASR) as envisioned by CERP have a compelling advantage over surface storage in

avoiding loss of water due to evapotranspiration as well as having minimal land requirements. The CERP plan would not have made it over the goal line without the inclusion of an ASR component. The pilot projects are underway and the Lake Okeechobee region's wells show promising results. This alternative for storage should be evaluated as part of the plan formulation analyses.

- Another alternative for providing increased water storage that must be addressed is increased use of Lake Okeechobee for storage beyond that provided historically. This is specifically addressed in the report of the NRC Committee on Everglades Restoration, (Re-Engineering Water Storage in the Everglades: Risks and Opportunities, NRC, 2005) and warrants further analysis in light of the increased storage capability that will be afforded by completion of the Hoover Dike improvements.

- There have been several processes over the last five years that have clouded the issue of what is considered part of CERP and what is not. To be successful within the time constraints you have chosen it is essential that the scope of the CEPP track very closely with the conceptual plans approved by Congress. With respect to the EAA, the actual footprint of the project in the final CERP document matches well with the land now owned by the District, and limiting the planning scope to that property meets the stated intent for the CEPP. Going beyond that footprint would trigger the need for a CERP Update as specified in the Programmatic Regulations and should not be part of this plan.

- The same approach must be taken with water flows from the Lake to the Everglades. Although the continued refinement of the computer models used for the CERP was expected, the scale of the Everglades flow values now being discussed in some circles is well beyond anything contemplated in WRDA 2000 and would clearly require a formal CERP update. The Central Everglades Plan must stay close to the flow volumes expected with the plan approval in WRDA 2000. This is especially important if you want to stay within the shortened timeframe for this analysis.

- Certain constraints were imposed on the plans to be recommended under CERP by the "Savings Clause" in WRDA 2000. The first provision protects water supplies for the various uses affected by CERP.

> "(5) SAVINGS CLAUSE.—
> (A) NO ELIMINATION OR TRANSFER.—Until a new source of water supply of comparable quantity and quality as that available on the date of enactment of this Act is available to replace the water to be lost as a result of implementation of the Plan, the Secretary and the non-Federal sponsor shall not eliminate or transfer existing legal sources of water, including those for—
> (i) an agricultural or urban water supply;
> (ii) allocation or entitlement to the Seminole Indian Tribe of Florida under section 7 of the Seminole Indian Land Claims Settlement Act of 1987 (25 U.S.C. 1772e);
> (iii) the Miccosukee Tribe of Indians of Florida;
> (iv) water supply for Everglades National Park; or
> (v) water supply for fish and wildlife."

While we have emphasized above that planning is to be based on the most likely without-project conditions in accordance with NEPA and Corps regulations, we remind the Corps that the savings clause imposes a constraint on plans based on conditions prevailing at the time of the enactment of WRDA 2000 and is an accounting calculation separate from the projections based on the present prevailing situation and the future most-likely without project condition.

With a stated purpose of enhancing sheet flow in the Everglades, and providing additional water from Lake Okeechobee for that purpose, the CEPP must include options that evaluate returning sheet flow to the Holey Land and Rotenberger properties adjacent to WCA-3A. To continue to isolate those areas will require additional engineering features to flow water around, rather than through, those areas, and severely limit the restoration of Everglades sheet flow over a large portion of the historic Everglades.

We applaud the Corps for its attempt to shift its emphasis in Everglades restoration from planning to construction of agreed upon and approved

project features. We continue to support the blueprint put forth with the Congressional and state legislative adoption of CERP in 2000.

Sincerely,

Barbara J. Miedema
Vice President, Public Affairs & Communications

BJM:swd

cc: Mr. Joe Collins, SFWMD, Chair
Mr. Kevin Powers, SFWMD, Vice Chair
Ms. Sandy Batchelor, SFWMD Board Member
Mr. Daniel DeLisi, SFWMD Board Member
Mr. James J. Moran, SFWMD Board Member
Mr. Daniel O'Keefe, SFWMD Board Member
Mr. Juan M. Portuondo, SFWMD Board Member
Mr. Timothy Sargent, SFWMD Board Member
Mr. Glenn J. Waldman, SFWMD Board Member
Mr. Matt Morrison, SFWMD
Mr. Tom Teets, SFWMD
Ms. Kimberly Taplin, USACE
Mr. Steven Kopecky, USACE

Ralph, Gina P SAJ

From: W. E. Ted Guy [redacted]
Sent: Tuesday, December 20, 2011 5:35 PM
To: CEPPComments, SAJ
Cc: 'SFWMD'
Subject: Comments on CEPP workshops

Col. Pantano & Lt. Col. Kinard:

We welcome the Corps and other agencies' push to "move water South" at long last, having studied the issues since the early 1980s. I note that SFRestore's "New" science "discovery" repeats what the Corps has known at least since its independent scientist panel published the Reconnaissance Report in 1994.

CERP Table 5-1 "Goals and Objectives" applies just as much today as it did when adopted in 1999 and should be followed. That seems to be the major flaw in the current CEPP: not restoring the natural flow instead of relying on new engineered "plumbing" projects. Without restoring the pond apple forest and the sawgrass sheet flow through the "River of Grass", we'll never achieve cleaning enough nutrients out of the water as it moves South to make it suitable for re-charging the Everglades.

I am an environmentalist board member of the Rivers Coalition and co-founder of the ROGER coalition of coalitions. (River of Grass Everglades/Estuary Restoration) Together these coalitions represent about 500,000 citizens of South Florida. Thanks for listening and thanks for involving stakeholders and the public in the CEPP!

W.E. "Ted" Guy, Jr.

[redacted]

Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

January 23, 2012

Dr. Gina Paduano Ralph
Jacksonville District, Planning Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Department of the Army, Jacksonville District Corps of Engineers – Scoping Notice – Central Everglades Planning Project (CEPP), Integrate and Accelerate Implementation of Comprehensive Everglades Restoration Plan Projects in South Florida.
SAI # FL201112066056

Dear Dr. Ralph:

The Florida State Clearinghouse has coordinated a review of the referenced scoping notice under the following authorities: Presidential Executive Order 12372; Section 403.061(42), *Florida Statutes*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Department of Environmental Protection (DEP) supports development of the CEPP and believes that it will compliment the State of Florida's efforts in improving water quality and restoring the Everglades. DEP staff recommends that the following issues and concerns be addressed during CEPP plan formulation:

- Because the new U.S. Army Corps of Engineers (USACE) nationwide Planning Transformation Pilot Program has introduced several enhanced procedures, such as identifying risks early in the process to aid in addressing uncertainties in plan formulation and improving vertical communication and decision making within the USACE, DEP recommends that the USACE maintain and provide a list of identified risks to the commenting agencies for their use in early issue resolution.
- The DEP believes that addressing water quality is one of the most critical components of this planning effort and is committed to addressing water quality in existing flows to the Everglades Protection Area consistent with the requirements of the state's phosphorus criterion. Staff requests that the USACE include, as part of the future without-project condition, the assumption that existing volumes of water will be

treated to meet the objectives of the phosphorus criterion prior to discharge to the Everglades Protection Area.

- In addition to the water quantity and quality assumptions for the future without-project condition identified above, the DEP requests that the USACE use the existing quality of water flowing from Lake Okeechobee, and the delta between existing flows and future with-project flows, through the central flow path as a basis for planning additional treatment, storage or other features identified as part of the expedited planning process. As with the treatment of existing flows, the USACE should assume that any new water flowing to the Everglades Protection Area will be required to be treated to levels consistent with the phosphorus criterion.
- Please work closely with the local sponsor to establish expectations regarding cost sharing on all new components, or modifications to existing components, that ultimately result from the expedited planning process. In particular, cost sharing expectations for water quality projects need to be identified and resolved early on in the planning process.
- The State of Florida has spent a significant amount of time and money acquiring more than 243,000 acres of land for the implementation of the Comprehensive Everglades Restoration Plan (CERP). The DEP requests that the USACE focus its planning efforts for storage and treatment projects on lands already owned by the South Florida Water Management District (SFWMD).
- The CEPP assumes in the future without-project condition that the foundation projects, first generation CERP projects and second generation CERP projects are in place. However, the foundation projects have not been completed and the operation plans have not been developed, making project outcomes more difficult to predict. As part of the scoping phase of the CEPP project, the Integrated Delivery Schedule should be reevaluated to account for these revised project timeframes. The implementation schedule for second generation CERP projects that may influence the CEPP should be carefully considered as part of the expedited planning process.
- It is currently unclear whether the Modified Water Deliveries (MWD) project will be completed as it was originally envisioned. Any future with-project scenario that includes features originally identified under the MWD project should be identified as being the sole responsibility of the federal government, with the exception of cost-share commitments between the SFWMD and USACE for operations.

For further specific comments and recommendations, please refer to the enclosed DEP memorandum and contact Ms. Inger Hansen at (561) 682-2663.

As the local sponsor, the SFWMD has played an integral role in developing and implementing the CERP. As such, SFWMD staff has identified three issues of significance

that must be addressed to enable the SFWMD to move forward with local sponsorship of the CEPP and meet the remaining milestones of the expedited planning process:

1. Water quality requirements, assumptions and cost-share. The SFWMD can only support assumptions for the CEPP future without-project condition that the SFWMD will treat current annual flows of approximately 850,000 acre-feet of water to a flow-weighted mean for total phosphorus of 13 parts per billion (ppb). All facilities needed to treat existing inflows, as proposed by the State of Florida in response to the U.S. Environmental Protection Agency's Amended Determination, would be non-federally funded. In its assumptions for the future with-project condition, the USACE should use the existing quality of water flowing from Lake Okeechobee through the central flow path as a basis for planning additional treatment facilities. Consistent with the treatment of existing flows, the USACE should also assume that new water flowing to the Everglades Protection Area will be treated to 13 ppb total phosphorus.
2. Use of existing SFWMD-owned lands in project formulation. SFWMD advises that the 243,000 acres currently acquired should be utilized to implement the initial increment of central Everglades restoration in an expeditious, cost-effective and commonsense manner (see attached map).
3. Inclusion in the CEPP future with-project condition of specific project features identified in the June 1992 General Design Memorandum and Environmental Impact Statement for Modified Water Deliveries to Everglades National Park. To date, features that were to be constructed as part of the MWD project – three gated culvert structures, three gated concrete headwall structures and degrading of the existing Levee 67 Extension and filling the borrow canal – have not been constructed or are only partially constructed. The SFWMD can support inclusion of these features in the future with-project condition only if the USACE indentifies in the CEPP documentation that construction and operation of these features will be cost-shared in accordance with the terms and conditions of the Project Cooperation Agreement between the SFWMD and USACE for this foundation project.

Please see the enclosed SFWMD letter and contact Mr. Tom Teets, Federal Policy Chief, at (561) 682-6993 for further details and assistance.

The Florida Department of Agriculture and Consumer Services (FDACS) fully supports the USACE's intent to conduct an integrated study of the subject CERP projects and the objective of restoring flows to the south and reducing harmful discharges to the east and west coast estuaries. There are, however, significant issues that need to be addressed if this effort is to be successful:

1. The process for developing the CEPP must clearly recognize the interim status of the current Lake Okeechobee Regulation Schedule; it would be inappropriate to assume the LORS08 schedule for either the with- or without-project scenarios. Planned repairs

to the Herbert Hoover Dike should increase storage in the Lake, and the planning process should consider the availability of that additional storage in its analysis of project alternatives. Any additional demands on the Lake must be carefully evaluated in light of existing demands of both water users and the environment, as well as future demands from other CERP components that rely upon Lake water.

2. The planning process must realistically consider water quality concerns. The CERP is built upon assumptions regarding water quality that FDACS staff has difficulty accepting, since water quality constraints can prevent the movement of additional water through the central part of the system. The in-lake phosphorus concentration for Lake Okeechobee is one such constraint, even if it is assumed that the total maximum daily load for phosphorus will be met in the foreseeable future. Issues related to the Stormwater Treatment Areas (STAs) must also be addressed. Without resolving the legal and technical uncertainties characterizing the STAs as currently operated, the movement of additional water made available by the CEPP southward cannot be presumed.

For additional information, please see the enclosed FDACS letter and contact Mr. Ray Scott at (850) 410-6714 or Ms. Rebecca Elliott at (561) 682-6040.

Based on the information contained in the scoping notice and the enclosed state agency comments, at this stage, the state has no objections to the proposed federal action. To ensure the project's consistency with the Florida Coastal Management Program (FCMP), the concerns identified by our reviewing agencies must be addressed prior to project implementation. The state's continued concurrence will be based on the activity's compliance with FCMP authorities, including federal and state monitoring of the activity to ensure its continued conformance, and the adequate resolution of issues identified during this and subsequent reviews.

Thank you for the opportunity to review the public notice. Should you have any questions regarding this letter, please contact Ms. Lauren P. Milligan at (850) 245-2170.

Yours sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm
Enclosures

cc: Greg Knecht, DEP, OEP
Ernie Marks, DEP, OEP PCRS
Dianne Hughes, DEP, Southeast District
Deborah Oblaczynski, SFWMD
Ray Scott, FDACS
Forrest Watson, FDACS

Project Information	
Project:	FL201112066056
Comments Due:	01/11/2012
Letter Due:	01/20/2012
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - SCOPING NOTICE - CENTRAL EVERGLADES PLANNING PROJECT (CEPP), INTEGRATE AND ACCELERATE IMPLEMENTATION OF COMPREHENSIVE EVERGLADES RESTORATION PLAN PROJECTS IN SOUTH FLORIDA.
Keywords:	ACOE - CENTRAL EVERGLADES PLANNING PROJECT FOR CERP PROJECTS IN SOUTH FLORIDA
CFDA #:	12.104

Agency Comments:

AGRICULTURE - FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

The FDACS indicates full support for the USACE's intent to conduct an integrated study of the subject CERP projects and the objective of restoring flows to the south and reducing harmful discharges to the east and west coast estuaries. There are, however, significant issues that need to be addressed if this effort is to be successful. First, the process for developing the CEPP must clearly recognize the interim status of the current Lake Okeechobee Regulation Schedule; it would be inappropriate to assume the LORS08 schedule for either the With- or Without-Project scenarios. Planned repairs to the Herbert Hoover Dike should increase storage in the Lake, and the planning process should consider the availability of that additional storage in its analysis of project alternatives. Any additional demands on the Lake must be carefully evaluated in light of existing demands of both water users and the environment, as well as future demands from other CERP components (e.g., the C-43 Reservoir) that rely upon Lake water. Second, the planning process must realistically consider water quality concerns. The CERP is built upon assumptions regarding water quality that FDACS staff has difficulty accepting, because water quality constraints can prevent the movement of additional water through the central part of the system. The in-lake phosphorus concentration for Lake Okeechobee is one such constraint, even if it is assumed that the total maximum daily load (TMDL) for phosphorus will be met in the foreseeable future. Issues related to the Stormwater Treatment Areas (STAs) must also be addressed. Without resolving the legal and technical uncertainties characterizing the STAs as currently operated, the movement of additional water made available by the CEPP southward cannot be presumed.

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

No comment from the FWC Division of Habitat and Species Conservation.

TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION

Released Without Comment

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The DEP supports development of the CEPP and believes that it will compliment the State of Florida's efforts in improving water quality and restoring the Everglades. DEP staff recommends that the following issues and concerns be addressed during CEPP plan formulation: - Because the new USACE nationwide Planning Transformation Pilot Program has introduced several enhanced procedures, such as identifying risks early in the process to aid in addressing uncertainties in plan formulation and improving vertical communication and decision making within the USACE, DEP recommends that the USACE maintain and provide a list of identified risks to the commenting agencies for their use in early issue resolution. - The DEP believes that addressing water quality is one of the most critical components of this planning effort and is committed to addressing water quality in existing flows to the Everglades Protection Area consistent with the requirements of the state's phosphorus criterion. Staff requests that the USACE include, as part of the future without-project condition, the assumption that existing volumes of water will be treated to meet the objectives of the phosphorus criterion prior to discharge to the Everglades Protection Area. - In addition to the water quantity and quality assumptions for the future without-project condition identified above, the DEP requests that the USACE use the existing quality of water flowing from Lake Okeechobee, and the delta between existing flows and future with-project flows, through the central flow path as a basis for planning additional treatment, storage or other features identified as part of the expedited planning process. As with the treatment of existing flows, the USACE should assume that any new water flowing to the Everglades Protection Area will be required to be treated to levels consistent with the phosphorus criterion. For further specific comments and recommendations, please refer to the enclosed DEP memorandum.

SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT

The SFWMD transmitted a letter to the Florida State Clearinghouse on January 18, 2012. The letter provides the District's comments on the Department of the Army, Jacksonville District Corps of Engineers Scoping Notice for the Central Everglades Planning Project. For further information on the above comments, please contact Mr. Tom Teets, Federal Policy Chief, at (561) 682-6993 or tteets@sfwmd.gov. If you have any comments or questions regarding SFWMD's review, please contact Ms. Deborah Oblaczynski, Policy and Planning Analyst Specialist, at (561) 682-2544 or doblaczy@sfwmd.gov.

Memorandum

TO: Florida State Clearinghouse

THROUGH: Greg Knecht, Director
Office of Ecosystem Projects

FROM: Inger Hansen, Jerilyn Ashworth, William C. Kennedy, and Dianne Hughes

DATE: January 20, 2012

SUBJECT: U.S. Army Corps of Engineers, Jacksonville District – Scoping Notice – Central Everglades Planning Project – Okeechobee, Glades, Martin, Palm Beach, Broward, Miami-Dade and Monroe Counties, Florida.

Background:
The Florida Department of Environmental Protection sincerely appreciates the opportunity to provide comments on the U.S. Army Corps of Engineers' (Corps) proposed Central Everglades Planning Project (CEPP). The CEPP is being developed under the Corps' Planning Transformation Pilot Program, whereby the Corps is expediting the development of a Project Implementation Report/Environmental Impact Statement (PIR/EIS) under the Comprehensive Everglades Restoration Plan (CERP) and the National Environmental Policy Act. The CEPP is a consolidation of several CERP project components including: Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheet Flow Enhancement, Everglades National Park Seepage Management and Everglades Rain-Driven Operations. To address the requirements of the PIR/EIS, the Corps is working with both federal and state agencies to gather information necessary to better define the issues and concerns that need to be addressed during the CEPP plan formulation.

Comments:
The Department believes that the CEPP compliments the State of Florida's efforts in improving water quality and restoring the Everglades. Successful restoration of the Everglades is contingent on integrating and streamlining both the state and federal efforts. As noted by the National Research Council's Committee on Independent Scientific Review of Everglades Restoration Progress (2010), "continued decline of some aspects of the ecosystem coupled with environmental and societal changes make accelerated progress in Everglades restoration even more important." The Department, therefore, strongly supports the Corps' effort on moving the Central Everglades restoration effort forward on an expedited schedule.

The CEPP is one of the Corps' seven nationwide Planning Transformation Pilot Programs to improve the federal planning process by significantly reducing the timeframe and process necessary to develop an EIS or, in the case of CERP, a PIR/EIS. The new program has introduced several enhanced procedures, such as identifying risks early in the process to aid in addressing uncertainties in plan formulation and improving vertical communication and decision making within the Corps. With regards to this particular item, the Department

recommends that the Corps maintain and provide a list of identified risks to the commenting agencies for their use in early issue resolution.

The Department believes that addressing water quality is one of the most critical components of this planning effort. The State of Florida is committed to addressing water quality with regard to the existing flows to the Everglades Protection Area consistent with the requirements of the state's phosphorus criterion. The Department requests that the Corps include, as part of the future without-project condition, the assumption that existing volumes of water will be treated to meet the objectives of the phosphorus criterion prior to discharge to the Everglades Protection Area.

In addition to the water quantity and quality assumptions for the future without-project condition identified above, the Department requests that the Corps use the existing quality of water flowing from Lake Okeechobee, and the delta between existing flows and future with-project flows, through the central flow path as a basis for planning additional treatment, storage or other features identified as part of the expedited planning process. As with the treatment of existing flows, the Corps should assume that any new water flowing to the Everglades Protection Area will be required to be treated to levels consistent with the phosphorus criterion.

The Department suggests that the Corps work closely with the local sponsor to establish expectations regarding cost sharing on all new components, or modifications to existing components, that ultimately result from the expedited planning process. In particular, cost sharing expectations for water quality projects need to be identified and resolved early on in the planning process.

The State of Florida, particularly the Department and the South Florida Water Management District (District), have spent a significant amount of time and money acquiring more than 243,000 acres of land for the implementation of the Comprehensive Everglades Restoration Plan. The Department requests that the Corps focus its planning efforts for storage and treatment projects on lands already owned by the District. The rationale for such limitations can be clearly articulated in the CEPP PIR/EIS. This focus would be in the best interest of taxpayers, as it will provide multiple benefits, including: elimination of evaluation of multiple footprints on lands not in District ownership, expediting the federal planning process and putting these significant investments to work.

The CEPP assumes in the future without-project condition that the foundation projects (specifically Modified Water Deliveries and South Dade C-111 projects), the first generation CERP projects and the second generation CERP projects are in place. However, the foundation projects have not been completed and the operation plans have not been developed, making project outcomes more difficult to predict.

As part of the scoping phase of the CEPP project, the Integrated Delivery Schedule (IDS) should be reevaluated. The current IDS shows that the DECOMP Part 1 project (now part of the CEPP)

will be constructed in 2017-2020, whereas some of the second generation CERP projects, such as BCWPA, are not scheduled to be constructed before the 2020 timeframe. The BCWPA project influences both water quality inflows to Water Conservation Area 3 and Everglades National Park. The Department suggests that an evaluation of the implementation schedule for second generation CERP projects that may influence the CEPP should be carefully considered as part of the expedited planning process.

It is currently unclear if the Modified Water Deliveries (MWD) project will be completed as it was originally envisioned. The construction of certain features and seepage management/flood control aspects of the MWD project have not been fully addressed. Any future with-project condition scenario that includes features originally identified under the MWD project should be identified as being the sole responsibility of the federal government, with the exception of cost-share commitments made between the SFWMD and the Corps for operations.

Department staff looks forward to continued participation throughout the planning process. The Department would like to reiterate its commitment to the restoration of the Greater Everglades ecosystem and "getting the water right." Should you have any questions on the comments provided, please do not hesitate to contact Ms. Inger Hansen at (561) 682-2663.

Electronic copies to:
Greg Knecht
Chad Kennedy
Ernie Marks
Inger Hansen
Jerilyn Ashworth
Dianne Hughes
Deinna Nicholson

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

January 20, 2012

Colonel Alfred A. Pantano, Jr.
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Colonel Pantano:

Subject: Department of the Army, Jacksonville District Corps of Engineers Intent to Prepare an Environmental Impact Statement for the Central Everglades Planning Project, Okeechobee, Glades, Martin, Palm Beach, Broward, Miami-Dade and Monroe counties, FL – Scoping Comments

The South Florida Water Management District submitted the attached letter in response to the U.S. Army Corps of Engineers (Corps) November 23, 2011 request for comments on the scope of the Central Everglades Planning Project (CEPP). These comments reflect the guidance received from the Governing Board at its January 12, 2012 business meeting concerning the goals and objectives of the Central Everglades Planning Project. Based on this direction, the District has identified three issues of significance, which are addressed in detail in the attached letter to the Florida State Clearinghouse.

- Water quality requirements, assumptions and cost-share;
- Use of existing District-owned lands in project formulation; and
- Inclusion in the CEPP "Future With Project Condition" of specific project features identified in the June 1992 General Design Memorandum and Environmental Impact Statement for Modified Water Deliveries to Everglades National Park.

The District is supportive of the Corps' reformed planning process, and is committed to moving Everglades restoration forward as envisioned in the CEPP. However, it is imperative that these issues be resolved early in the planning process so that both agencies – as trustees of the public's resources - have a clear understanding of our anticipated financial obligations prior to the onset of plan formulation.

In order to meet the expedited timetable envisioned for CEPP, the District and Corps should have agreed upon solutions by the first Decision Pont meeting scheduled for January 27, 2011. Tom Teets and I will be in Washington, D.C., to participate in this meeting.

Should there be any questions associated with the District's comments, please contact Tom Teets, Federal Policy Chief, at (561) 682-6993 or tteets@sfwmd.gov.

Sincerely,

Melissa L. Meeker
Executive Director
South Florida Water Management District

MLM/bcl
Attachment

c: Stuart Appelbaum, USACE
Kimberly Taplin, USACE
Ernie Barnett, SFWMD
Tom Teets, SFWMD
Matthew Morrison, SFWMD
Greg Munson, FDEP
Greg Knecht, FDEP

CENTRAL EVERGLADES STUDY

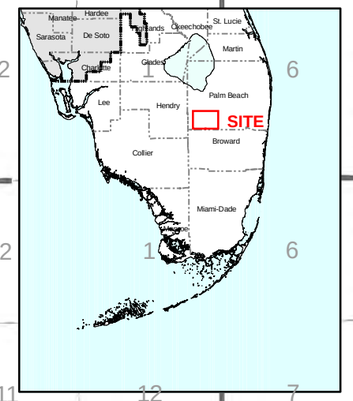
A-1 & A-2 Reservoirs

UPDATED
10-JAN-2012

A-2 Reservoir

A-1 Reservoir

100-145
100-044
100-039
100-029
100-047
100-141
100-066
100-067
100-139
100-149
200-005
100-104
100-105
100-152
100-103
100-143
L-24
L-23
L-19
L-18
Range 35 East
Range 36 East
Range 37 East
Hiatus
Township 46 South
Township 47 South
HOLEYLAND SEEPAGE CANAL
Holey Land
Wildlife Management Area
STA
3/4



IMPORTANT DISCLAIMER:
This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not affect the interests of any persons or properties, including any present or future right or use of real property.

N W E S

0 0.5 1 2 3 4 5 Miles

0 1.5 3 6 Kilometers

C-3-177

Legend

- SFWMD Owned Lands
- A-1 Reservoir; A-2 Reservoir
- Stormwater Treatment Areas
- Wildlife Management Areas

sfwmd.gov
South Florida Water Management District
Land Acquisition Department
GIS SECTION
3301 Gun Club Road, West Palm Beach, Florida 33406
561-686-8800 - FL WATS 1-800-432-2045 - www.sfwmd.gov
MAILING ADDRESS: P.O. Box 24680 - West Palm Beach, FL 33416-4680

January 20, 2012

Ms. Lauren P. Milligan
Environmental Manager
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399-3000

Dear Ms. Milligan:

Subject: Department of the Army, Jacksonville District Corps of Engineers Intent to Prepare an Environmental Impact Statement for the Central Everglades Planning Project, Okeechobee, Glades, Martin, Palm Beach, Broward, Miami-Dade and Monroe counties, FL – Scoping Comments

The South Florida Water Management District (District) appreciates the opportunity to provide comments on the scope of the Central Everglades Planning Project (CEPP) in accordance with the requirements of the regulations implementing the National Environmental Policy Act (NEPA), 40 C.F.R. Section 1501.7. The District has provided technical resources to the U.S. Army Corps of Engineers (Corps) during this project scoping phase and at its January12, 2012 business meeting, presented comprehensive information about the goals and objectives of the Central Everglades Planning Project to its Governing Board. The District's enclosed comments reflect the guidance provided by the Governing Board on the resolution of specific policy issues, which will be necessary prior to the Corps' first Decision Point and before proceeding as local sponsor into the execution phase of the project.

Background

The Comprehensive Everglades Restoration Plan (CERP) is an unprecedented 50/50 cost-share partnership between the federal government and the State of Florida, with the South Florida Water Management District authorized by the State as the local sponsor for CERP projects (373.1501(4), F.S.). Approved in Section 601(h) of the federal Water Resources Development Act of 2000, CERP is the framework for improving and restoring the quality, quantity, timing and distribution of water to the South Florida ecosystem, while providing for other water related needs of the region.

The Corps intends the Central Everglades Planning Project to be the next step in the ongoing implementation of CERP. Specifically, the purpose of the Central Everglades Planning Project is to develop an initial increment of CERP project features that provide for storage, treatment and conveyance of water south of Lake Okeechobee; removal of canals and levees within Water Conservation Area 3; and implementation of seepage management features to retain water within the natural system. The Corps has identified the following inter-related CERP projects to accomplish these objectives:

- Everglades Agricultural Storage Reservoirs
- Water Conservation Area 3 Decompartmentalization and Sheet Flow Enhancement
- Everglades National Park Seepage Management
- Everglades Rain-Driven Operations

Identified as one of seven pilot projects nationwide, the Corps intends to undertake and fast-track an integrated study effort on these projects through the development of an integrated Project Implementation Report and Environmental Impact Statement. This expedited study is being conducted under the Corps' newly reformed planning process that is designed to cut years from the planning process by completing and approving the Project Implementation Report through the Civil Works Review Board within 18 months.

Guidance on the expedited planning process from the Assistant Secretary of the Army (Civil Works) directs the Corps to determine the expected level of federal investment early in the decision-making process and to clearly communicate such decisions with the intended local sponsor and other stakeholders in order to appropriately steer plan formulation. For the Central Everglades Planning Project, this first Decision Point is scheduled for January 27, 2012.

As the local sponsor, the South Florida Water Management District has played an integral role in developing and implementing the Comprehensive Everglades Restoration Plan. Consequently, the District is uniquely positioned to provide valuable input for inclusion by the Corps in the Project Implementation Report. We also have a vested interest in the Corps' decisions on the expected level of federal investment in these cost-shared projects.

The District has identified three issues of significance that must be addressed if the District is to move forward with local sponsorship of the Central Everglades Planning Project, and if remaining milestones of the expedited planning process are to be met.

These issues of significance, described in detail below, are:

- Water quality requirements, assumptions and cost-share;
- Use of existing District-owned lands in project formulation; and
- Inclusion in the CEPP "Future With Project Condition" of specific project features identified in the June 1992 General Design Memorandum and Environmental Impact Statement for Modified Water Deliveries to Everglades National Park.

Water Quality Requirements, Assumptions and Cost-Share

A. Future Without Project Condition – Existing Water Flows to the Everglades Protection Area

As a part of its negotiations with the U.S. Environmental Protection Agency to achieve water quality requirements in the Everglades Protection Area, the District has proposed a suite of treatment and storage facilities – including a 54,000 acre-feet Flow Equalization Basin on the Everglades Agricultural Area A-1 parcel - that will treat existing flows from the Everglades Agricultural Area and Lake Okeechobee through the central flow path and to the Everglades Protection Area.

For the purposes of the Central Everglades Planning Project, the District can only support the Corps' assuming for the "Future Without Project Condition" that the District will treat current annual flows of approximately 850,000 acre-feet of water to a flow-weighted mean for total phosphorus of 13 parts per billion (ppb). All facilities needed to treat existing inflows, as proposed by the State of Florida in response to the U.S. Environmental Protection Agency's Amended Determination, would be non-federally funded.

B. Future With Project Condition – New Water Flows Identified by the Central Everglades Planning Project to the Everglades Protection Area

The quality of water leaving Lake Okeechobee to the south will be a key factor in determining the size and type of facilities necessary to treat the water before it flows into the Everglades Protection Area. As part of its assumptions for the Central Everglades Planning Project, the Corps should use the existing quality of water flowing from Lake Okeechobee through the central flow path as a basis for planning additional treatment facilities. Consistent with the treatment of existing flows, the Corps should also assume that new water flowing to the Everglades Protection Area will be treated to 13 ppb total phosphorus.

The District will support a 50/50 federal/District cost-share for storage, treatment and conveyance of volumes over and above existing annual flows in the central flow path that are redirected through the Everglades Agricultural Area to the Everglades Protection Area for restoration purposes. Central Everglades project features developed to treat new water should be cost-shared in accordance with CERP project cost-share provisions, Section 601(e) of the Water Resources Development Act of 2000. In addition, it should be noted that the Corps also has independent authority under Section 528 of the Water Resources Development Act of 1996 to 50/50 cost-share water quality improvement features that are essential for restoring the Everglades.

Use of Existing District-Owned Lands

As local sponsor, the District has to-date acquired more than 243,000 acres toward implementation of the Comprehensive Everglades Restoration Plan – 36,000 acres of which are ideally located for project utilization within the central Everglades flow path. To implement the initial increment of restoration for the central Everglades in an expeditious, cost-effective and commonsense manner, formulation of Central Everglades Planning Project features should be undertaken utilizing the lands already acquired by the District (Attachment).

It is the District's position that under NEPA, the Corps can choose to limit the scope of its analysis to District-owned lands so long as the CEPP Project Implementation Report and Environmental Impact Statement clearly explains the rationale for this option and its effects on the decision-making process. As allowed under NEPA, it would be in the best interest of the taxpayers to use the scoping process to focus plan formulation activities on District-owned lands, which will provide multiple benefits, including: eliminating any unnecessary evaluation of multiple footprints on lands not in public ownership; fast-tracking planning; and putting the land in which taxpayers have invested millions of dollars to work.

Inclusion of Specific Modified Water Deliveries to Everglades National Park Project Features

The Modified Water Deliveries to Everglades National Park project was authorized by Congress in 1989 as a federal foundation project critical to the restoration of Everglades National Park and Florida Bay. As Congress recognized in the Water Resources Development Act of 2000, Modified Waters is a prerequisite to some CERP projects and, as a foundation project, is not a part of CERP. Planning, design and construction of the

features associated with Modified Water Deliveries is the full responsibility of the federal government. In addition, the federal government is also responsible for reimbursing the local sponsor for 75 percent of the operations and maintenance for the life of the project.

The General Design Memorandum and Environmental Impact Statement for Modified Water Deliveries to Everglades National Park, dated June 1992, identified the following features that were to be constructed as part of the Modified Water Deliveries Project:

1. Three Gated Culvert Structures (S-345A, S-345B and S-345C)
2. Three Gated Concrete Headwall Structures (S-349A, S-349B and S-349C) located in the L-67A Borrow Canal
3. Degrading the existing Levee 67 Extension and filling the borrow canal

To date, these features have not been constructed—or are only partially constructed—and are not anticipated to be completed as part of the Modified Water Deliveries project. The Corps is currently considering whether these features are assumed to be a part of the "Future Without Project Condition" or "Future With Project Condition" in the Central Everglades Planning Project formulation process.

The District can support inclusion of these features in the "Future With Project Condition" only if the Corps identifies in the Central Everglades Project Implementation Report and Environmental Impact Statement that construction and operation of these features will be cost-shared in accordance with the terms and conditions of the Project Cooperation Agreement between the District and the Department of the Army to Improve Water Deliveries to Everglades National Park dated September 24, 1994 and its subsequent amendments. The District cannot agree to cost-share construction and operation of these features under the CERP authority, Section 601(e) of the Water Resources Development Act of 2000.

Summary

The District is a committed partner in the restoration of America's Everglades and is investing technical resources to assist the Corps in implementing the scoping phase of the Central Everglades Planning Project. While the District is fully supportive of the expedited planning process, definitive and prompt resolution of the District's issues of significance must be reached prior to the first Decision Point and before continuing into the execution phase of this process. In summary, the Corps should:

- Provide a 50/50 cost-share commitment for water quality features necessary to treat *new* volumes of water identified for restoration in the central flow path.
- Preclude the need for new land acquisition by focusing project formulation on District-owned lands to expedite planning and implementation.
- Provide a cost-share commitment for any incorporated Modified Water Deliveries project components for the federal government to fully fund land acquisition and construction, as well as 75 percent of operations and maintenance, as originally agreed to in the Project Cooperation Agreement for this foundation project.

The South Florida Water Management District has demonstrated a continued commitment to strengthening and fulfilling our role as local sponsor for the Comprehensive Everglades Restoration Plan. We look forward to receiving a timely decision from the Corps that resolves these important policy issues associated with the Central Everglades Planning Project and moves the restoration of America's Everglades expeditiously forward.

Should there be any questions associated with the District's comments, please contact Tom Teets, Federal Policy Chief, at (561) 682-6993 or tteets@sfwmd.gov.

Sincerely,

Melissa L. Meeker
Executive Director
South Florida Water Management District

MLM/bcl
Attachment

c: Stuart Appelbaum, USACE
Ernie Barnett, SFWMD
Shannon Estenoz, DOI
Greg Knecht, FDEP
Matthew Morrison, SFWMD
Greg Munson, FDEP
Colonel Al Pantano, USACE
SFWMD Governing Board Members
Kimberly Taplin, USACE
Tom Teets, SFWMD

bc: Carolyn Ansay, SFWMD
Abe Cooper, SFWMD
Beth Lewis, SFWMD
Deena Reppen, SFWMD
Paul Warner, SFWMD

OFFICE OF AGRICULTURAL
WATER POLICY
(850) 617-1700

MAGNOLIA CENTER, SUITE 200
1203 GOVERNOR'S SQUARE BOULEVARD
TALLAHASSEE, FLORIDA 32301

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

COMMISSIONER ADAM H. PUTNAM

DATE: January 17, 2012

TO: Lauren P. Milligan, Environmental Manager, Florida State Clearinghouse

FROM: W. Ray Scott, Conservation and Water Policy Federal Programs Coordinator
Office of Agricultural Water Policy

RE: State Clearinghouse Review Comments – (SAI # FL20112066056)
Department of the Army, Jacksonville District Corps of Engineers – Scoping Notice – Central Everglades Planning Project (CEPP), Integrate and Accelerate Implementation of Comprehensive Everglades Restoration Plan Projects in South Florida

The Florida Department of Agriculture and Consumer Services (FDACS) appreciates the opportunity to provide comments for the NEPA scoping of the Central Everglades Planning Project (CEPP). We are submitting the following comments for consideration as part of the Florida State Clearinghouse consistency evaluation.

FDACS supports the Corps' intent to conduct an integrated study of the Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park Seepage Management, and Everglades Rain-Driven Operations. In addition, we fully support the objective of restoring flows to the south and reducing harmful discharges to the east and west coast estuaries. Finally, we appreciate the Corps' effort to produce the CEPP Project Implementation Report (PIR) in an expedited manner. There are, however, significant issues that need to be addressed if this effort is to be successful.

First, the process for developing the CEPP must clearly recognize the interim status of the current Lake Okeechobee Regulation Schedule, and it would be inappropriate to assume the LORS08 schedule for either the With- or Without-Project scenarios. Planned repairs to the Herbert Hoover Dike should increase storage in the Lake, and the planning process should consider the availability of that additional storage in its analysis of project alternatives. Any additional demands on the Lake must be carefully evaluated in light of existing demands of both water users and the environment, as well as future demands from other CERP components (e.g., the C-43 Reservoir) that rely upon Lake water.

Second, the planning process must realistically deal with water quality considerations. The Comprehensive Everglades Restoration Plan (CERP) is built upon assumptions regarding water quality that we cannot continue to accept because water quality constraints can prevent the movement of additional water through the central part of the system. The in-lake phosphorus concentration for Lake Okeechobee is one such constraint, even if one assumes that the total maximum daily load (TMDL) for phosphorus will be met in the foreseeable future. Issues related to the Stormwater Treatment Areas (STAs) must also be addressed. Without resolving the legal and technical uncertainties characterizing the STAs as currently operated, it is hard to envision how additional water made available by the CEPP can be moved southward.

We look forward to participating in the development of the CEPP. Thank you for the opportunity to provide comments, and if you have questions regarding our comments please contact Ray Scott (850-410-6714) or Rebecca Elliott (561-682-6040).

Audubon of Florida * Audubon Society of the Everglades
Clean Water Action * Ding Darling Wildlife Society
Everglades Foundation * Florida Wildlife Federation
Florida Oceanographic Society * League of Women Voters of Florida
National Parks Conservation Association * Natural Resources Defense Council
Sierra Club * South Florida Audubon Society * Tropical Audubon Society

January 20, 2012

Attn: Gina Paduano Ralph, Ph.D
Department of the Army
Planning and Policy Division
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Dr. Ralph;

On behalf of the undersigned organizations, we appreciate the opportunity to comment on Central Everglades Planning Project (CEPP) scoping. We share the Army Corps of Engineers' concerns regarding the urgent need for delivering increased water flows and the high costs of delay in Everglades restoration that threaten irreversible ecosystem damage. Thus, we strongly support the initiative to develop a CEPP Project Implementation Report (PIR) for Congressional approval by May 2013 that will reduce damaging discharges to east and west coast estuaries; restore habitat in the central Everglades, focusing on the "River of Grass"; and deliver "new" sources of clean water to the central Everglades and Everglades National Park (ENP).

The National Research Council of the National Academies Progress Toward Restoring The Everglades: Third Biennial Review 2010 stated: "Given the slower than anticipated pace of implementation and unreliable funding schedule, projects should be scheduled with the aim of achieving substantial restoration benefits as soon as possible." CEPP provides the opportunity to bundle the planning and implementation of several related projects, and the threats facing the central Everglades make it vital that a draft plan is prepared to be presented at the April 24, 2013 Civil Works Review Board Meeting as stated by Assistant Secretary Jo-Ellen Darcy. This will ensure that we can advance Everglades restoration in the central part of the Everglades ecosystem and avoid irreversible damage. To accomplish the CEPP in an efficient and meaningful way, the undersigned organizations strongly urge the Army Corps of Engineers (Corps) to include the following recommendations and considerations in CEPP scoping:

First, the CEPP must decompartmentalize a significant majority of Water Conservation Area (WCA) 3, improve the quality of water headed south, and help resolve seepage management issues to the east. Almost a decade of planning conducted as part of the Comprehensive Everglades Restoration Plan's (CERP's) WCA 3 Decompartmentalization and Sheet Flow Enhancement (Decomp) Project has identified many specific elements that should be included in the CEPP PIR; to help expedite current planning efforts, the CEPP should build on data and tools developed in previous Decomp Project Delivery Team (PDT) efforts. Planning by the South Water Management District as part of its River of Grass initiative also provides useful lessons

that should inform the CEPP. Incorporating previous planning efforts will allow CEPP to move forward at a speed needed to provide a PIR by 2013. In particular, the CEPP should:

- Incorporate the findings of the Decomp Physical Model as they become available in the next 18 months.
- Explore including the Decomp hydropattern restoration feature (i.e. spreader canals) along the northern border of WCA 3A.
- Consider innovative partial backfill and plugging opportunities of the L-67A and L-67C canals that could provide increased access and continued fishing opportunities, while at the same time ensuring the canals do not interfere with sheetflow in ways that have adverse ecological consequences, or result in adverse water quality impacts.
- Assess options to degrade, including by partially backfilling or plugging, the Miami Canal in order to allow water into WCA 3B.
- Analyze options to degrade the L-29 levee, including by way of new outlets and culverts.
- Explore phasing alternatives for planned additional elevation and bridging of Tamiami Trail, using information from the Department of Interior's November 2010 Tamiami Trail Modifications: Next Steps Final Environmental Impact Statement.
- Evaluate the use of available levee material to recreate tree islands.

As outlined in the recommendations of the National Research Council of the National Academies Progress Toward Restoring The Everglades: Third Biennial Review 2010, increased water storage is essential to Everglades restoration efforts. To that end, CEPP must evaluate implementing increased storage, treatment and conveyance in the Everglades Agricultural Area (EAA). Specifically, we urge Corps to include the following in its CEPP scoping:

- An evaluation of (1) the use of the lands known as the A1 and A2 parcels, which were purchased by the federal government pursuant to the Talisman Land Acquisitions Grant Agreement, as storm water treatment areas (STAs) and (2) the potential replacement acreage of any acres used for STAs with lands or other options (as required under the grant agreement) that would enable increased water flows to the central Everglades and ENP including Florida Bay.
- An estimation of storage needed to enable increased water flows to the central Everglades and ENP including Florida Bay and a discussion of options to provide needed additional storage.

In order to manage increased flows, it will be necessary to include improved seepage management. Specifically, we urge the Corps to:

- Evaluate the miners' proposed L-31N seepage pilot project, designed to resolve significant seepage out of ENP.
- Evaluate whether additional seepage components are needed to resolve seepage out of the central Everglades and ENP.

Operational changes will be needed to make use of many of the structural changes being considered as part of the CEPP. While we recognize that detailed consideration of operational

changes may be outside the scope of the CEPP, the environmental benefits of the CEPP will depend on operations currently in place or under evaluation in parallel processes. For that reason, we recommend that the CEPP assess the operational changes occurring or being considered as part of the Everglades Restoration Transition Plan and the Combined Operations Plan. In particular, the CEPP should:

- Consider opening the S-151 structure to allow additional flow into WCA 3B.
- Consider raising L-29 levels during short-term high-water emergencies.
- Evaluate the need for more appropriate water levels in WCA 3A, 3B, and ENP, as opposed to stair-step levels now often found moving among the areas and damaging the ecosystem.

While the CEPP cannot take on the challenges posed by the many related projects that are in operation or in planning stages, it should review the status and operations of projects such as the 8.5 Square Mile Area and C-111 Western and South Dade projects and highlight needed adjustments to ensure that they meet their stated goals and achieve ecological objectives.

We understand that the features of CEPP's first increment may be constrained by federal and state appropriations, and we further appreciate the tremendous amount of effort the Corps PDT will undertake to move this planning effort forward expediently. Water storage and water treatment must move forward together and it is important that water moved south is clean. We remain committed to assisting in this process and to helping ensure increased water flows to the central Everglades, relief to the northern estuaries, and ecological benefits for America's Everglades. The realization of ecological benefits from the first increment of CEPP is essential to build upon in order to gain support for future CEPP phases and other Everglades restoration efforts.

We look forward to working with you in this ambitious endeavor and invite any questions or comments you may have.

Sincerely,

Signatures waived to expedite delivery

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C.3.2 Agency Coordination and Public Involvement

Agency coordination and public involvement has taken place throughout the CEPP planning process. Project Delivery Team (PDT) and public involvement has been a critical component of the development of this PIR. **Table C.3.2-1** provides a list of interagency coordination and public presentations conducted throughout the planning process for CEPP.

C.3.2.1 Agency Coordination and Public Involvement Summary

Table C.3.2-1. Agency Coordination and Public Involvement Summary

Action	Location	Date
NEPA Scoping Meetings	Plantation, FL	December 14, 2011
	Clewiston, FL	December 15, 2011
NEPA Final Array Public Meetings	Estero, FL	December 10, 2012
	Homestead, FL	December 11, 2012
	Clewiston, FL	December 12, 2012
	Stuart, FL	December 13, 2012
	Coconut Creek, FL	December 18, 2012
NEPA Draft PIR/EIS Public Meetings	Plantation, FL	September 16, 2013
	Fort Myers, FL	September 17, 2013
	West Palm Beach, FL	September 18, 2013
	Stuart, FL	September 19, 2013
	Homestead, Fl	September 25, 2013
Project Delivery Team Meetings	West Palm Beach, FL	December 16, 2011
	West Palm Beach, FL	January 31, 2012
	West Palm Beach, FL	March 1, 2012
	West Palm Beach, FL	March 26, 2012
	West Palm Beach, FL	April 18, 2012
	West Palm Beach, FL	May 14, 2012
	West Palm Beach, FL	May 31, 2012
	Teleconference/Webinar	June 11, 2012
	Hobe Sound, FL	July 2 and 3 , 2012
	West Palm Beach, FL	July 31, 2012
	Teleconference/Webinar	August 14, 2012
	West Palm Beach, FL	September 4 and 5, 2012
	Teleconference/Webinar	October 1, 2012
	Teleconference/Webinar	October 15, 2012
	West Palm Beach, FL	October 24, 2012
	West Palm Beach, FL	November 16, 2012
	West Palm Beach, FL	December 5, 2012
	West Palm Beach, FL	December 19, 2012
	West Palm Beach, FL	January 15, 2013
	West Palm Beach, FL	January 23-24, 2013
	West Palm Beach, FL	March 5, 2013
	Teleconference/Webinar	March 20, 2013

Action	Location	Date
	West Palm Beach, FL	May 10. 2013
	Teleconference/Webinar	June 14, 2013
	West Palm Beach, FL	July 1, 2013
	West Palm Beach, FL	July 8, 2013
South Florida Ecosystem Restoration Task Force	West Palm Beach, FL	October 27, 2011
	Coral Springs, FL	March 7, 2012
	Washington D.C.	June 19, 2012
	West Palm Beach, FL	December 7, 2012
	West Palm Beach, FL	July 9. 2013
Workshop sponsored by South Florida Ecosystem Restoration Task Force Working Group	West Palm Beach, FL	November 30, 2011
	West Palm Beach, FL	December 16, 2011
	West Palm Beach, FL	January 25, 2012
	West Palm Beach, FL	March 1, 2012
	West Palm Beach, FL	March 9, 2012
	Coral Springs, FL	April 17, 2012
	West Palm Beach, FL	May 15, 2012
	Jensen Beach, FL	June 26, 2012
	West Palm Beach, FL	August 29, 2012
	West Palm Beach, FL	August 30, 2012
	Doral, FL	September 26, 2012
	West Palm Beach, FL	October 25, 2012
	West Palm Beach, FL	November 19, 2012
	West Palm Beach, FL	February 13, 2013
	West Palm Beach, FL	February 25, 2013
Workshop sponsored by South Florida Ecosystem Restoration Task Force Science Coordination Group	West Palm Beach, FL	February 13 and 14, 2012
South Florida Ecosystem Restoration Task Force Joint Working Group and Science Coordination Group Meetings	West Palm Beach, FL	November 17, 2011
	Coral Springs, FL	February 15, 2012
	Coral Springs, FL	May 16, 2012
	West Palm Beach, FL	September 20, 2012
	West Palm Beach, FL	January 31, 2013
	West Palm Beach, FL	June 25, 2013
Water Resources Advisory Council	Miami, FL	November 3, 2011
	West Palm Beach, FL	January 5, 2012
	West Palm Beach, FL	February 2, 2012
	West Palm Beach, FL	March 8, 2012
	West Palm Beach, FL	April 5, 2012
	West Palm Beach, FL	May 3, 2012
	West Palm Beach, FL	August 2, 2012
	West Palm Beach, FL	September 6, 2012
	St. Cloud, FL	November 8, 2012

Action	Location	Date
	West Palm Beach, FL	January 3, 2013
	West Palm Beach, FL	February 7, 2013
	Clewiston, FL	April 4, 2013
	West Palm Beach, FL	July 8, 2013
Water Resources Advisory Council Recreation Issues Team Briefings	West Palm Beach, FL	March 19, 2012
	West Palm Beach, FL	June 18, 2012
	West Palm Beach, FL	September 17, 2012
	West Palm Beach, FL	December 17, 2012
	West Palm Beach, FL	March 18, 2013
Committee on Independent Scientific Review of Everglades Restoration Progress	Ft. Lauderdale, FL	January 26, 2012
	Ft. Lauderdale, FL	November 27, 2012
Ten County Coalition Meeting	Okeechobee, FL	March 30, 2012
South Florida Water Management District Governing Board	West Palm Beach, FL	January 12, 2012
	Hollywood, FL	February 9, 2012
	West Palm Beach, FL	March 15, 2012
	West Palm Beach, FL	April 12, 2012
	West Palm Beach, FL	May 10, 2012
	Okeechobee, FL	June 14, 2012
	West Palm Beach, FL	July 12, 2012
	West Palm Beach, FL	August 9, 2012
	West Palm Beach, FL	September 13, 2012
	West Palm Beach, FL	October 11, 2012
	West Palm Beach, FL	November 15, 2012
	West Palm Beach, FL	December 13, 2012
	Orlando, FL	February 14, 2013
	West Palm Beach	March 14, 2013
	West Palm Beach	April 11, 2013
	West Palm Beach	May 9. 2013
	West Palm Beach	June 13, 2013
	West Palm Beach	July 11, 2013
BASS Conservation Leaders Meeting	Ft. Lauderdale, FL	February 14, 2013
Annual Meeting with Miccosukee Tribe	Miami, FL	December 1, 2011
		December 6, 2012
Biscayne Bay Regional Restoration Coordination Team	Virginia Key, FL	September 26, 2012
	Virginia Key, FL	December 18, 2012

C.3.2.2 Agency and Public Involvement Comment Response Matrices

Table C.3.2-2. Comment response matrix detailing comments received during the CEPP planning process with USACE responses

LETTER	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
Seminole Tribe of Florida			
Seminole - 1	7-2-2012	On behalf of the Seminole Tribe of Florida, I am requesting a meeting to discuss the Tribe's concern regarding the impact of the developing Central Everglades Planning Project (CEPP) on our Big Cypress Reservation. We anticipate that the Big Cypress National Preserve (BCNP), with whom we share a border north of the Addition Lands, might share our concerns about reserving water necessary to support a healthy ecosystem in our mutual native areas.	We are looking forward to a follow-on discussion of the above at your earliest convenience with your staff. Ms. Natalie Garrett, Tribal Liaison, will coordinate the upcoming meeting with In the meantime; we will continue to work on these actions so that a future meeting can be used as a forum to finalize the details and to chart a mutually-agreeable path forward.
Seminole - 2	7-2-2012	While we agree that the Everglades is a unique ecosystem, as acknowledged by its World Heritage Site designation and consistent multi-decade bi-partisan national support for structural and operational water projects to restore and protect it, we want to highlight the uniqueness of the "Everglades" that compose the Tribe's Big Cypress Reservation. In the western flow-way of the historic Everglades, Big Cypress incorporates a collection of varied ecosystems from saw grass prairie to hardwood hammocks that is home to many species, including some classified as threatened and endangered, and most that represent some cultural and/or religious value to the Tribe. The Tribe interprets the "health" of its people upon the health of its lands and waters, as guided by our elders. And we note that it will not be possible to restore the Everglades without rehydrating the Big Cypress Reservation and the BCNP Addition Lands.	We continue to appreciate the Seminole Tribe's unique commitment to the health of the broader ecosystem and understand the "uniqueness of the 'Everglades' that compose the Tribe's Big Cypress Reservation." The July13, 2012 meeting referred to in your letter proved to be a fruitful dialogue between your staff, personnel from the Jacksonville District, U.S. Army Corps of Engineers (Corps), and representatives from the South Florida Water Management District. Such opportunities are always welcome. We believe this meeting in particular proved to be a powerful forum for identifying solutions to the challenges you noted. The Corps remains fully committed to ecosystem restoration and over the past several years has found success in doing so through continued engagement with key partners and stakeholders. I understand your interest in seeing the Central Everglades Planning Project (CEPP) used as a planning vehicle to deliver the long-term hydrologic benefits you are seeking. However, within the broader Comprehensive Everglades Restoration Plan (CERP), the current CEPP study unfortunately cannot specifically address multiple

LETTER	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
			restoration projects, to include the delivery of water to the Big Cypress Reservation as you envision. As only the first of several increments to support restoration, the ongoing CEPP study is seeking to identify a suite of projects in an unprecedented 18-month period that most effectively capitalizes on existing data, knowledge, evaluation tools, previously constructed restoration features, and lands currently available. I am optimistic that the new streamlined planning paradigm will provide restoration benefits quicker than ever. Implementing an incremental approach along with the continued gathering of critical scientific data and knowledge will certainly facilitate future studies and subsequent progress in restoration.
Seminole - 3	7-2-2012	Over the last 20 years, the Seminole Tribe has planned and implemented water infrastructure projects designed to improve the hydrology on the Big Cypress Reservation, located in Hendry and Broward Counties, north of the BCNP border, in the C-139 Basin. The hydrology and environment on the Reservation had been negatively and cumulatively impacted by the Central and South Florida Project, as well as by Bureau of Indian Affairs (BIA) supported agricultural drainage projects. The Tribe is building, in full partnership with the Corps of Engineers (Corps,) the Big Cypress Reservation Critical Project as part of the Critical Project Program authorized by WRDA 1996. While this project has and will address many of the problems created by earlier federally supported water control projects, minimum flows and levels needed for adequate hydration of the native areas on the Reservation and in the northern part of the BCNP, including the Addition Lands, still must be addressed. A new water reservation for the environment must be considered in excess of the Tribe's existing water rights as described in our Water Rights Compact. As the Tribe has been	In addition, the discussions on July 13, 2012 resulted in several potential remedies to address the hydration concerns on the Big Cypress Reservation and in the northern part of BCNP. The first includes incorporating adaptive measures as described in the September 24, 2003 Wetland Management Plan prepared by AMS Engineering and Environmental, Incorporated which in part states that "if, after three years of operation, the annual success criteria evaluation at any given project feature indicates deficiencies in attainment of successful enhancement/restoration of wetland resources or abatement of phosphorus discharges to off-reservation waters, the Tribe will confer with the Corps." Pursuant to the outcome of the review, the Tribe will prepare an adaptive management plan for review and approval by the Corps prior to implementing any changes in the operations of the feature. This plan should focus on Basin 1 outlets and siphon design elevations with the intent of delivering more water to native areas by, in part, minimizing the loss of water underground and to the feeder canal. Secondly, a change to the schedule governing the S-190 water control structure may yield higher groundwater elevations within the western portion of the Big Cypress Reservation by increasing water storage in the West Feeder and North Feeder canals. This effort in particular would likely be realized through a temporary deviation to the existing regulation schedule which would be coordinated with

LETTER	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		involved in the greater Everglades Restoration effort along with our projects focused on our lands, we have come to appreciate the need for minimum flows and levels to supply clean water to support the environmental needs of our lands. This realization has led us to this meeting request.	Corps and South Florida Water Management District operations staff. It should be noted that our staff continues to explore possible alternatives within the criteria of the existing Water Control Plan (WCP) to closely meet intended outcomes. Finally, the Corps team members are exploring the process for conducting a Watershed Study that would best identify the hydrologic conditions underlying the Big Cypress Reservation and adjacent areas. Section 203 of the Water Resources Development Act of2000 authorizes the Secretary of the Army, in cooperation with Indian tribes and the heads of other Federal agencies, to study and determine the feasibility of carrying out projects that will substantially benefit Indian Tribes. Section 203, titled Tribal Partnership Program, also establishes cost sharing provisions, defines cooperation and consultation requirements, and authorizes appropriations. Please reference the enclosed booklet for details on this authorization and additional programs the U.S. Army Corps of Engineers have available and could possibly be a benefit to the Big Cypress Reservation.
Seminole - 4	7-2-2012	Over the past few months, representatives for the Tribe have been participating in numerous meetings to discuss CEPP, including some meetings with your staff focused on the issue of moving water to the western Everglades through the Big Cypress Reservation and the Addition Lands of the Big Cypress National Preserve. We look forward to getting some feedback on our proposals in the upcoming meeting now scheduled for July 13. More specifically, we seek your agencies feedback on: 1. How to assure water reservations to supply environmental needs on our and federal native lands adjacent to the Big Cypress Reservation; and 2. How to deliver water to the Big Cypress Reservation for use by the natural system.	Taken together, the above three actions would have the strategic goal of gaining a better understanding of groundwater conditions which can be used in future planning studies. In the near-term, of course, the first two actions may provide environmental benefits by themselves.
Seminole - 5	7-2-2012	While CEPP is being fully vetted, we believe that consideration of the new water reservations to sustain the environment on Big Cypress and in the BCNP Addition Lands is well timed. Attached for	We are looking forward to a follow-on discussion of the above at your earliest convenience with your staff. Ms. Natalie Garrett, Tribal Liaison, will coordinate the upcoming meeting with In the meantime; we will continue to work on these actions so that a future meeting

LETTER	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		your consideration is a draft agenda to guide this meeting. Patricia Powers on behalf of the Tribe will follow-up with your office to confirm participation in the July 13 meeting.	can be used as a forum to finalize the details and to chart a mutually-agreeable path forward.
Seminole - 6	11-7-2012	The Seminole Tribe has been actively engaged in the South Florida Ecosystem Restoration effort for nearly 20 years. We have supported this effort technically and politically though all of these years. More specifically, we are constructing in full partnership with the Corps, an extensive water control system on the Big Cypress Reservation. This project is important to us and to our region and we appreciate the Corps' work and federal funding. But focusing solely on the land and water within our Reservation's legal boundaries is short-sighted. And this has been our position for nearly two decades. We have urged over and over again through all that planning efforts, including the Restudy which is the basis for CERP, to include the western basins in the Central Everglades system in the monitoring, modeling, data gathering, design, planning, and project implementation. So please appreciate our deep disappointment to be told that waters in the western basins that impact the CEPP are not included in the scope of CEPP because the monitoring, data gathering, and modeling have still not been done in this region, despite our repeated requests to do so for over 14 years. We applaud the Corps' drive to complete the CEPP planning process in 18 months, but we remain very concerned by the long-standing inattention to this region.	The Jacksonville District and the South Florida Water Management District are actively engaged in efforts hosted by the South Florida Ecosystem Restoration Task Force and to facilitate the development of appropriate models to address the Western Basins. Part of this process includes capitalizing on knowledge gained from the ongoing construction of the Seminole Big Cypress Critical Project. We will continue to use regularly-scheduled Seminole Big Cypress Critical Project, Project Delivery Team meetings to collaboratively identify and address opportunities to improve that project's performance. In the course of these meetings we collectively determined that addressing the operation of the S-190 structure is a critical step prior to project modifications. Accordingly, the Jacksonville District is currently scoping a plan for a modification to the existing S-190 operations.
Seminole - 7	11-7-2012	Apart from the fact that we, a valued partner in Everglades Restoration by all accounts, have been effectively ignored in our repeated requests for monitoring, modeling, and planning in this region, we note that the federal government has an	Please refer to response to Seminole -6.

LETTER	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		obligation through its trust responsibilities to restore the northwest corner of WCA 3A, where the Seminole Tribe of Florida retains hunting and fishing rights, at a minimum. Beyond CEPP, we would like to discuss further how the Corps and its State partner intend to address the Central Everglades north and west of the redline in the current CEPP models.	
Seminole - 8	11-7-2012	As to your specific suggestions for addressing our water supply concerns, we welcome your offers. Regarding your suggestion to exercise adaptive management of Basin 1 of the critical project, we look forward to working with your engineering and wetlands regulatory staff on crafting operational changes to the outlets and siphons in order to deliver more water to the native areas south of the West Feeder Canal in the Big Cypress Seminole Indian Reservation. We assume that such work will be eligible for funding under the Operations & Maintenance provisions of the project's Project Cooperation Agreement.	Please refer to response to Seminole -6
Seminole - 9	11-7-2012	Regarding the S-190 water control structure temporary deviation, we are encouraged by the option to work effectively within the existing regulation schedule to increase water storage in the West and North Feeder Canals, which will allow more water to replenish groundwater of the reservation. We would like to schedule meetings as soon as possible with the Corps and SFWMD to discuss the details and timing of the temporary deviation. I note here that we are also concerned about the structural integrity of the S-190 water control structure and urge the Corps and the District to carefully review the soundness of the structure and take all actions necessary to make it secure.	Please refer to response to Seminole -6
Seminole - 10	11-7-2012	And thank you for the information on the Tribal	Thank you for your comment. The USACE will continue to maintain

LETTER	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		Partnership Program as authorized by Section 203. We will take a careful review of this program and make a decision about whether or not to apply at a later date.	ongoing communications with the Seminole Tribe of Florida regarding the Big Cypress Reservation. Please refer to response to Seminole -6
Seminole - 11	11-7-2012	Managing water resources in South Florida is a steep challenge. The only way to meet this challenge is to work together to plan a future that balances competing needs fairly, which requires a more comprehensive view of the system. For as long as the monitoring and modeling in the western basins is not addressed, the South Florida Ecosystem restoration plan is incomplete.	Thank you for your comment. The USACE will continue to maintain ongoing communications with the Seminole Tribe of Florida regarding the Big Cypress Reservation. Please refer to response to Seminole -6
Seminole - 12	11-7-2012	We look forward to continue to work with you to remedy this situation and to address the pressing needs of the Tribe to correct the hydrology surrounding our Big Cypress Reservation.	Thank you for your comment. The USACE will continue to maintain ongoing communications with the Seminole Tribe of Florida regarding the Big Cypress Reservation. Please refer to response to Seminole -6
LOCAL MARTIN COUNTY (MC)			
MC - 1	6-15-2012	I understand that there are financial and time constraints on the initial segment of Central Everglades Planning so present plans do not include considering the Lake releases that now go into the estuaries. But I am hopeful that in the future we will incorporate systems in our planning to conserve these billions of gallons of fresh water now being sent to tide. This is freshwater that can be used to rejuvenate our aquifers and rehydrate the Everglades. I hope we will design the system to flow south up to 10,000 cfs, so that there truly will be a way to protect our estuaries. In addition to having as an eventual objective a significant southern flow from the Lake, I encourage us to actually move water south every opportunity we get. Not just consider the possibility during emergencies, but make moving water south part of the regular routine, even if it is just a few cfs.	The construction of a Flow Equalization Basin on the A-2 property will capture approximately 200,000 acre-feet on average annually of water that would be released into the northern estuaries and send it through the FEB into WCA 3. While this provides a minor benefit to the northern estuaries, it is 200,000 acre-feet less water being released into the estuaries compared to the no action alternative.

LETTER	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
MC - 2	12 – 17-2012	It is so heartening that Army Corps is listening to our plea to protect the Estuary from Lake Okeechobee releases. We all recognize that 200,000 acre/feet is just a beginning, but it is a strong, positive beginning. There is no magic; it will take vast complex planning and significant funding. But now, Army Corps has embarked upon a path that can eventually lead to a solution; a solution requiring perseverance and continued dedication of us all to achieve.	Thank you for your comment.
CITY OF CORAL GABLES (CG)			
CG - 1	6-15-2012	As of May 8, 2012, legislation pertaining to supporting CEPP for the restoration of the Central Everglades was adopted.	Thank you for your comment.
ARTHUR R. MARSHALL FOUNDATION & FLORIDA ENVIRONMNETAL INSTITUTE (AM)			
AM - 1	1-21-2012	Re-connection of Lake O with WCA-3 is key to the Art Marshall vision of restoring sheet-flow from Kissimmee Basin to FL Bay. More Adaptive Management (AM) approaches are needed in this process. We appreciate the "enhanced public inclusion".	In accordance with the 2011 CERP Adaptive Management Integration Guide; an adaptive management plan has been developed and included in Annex D of the CEPP Project PIR and EIS.
AM - 2	2-2-2012	Reduced surface waters in South Florida are a major cause of the effect of decreased rainfall and resulting drought, discussed this with CEPP PDT Jan 31. Full understanding of the rainfall cycle is critical for CEPP alternatives.	Regional hydrologic models were used during plan formulation for the CEPP. These models provide daily, detailed estimates of hydrology across the 41-year period of record (January 1965-December 2005) and are used to evaluate the systems response to project alternatives by simulating major components of south Florida's hydrology including evapotranspiration, infiltration, overland and groundwater flow, canal flow, canal-groundwater seepage, levee seepage and current or proposed water management control structures and operational rules.
AM - 3	2-2-2012	The optimum approach to CERP/CEPP and restoring what was a much wetter Everglades, is to restore a massive amount of surface water in the form of Dynamic Storage and Sheetflow. Circumstantial proof – Kissimmee River Restoration results.	Thank you for your comment and information. Throughout the plan formulation different management measures have been assessed in order to meet the objectives of CEPP as well as the constraints. The final array of alternatives ranged from as passive as possible to highly engineered.

LETTER	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		Precaution of NRC Peer Review Committee – Avoid engineered solutions where possible.	
AM - 4	3-15-2012	This is a follow up to the Marshall Plan vision and related documents. We recognize that this Marshall Plan may be a bit aggressive for CEPP increment 1, however, we think it's important that we keep our eyes on the prize of long-term vision, as CEPP interim goals and objectives are developed, consistent with CERP Table 5-1.	Thank you for your comment.
AM-5	3-8-2013	We appreciate the CEPP PDT aggressive approach to adaptive management (AM); extensive reference to the CERP ***Adaptive Management Integration Guide*** (AMIG) dated March, 2011; and the production of the extensive monitoring matrix (Monitoring Matrix) passed out at the Feb 25 CEPP Meeting and updated at CEPP PDT Meeting March 5, 2013. These written comments are a follow-up to ArtMarshall.org verbal comments made March 5, 2013. A Big question remains regarding the Monitoring Matrix and other factors: How to integrate multivariate requirements (targets) and the measurement of same, and synthesize for decision makers. In the March 5 CEPP PDT proceedings, the Top-Down approach folks (Generalists) appeared at odds with the Bottom-up approach folks (need to consider more details) with the latter group asking for more time to solve the puzzle. Here, stasis is a fleeting thing.	Regarding the question of how multiple factors will be integrated for decision makers: the CEPP Adaptive Management and Monitoring Plan (AM and Monitoring Plan) specifies that data will be provided to agencies, and if the data suggests that an improvement could be made for CEPP then such suggestions will be provided as well. It is important that the agencies consider the multiple factors; a method of synthesizing or "rolling up" the information is not dictated in the AM and Monitoring Plan. However the scientists will continue to provide data as understandably as possible, such as in formats of the ongoing System Status Reports (http://www.evergladesplan.org/pm/ssr_2009/ssr_main.aspx), the CERP Scientific Knowledge Gained document (http://www.evergladesplan.org/shared-definition/sd_2010.aspx), and the Stop Light Indicator Reports (http://www.sfrestore.org/documents/Final_System-wide_Ecological_Indicators.pdf) We will continue to seek ways to make the complex data of Everglades restoration accessible and understandable for decision makers and interested parties. Regarding the comment on PDT meeting preferences for a top-down vs. bottom-up presentation of the AM and Monitoring Plan, the full detailed plan is included in the CEPP PIR document for review (Annex D) for those who want all details.
AM-6	3-8-2013	Section 3 and Appendix D of the AMIG call out a variety of activities in the AM process to be undertaken by the PDT as follows:	Regarding Activity 2 and the monitoring matrix: The matrix was intended to summarize RECOVER's monitoring programs and how they may help to address the items discussed in the adaptive management portion of the AM and Monitoring Plan. The items

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		• Activity 2: Establish / Refine Yellow Book description of Goals & Objectives [CERP Table 5-1] • Activity 4: Use conceptual ecological models (CEM), to develop testable hypothesis, and targets that reflect defining characteristics of the systems to be restored. • Activity 5: Continue consideration of CERP Yellow Book Goals & Objectives; o Evaluate benefits o Include management options matrix and costs • Activity 6: Monitoring; Develop project level monitoring plan; identify costs, decision-criteria [benefits] • Activity 7: Assessment; synthesize results Closer adherence to AMIG activities would improve the effort and provide better overall decision-support. Specifically: • Regarding AIMG Activity 2: While earlier CEPP PDT activities put potential CEPP achievements in context of meeting CERP Yellow Book Goals & Objectives in CERP Table 5-1, the Monitoring Matrix falls short of addressing all objectives in a balanced manner, e.g., addressing the extent to which spatial extent is increased. An Appendix to this report amplifies. • Regarding AIMG Activity 4: There is no regional CEM for the CEPP region under consideration. Performance measures and targets were developed using CEM's from other regions and a To-	discussed in the adaptive management portion were subjected to screening, described in the PDT presentation and in the PIR Annex D. Items that cannot be addressed with adaptive management actions in CEPP (such as operational adjustments or testing) were screened out of the AM Plan. Screening out items did not indicate a lack of importance of the items, but rather a *lack of ability to perform adaptive management to address the items*. There are not operational adjustments or other adaptive measures that could be taken to increase the spatial extent of CEPP and therefore a question about this may have been screened from the adaptive management portion of the plan despite its overall importance in CERP. Regarding Activity 4: Available Conceptual Ecological Models have been used in CERP and CEPP to identify problems, opportunities, goals, objectives, performance measures, and monitoring questions during the project study and in the development of the AM and Monitoring Plan. Since a CEM for the central part of CEPP is not available, scientific and local knowledge were used in lieu of developing a new model. Regarding Activity 5: The monitoring matrix was not intended to provide any information about project benefits. Project costs and benefits have been discussed in several PDT meetings, with presentations publically available. The dollar value of ecosystem services associated with CEPP is being calculated as a case study; a separate and parallel effort to the CEPP process for choosing a TSP. The results of the ecosystem services case study will be provided as soon as possible, but are not being used to select or influence the selection of the CEPP TSP. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process. Regarding Activity 6: The matrix was only intended to summarize RECOVER monitoring and CEPP's adaptive management questions. There was no intention to discuss or provide cost/benefit information in this matrix. Please see previous responses here.

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		tal CEM. Thus a hypothesis that the pond apple forest existed and provided habitat and functional value including significant uptake of nutrients has escaped scientific consideration. • Regarding AIMG Activity 5: The "Benefits" word has been used extensively, and options matrix with costs have been developed, however no dollar value has been put on benefits, yet, so as to provide a Benefits/Cost ratio, arguably the most important piece of info that could be provided to a decision-maker. The monitoring matrix does not provide this info. Benefits in dollars would best be provided by an Ecosystem Services Valuation (ESV) of the CEPP Tentatively Selected Plan (TSP), as briefed in an earlier CEPP meeting. Presentation of more info earlier on the ESV of the CEPP TSP would serve stakeholders and decision-makers. • Regarding AIMG Activity 6: Benefits/Cost Criteria are not included in the Monitoring Matrix, and only appear rhetorically in previous CEPP meetings; Activity 5 and Activity 7 comments apply. • Regarding AIMG Activity 7 on the call for synthesis (an often heard call in the CERP/CEPP process): As an extension of Activity 5 comments, the best synthesis possible would be the calculation of total benefits (B) and total costs (C), including projected life-cycle O&M costs. The resulting B:C ratio provides an indicator of return on investment and the extent that the	Regarding Activity 7: Concur with the usefulness of this type of synthesis. This information is provided in Section 6 of the CEPP PIR document. Benefits are not monetized in the USACE TSP selection process for ecosystem restoration projects. It is possible in the future that USACE may consider ecosystem services benefits as part of its TSP selection process for future projects, but many factors need to be considered to develop formal implementation policy by the agency. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process.

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		system has been optimized per the following statement: Maximize benefits while minimizing costs, long term. One observation: The more folks see the B:C synthesis, the more comfortable they are with it, especially for analysis of alternatives, as required by CERP Section 7.5.3.	
AM-7	3-8-2013	Consideration of USACE Engineering Circular EC 1165-2-212 dated 1 Oct 2011. EC 1165 states: "*Impacts to coastal and estuarine zones caused by sea-level change must be considered in all phases of civil works programs*". However there has been no visible consideration of the projected impacts of sea-level rise, nor consideration of the benefits of a rapidly executed CEPP implementation, as counter-measure to Sea Level Rise (SLR). Failure to consider the dollar value benefits of CEPP implementation as a counter-measure to SLR could result in an oversight in calculating the ESV of the CEPP TSP. Regarding the lack of discussion of SLR in CEPP proceedings, it is a puzzlement how about 10 member of the CEPP PDT and a quorum of the Science Coordination Group/Working Group could be involved in a Feb 14-15, 2013, "Technical Meeting" addressing SLR in detail, sponsored by FAU, yet avoid SLR discussion in CEPP PDT proceedings. As noted in verbal comment March 5, there are a number of consequences not to have SLR on the table. One occurred when a PDT Member representing agriculture, announced that he was going to be blunt, then stated CEPP may not meet institutional requirements established in CERP 2000, or words to that effect. With due appreciation for the business of Ag, a blunt response made in public comment is that we are not in a *business as usual* scenario. A regression to	Sea Level Rise (SLR) is addressed for the TSP in the Draft PIR/EIS in Section 6 and Annex I. A full analysis of SLR on CEPP and the effect of SLR on the expected benefits are located in Section 6.11.1.3 and Annex I. During the preliminary evaluation of CEPP ecosystem services the team could not find a viable means to consider CEPP as a counter-measure to SLR. The team will seek further information on this during their draft revisions. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process. In order for items to be included in the CEPP's Adaptive Management Plan, they must have project management options that can be reasonably tested and/or adjusted to improve restoration performance. Please see the screening criteria provided in Annex D.

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		the 2000 scenario is a de facto abandonment of adaptive management. The National Research Council Peer Review Panel has taken the strong position that climate change and sea level rise are a good reason to speed up the [CEPP] process, rather than proceed in business as usual fashion. SLR is arguably the best reason for engaging the AM process. More on this in future meetings.	
AM-8	3-8-2013	Cost-Effectiveness and Cost-Benefit terminology. These terms were mentioned in the context of being equivalent per the March 5 statement, paraphrased: *We have done the cost-benefit analysis and determined the cost-effective alternatives*. (Alt 1 and Alt4). The CERP Cost-Effectiveness and Incremental Cost Analysis approach is outlined in CERP Section 7.5.3. March 5 Public comment included a request for clarification of the use of these terms. The public comment view was that cost-benefit, better termed Benefit/Cost (Benefit divided by Cost to determine the B:C ratio), had not been determined, yet; also that it would come in the form of an Ecosystem Services Valuation (ESV) of the CEPP Tentatively Selected Plan. At the March 5 CEPP PDT meeting, a PDT member noted that there had been very little cost data provided. An earlier public comment noted that the CEPP Analysis of Alternatives did not appear to consider Operations and Maintenance (O&M) Costs, long term. Per PDT protocol, there was no further discussion or clarification on the public comment questions raised.	Cost effective/incremental cost analysis (CE/ICA) is used to evaluate and compare the production efficiency of alternatives, thus identifying plans that reasonably maximize ecosystem restoration. Cost effectiveness analysis begins with a comparison of the costs and outputs of alternative plans to identify the least cost plan for every level of output considered. Alternative plans are compared to identify those that would produce greater levels of output at the same cost, or at a lesser cost, as other alternative plans. Cost effective plans are then compared by examining the additional (incremental) costs for the additional (incremental) amounts of output produced by successively larger cost effective plans. The plans with the lowest incremental costs per unit of output for successively larger levels of output are the best buy plans. Costs are based initially on a rough order of magnitude and include pre-construction engineering and design and construction costs, interest during construction, as well as recurring operations and maintenance costs. Benefits are based on the habitat unit evaluation. Alternatives 1 and 4 were identified as being cost effective. Alternatives 2 and 3 were both more costly than Alternative 4 and provided fewer overall habitat units. Alternatives 2 and 4 were not cost effective. The ecosystem services evaluation will be conducted only on the recommended plan. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process.
AM-9	3-8-2013	Summary: The Monitoring Matrix in effect, is a multi-decision criteria approach, the results of which may be difficult for Top-Level decision makers to integrate (17 factors) in evaluating the success of	The monitoring matrix was not intended to list CERP objectives, habitat units, or targets. Please see discussion of this above. Discussion of Sea Level Rise in relation to CEPP is provided in Section

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		the project; as noted in the Appendix, the Monitoring Matrix does not include many other CERP Objectives, and extensive habitat unit approach (HUA) data. This has the potential of undermining the effort. More consideration of CERP Table 5-1 Goals & Objectives and other Activity called out by the CERP AMIG, would be helpful in clarifying matters for a decision-maker, including the extent to which CEPP provides a counter-measure to Sea Level Rise. Since not all "targets" have been considered in the Monitoring Matrix, addition to the 17 elements of the Matrix may make integration of the success outcome even more difficult. The best synthesis for a decision-maker would appear to be the total dollar Benefits to total dollar Cost ratio (B:C = B/C) as a means of measuring return on investment in a synthesis that could be understood by all. This suggests that the CEPP PDT process ought to begin to air the ESV of the CEPP TSP ASAP, as a matter of education and an indication of success that will sell the program on its own merit. These comments will be subject to final edit following the next CEPP PDT Meeting, any feedback from this input, and a preparation for future comments in the CEPP comment process.	6.11.1.3 and Annex I. The CEPP evaluation of ecosystem services is a separate and parallel effort to the TSP selection process and will not influence the selection of the TSP. The results of the evaluation will be provided in a separate document than the PIR/EIS after it has gone through a separate review process.
EVERGLADES COALITION: AUDUBON FLORIDA*EVERGLADES FOUNDATION*EVERGLADES LAW CENTER*CLEAN WATER ACTION *FLORIDA WILDLIFE FEDERATION *NATIONAL PARKS CONSERVATION ASSOCIATION *NATURAL RESOURCES DEFENSE COUNCIL (EC)			
EC - 1	6-1-2012	We're concerned that some of the agriculture community is suggesting that CEPP must "make up" for irrigation water lost due to implementation of LORS. It's critical that the focus of CEPP remain on environmental restoration objectives, while maintaining protection for water users.	The objective of CEPP is to send more water south from Lake Okeechobee to WCA 3 that would otherwise result in regulatory releases to the northern estuaries, while operating within zones above the baseflow zone of LORS. CEPP will maintain the current level of water supply for LOSA users under the 2008 LORS.
EC - 2	6-1-2012	We ask that the Corps and SFWMD reiterate a	The construction of a Flow Equalization Basin on the A-2 property

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		commitment to ensuring that CEPP results in meaningful restoration of the heart of the Everglades by sharpening the focus on restoration and increased water for the ecosystem. Thank you for your tremendous vision and hard work.	will capture 200,000 average annual acre-feet of water that would be released into the northern estuaries and send it through the FEB in WCA 3. While this provides a minor benefit to the northern estuaries, it is a step forward to reducing flows to the estuaries and it is 200,000 acre-feet of new water being sent to the Everglades.
EC – 3	11-13-2012	CEPP must take a clear step toward restoration. We are heartened to see that CEPP PDT has identified about 200,000 acre-feet of new water to be delivered to Central Everglades. However, for CEPP to meaningfully advance restoration and achieve ecological benefits, the plan must increase ecological connectivity and water conveyance between ENP and WCA 3A and 3B. Partial removal of L-29 levee represents the clear step forward needed to show progress. Full restoration of sheetflow for WCA 3A through 3B and into ENP is the ultimate goal, but it is understood that seepage issues constrain our ability to implement such restoration in one complete iteration. Given these concerns, it is vital that the CEPP include phased and/or locally preferred alternatives that will provide interim benefits while additional restoration components, including the authorized elevation and bridging of Tamiami Trail and other projects, come online.	The Corps supports reconnecting WCA 3A, WCA 3B and ENP as a functioning component of the Everglades ecosystem. Implementation of Alternative 4R2 would include three gated structures in the L-67 A levee, spoil removal along the west side of the L-67 A Canal in the proximity of the L-67A gated structures, construction of an ~ 8.5 mile levee in WCA 3B connecting the L-67 A levee to the L-29 levee, and removal of ~ 8 miles of the L-67 C levee and ~ 4.3 miles of the L-29 levee in the Blue Shanty flowway. Alternative 4R2 also includes construction of the western 2.6 mile Tamiami Trail bridge. An implementation plan for the TSP has been developed and is included in Section 6 of the CEPP Project PIR and EIS.
EC - 4	11-13-2012	CEPP must remain focused on ecological benefits. The CEPP process and robust stakeholder participation workshops have allowed for unprecedented dialogue and feedback. We acknowledge the effort required to be inclusive and applaud the PDT"s engagement efforts, but want to emphasize that it is not possible for CEPP, nor any other single project in the full CERP, to achieve each individual goal outlined in CERP. It is absolutely essential that CEPP achieve key restoration benchmarks of rerouting flow into NESRS. To do	Management measures and alternatives for the CEPP were formulated and evaluated based on achievement of project objectives. Project objectives identified for the CEPP are consistent with those of CERP. Section 601 (h) of WRDA 2000 (authorizing CERP) states "the overarching objective of the Plan is the restoration, preservation, and protection of the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection. Project objectives are included in Section 1 of the CEPP Project PIR and EIS.

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		this, the TSP must be selected based on its ability to achieve the following CEPP goals outlined in the December 2011 scoping: • Restore habitat in the central Everglades, focusing on the "river of grass" • Deliver "new" sources of clean water to the central Everglades and ENP, and • Reduce damaging discharges to east and west coast estuaries	
EC - 5	11-13-2012	Compatibility with CERP. We understand that the features of CEPP"s first increment are constrained by deferral and state appropriations, and appreciate the tremendous effort by the PDT to move their planning effort forward expediently. Given these limitations, it becomes even more critical to ensure that CEPP alternatives create opportunities for sheetflow that can be explained in future CERP efforts rather than creating an even more managed Everglades ecosystem by installing more pumps and other infrastructure.	Implementation of Alternative 4R2 would not include the construction of additional pump stations on the L-29 levee. During plan formulation, construction of pump stations on the L-29 levee was proposed as part of Alternative 3. Alternative 3 was not identified as the TSP. Implementation of Alternative 4R2 is compatible with future increments of the CERP. Alternative 4R2 also includes removal of a portion of the L-4 levee west of S-8, and backfilling the Miami Canal from ~1.5 miles south of S-8 to I-75 thereby reestablishing sheetflow in northern WCA-3A.
EC - 6	11-13-2012	Environmental groups have a common vision for the first iteration of central Everglades restoration, supported by numerous recreational stakeholders. This vision includes bridging the Tamiami Trail, decompartmentalizing WCA-3A, WCA-3B, and NESRS in ENP, and completely degrading the L-29 along the bottom of WCA-3B. Implementation of this vision includes a temporary berm along the existing "Blue Shanty" canal alignment as a construction phase which would be removed following the completion of the Tamiami Trail improvements and other projects.	Construction of the ~ 8.5 mile levee in WCA 3B connecting the L-67 A levee to the L-29 levee would be constructed in accordance with USACE Engineering Design and Levee Safety Criteria and consistent with design criteria jointly developed by the SFWMD and the Corps.
EC - 7	11-13-2012	We believe that a temporary Blue Shanty berm is a cost effective way to utilize existing canal and berm features in SW WCA-3B and ENP to achieve near-	Please see response to comment EC-6 above. Construction of the ~ 8.5 mile levee in WCA 3B connecting the L-67 A levee to the L-29 levee would be constructed in accordance with USACE Engineering

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		term benefits and "train" the River of Grass through two gated structures to be installed along lower L-67A during an initial CEPP phase. This feature is intended to allow for restoration of sheetflow, the creation of ride/slough habitat, and fishery improvement through marsh connectivity and should not be interpreted or designed as a flood control structure.	Design and Levee Safety Criteria and consistent with the design criteria developed jointly by the SFWMD and the Corps. The Corps concurs that construction of the levee in WCA 3B would provide a means to reconnect WCA 3A, WCA 3B and ENP.
EC - 8	11-13-2012	We remain committed to assisting in this process and to helping ensure increased water flows to the central Everglades, relief to the northern estuaries, and ecological benefits for America's Everglades. We look forward to working with you in this ambitious endeavor and invite any questions or comment you may have.	Thank you for your comment.
EC - 9	12/27/13	The Everglades Coalition has previously supported Central Everglades Planning Project (CEPP) goals to: 1) restore habitat in the central Everglades, focusing on the "River of Grass"; 2) deliver "new" sources of clean water to the central Everglades and Everglades National Park (ENP); and 3) reduce damaging discharges to the east and west coast estuaries. Removal of the L-29 along the bottom of WCA-3B is consistent with long term restoration goals and represents a clear step forward in Everglades restoration as it removes a barrier to sheet flow and will improve fishery conditions. Alternative 4 is the only alternative in CEPP which will begin more natural flow into Water Conservation Area (WCA) 3B and ENP, re-establish ridge and slough topography, and improve ecological connectivity, all of which are priority tenets of Everglades restoration.	Thank you for your comment.

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		Restoration of the Everglades should not significantly increase the footprint of levees in sensitive wetlands. Restoring the natural flow path of the Everglades, as proposed in Alternative 4, will reduce soil oxidation and loss in WCA 3B, increase biological connectivity, improve the mosaic of landscapes essential to the food chain, and provide more corridors and habitat for fish and wildlife. THEREFORE BE IT RESOLVED that the Everglades Coalition supports CEPP Alternative 4, with the WCA 3B river training structure implemented with a minimal footprint, as the best alternative for the environment. The Coalition requests that it be designated the Tentatively Selected Plan in the Project Implementation Report because it most comprehensively and meaningfully advances restoration goals, achieves ecosystem benefits, and increases ecological connectivity and water conveyance between ENP and Water Conservation Areas 3A and 3B.	
FLORIDA WILDLIFE FEDERATION (FWF)			
FWF - 1	6-4-13	The Florida Wildlife Federation respectfully requests the South Florida Water Management District Governing Board to re-affirm the District's role as local sponsor of the Central Everglades Planning Project (CEPP), which is currently being developed by the U.S. Army Corps of Engineers with District support. The CEPP has proposed an array of projects in its Alternative 4-R that, together with the District's and Governor Scott's Everglades Water Strategies	Thank you for your comment.

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		program, will move significant amounts of fresh water into Shark River Slough, the core of Everglades National Park. With these projects and the already commenced Picayune Strand restoration projects on the west and the C-111 spreader canal moving water into Taylor Slough on the east, the state and federal governments will secure the future of the park and revitalize a large portion of the historic "River of Grass" through Water Conservation Areas 3 A and B.	
FWF - 2	6-4-13	Specifically, we are asking SFWMD Governing Board to take such formal action as is necessary to permit release of the ACOE's Draft Project Implementation Report (PIR) for the proposed Tentatively Selected Plan, Alt.4-R. Release of the PIR will start compliance reviews under the National Environmental Policy Act and formal public comment, as modeling and refinements continue to address remaining concerns. Taking action now provides sufficient time to ensure that a Chiefs Report can be submitted to Congress by December 2013, making CEPP projects eligible for Congressional authorization under the Senate-passed Water Resource Development Act (WRDA). It is not possible to predict when the House will take up a WRDA bill. It would be politically foolish, however, for us in Florida not to make every attempt to meet the Senate's conditions and deadline for the next WRDA bill. Urging Congressional authorization for CEPP projects is not to say that other projects such as the Caloosahatchee and St. Lucie reservoirs, Broward Water Preserves, Biscayne Bay Coastal Wetlands should be sidelined. All of us are aware of	Thank you for your comment.

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		the enormity of the restoration laid out in the Comprehensive Everglades Restoration Plan, of which CEPP is a component. It is that enormity and its potential rewards that make "Everglades Restoration" *worth* implementing.	
FWF - 3	6-4-13	Florida Wildlife Federation's message is that we are still in "a process" and, at this point in that process, all of us should push forward to obtain Congressional authorization for CEPP projects. By statute and court orders, the District and its taxpayers have incurred an obligation to meet water quality standards; formally agreeing to the role of "local sponsor" for CEPP does not add to that obligation. Long term, implementing the projects proposed may make achieving those standards easier. If the Governing Board feels it needs an "escape clause," the process builds one in: the Project Construction Agreement. Prepared after design, the PCA spells out responsibilities for the costs of construction, operations and maintenance. You are NOT now being asked to sign a PCA.	Thank you for your comment.
FWF - 4	6-4-13	The Comprehensive Everglades Restoration Plan was adopted unanimously by the Florida Legislature in 2000, which also designated the South Florida Water Management District to be the state's "local sponsor." The plan also was adopted by Congress, winning every vote save that of one senator. At that time, it was anticipated that implementation would take thirty years to complete. As we approach the half-way point, the Federation urges all to continue moving forward to full implementation.	Thank you for your comment.
PUBLIC			
Jack Moller (JM) - 1	3-8-2012	At yesterday's meeting you stated the ACOE flow rate goal in the WCAs, Central Everglades, is to	It is not essential to have extremely high water depths when trying to facilitate high flow rates. The CERP "goals are to restore

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		obtain a 2.5 to 3.5 cm/sec flow for four weeks a year. What water depth in the WCAs will allow this flow rate to be obtained?	hydroperiods and sheetflow, not a particular flow velocity. These flow numbers are not CEPP targets because these have not been vetted through the RECOVER PM evaluation process. However, the design of the CEPP will strive to restore enough sheetflow to move the buoyant sediments ("floc") out of the sloughs and onto the ridges and, at the same time, not create an environment where the water depths get high enough to damage tree islands.
JM - 2	3-11-2012	Also, isn't 1.5 to 2 miles a day a bit fast for water to flow in the Everglades? This is what your goal of a few cm/sec converts to.	Again, this flow rate is not a goal. It is a short-term characteristic of sheetflow, and yes, 1.5-2.0 miles a day is fast for the Everglades, but probably essential for at least a few days, to entrain sediments and move them onto ridges.
JM - 3	3-11-2012	What new science, besides Dr. McVoy's work, has been found that verifies the pre-drainage flow rate of water in the Everglades was 1.5 miles per day or more?	There are numerous references that indicate that these flows are needed today to reverse current soil elevation changes on tree islands, ridges, and sloughs. A partial list of references from the Decomp Physical Model Science Plan is provided here. This list contains references for published, independently refereed scientific journal articles (the highest level of scientific review). Additional supporting references are listed at the end of this response document; those references have been vetted in extensive CERP and public forums.
JM - 4	3-11-2012	I heard you said to reach this 1.5 mile/day flow rate you only needed to increase the water volumes by 40%. What will this increase make the water depths in the Everglades become? Where do you measure the flow rate at?	There are no flow-monitoring stations in the ridge & slough habitats of the Everglades. Flows are calculated by computer models within indicator regions that have been established by RECOVER. The CEPP team will use computer models to answer your question concerning water volumes because we also want to make sure that water depths will not become excessive and that flows are measured correctly. Keep in mind that although the historic system probably had up to 40% more water, we do not anticipate that this project will provide the historic volume of water. CEPP will formulate and evaluate plans for a first increment of additional flows of water to the natural system. Please also keep in mind that CEPP does not want to create water depths that will damage tree islands. Determination of what the appropriate first increment of water flows into the natural system is the purpose of the CEPP study.
JM - 5	3-11-2012	Since the Everglades has few sloughs today and the old sloughs have non-slough vegetation in them	When the CEPP team talks about "sloughs" they are referring to the natural, linear waterways that water follows to move south through

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		how will this affect the flow rate of the water once you are able to push the desired amount of water into the Everglades?	the Everglades. A more extensive response is available upon request (letter 3-26-2012).
JM - 6	3-11-2012	Will this vegetation cause the flow rate to be reduced until all this nonslough vegetation is killed by drowning?	The goal of CEPP is to recreate natural sloughs (described in previous answer). Yes, there will be some vegetation transition over time. A more extensive response is available upon request (letter 3-26-2012).
JM - 7	3-11-2012	Will this vegetation problem create a need for more water to be pushed into the Everglades, at least until these old sloughs are reestablished?	The goal of putting more water in the Everglades is based upon the need to prevent peat oxidation and fires. A more extensive response is available upon request (letter 3-26-2012).
JM - 8	3-11-2012	If this is so what will be done to protect the islands and uplands? What will be done to prevent the hardwoods, which include willows, from being drowned? I am sure you know protection of these Everglades resources was approved by a vote of the Sustainable – to do no harm to the island, hardwoods (which includes the willows).	You concerns are understood and will be considered throughout the CEPP process. However, it is critical that you understand that we want to protect tree islands and even make efforts to bring some back. But willow has overtaken northern WCA3A and is not indicative of a healthy vegetation mosaic in that ware.
JM - 9	4-19-2012	Water depth issues have not been adequately addressed. More water in the Everglades will lead to no uplands and drowned wildlife. Questions: 1. What is the frequency of flooding the Everglades; will you have to flood them multiple times a year, once a year, or every other year to reach your desired goals of 40% more water to create an unnatural flow rate in the Everglades? 2. What is length of time for each flooding in the Everglades? 3. What is the water depth at its max depth when you obtain the desired 40% more water to increase an increase flow rate and how long will this depth have to be maintained to allow you to obtain your desired performance measure? 4. How much material will this flow rate move for each flooding?	The objectives of CEPP to enhance ecological values include to restore seasonal hydroperiods and distribution, to improve sheetflow patterns and surface water depths and durations, and to restore more natural water level responses to rainfall (for additional detail, reference Section 01 of the CEPP PIR). CEPP alternative configurations were developed to reduce the drainage effects from Miami Canal in the northern portions of WCA 3A and restore more sheetflow across the northwest portions of WCA 3A. The Miami Canal causes water levels in northern WCA 3A to recede well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation and muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas. Alt 4R2 proposes to reverse the continued degradation of this area by backfilling a portion of the Miami canal north of I-75 to remove its drainage effects, re-distributing inflows through removal of approximately 2.9 miles of the south L-4 levee and increasing water flow into WCA 3A during the dry season. Water levels and durations within WCA 3A and 3B will vary across the landscape and from year-to-year if Alt4R2

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		5. How will you and we know when you can stop flooding the Florida Everglades and what are the bench marks being sought by these floodings of the Florida Everglades?	were implemented, consistent with the variability in rainfall, hydrologic conditions, and operations within the upstream basins (Lake Okeechobee, EAA, WCA 1, WCA 2). Generally, water levels in northern WCA-3A will stay above ground surface for longer and the depth and duration of the wet-season water levels will increase. The water level changes anticipated with implementation of Alt 4R2 are conducive to restoring a portion of the wetland hydrology that was lost as a result of the drainage effects from the construction of the Miami Canal through the marsh in northern WCA-3A. Details regarding the expected water level changes can be found in Section 5 and 6 and Appendix C.2.1 and C.2.2. In general, with implementation of Alt 4R2, water levels in Northwest and North Central WCA-3A are predicted by the period of record modeling results to remain above ground surface throughout the year to reduce continued soil oxidation and invasion of woody vegetation, significantly reduce the susceptibility of that area to risk of muck fire and beginning to restore the ridge and slough landscape that was evident in the western portion of this area in the 1940s. Water levels in the northeastern portion of WCA-3A are predicted by the POR modeling to remain conducive to maintaining the sawgrass plains in this area that were also evident in the 1940s Central WCA-3A will remain similar to today's condition, and water levels and durations in southern WCA 3A will be slightly reduced due to the increased outlet capacity (to WCA-3B and the expanded S-333) included in Alt 4R2.
JM - 10	10-22-2012	Email saying: See the attached and consider what was said in today's meeting and who is in control of this massive public works project called CERP, with 4 attachments of articles titled: "Big Sugar does not like NAFTA, Fanjul's, Monica and Clinton.doc, Fanjul on the phone while Clinton gets it from Monica.doc, The Washington Post reports on Clinton and Moica & Fanjul.doc, and to sherry with the Fanjul – Clinton connection.doc"	Thank you for your comment.

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JM - 11	10-22-2012	Attached to his email was information taken from the book EAA on water, soil, crops, and environmental management by Bottcher. The page (30) talks about much and peat.	Thank you for your comment and information.
JM - 12	10-22-2012	Email subject: another Fed. map showing sawgrass plain in WCA3N http://sofia.usgs.gov/publications/ofr/2004-1448/images/fig2x.gif	Thank you for your comment and information. This map is consistent with the objectives of CEPP to restore seasonal hydroperiods and distribution, to improve sheetflow patterns and surface water depths and durations, and to restore more natural water level responses to rainfall and reduce the drainage effects from Miami Canal in the northern portions of WCA 3A to restore sheetflow across the northwest portions of WCA 3A. The Miami Canal causes water levels in northern WCA 3A to recede well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation and muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas (refer to Section 1.2 for additional details on problems to be addressed by CEPP).
JM - 13	10-22-2012	Email subject: another water vs. tree islands doc. http://www.evergladesplan.org/pm/pm_docs/ertp/022511_ertp_v2_app_a.pdf	Thank you for your comment and information.
JM - 14	10-22-2012	Email subject: another water vs. tree islands doc. http://www.evergladesplan.org/pm/pm_docs/ertp/022511_ertp_v2_app_a.pdf	Thank you for your comment and information.
JM - 15	10-22-2012	photo of building with stairs <http://sofia.usgs.gov/publications/circular/1182/buildingsub.jpg> This building at the Everglades Experiment Station was originally constructed at the land surface; latticework and stairs were added after substantial land subsidence.	Thank you for your comment and information.

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JM - 16	10-22-2012	Email subject: The Tree Islands are Predrainage <http://www.google.com/url?sa=t&rct=j&q=map%20of%20tree%20islands%20in%20the%20water%20conservation%20areas%20of%20fl&source=web&cd=92&ved=0CCYQFjABOFo&url=http%3A%2F%2Fclic.cses.vt.edu%2Fsoils%2Fwrite%2Fposters%2FC_Lynn_Coultas%2520-%2520Bone%2520Phosphorus%2520on%2520Fixed%2520Tree%2520Islands%25207.ppt&ei=KaaFUJ6fG4rY2gW4vIBA&usg=AFQjCNGPcIwPSLiy6ISpmefReFfqUJ5DdA> <http://webcache.googleusercontent.com/search?q=cache:6c-Wg5oDnW0J:clic.cses.vt.edu/soils/write/posters/C_Lynn_Coultas%2520-%2520Bone%2520Phosphorus%2520on%2520Fixed%2520Tree%2520Islands%25207.ppt+map+of+tree+islands+in+the+water+conservation+areas+of+FL&cd=92&hl=en&ct=clnk&gl=us>	Thank you for your comment and information.
JM - 17	10-22-2012	Email Subject: Tree Island Maps Everglades District Field Map WCA 2A, WCA 3A, WCA 3B	Thank you for your comment and information.
JM - 18	10-22-2012	Email subject: Tree Island Study http://www.sfrestore.org/issueteams/csop_advisory_team/2004meetings/12jan2004/WCA_3B_Presentation_FWS.pdf	Thank you for your comment and information.
JM - 19	10-22-2012	Email subject: WCA 3 Islands http://www.evergladesplan.org/shared-definition/shared_def_docs/sd_2010/111910/4-1-2_skd_revised_111910.pdf	Thank you for your comment and information.
JM - 20	11-29-2012	In regards to backfilling the Miami canal from 1.5 miles south of S-8 to I-75. This needs to be changed to allow for much of the existing levee to remain, and to flatten it to create much needed uplands.	Spoil mounds currently located adjacent to the Miami Canal from S-8 to S-339 have been identified to be removed and placed back into the Miami canal during construction of Alternative 4R2 to restore sheetflow. A portion of the spoil mounds currently located between

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		Distance between the uplands can be determined using flow studies; this will assure water being pushed south from EAA and Lake O will spread out across WCA3N.	S-339 and I-75 that coincide with the ridges of the ridge and slough landscape would remain. These spoil mounds have vegetation that has been planted and maintained by the FWC. In addition, mounds would be created during construction of Alternative 4R2 approximately every 1 mile from S-8 to I-75. These additional mounds would provide a source of upland habitat or refugia to wildlife during periods of high water.
JM - 21	11-29-2012	FWS is digging holes and building man made uplands in Lox NWR. If this is good for their land and habitat, can we assume that it would be good for CEPP as well?	Please see response to comment JM-20 above (Dated 11-29-2012). A portion of the spoil mounds located adjacent to the Miami Canal that coincide with the ridges of the ridge and slough landscape would remain. In addition, mounds would be created during construction of Alternative 4R2 approximately every 1 mile from S-8 to I-75; providing a source of upland habitat or refugia to wildlife during periods of high water.
JM - 22	12-12-2012	What is wrong with the Dec 2012 proposals? 1. The red line has not moved to include Holey Lands and Rays. 2. Within the EAA they are not using all the public land that is under plow for water storage and/or cleaning the water. There are lots of large public properties leased to ag that could go into deep water storage 3. There is no indication that they are planning to use the newly purchased US Sugar lands for water storage. 4. The Miami Canal in WCA3N is still a solid “black” line and must become a dotted or dashed “black” line indicating there is not going to be a complete back fill job but deep water refuge and adjacent uplands left. 5. They do not turn the L-29 into a spillway but instead want to install pumps. 6. They do not but gaps in the C11 Extension levee. There should be no pumps but the entire levee turned into a spillway as the agencies agreed to	Inclusion of operational and structural modifications to existing infrastructure and/or construction of new features in Holeyland WMA was considered during initial plan formulation efforts for the CEPP. These proposals within the WMA were not further pursued given water quality concerns. The quantity/quality management measures south of Lake Okeechobee are recommended to be located on and maximize the usage of the A-2 Compartment of the EAA land south of Lake Okeechobee that is owned by the State of Florida. The identified project lands are located between and adjacent to the North New River and Miami Canals, which reduces the need to construct any additional conveyance features to move water from Lake Okeechobee to the project features and the WCAs. The robust hydraulic connection to Lake Okeechobee creates flexibility in managing high water levels and improves the timing of water deliveries to the WCAs. The project lands are also adjacent to existing water quality components that are currently being used for environmental purposes, creating a unique ability to optimize C&SF operations. Existing infrastructure, including roads, pump stations, etc., are already in existence and would not require substantial efforts for utilization or any upgrade. Publicly owned lands in the

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		do—as I said their word is no good and they must put into writing what they are going to do and not do. 7. No place do they indicate public access locations or the type of access that will be allowed from these places. Essentially they are closing all of the WCAs to public access. 8. They do not indicate that they are going to move any clean water into Holey Lands or Rays therefore they are either going to move dirty water or they are going block all water from entering these areas, either option is no good.	southern portion of EAA demonstrated better cost effectiveness on a cost per acre foot of storage and treatment when compared to other locations. The lands identified for the project have already been purchased and are owned by the State of Florida which reduces the risk and uncertainty associated with real estate costs and acquisitions. Implementation of Alternative 4R2 would include complete backfill of the Miami Canal from S-8 to I-75 starting approximately 1.5 miles south of S-8. Please see response to comment JM-27 above. A portion of the spoil mounds located adjacent to the Miami Canal that coincide with the ridges of the ridge and slough landscape would remain. In addition, mounds would be created during construction of Alternative 4R2 approximately every 1 mile from S-8 to I-75; providing a source of upland habitat or refugia to wildlife during periods of high water. Implementation of Alternative 4R2 would not include the construction of additional pump stations on the L-29 Levee. During plan formulation, construction of pump stations on the L-29 Levee was proposed as part of Alternative 3. Alternative 3 was not identified as the TSP. Gapping of the C-11 Extension is not included in Alternative 4R2. Gapping of the C-11 Extension was considered during plan formulation for the CEPP, but was not identified to be a cost effective measure. A recreation plan has been developed and included in CEPP Project PIR and EIS.
JM - 23	12-12-2012	Don't support these plans for above reasons. Corps states that will manage WCA3N to assure no harm to uplands, hardwoods and historical sawgrass prairie area. To manage water in WCA3N to only benefit ENP as they have stated and what appears to be the goal of the current set of plan options is	Environmental effects within northern WCA 3A are described in Section 5 of the PIR/EIS and Appendix C.2.1 and C.2.2. The purpose of CEPP is to improve conditions within WCA-3A, 3B and Everglades National Park. Implementation of the CEPP is expected to rehydrate much of northern WCA 3A by providing a means for redistributing treated STA discharges from the L-4 and L-5 in a manner that

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		only going to drown the WCA3N and assure complete destruction of the Everglades in this part of Florida.	promotes sheetflow and by removing the drainage effects associated with the Miami Canal. As a result of increased flows, depths and inundation durations, it is expected that shorter hydroperiods sawgrass marshes will transition to slough/open water marsh communities in northwestern WCA-3A. Increased flow within northwestern WCA 3A would aid to reduce woody vegetation and dense sawgrass stands and help to promote a mosaic of wetland vegetation types within this area.
JM - 24	2-21-13	After reviewing the last power point on CEPP and finally figuring out how to open the web page which houses the information about CEPP I now realize why you all have avoided providing the answer to the questions we have been asking about how much water and for how long the planned deep water will be in the WCAs. From what I read you will push 20% more water than is established as the current high water levels and hold this amount of water in the WCAs for more than 40% of the year. Is this a correct reading of your data and plan? If this not a correct reading then what is a correct reading stated in maximum planned high water depth and duration of the planned high water events? Mind you this does not consider storm events which will push these planned high water events to even deeper water depths causing more destruction of the Everglades. If it is the correct reading or your data and plan than this is not Everglades restoration but the drowning of the WCAs -- Florida's Everglades to save the EAA and Federally owned Everglades.	The increase in water flow to WCA-3A will occur primarily in the dry season to reverse the current trend of water levels in northern WCA 3A receding well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation and muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas (Refer to Section 1.2). The CEPP TSP incorporates the Zone A schedule included in the current operation schedule for WCA-3A under ERTP. As such, inflows from Lake Okeechobee would not occur when stages in the WCA-3A are above Zone A consistent with current operations. The period of record modeling predictions, which include the storm events in the historical record (1965 to 2005), indicate that wet-season water levels in some years may be slightly increased (due to the loss in soil storage associated with improved ground water levels in northern WCA-3A), however the peak stage and duration of those events will decrease as a result of the increased outlet capacity from WCA-3A provided with Alt4R2. (Refer to Appendix A, WCA-3A 3-gage average stage-duration curve, for specific gages within WCA-3A refer to Appendix C.2.2).
JM - 25	2-21-13	I also understand there is one more public meeting on CEPP and then a formal public comment time. Is	The last Task Force sponsored workshop was held on the 25th of February. USACE will be hosting public meetings once the CEPP Draft

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		this correct? Is there a real opportunity for the public to bring about meaningful change to the current CEPP plan or is this a done deal? What agency is responsible for the current CEPP plan and will impellent the final plan? Where will the funds come from to do CEPP? the Federal government, SFWMD or State of FL?	PIR/EIS is released to the public and published in the Federal Registrar. We have tried to be careful about separating the USACE's public meetings (which are required under NEPA) from the Task Force's workshops which are above and beyond the required public input process and do not count toward the USACE's NEPA obligations. USACE and the SFWMD, as the non-Federal sponsor, are responsible for development and approval of the CEPP plan as well as implementation of the plan. The USACE and the South Florida Water Management District are responsible for funding CEPP with a 50/50 cost share.
JM-26	3-6-13	We spent a lot time with you and other decision makers and planners. I thank you for your time. However, I understand that the newest and final plan will flood the WCAs all year. These plans will keep water so deep 40% of the time that the water will be above what is today's maximum water depths. You did not respond to my questions about this deep water situation caused by your CERP-CEPP plans.	We appreciate your participation in the stakeholder engagement process utilized during the planning process. The CEPP plan does not intend to hold water levels above today's maximum water depths 40% of the time. As we explained during the CEPP Project Delivery Team meetings and Task Force hosted public workshops, the increase in water flow to WCA-3A will occur primarily in the dry season to reverse the current trend of water levels in northern WCA 3A receding well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation and muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas (Refer to Section 1.2). The CEPP TSP incorporates the Zone A schedule included in the current operation of WCA-3A under ERTP. As such, inflows from Lake Okeechobee would not occur when stages in the WCA-3A are above Zone A consistent with current operations. The period of record modeling predictions, which include the storm events in the historical record (1965 to 2005), indicate that wet-season water levels in some years may be slightly increased (due to the loss in soil storage associated with improved ground water levels in northern WCA-3A), however the peak stage and duration of those events will decrease as a result of the increased outlet capacity from

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			WCA-3A provided with Alt4R2. For additional analyses, please refer to Appendix A, Section A.8.3.2.1 (WCA-3A 3-gauge average stage-duration curve), and Appendix C.2.2 for hydrologic performance at specific gages within WCA-3A. Two complete sets of RSM-BN and RSM-GL hydrologic model performance measure output for the baselines and Alt4R2 are posted on the Everglades Plan public web site for the CERP: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx
JM-27	3-6-13	When I read in the newspaper that the currently desired CEPP plans harmed water supply to SE FL I knew you would put more water in the WCAs. These plans are not restoration but destruction of the Everglades. We explained in may terms why so much water is not restoration but a destruction plan for the Everglades. CERP is not merely restoration of Everglades National Park which is what it has become.	The CEPP plan incorporates multiple components of the overall Comprehensive Everglades Restoration Plan (CERP) framework authorized by WRDA 2000. The objectives of the Comprehensive Plan are restoration of the Everglades ecosystem while providing for other water-related needs. The CEPP TSP provides a significant increment of restoration for the natural system and also includes an increment of improvement for other water related needs, specifically 12 MGD and 5 MGD improvements to water supply for Broward and Miami-Dade county respectively. The objectives of the CEPP TSP are to not focused on Everglades Park, rather, focus on improving natural system conditions within WCA-3A, 3B as well as Everglades National Park.
JM-28	3-6-13	Since the decision makers have decided to ignore our input I have sent to my Congressional delegation a request to stop funding CERP and will work to get everyone I know to do the same. I am also encouraging groups I know to file litigation under the endangered species act because so much water is going to harm not only these animals the WCAs but the Big Cypress National Preserve. You are going to drown the eastern third of the Big Cypress like you have already drowned Zone 4 of the Stair Steps.	The natural system performance metrics and water levels targeted by CEPP TSP were developed by RECOVER through extensive scientific research, scrutiny, are based upon peer reviewed science and represent conditions under which the Everglades is expected to flourish throughout the system. (Refer to Appendix G on Performance Measures)
JM-29	3-6-13	How can you call it restoration when most of the year there will be more water in the WCAs than is currently legally allowed and when the current high	The increase in water flow to WCA-3A will occur primarily in the dry season to reverse the current trend of water levels in northern WCA 3A receding well below the ground surface for long periods of time,

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		water line is reached the area is closed to human activity because the wildlife is being harmed by this high water? I would like a response to this question.	which has resulted in extensive and documented losses of peat soils from oxidation, muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas (Refer to Section 1.2). The CEPP TSP incorporates the Zone A schedule included in the current operation of WCA-3A under ERTP. As such, inflows from Lake Okeechobee would not occur when stages in the WCA-3A are above Zone A consistent with current operations. The period of record modeling predictions, which include the storm events in the historical record (1965 to 2005), indicate that wet-season water levels in some years may be slightly increased (due to the loss in soil storage associated with improved ground water levels in northern WCA-3A), however, the peak stage and duration of those events will decrease as a result of the increased outlet capacity from WCA-3A provided with Alt4R2. For additional analyses, please refer to Appendix A, Section A.8.3.2.1 (WCA-3A 3-gauge average stage-duration curve), and Appendix C.2.2 for hydrologic performance at specific gages within WCA-3A. Two complete sets of RSM-BN and RSM-GL hydrologic model performance measure output for the baselines and Alt4R2 are posted on the Everglades Plan public web site for the CERP: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx
JM-30	7-1-13	There is a large amount of information on the dollars per day for whitetail deer and duck hunting in American and FL. Also, the Wilderness Society had a study done on the Externalities of Water Management in the Everglades. This study reported there was, at that time, a million dollars worth of frogs removed from the Everglades a year. Of course frogging would have been north of US 41 because one cannot frog in Everglades National Park.	We have accessed the information on the value per day of deer and duck hunting and will use it for the CEPP ecosystem services assessment. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process. We are seeking the information on frogging and will include it in the CEPP ecosystem services assessment if possible. The primary challenge is in determining how much CEPP would change the amount of frogging that takes place in the Everglades. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process.

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		This was taken from the report given today; page 16, on ecological services from CEPP/CERP.	
JM-31	7-1-13	Do they include the recreational value of pink shrimp? Or just the commercial shrimp industry dollars? They have a dollar value for recreational fishing but not for pink shrimp.	Only the commercial value of pink shrimp was included in the CEPP ecosystem services report because this was the aspect for which we could calculate a change with CEPP. The value of the change in commercial pink shrimp catch is included in the assessment. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process.
JM-32	7-1-13	Why is the value of potable water not included in the report about the value to society by CEPP?	At the time that this comment was submitted, the team was determining the value of the water supply improvements. If sufficient data is available to calculate the value of the water supply improvements, they will be included in the final draft of the assessment.
JM-33	7-1-13	Did I understand the speaker who addressed the issue of water for irrigation correctly in that the data, the dollar value, of the water in CEPP is worth more than $22+ million to the growers of sugar cane. In other words the taxpayer is giving these folks a $22+million gift of water.	The results presented on this date were preliminary results, calculated before the CEPP TSP was determined. The final draft of the assessment shows a relatively small benefit of CEPP to agriculture south of Lake Okeechobee, and a much larger benefit to society due to the restoration in the Greater Everglades and estuaries.
JM-34	7-1-13	On slides in the presentation Keefe_20130701CEPPPD I find this slide: There are two red lines. The one on the left follows the existing levees. The one on the right follows no levee. When you and other talk about above and below the "red line" which "red line" are you talking about? Also, what is the purpose of the "red line" in the right picture? The same right picture red line is in other slides.	In regard to two different redlines, as we clarified during the PDT meeting, there was an error on one of the slides where the “redline” had shifted south as result of a formatting error on that slide (the redline is a drawn on to the background map) Clarification of the “Red Line” referred to throughout CEPP’s planning: The red line is just an accounting tool, that is, a way to keep track of the amount of water flowing southward into the remaining Everglades areas (i.e. Water Conservation Areas).

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		Please explain in detail what these two red lines mean to the planning team and stake holders.	
JM-35	7-1-13	The "fluke" red line should be the line that delineates the area north and west that is to be protected as areas that are to have water managed to protect the sawgrass and myrtles. Maybe this is a good sign and should be included in the future model assumptions.	Please refer to response above for JM-34, 7-1-13.
JM-36	7-1-13	The historical and oldest available map that I sent you all indicate that the sawgrass and myrtle area before drainage was east of the Mud Canal and north of the "fluke red line". The other areas were ridge and slough. Freddy has talked about this a lot and explained why the old airboat trails were located where they were. Talk with him again to get a better understanding of this vegetation-water-user relationship. Remember--- X amount water in at the top per day means X amount of water out the bottom per day. The bigger and lower the weirs the faster the water will flow. But, you have to keep enough water back to prevent over draining the WCAs.	The conditions in the system represented by the 1940s Davis Map represent a drained condition and conditions in northern WCA 3A after 1971 represent a drained condition after construction of the Miami Canal on the north end and impounded conditions in the southern end of WCA 3A due to the levees. The goal of the CEPP is to remove the drainage effects of the Miami Canal in northern WCA-3A, restore more natural distribution of water inflows into WCA-3A and reconnect WCA 3A to 3B by providing additional outlet structures into 3B as well as increasing capacity of the outlet structure discharging into the L-29 canal. The increase in outlet capacity of WCA-3A amounts to an additional 2650 cfs to be used in conjunction with the existing outlets of WCA 3A. This increase in outlet capacity will provide increased capability to improve conditions within WCA-3A from existing water flows as well as the increase in inflow proposed by CEPP TSP in the dry season. Passive weirs were considered early on in the planning process. The weirs were screened out due to operable gated culvert structures providing more capability of these structures to pass flow throughout the range of water levels expected in WCA 3A. Weirs must be fixed at particular heights which can limit the amount of water that can be passed through the system. When weirs are sized to extreme conditions, the tradeoff is a reduction in the amount of flow that could be passed through the system under more average or drier conditions. The structures proposed in the CEPP TSP are designed and intended to remain open under extreme conditions unless the design high water condition for the additional bridging

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			and road raising for the Tamiami Trail Next Steps project of 9.7 feet is reached in the L-29 canal. The period of record analysis conducted for CEPP indicated that condition was only reached for approximately 15 days out of the entire 41 years. Therefore, use of gated culvert structures perform similar to a weir but also provide much more capability to flow water out of WCA-3A under the full range of water levels. The concept of ONLY having weirs in the L-67A levee was also considered in the analyses conducted to develop the CERP plan in 1999. That option was also eliminated during that planning process for the same reasons - that greater benefits could be achieved with the use of 6 gated culvert structures in the mid and lower portions of L67A and inclusion of some overflow weirs in the upper northern reaches of L67A for extreme events. Since CEPP is a first increment towards decompartmentalizing the system, the CEPP effort proposes that consideration of those weirs be considered in planning the next increment of CERP to ensure that CEPP provides a meaningful increment towards improving conditions within WCA-3A without over-draining given the limited amount of water budget available in this first increment.
JM-37	7-1-13	Also, since the savings clause protects water supply for ag, urban and wildlife and flood protection equivalent to the conditions that existed at the time of passage of CERP does this also apply to fish, wildlife and plants?	The savings clause provisions included in WRDA 2000 are specific to maintaining existing levels of flood control and water supply for agriculture, municipal and industrial users provided by the Central and Southern Flood Control project. The project assurances provisions of WRDA 2000 assure that the water made available by CERP to restore the natural system is reserved for the natural system and protected from other consumptive use purposes. The goals for CEPP and CERP is to restore more natural water levels and fluctuations that are beneficial to the ecosystem and is based upon the best peer reviewed scientific information available about the needs of the natural system and is therefore protective of the natural system.
JM-38	7-1-13	I do not see or hear any talk about the rate of water depth increase or water rise. This is important because if the water rises too fast	The performance metrics considered in the development of the CEPP TSP include recession and accession rates that are beneficial for the natural system. The CEPP period of record analyses indicate that

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		and/or the wrong time of the year there will be serious harm to many plants and animals. Can you all develop a chart, graph or some other instrument that shows everyone how fast the water depth will increase per day for a normal year, high rain event year and low rain event year? Such data should be developed for WCA3A, WCA3B, WCA2A, WCA2B, ENP. Such data should be developed for both estuaries and Lake O.	recession and accession rates of water levels within WCA-3A, 3B and ENP are much improved over today's conditions with the plan (Refer to Appendix C.2.2). The CEPP plan incorporates a significant change in operations towards a rain-driven delivery of water through the system based upon ecologically desirable water levels throughout WCA-3A. 3B and ENP based upon seasonal needs of the ecosystem. It is a rain-driven pull to move water through the system as opposed to stage-based regulatory push release from the WCA's that currently exists today. The climate of south Florida is such that conditions in the system are largely driven by not only the amount of rainfall in any given year but where the rainfall occurs throughout the system. That is why a 41 year period of record rainfall analyses is done when planning and designing modifications to the water management system. This allows for evaluation of the broad range of conditions that may be experienced with proposed modifications. The information you request regarding how fast water depth will increase per day for any year is available in the model output posted. This output includes the hydrographs which shows water level changes during every year of the simulation period at various locations throughout the system as well as the period of record average stage-duration curves. Two complete sets of RSM-BN and RSM-GL hydrologic model performance measure output for the baselines and Alt4R2 are posted on the Everglades Plan public web site for the CERP: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx
JM-39	7-1-13	What is this-- new divide structure in L29 and new discharge? Jack Moller New divide structure in L29 canal; New discharge, subject to FDEP permitting and Settlement Agreement monitoring	The new divide structure in the L-29 canal is proposed to maximize benefits of the Blue Shanty flowway and the 2.6 mile bridge associated with the DOI Tamiami Trail Next Steps project that focus flows within the remnant deep slough areas in that area, reducing seepage losses to the east while also providing the operational flexibility to rehydrate the eastern portions of northeast Shark River Slough through the 1-mile eastern bridge. All inflows into Everglades National Park are subject to monitoring and compliance with the Settlement Agreement. The CEPP plan

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			does re-distribute the water enter into Everglades National Park that must be taken into consideration as part of compliance with the Settlement Agreement.
JM-40	7-1-13	There is a problem in the slide presentation for today's L67 structure discussion. This is found on the following page of the document to be presented today. We should not use the information from the CSOP modeling because we do not know the design criteria that was given to the engineers to use as they developed their plans and models. If the proper design criteria is uses, to not over drain WCA3A & B and to not allow the water to go over the current regulatory depth or elevation, we can then design the weirs to the proper size and configuration to allow the water that flows in at the top the flow out the bottom. In other words "X" amount in today means "X" amount out at the bottom today. This is sheet flow.	The information provided during the July 1, 2013 PDT meeting included modeling efforts conducted during CSOP as a means of providing information from previous planning efforts which considered weirs in the L-67A. Concur that the goals and objectives of that effort and CEPP are different and the modeling tool and period or record rainfall considered in that effort must be taken into account when interpreting model results. The CSOP modeling results presented were based upon structures in the L-67A levee that included both gated culvert structures with adjacent sheetpile weir segments and relied on the existing S-356 pump station to manage increased seepage into WCA-3B and NE Shark River Slough. The CSOP results presented at that PDT meeting also did not include the effects of those alternatives to flooding or water supply implications to the lower east coast. While the alternative that rose to the top during that analysis did include the hybrid gated culvert structure with sheetpile weir segments, it is most important to recognize that the culvert structures were required to be closed when stages in WCA 3B approached 8.3 feet due to concerns from FFWCC about resources within WCA 3B as well as flooding concerns from uncontrolled inflows into WCA 3B. The CEPP plan proposes to keep the gated culvert structures in the Blue Shanty Flowway open until the design high water in L-29 canal reaches 9.7 feet associated with design of the DOI Tamiami Trail Next Steps additional bridging and road raising limit is reached which maximizes benefits to WCA 3A, 3B and ENP. The Blue Shanty levee proposed in CEPP ensures that project constraints for maintaining flood protection and water supply to the lower east coast developed areas are maintained, ensures goals for CERP for restoration of north to south flow of water is restored consistent with the landscape and ensures water levels and remaining tree island resources within the larger eastern portions of WCA 3B that has experienced subsidence are protected.

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JM-41	7-2-13	I would like to thank you both for the opportunity to listen, attend and participate in the meetings about CERP like you held yesterday. I suggest that instead of having a few moments for public comment that you allow public comment after each item. Each item on yesterday's agenda was/is very important. This idea is what I did while running ARC. After each management plan we had public comment. By doing this we had a much more productive meeting and meaningful dialog with staff and the public. Also, who owns the carbon that is sequestered in CERP-CEPP? Does the ACOE, SFWMD, State, County, City, landowner, Tribe? The value of this by-product of CERP-CEPP is very high and could well lead to many legal issues as those who think they own these carbon credits decide they want the money or the ability to trade these credits for their own benefit.	Thank you for your helpful feedback on the presentations. As a result of your comment, more public comment time was provided in subsequent meetings. Regarding the carbon: the results of the CEPP ecosystem services assessment do not imply ownership or the ability to sell or trade carbon credits. In response to this comment we have clarified this point in the report. In addition we are seeking legal review of the report to make sure our wording states clearly that the report does not imply the ability to sell or trade the carbon. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process.
JM-42	7-2-13	This is the value of WCAs to FL's economy. "FWC economic analysis estimates indicate that the ECWMA generated an estimated annual economic impact of $260,658,075 for the State and Southeast Florida region. This estimated annual economic impact has aided in the creation of an estimated 2,654 jobs." http://myfwc.com/media/2575828/ECWMA-Area-Overview.pdf I suggest that the folks working on this value issue check all the state records on this topic. All you need to do is keep a healthy habitat and not	Thank you for the reference to the FWC material. We have been working with FWC to produce the ecosystem services report. Please note that in the report we focus specifically on the changes made by CEPP, rather than total values of areas. We also focus on net results in order to be transparent about the negative and positive effects of CEPP; for example, when calculating carbon sequestration due to peat improvements with CEPP we also calculated the negative effects of carbon emissions due to construction and operating pumps. The preliminary results show so far that in all cases the negative values are much smaller than the positive results, which is a positive economic result for Florida and the nation due to CEPP. . The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has been through the review process.

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		drown the area to continue allowing the area to make money for Floridian and the nation. What harm will the current CEPP plan have on the known archeological sites?	Through consultation with stakeholders, such as State and Tribal Historic Preservation Officers and Indian tribes, USACE has taken into account the effects of this undertaking on cultural resources and is considering ways to avoid, minimize or mitigate adverse effects.
JM-43	7-2-13	Right now the S12A and S12B are closed while the water in the WCAs and other areas upstream are about to be closed because of too much water. It is the summer. It is the wet season. Water in the Everglades should be freely flowing into ENP. If we had weirs this would be the case. As it is now someone will close the gates or structures at the bottom and start the drowning process of all the land to Orlando and oceans again. Please share this with the members of the team working on CEPP. Some of them raised the issue of trust. This is an example of why gates or control structures other than weirs are not desirable.	The CEPP plan will enhance our ability to move water through the Everglades by providing an additional 2650 cfs outlet capacity to WCA 3A. Please refer to response to JM-36 7-1-13 regarding weirs.
JM-44	7-3-13	Do you all have a map showing the expected annual ponding depths in WCA3A after CEPP is completed? If so will you send it to me. Also, while looking at the large volume of data you sent me on Monday I find that there are no maps showing the ponding depths in WCA3A for Oct. 1996. Why is this month missing? Is there a map for Oct 1996? I find maps for most all Oct.-years.	The average annual ponding depth maps for the Existing Condition Base and Alt 4R2 were sent to you via email from Chris McVoy on 7-8-13. Please refer to Section 6.2.1 for difference in average annual ponding depths between Alt 4R2 and Future Without Project condition. During the alternative modeling and evaluation process, difference maps were not generated for every year in the POR, however, the differences in water levels can be seen for each year in the POR on the hydrographs for various locations within the system. Two complete sets of RSM-BN and RSM-GL hydrologic model performance measure output for the baselines and Alt4R2 are posted on the Everglades Plan public web site for the CERP: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx The hydrologic output produced following the identification of ALT4R2 as the TSP included difference maps comparing hydroperiod

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			and stages between ALT4R2 and each of the CEPP baselines. This information is additionally included in Appendix A (Engineering), Annex A-2 (Hydrologic Modeling), Reference 6.
JM-45	7-4-13	The issue of pushing too much water into the WCAs is not a new one. As you can see the FWC took a position on this matter many years ago. The current CEPP plan that plans on having deep water held in WCA3A is not acceptable. Whoever is responsible for this planning process should have never taken to the Col. a plan that causes ponding, flooding, and harm to the WCAs. They should have sent it back to the engineers and said you must redo the plan so that it does not cause harm to the WCAs.	The increase in water flow to WCA 3A will occur primarily in the dry season to reverse the current trend of water levels in northern WCA 3A receding well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation, muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas (Refer to Section 1.2). The CEPP TSP incorporates the Zone A schedule included in the current operation of WCA-3A under ERTP. As such, inflows from Lake Okeechobee would not occur when stages in the WCA 3A are above Zone A consistent with current operations. The period of record modeling predictions, which include the storm events in the historical record (1965 to 2005), indicate that wet-season water levels in some years may be slightly increased (due to the loss in soil storage associated with improved ground water levels in northern WCA-3A), however, the peak stage and duration of those events will decrease as a result of the increased outlet capacity from WCA-3A provided with Alt4R2. For additional analyses, please refer to Appendix A, Section A.8.3.2.1 (WCA-3A 3-gauge average stage-duration curve), and Appendix C.2.2 for hydrologic performance at specific gages within WCA-3A. Two complete sets of RSM-BN and RSM-GL hydrologic model performance measure output for the baselines and Alt4R2 are posted on the Everglades Plan public web site for the CERP: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx
JM-46			
Ed Fielding - 1	12-17-2012	It's so heartening that the Corps is listening to our plea to protect the Estuary from Lake O releases. We all recognize that 200,000ac/ft is just a beginning but it's strong and positive. Many thanks --for your strong efforts in this quest.	Thank you for your comment.

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Emilio Lopez (EL) - 1	12-20-2012	Because the threat of stormwater pollution, as documented by SFWMD website, is of national proportion and not limited to the Everglades or Florida, can the technology be implemented in stormwater curb inlets, in cities of S FL that are willing to participate in the research, to determine the effectiveness of the technology? Lopez technologies can provide additional sources to show the effectiveness of the technology thus far.	Water quality is not one of the objectives of CEPP and the project authority is focused on modifications of the Central and Southern Florida Flood Control project which is comprised of the regional water management system. Thank you for your comment and information.
Larry Fink (LF) – 1	11-23-2012	The following South Florida ecosystem restoration and protection critical performance objectives/measures are absent from or subsumed by/demoted under more general performance objectives/measures in the downloaded list: Everglades -- timing, extent, magnitude, duration, and frequency of natural fires (pyroperiod) to crop back aggressively colonizing plant species, such as cattail -- tree island coverages* -- minimum and maximum flows and levels to establish and maintain target tree island target coverages -- limiting nutrient concentrations and loads to outstanding Florida Waters to attain and maintain applicable human and wildlife uses, reduce the magnitudes, durations, and frequencies of color- and turbidity-related light limitation, contaminated peat accretion, algae blooms, and dissolved oxygen sags to acceptable levels, and reduce the magnitudes, durations, and frequencies of noncompliance with the associated nutrient and nutrient-related Water Quality Standards -- sulfate concentrations and loads to restore the mercury-impaired human and wildlife uses of the Everglades in response to the reduced inorganic	Each of the project performance measures for the CEPP planning effort are derived from those performance measures approved for use by RECOVER. The members of RECOVER have extensive experience working in south Florida and Everglades wetlands ecosystems. These members are considered by their peers to be the experts in their fields. Performance measures are used to make the correlation between hydrologic output and ecosystem functions and evaluate the degree to which proposed alternative plans will meet restoration objectives. The project team will utilize performance measures developed from the Lake Okeechobee, Northern Estuaries and Greater Everglades Ridge and Slough Conceptual Ecological Model (CEM). These CEM have been extensively peer reviewed and provide the framework for the planning and assessment of the CERP. CEPP has addressed other factors critical to ecosystem restoration in the PIR/EIS including an assessment of the potential effects on water quality.

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		mercury wet and dry atmospheric deposition fluxes to the Everglades under the statewide mercury TMDL -- time-to-recovery, because a recovery of sufficient ecosystem structures, functions, and throughputs to constitute a restored Everglades and the human and wildlife uses to which it is put and the environmental services it provides outside the planning horizon for CEPP is of inherently less value than a recovery that occurs within that planning horizon, all other things being equal. Estuaries, Lagoons and Bays -- freshwater flows to reduce the magnitudes, durations, and frequencies of osmotic stress-related estuarine and marine life barriers to migration, reduced reproductive success, and mortality at each life stage, including prized sport fish species and endangered marine wildlife -- limiting nutrient, sediment, and toxicant concentrations and loads to estuaries -- minimum photosynthetically active radiation (PAR) flux to estuarine submersed aquatic vegetation (SAV) as a function of depth and color and turbidity, which are, in turn, functions of dissolved organic carbon, suspended solids, and nutrient concentrations and loads -- dissolved organic carbon concentrations and loads to Florida Bay to restore the mercury-impaired human and wildlife uses of Florida Bay -- time-to-recovery as per the Everglades As a consequence of these critical omissions or demotions to a secondary consideration status, the quality of the source water required to achieve the water quantity performance measures is of no	

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		consequence, and neither is the time to recovery of the water quality of the Everglades, Biscayne Bay, or Florida Bay ecosystems, so the in-place contaminated sediment in Lake Okeechobee and the impacted zones in the Northern Everglades need not be remediated to accelerate recovery. Thus, the following water quality constraints imposed by WARDA 1996 and 2000 have been rescinded by administrative fiat**: -- existing water quality must not be degraded, e.g., first do no harm, -- all WQS must be met, including but not limited to nutrients, turbidity, dissolved oxygen, and mercury, and -- wherever practicable, water quality benefits will be integrated into the infrastructure design and operation plans, as long as that can be done without interfering with the attainment of their water quantity performance objectives.	
LF – 2	11-23-2012	It is good to know at this critical juncture that the USACE-Jacksonville and the local sponsor of the C&SF Project feel free to ignore the Clean Water Act and WRDA 1996 and 2000 when it comes to the source water, design, and operation of infrastructure for South Florida ecosystem restoration and protection. This misapprehension will form the basis of a lawsuit filed to ensure a more comprehensive approach with appropriate source water and infrastructure design and operation constraints that attain and maintain minimum water quality as well as minimum and maximum water quantity. Knowing this, feel free to contest these fatal flaws in public comments rather than going along, either actively or passively, with	The USACE and NFS with the consent of the FDEP intend to construct and operate the CEPP project in a manner that is consistent and in compliance with the Clean Water Act and other State water quality criteria as they exist today and as they may be amended at the time of feature construction.

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		the demotion of water quality constraints to secondary or nonexistent status.	
David Charland (DC)-1	3-12-13	As I understand the current CERP plans they completely ignore the necessity of hydro periods and the need of the land to be dry at least part of the year. I am a long time resident that has enjoyed the Glades before Area 1 & 2 were turned into lakes and when area 3 was much drier than it is currently. Destroying the remaining Glades and probably parts of the Big Cypress in the name of Restoration is not acceptable. Take a ride out Alligator Alley and look at the sea of Cat Tails. Used to be mostly Sawgrass.	The conditions in the system today were brought about by the drainage and impoundments created as a result of construction of the Central and Southern Florida Flood Control project. The Miami Canal has caused over-drainage of the upper reaches of WCA 3A and the levees have resulted in ponding of water in the southern reaches of WCA 3A. The objectives for CEPP and CERP are to restore more natural water levels and fluctuations that are beneficial to the ecosystem and is based upon the best peer reviewed scientific information available about the needs of the natural system. The plan and operations of the system will provide for restoration of seasonal hydroperiods and includes appropriate recession of water levels in the dry season for ridges and sloughs.
DC-2	3-12-13	If you can't come up with a plan that makes sense, why not do what should have been done when this whole mess really became an obvious failure and that is condemn all the agricultural land south of the Lake? About 30 years ago the Florida Wildlife Federation had a seminar in West Palm Beach and the conclusion of many of the working groups was that the only way to prevent the area from becoming an extension of the Cities on both coasts was to get ownership of the land. Here we are 30 years later about to spend $Billions for a system that won't work, or won't work to restore the Everglades. The ACOE is a great group of professionals but they aren't and have never been in restoration business. The current mess is largely the fault of their mind set. I can remember Lake O when the water was as clear as gin and hand a white sand bottom. Now it has a foot or more black goop on the bottom and you can't see 6" into the water.	Thank you for your comment.
DC-3	3-12-13	In any case please enter my comments in the record. They probably won't amount to a hill of	Thank you for your comment.

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		beans, but at least I did what I could do. If you don't understand the history of South Florida and the Glades, read "The Swamp" by Michael Grunwald and Tom Shirley's "On Patrol", also Toch Brown's "Toch". Thank you.	
SUGAR CANE GROWERS COOPERATIVE OF FLORIDA (SUGAR)			
Sugar-1	3-29-12	We have many concerns about the scoping comment responses as well as the direction the Central Everglades Planning Project (CEPP) is taking. Please accept the following additional comments on behalf of Sugar Cane Growers Cooperative of Florida regarding this initiative.	Thank you for your comments.
Sugar-2	3-29-12	The Comprehensive Everglades Restoration Plan (CERP), consisting of some-68 components, was designed to protect and restore the remaining Everglades while meeting the water related needs of the region. This included improving the timing, flow and distribution of water while providing the level of service for flood protection and water supply as of the date of enactment of CERP, known as the Savings Clause protections. In all likelihood Congress would not have approved CERP without the broad-base stakeholder support that was derived by the commitments to meet the needs for both the built and natural environments	Thank you for your comment.
Sugar-3	3-29-12	We noted that the project team has modified its goals by adding "Enhance Economic Values and Social Well Being" in its goals and objectives statement at the March 26, 2012 Project Delivery Team meeting. However the sub-objectives under this goal give us concern. The presentation stated, "the formulation and evaluation of alternatives will include the objective of providing water supply as incidental to the objective of fulfilling the ecological needs of the South Florida ecosystem." And further states, "Water retained in the Lake that is not	Project objectives identified for CEPP are consistent with those of CERP. Section 601 (h) of WRDA 2000 (authorizing CERP) states "the overarching objective of the Plan is the restoration, preservation, and protection of the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection. Project objectives are included in Section 1 of the Draft CEPP Project PIR and EIS. The CEPP TSP, Alt4R2, provides for maintaining the current level of water supply cut-backs to the Lake Okeechobee Service area and 14 MGD and 5 MGD increase in water supply to users in Broward and Miami-Dade County respectively.

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		identified for the natural system may be available for water supply." These two sub-objectives clearly indicate to us that water supply needs are not being addressed on equal footing as Congress intended when approving the CERP.	
Sugar-4	3-29-12	While we support the Corps' desire to streamline the process and acknowledge the National Academy of Science's recommendation to evaluate groups of complementary components to achieve benefits that would not be attained with the piece-by-piece approach, we are concerned that an appropriate evaluation of alternatives to flow more water through the Central Everglades will not be conducted. The CEPP cannot be undertaken in a vacuum. It must consider current and on-going Lake Okeechobee and Everglades projects in the region (including the rehabilitation of the Herbert Hoover Dike), projects anticipated to be built during the planning horizon, and it must be compatible with and complementary to whatever remedy is adopted to settle the federal litigation.	The planning assumptions included in CEPP planning process did take into account projects anticipated to be built within the planning horizon. Please refer to Section 2 for details on those assumptions.
Sugar-5	3-29-12	One of the objectives of the CEPP is to capture and divert water from the Lake now lost to tide to reduce harmful discharges to the Caloosahatchee and St. Lucie Estuaries. CERP envisioned that these discharges would be stored in a series of strategically located Aquifer Storage and Recovery Wells (ASR) to provide carry over storage capacity or storage in a series of deep above ground reservoirs in the Everglades Agricultural Area (EAA), Caloosahatchee Basin and the St. Lucie Basin. The plan was also dependent on improving conveyance capacity within the EAA canal network.	It is important to recognize that CEPP is an increment of restoration and did not intend to provide all of the benefits identified in CERP plan. The CEPP effort included a robust plan formulation and evaluation process that included a robust stakeholder engagement process in developing the final array of plans that were evaluated in detail for this first increment of diverting flows currently being discharged to the estuary and re-directing those flows south. There is still much that will need to be done in future increments of CERP to address the needs of the northern estuaries. It was further identified that the existing canal conveyance capacity within the EAA are sufficient to accommodate the water budget and treatment capabilities available for this first increment.
Sugar-6	3-29-12	Subsequent to the passage of CERP, the state pledged the Everglades Conveyance and Regional Treatment (ECART) project, and the EAA-Al	The SFWMD's plan, entitled the Long-Term Plan for Achieving Water Quality Goals for the Everglades Protection Area Tributary Basins (LTP), was developed and subsequently incorporated into the EFA in

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		Reservoir as critical components of the Long-Term Plan to meet Everglades water quality standards as mandated by the Florida Legislature in the 2003 amendments to the Everglades Forever Act (Section 373.4592(3) Florida Statutes). The Long Term Plan is periodically updated by the South Florida Water Management District (SFWMD) and submitted to the Florida Department of Environmental Protection (FDEP) for approval. The legislation mandates that SFWMD and DEP annually report to the Governor and the Florida Legislature summarizing the water conditions in the Everglades Protection Area, the status of the impacted areas, the status of the construction of the Stormwater Treatment Areas, the implementation of on-farm Best Management Practices, and actions to monitor and control exotic species. Section 373.4592{13) Florida Statutes. It was the intent of the Legislature that "implementation of the Long-Term Plan shall be integrated and consistent with the implementation of the projects and activities in the congressionally authorized components of the CERP so that unnecessary and duplicative costs will be avoided." Clearly, there was a well thought out plan, including process development and engineering components, that was mandated by the Florida Legislature for the Long-Term Plan and by the Congress for CERP.	2003. Consistent with the requirements of the EFA, the LTP was subsequently amended to include additional remedial measures, including expansion of the original STAs. In January 2007, the Everglades Conveyance and Regional Treatment (ECART) project, which was designed to improve the movement of stormwater runoff in the Everglades Agricultural Area, was added to the LTP. The Everglades Agricultural Area (EAA) A-1 Storage Reservoir project, a feature of the CERP whose authorization is contingent on Congressional Approval of a report by the Corps Chief of Engineers, was complementary to the goals of the LTP but was never incorporated into the LTP. At this time, ECART is not envisioned to be constructed as previously planned, but other new projects will be constructed to enable the SFWMD to achieve the Everglades phosphorus criterion. The new projects, documented in the *Restoration Strategies Regional Water Quality Plan* (RS Plan) dated April 27, 2012. In 2013, the Florida legislature modified the EFA to incorporate the RS Plan into the LTP. The RS Plan provides alternative strategies for achieving the water quality goals of the EPA. The SFWMD will continue to report annually to the Governor and Florida legislature on the performance of the STAs and the progress of LTP implementation and will continue to integrate CERP projects into state water quality planning as proposed in the CEPP.
Sugar-7	3-29-12	While undertaking CEPP, the Corps must be mindful of the Savings Clause requirements in CERP-that there shall be no elimination or transfer of existing legal sources of water, existing as of December 2000, until a new source of water supply of comparable quality is available. The Savings Clause constraint should be built into the front end of the screening process for any alternative to move forward. Given the decision to use the LORS08 Lake	Savings Clause requirements were a constraint for CEPP. The Savings Clause analysis is located in Annex B of the Draft PIR/EIS.

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		Schedule as the future without project planning condition, and the lack of support for recognizing the ability to store more water in Lake Okeechobee as improvements are made to the Herbert Hoover Dike, we are concerned that a plan to meet the objectives of CEPP, and the requirements of the Savings Clause, will not possible.	
Sugar-8	3-29-12	Also puzzling are the scoping comment responses regarding ASR wells as a component that will not be evaluated as part of the *first increment* of CEPP, but will be put off to be evaluated at a later date. The preliminary data regarding the effectiveness of ASR technology are promising and other than the Lake, this may be the only viable solution to store water for carry-over supply	The first increment of CEPP did not include detailed evaluation of the system of regional ASR wells that were included as a component of the CERP plan.
Sugar-9	3-29-12	During the March 9, 2012 EAA component screening presentation, a matrix was presented evaluating the costs and benefits between deep and shallow storage. Both configurations will require canal conveyance improvements. Deep storage reservoirs have the potential to provide additional storage and flow capacity albeit at a higher cost. Focusing on improved utilization of the storage capacity in the Lake would seem likely to be a part of the most cost effective alternative.	The CERP Plan did not envision utilization of Lake Okeechobee as a storage reservoir for water supply, rather, that the Lake stages would remain within the ecologically desired envelope more often due to the storage available both north and south of the Lake as well as the system of ASR wells around the Lake. Operational changes were incorporated into the hydrologic modeling conducted for the CEPP alternatives, including the TSP Alternative 4R2, in an effort to optimize CEPP system-wide performance within the existing flexibility of the 2008 LORS. More specifically, the hydrologic modeling of the CEPP alternatives included proposed revisions to the 2008 LORS decision tree outcome maximum allowable discharges dependant on the following criteria: Lake Okeechobee inflow and climate forecasts (class limits were modified for tributary hydrologic conditions, seasonal climate outlook, and multi-seasonal climate outlook), stage level (regulation zone), and stage trends (receding or ascending). While some refinements were made within the operational flexibility available in the 2008 LORS, consistent with the original modeling intent, the final operational assumptions ultimately extended beyond this flexibility due to adjustments made to the tributary/climatological classifications. Additional information and documentation of these assumptions can be found in the

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			Engineering Appendix (Appendix A). The FEB is the least cost option and compatible with future increments of CERP. The 12ft Reservoir provides the greatest benefits to the everglades; however, the cost was prohibitive for the marginal benefit gained and the 12ft Reservoir configurations were eliminated from further consideration. A full description of the evaluation and screening are provided in Section 3 of the CEPP Draft PIR/EIS.
Sugar-10	3-29-12	We believe that NEPA requires that all reasonable alternatives be evaluated as part of the process and that evaluation must include the option of storing additional water in Lake Okeechobee. As the National Research Council said in its Second Biennial Report in 2008, *"Lake Okeechobee is a critical linchpin of the South Florida Ecosystem...The challenges of water quantity and quality in the Lake have important ramifications for the entire ecosystem because the Lake supports important elements of the region's biota, and it also has the potential to serve as a major source of water storage and water supply for downstream ecosystems. This potential will become more critical if other planned and proposed sources of water do not become available."* At page 186. The Corps is at that critical decision point now.	Please refer to response to Sugar-9 3-29-12 above.
Sugar-11	3-29-12	The second juggernaut in the CEPP is the water quality constraint. The without-project condition assumes that water quality standards under the Clean Water Act are being met. While this seems straightforward, it is anything but.	All alternatives were evaluated to be in compliance with WQBEL.

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		The issue is tied up in two federal court cases under two different judges. While there are ongoing discussions and negotiations regarding this issue between state and federal parties, there currently is no agreement on what the water quality standards will be or what projects on what lands will be necessary to achieve the ultimate standard.	
Sugar-12	3-29-12	These issues must be resolved so that the CEPP planners know what water quality target must be met. Potentially the same set of state owned lands could be identified to meet existing water flow as an outcome to the federal litigation as well as for the new water to be delivered as part of CEPP. How this water quality dispute is resolved also has obvious financial ramifications to the South Florida Water Management District, as well as the state.	All alternatives were evaluated to be in compliance with WQBEL.
Sugar-13	3-29-12	Please make available the Memorandum of Record for Decision Point 1 that was reached on January 27, 2012 and the Risk Register that will help planners evaluate potential risks associated with various assumptions during the modeling phase. In view of the accelerated beginning of the CEPP process we view these comments as a supplement to our previous submission during the formal scoping process.	This information can be made available through a formal request pursuant to the Freedom of Information Act
Sugar-14	3-29-12	Please reconsider your position regarding your goals and objectives in meeting the water related	Thank you for your comment.

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		needs of the region, the future storage capabilities of Lake Okeechobee and the need to integrate on-going and future planned Lake Okeechobee/Everglades initiatives into the CEPP process.	
FLORIDA CRYSTALS CORPORATION (CRYSTALS)			
CRYSTALS-1	03-30-2012	Florida Crystals continues to support the goal of the CEPP, which as we understand it, is to bring important restoration projects on-line sooner, consistent with the approved 1999 Comprehensive Everglades Restoration Plan. The 1999 Approved Plan calls for restoring the Everglades while providing for other water-related needs of South Florida. For purposes of the CEPP, this means (among other things) addressing the water supply needs of existing uses that rely on Lake Okeechobee, and designing a project that uses lands purchased in the Everglades Agricultural Area (EAA) and elsewhere to implement the 1999 Approved Plan. We believe that the Corps can develop a plan for the CEPP which meets those criteria and remains true to the stakeholder consensus that led to Congressional authorization of the 1999 Approved Plan. Our comments today focus on the integration of the CEPP with other ongoing activities, and the Corps' commitment to provide pre-CERP levels of service to agricultural and urban water uses in the CEPP development process.	The CEPP TSP provides an increment of restoration of the central Everglades ecosystem as well as an increment of improvement to water supply for other water-related needs. The CEPP TSP, Alt 4R2 provides for a 14 MGD and 5 MGD increase in water supply to users in Broward and Miami-Dade County respectively, while maintaining the existing level of water supply cut-backs to the Lake Okeechobee Service area.

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CRYSTALS-2	03-30-2012	Misidentification of Stakeholder Comments.As an initial matter, the Corps misidentified comments from agricultural stakeholders in its Scoping Response.Florida Crystals' comments were identified as the comments of the Sugar Cane Growers Cooperative of Florida (and labeled as "Sugar") comments, comments, while the Cooperative's comments were identified as the comments of Florida Crystals (and labeled as "Crystals"). The Corps should correct this error.	The Scoping Comment response matrix was corrected and is located in Appendix C.3 of the Draft PIR/EIS.
CRYSTALS-3	03-30-2012	Projects Included within the CEPP. We previously identified nine components of the 1999 Approved Plan which fit the general description of the CEPP. The Scoping Response confirms that five of those components are included, included a sixth component ("Bird Drive Recharge Area (U)") which we did not identify, and was silent regarding the remaining four projects on our list. Scoping Response, at 46 (response to Sugar-2)	The component Q "Water Conservation Area 3A and 3B Levee Seepage Management" is included in the Broward Water Preserve Area Project which has completed the planning phase and awaiting authorization from Congress. Inclusion of structural and operational modifications to existing infrastructure and/or construction of new features in Holeyland WMA was considered during initial plan formulation efforts for the CEPP (refer to Appendix E for details). Features within the WMAs were not further pursued given water quality concerns. The CEPP effort did not consider Lake Okeechobee Regulation Schedule (F) components of CERP. The 1999 Approved plan in regards to component F states "*The Lake Okeechobee Regulation Schedule will be modified in order to take advantage of the additional storage facilities identified in the construction features. Two additional zones will be added to the schedule. The first zone will trigger discharges to the north of the Lake reservoir and the Everglades Agricultural Area reservoir. The second higher zone will trigger the Lake Okeechobee aquifer storage and recovery facilities to begin injecting water from the Lake." The CEPP planning effort did not include the storage area north of Lake Okeechobee or the system of ASR components of CERP.*" The CEPP planning effort did not include CERP components for storage north of Lake Okeechobee or the regional system of ASR wells around Lake Okeechobee. CEPP is not intended to be a final PIR for CERP implementation, only an increment of restoration in the central Everglades portion of the

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			system.
CRYSTALS-4	03-30-2012	The Corps needs to explain why it is not including in the CEPP all of the relevant components of the 1999 Approved Plan. The Corps' Federal Register notice indicated that the CEPP is the "heart of CERP" and is the Corps' effort to address water levels in Lake Okeechobee, water deliveries to the Water Conservation Areas, and sheetflow in the Everglades. 76 Fed. Reg. 75539 (Dec. 2, 2011). The project components left off the Corps' list all address those issues. Moreover, the Corps appears to be considering proposals in the CEPP that are addressed by those missing components, e.g., consideration of seepage management measures along the WCA 3A and 3B levee (which is missing component "Q"). We are concerned that failure to include them signals that the Corps effectively is abandoning them. Abandoning components of the 1999 Approved Plan is too significant a change to the CERP for the Corps to do it silently. If the Corps does not include them in the CEPP, then you should explain why and set forth how the Corps intends to address them in some separate process.	Consistent with the other planning efforts conducted to date on CERP components, the CEPP effort was purposefully focused on the components of CERP that would provide an initial increment of restoration for the central everglades ecosystem. It was recognized in the 1999 Approved Plan (CERP) that implementation would require that the plan be divided into smaller implementable packages of components. It was further recognized that an adaptive assessment strategy requires incremental implementation of the plan components and each increment would be planned and designed to carry the program one step closer to the ultimate goal of ecosystem restoration (Central and Southern Florida Project Comprehensive Review Study, Final Feasibility Report and PEIS, page 10-7) The CERP component Q “Water Conservation Area 3A and 3B Levee Seepage Management” is included in the Broward Water Preserve Area Project which has completed the planning phase and awaiting authorization from Congress. CEPP is not intended to be a final PIR for CERP implementation, only an increment of restoration in the central Everglades portion of the system.
CRYSTALS-5	03-30-2012	We have a much greater concern that the CEPP itself is not integrated with other ongoing Corps and SFWMD projects in the same locations and dealing with the same subject matter. The CERP was conceived of as the "Comprehensive Everglades Restoration Plan. The expectation of stakeholders and Congress was that the 1999 Approved Plan would be integrated with and guide all changes to the Central and Southern Florida Project. See, e.g., WRDA 2000, §601(b)(1)(B) (directing Corps to integrate implementation of CERP "with ongoing Federal and State projects	The plan anticipates on-going efforts and project within the study area such as the State’s Restoration Strategies Plan, Modified Water Deliveries to Everglades National Park, C-111 South Dade Project, Tamiami Trail Next Steps additional bridging and road raising, Herbert Hoover Dike Rehabilitation as well as other CERP Projects (BCWPA, IRL-South, Site 1, BBCW, C-111 SC, C-43 Reservoir). These projects were represented in the POR modeling analyses used to develop the CEPP plan to ensure the plan is fully integrated with these other projects. The recommended plan works with and within the context of all of these on-going projects. Please refer to Section 2 for details on the future with-out project assumptions that were incorporated into the with-plan condition.

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		and activities); WRDA 1996, § 528(b)(2)(B), -(3)(A), -(c)(1) (providing that ongoing Corps actions should be consistent with Governor's Commission for Sustainable South Florida conceptual plan, which is the template of the CERP). The Corps announced the CEPP as "[a]n integrated study effort" for the Central Everglades that will "set the direction for the next decade of CERP implementation." 76 Fed. Reg. 75539 (Dec. 2, 2011)	Again, CEPP is not intended to be a final PIR for CERP implementation, only an increment of restoration in the central Everglades portion of the system.
CRYSTALS-6	03-30-2012	Despite that guidance the Corps is not integrating other agency activities, such as the rehabilitation of the Herbert Hoover Dike (HHD) and the Lake Okeechobee regulation schedule (e.g., making permanent the 2008 regulation schedule, which is discussed further below). The Corps also is not addressing the State's Long- Term Plan to address Everglades water quality issues approved by the Florida Legislature, § 373.4596(3), Fla. Stat. The Long-Term Plan, in particular, calls for canal conveyance improvements in the EAA and construction of a reservoir at the EAA A-1 site that would include opportunities for agricultural water storage. The Corps also is not addressing the measures under consideration related to ongoing court cases that would affect water quality and discharges from the EAA to the Water Conservation Areas. These measures are inherently interrelated with any CEPP plan designed to use the A-1 site or which involved changes in water flows in the EAA, and yet the CEPP without explanation does not include them within its scope.	Please refer to response to CRYSTALS-5 03-30-2012.
CRYSTALS-7	03-30-2012	The lack of integration of the CEPP with these other projects hobbles the ability of the Corps	High water levels within Lake Okeechobee would cause significant impacts to the littoral zone. The lake's natural resources are

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		and SFWMD to address the water- related needs of the region.By keeping activities related to Lake Okeechobee separate, the Corps is taking off the table reasonable alternatives related to the lake which could address water storage. By not integrating the CEPP with consideration of new Stormwater Treatment Areas and related features in ongoing litigation, the Corps has two different projects that potentially will use the same SFWMD-owned lands in the EAA and that will compete for the same limited pool of funds at the SFWMD. The result has been confusion, because the public does not know which lands in the EAA are available for the CEPP or whether the SFWMD will be able to afford to participate in the CEPP at all.This lack of integration is inconsistent with Congress' directives to the Corps. See, e.g., WRDA 2000, § 601(b)(1)(B) ("In carrying outthe Plan, the Secretary shall integrate the [1999 Approved Plan] with ongoing Federal and State projects and activities"); 33 U.S.C. § 2282a(f)(1)(A)(i) ("assessments for a water resources project shall include recommendations for alternatives … that, as determined in accordance with the non-Federal interest for the project, promote integrated water resources management").	dependent on the littoral zone since it provides nursery areas, spawning areas, foraging areas, and roosting areas required for completion of life cycles. The frequency and duration of inundation of the littoral zone would increase with higher lake levels. High lake stages result in loss of beneficial littoral zone plant communities in favor of introduced exotics. (e.g. torpedo grass) as well as impacts to wading birds and other water-dependent wildlife. The planning assumptions included in CEPP planning process did take into account projects anticipated to be built within the planning horizon, please refer to Section 2 for details on those assumptions. The with-plan analyses conducted also included the State's Restoration Strategies plan for an FEB on the A-1 parcel of the Talisman tract within the EAA to be constructed in the planning area which will be affected by CEPP. The CEPP plan proposes to implement a similar FEB on the adjacent A-2 parcel of the Talisman tract that would be fully integrated and operated in conjunction with the State's A-1 FEB.
CRYSTALS-8	03-30-2012	We recommend that the Corps make the CEPP a truly integrated study that will allow all relevant proposals and activities to be evaluated together. This will facilitate transparency regarding available land and funds for new projects, and allow everyone to know the trade-offs inherent in each element of these activities. It is also more likely to identify a plan with the most benefits for the least cost.	Please refer to response to CRYSTALS-7 3-30-2012 above.

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CRYSTALS-9	03-30-2012	Status of 2008 Lake Okeechobee Regulation Schedule (LORS 2008) The Corps' Scoping Response heightens our concerns about Lake Okeechobee water supply issues. In particular, the Scoping Response makes it appear that the Corps is using the CEPP to convert LORS 2008 from an interim to a long-term, effectively permanent regulation schedule.	CEPP assumed current operations of Lake Okeechobee (Lake Okeechobee Regulation Schedule (LORS 2008) in the future without project condition. The CEPP team recognizes that when it was approved LORS 2008 was identified as an interim schedule USACE expects to operate under the 2008 LORS until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate CERP (Band 1 Projects) and the State of Florida's Acceler8 Projects, or (2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2, and 3. Until a new operating schedule is developed under a different, future study, LORS 2008 is the best estimate for future without project operations. Based on the hydrologic modeling conducted for the CEPP TSP (Alternative 4R2), it is anticipated that changes to the 2008 LORS will be needed in order to achieve the complete ecological benefits envisioned through implementation of CEPP and to address the minor to moderate adverse effects indicated with future without project condition. The CEPP PIR will not be the mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule. It is possible that future efforts to revise the Lake Okeechobee schedule may result in even greater benefits from the proposed CEPP features and provide improvements to water supply for the LOSA.
CRYSTALS-10	03-30-2012	In its Final EIS for the LORS 2008 regulation schedule (which was adopted in the Record of Decision), the Corps stated: "The Corps expects to operate under the LORS until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate the Comprehensive Everglades Restoration Plan (CERP Band 1 projects) and the State of Florida's fast track Acceler8 projects, or (2) completion	CEPP assumed current operations of Lake Okeechobee (Lake Okeechobee Regulation Schedule (LORS 2008) in the future without project condition. The CEPP team recognizes that when it was approved LORS 2008 was identified as an interim schedule. USACE expects to operate under the 2008 LORS until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate CERP (Band 1 Projects) and the State of Florida's Acceler8 Projects, or (2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2, and 3.. Until a new operating schedule is developed under a different, future study, LORS 2008 is the best estimate for operations.

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		of the [Herbert Hoover Dike] HHD seepage berm construction or equivalent dike repairs for reaches 1, 2 and 3. [T]he Corps will timely shift from the interim LORS to a new schedule with the intent to complete any necessary schedule modifications or deviations concurrent with completion of (1) or (2). "LORS 2008 Final SEIS iv (Nov. 2007) (emphasis added).	
CRYSTALS-11	03-30-2012	The Corps' assurances that LORS 2008 would be a relatively short-term plan were part of the basis for many stakeholders in South Florida to not oppose it in 2008. At that time, the Band 1 Projects all were scheduled to be completed by 2015, which meant that LORS 2008 was projected to be in effect for only seven years.	CEPP assumed current operations of Lake Okeechobee (Lake Okeechobee Regulation Schedule (LORS 2008) in the future without project condition. The CEPP team recognizes that when it was approved LORS 2008 was identified as an interim schedule. USACE expects to operate under the 2008 LORS until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate CERP (Band 1 Projects) and the State of Florida's Acceler8 Projects, or (2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2, and 3.. Until a new operating schedule is developed under a different, future study, LORS 2008 is the best estimate for future without project operations.
CRYSTALS-12	03-30-2012	In its Scoping Response for the CEPP, the Corps now is indicating that LORS 2008 is a long-term, or even permanent, schedule. First, instead of assuming that LORS 2008 will no longer be in effect once the "Band 1 Projects" and the key HHD repairs are complete, the Corps now assumes it could remain in effect for the next 50 years regardless of those projects' completion. The Scoping Response states that "[t]he future without project condition includes the assumption that the Herbert Hoover Dike (HHD) rehabilitation will be complete." Scoping Response, at 22 (response to FDACS-1).The Corps also assumes that the projects previously referred to as "Band 1 Projects" will be complete:	CEPP assumed current operations of Lake Okeechobee (Lake Okeechobee Regulation Schedule (LORS 2008) in the future without project condition. The CEPP team recognizes that when it was approved LORS 2008 was identified as an interim schedule. USACE expects to operate under the 2008 LORS until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate CERP (Band 1 Projects) and the State of Florida's Acceler8 Projects, or (2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2, and 3. . Until a new operating schedule is developed under a different, future study, LORS 2008 is the best estimate for future without project operations. Based on the hydrologic modeling conducted for the CEPP TSP (Alternative 4R2), it is anticipated that changes to the 2008 LORS will

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		the future without project condition includes the "First Generation" and "Second Generation" (i.e., the Corps is assuming that they will be completed), which when combined with the CEPP itself, represents all of the projects formerly identified as the "Band 1 Projects." In other words, both of the triggers for revision of the "interim" LORS 2008 will occur prior to, or concurrent with, the CEPP. Yet, the Corps Scoping Response indicates that "the LORS 08 schedule will be used" as the future without project condition. The Scoping Response also states that "[t]he CEPP study will not be the mechanism for changing LORS," Scoping Response, p. 22 (response to FDACS-1), and that "any analyses conducted during the study will not predetermine a change to the lake schedule … as a result of additional CERP project implementation," id. at 38 (response to Crystals-3). If the CEPP is the "CERP project implementation" that will trigger changes to LORS 2008 (as indicated by the Corps in 2008), then the logical time to consider such changes to the lake schedule would be in the CEPP itself. The Corps' refusal to even consider such changes is inconsistent with its commitments made in 2008.	be needed in order to achieve the complete ecological benefits envisioned through implementation of CEPP and to address the minor to moderate adverse effects indicated with future without project condition. The CEPP PIR will not be the mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule.
CRYSTALS-13	03-30-2012	Second, the Corps appears to be changing its triggers for revisiting LORS 2008. In 2008, the Corps identified two separate triggers for revisiting LORS 2008: completion of a subset of HHD rehabilitation measures ("seepage berm construction or equivalent dike repairs on reaches 1, 2, and 3"), and the completion of the CERP Band 1 Projects and Acceler8 projects. LORS 2008 Final SEIS iv (Nov. 2007) (quoted above).	CEPP assumed current operations of Lake Okeechobee (Lake Okeechobee Regulation Schedule (LORS 2008) in the future without project condition. USACE expects to operate under the 2008 LORS until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate CERP (Band 1 Projects) and the State of Florida's Acceler8 Projects, or (2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2, and 3. Until a new operating schedule is developed under a different, future

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		Now, in its Scoping Response, the Corps states only that "LORS will be revisited upon completion of HHD modifications." Scoping Response at 37 (response to Crystals-2). This new formulation completely drops the trigger associated with completion of the early CERP projects (which will be fully accomplished through the CEPP itself), and it apparently makes consideration of a new regulation schedule dependent on completion of all HHD repairs, which will not be done for many years. The effect is to allow the Corps to keep LORS 2008 in effect for decades, contrary to what the agency told stakeholders only a few years ago.	study, LORS 2008 is the best estimate for future without project operations. Based on the hydrologic modeling conducted for the CEPP TSP (Alternative 4R2), it is anticipated that changes to the 2008 LORS will be needed in order to achieve the complete ecological benefits envisioned through implementation of CEPP and to address the minor to moderate adverse effects indicated with future without project condition. The CEPP PIR will not be the mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule.
CRYSTALS-14	03-30-2012	The Corps' failure to consider changes to LORS 2008 in the CEPP also appears inconsistent with the 1999 Approved CERP Plan. The 1999 Approved Plan includes a new "Lake Okeechobee Regulation Schedule (F)" as a Plan component. The purpose of that component, in *part,* was to develop operational rules for "discharges … to the Everglades Agricultural Area reservoir."\Final CERP Integrated Feasibility Study and Programmatic EIS, at 9-29 (1999). According to the 1999 Approved Plan, "[m]ost of the operational features will be implemented in association with related construction features." Id.For the "Lake Okeechobee Regulation Schedule (F)" component, one of the logical times to implement it would be in plan development for the "Everglades Agricultural Storage Reservoirs (G)" component, which the Scoping Response indicates is part of the CEPP.For the Corps now to say that it will not consider operational changes to Lake Okeechobee in association with the CEPP is inconsistent with the 1999 Approved Plan	The 1999 Approved plan in regards to component F states "*The Lake Okeechobee Regulation Schedule will be modified in order to take advantage of the additional storage facilities identified in the construction features. Two additional zones will be added to the schedule. The first zone will trigger discharges to the north of the Lake reservoir and the Everglades Agricultural Area reservoir. The second higher zone will trigger the Lake Okeechobee aquifer storage and recovery facilities to begin injecting water from the Lake." The CEPP planning effort did not include the storage area north of Lake Okeechobee or the system of ASR components of CERP.*" The CEPP planning effort did not include CERP components for storage north of Lake Okeechobee or the regional system of ASR wells around Lake Okeechobee. The 1999 Approved Plan did not envision higher stages in Lake Okeechobee associated with storage for water supply, rather, that the Lake stages would remain within the ecologically desired envelope more often due to the storage available both north and south of the Lake as well as the system of ASR wells around the Lake. Operational changes were incorporated into the hydrologic modeling conducted for the CEPP alternatives, including the TSP Alternative

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			4R2, in efforts to optimize CEPP system-wide performance within the existing flexibility of the 2008 LORS. More specifically, the hydrologic modeling of the CEPP alternatives included proposed revisions to the 2008 LORS decision tree outcome maximum allowable discharges dependant on the following criteria: Lake Okeechobee inflow and climate forecasts (class limits were modified for tributary hydrologic conditions, seasonal climate outlook, and multi-seasonal climate outlook), stage level (regulation zone), and stage trends (receding or ascending). While some refinements were made within the operational flexibility available in the 2008 LORS, consistent with the original modeling intent, the final operational assumptions ultimately extended beyond this flexibility due to adjustments made to the tributary/climatological classifications. Additional information and documentation of these assumptions can be found in the Engineering Appendix (Appendix A).
CRYSTALS-15	03-30-2012	Many stakeholders are very concerned that the Corps is abandoning its commitments made in 2008 that the LORS 2008 schedule would be an interim schedule, and is making the LORS 2008 schedule permanent. This has the potential to undermine the CEPP, because it affects whether stakeholders will have the benefit of the Savings Clause enacted in 2000 with the changes made in the CEPP. The Corps can address this issue by agreeing to consider changes in the Lake Okeechobee regulation schedule as part of the CEPP and defining the water supply level of service in effect in 2000 as one of the goals of the CEPP. Also, if the Corps' statements in the Scoping Response regarding the longevity of LORS 2008 were mistaken, then the agency should immediately clarify its position.	The CEPP TSP provides an increment of restoration of the central Everglades ecosystem as well as an increment of improvement to water supply for other water-related needs. The CEPP TSP, Alt 4R2, provides for a 14 MGD and 5 MGD increase in water supply to users in Broward and Miami-Dade County respectively while maintaining the current level of water supply cut-backs to the Lake Okeechobee Service area. Based on the hydrologic modeling conducted for the CEPP TSP (Alternative 4R2), it is anticipated that changes to the 2008 LORS will be needed in order to achieve the complete ecological benefits envisioned through implementation of CEPP and to address the minor to moderate adverse effects indicated with future without project condition. The CEPP PIR will not be the mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule.
CRYSTALS-16	03-30-2012	Study Biases Related to Lake Okeechobee Water Storage. The Scoping Response also indicates that the Corps is building an inappropriate bias into the CEPP study related to storage and water	The 1999 Approved Plan for CERP did not envision higher stages in Lake Okeechobee associated with storage for water supply, rather, that the Lake stages would remain within the ecologically desired envelope more often due to the storage available both north and

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		levels in Lake Okeechobee. In response to a comment about the need for more water storage in the lake, the Corps stated that it would not consider changes to LORS 2008 in the CEPP and justified that decision based (in part) on the impacts of higher water levels on lake ecology.See Scoping Response, at 37 (response to Crystals-2). By so doing, it appears the Corps is taking "off the table" additional water storage in the lake based on the Corps' pre-study decision that the alleged impacts of higher water levels on in-lake vegetation will outweigh any regional benefits that could be provided by additional water storage in the Lake. This will bias the CEPP's analysis, because it means that the Corps is unwilling to consider alternative plans which would reduce storage needs in the EAA and still avoid significant impacts to in-lake resources. We believe that is entirely inappropriate.	south of the Lake as well as the system of ASR wells around the Lake. Based on the hydrologic modeling conducted for the CEPP TSP (Alternative 4R2), it is anticipated that changes to the 2008 LORS will be needed in order to achieve the complete ecological benefits envisioned through implementation of CEPP and to address the minor to moderate adverse effects indicated with future without project condition. The CEPP PIR will not be the mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule. It is possible that future efforts to revise the Lake Okeechobee schedule may result in even greater benefits from the proposed CEPP features and further improvements to water supply for the LOSA.
CRYSTALS-17	03-30-2012	The Corps also appears to be assuming that LORS 2008 will be implemented in the future, without the adaptive protocols adopted by the South Florida Water Management District in 2010.When LORS 2008 was implemented, the SFWMD developed protocols designed to provide operational guidance in areas where the schedule alone is ambiguous. Among other adjustments, the protocols reflect the desire to eliminate Base Flow releases to the St. Lucie Estuary when the LORS 2008 schedule assumed they would be made. Recent modeling of the "Future Without Project Condition" (which will be the "no action" alternative under NEPA) shows significant reduction in the Lake stage and a noticeable increase in water shortage severity in	The Adaptive Protocols is a part of the SFWMD's operational recommendations provided to the Corps.

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		several drought years. One of the causes of this reduction in the level of service for water supply is likely the way the LORS 2008 Schedule was assumed to be implemented for the FWO condition.	
CRYSTALS-18	03-30-2012	The Corps' failure to consider in-lake storage alternatives is inconsistent with important policy directives.The Florida Legislature made an express statutory finding "that additional water storage may be an appropriate use of Lake Okeechobee." § 373.4592(1), Fla. Stat. The Corps justified the cost of repairs to the HHD, as recently as last month in the FY 2013 Civil Works Budget Detail prepared for Congress, on grounds that such repairs "will allow the Corps to hold more water safely in the Lake, … enable the Corps to release excess water to the estuaries … in a more controlled, less damaging fashion," and "enable the Corps to release more water during dry periods to benefit the ecosystem of the Everglades."The National Research Council, in its 2008 Second Biennial Review of the CERP, stated that "rehabilitation of [HHD] may offer synergistic opportunities for creating additional CERP storage and managing water levels for the benefit of the littoral zone, and the costs, benefit, and hydrological and ecological viability of these options should be considered in any analysis of CERP storage alternatives." National Research Council, Progress Toward Restoring the Everglades: The Second Biennial Review, 182-83 (2008).The Corps should consider such options in the CEPP in light of these statements and recommendations.	The benefits to HHD rehabilitation articulated in the Corps' FY 2013 Civil Works Budget Detail are correctly stated. It should be noted that changes to the Water Control Plan governing lake operations will also be required in order to realize the benefits of HHD rehabilitation. Such changes will be conducted in accordance with NEPA. The CEPP TSP, Alt 4R2, provides for a 14 MGD and 5 MGD increase in water supply to users in Broward and Miami-Dade County respectively while maintaining the current level of water supply cut-backs to the Lake Okeechobee Service area.
CRYSTALS-19	03-30-2012	This study does not comport with NEPA. The Corps is indicating that it is not going to consider	A full array of reasonable alternatives was considered. A full explanation of how the final array of alternatives was determined is

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		reasonable alternatives to its proposals to store water in the EAA as opposed to in Lake Okeechobee. All environmental impact statements require an analysis of reasonable alternatives to a proposal. 42 U.S.C. § 4332(2)(C)(iii). Corps project recommendations, in particular, are required to include alternatives that "promote integrated water resource management," without "budgetary or other policy" constraints. 33 U.S.C. § 2282a(f)(1)(A)-(B). Agencies cannot categorically refuse to consider reasonable alternatives because the agency has pre-decided a discretionary policy choice. 40 CFR §§ 1502.2(e), 1502.14(a), -(c). The Corps, use of a "no action" alternative which does not represent reality, as discussed above with regard to the SFWMD operating protocols, is also inconsistent with NEPA. The Corps should take an unbiased, hard look at the environmental choices and include alternatives that would use the lake for water storage instead of adding all new storage in the EAA, and use an accurate "no action,, alternative	provided in Section 3 of the Draft CEPP PIR/EIS.
CRYSTALS-20	03-30-2012	Modifications to the Lake Okeechobee Regulation Schedule may be the easiest and least expensive alternative to provide additional water storage for environmental and human needs. We urge the Corps not to "stack the deck" at the start of the CEPP process, by refusing to even consider such modifications	The CEPP TSP, Alt 4R2, provides for a 14 MGD and 5 MGD increase in water supply to users in Broward and Miami-Dade County respectively while maintaining the current level of water supply cut-backs to the Lake Okeechobee Service area.
CRYSTALS-21	03-30-2012	Loss of Agricultural Water Supply. As indicated in our earlier comments, Florida Crystals continues to be very concerned about the potential loss of water supply as a result of the CEPP. The Scoping Response does not dispute that LORS 2008	The CEPP TSP, Alt 4R2, provides for a 14 MGD and 5 MGD increase in water supply to users in Broward and Miami-Dade County respectively while maintaining the current level of water supply cut-backs to the Lake Okeechobee Service area.

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		provides less water supply to agricultural uses than the previous WSE regulation schedule. See Scoping Response at 39-40 (response to Crystals-10). The Corps, own documents indicate that the LORS 2008 has a significant negative effect on agricultural water supply:attached is a 2007 Corps analysis which shows major negative impacts to agricultural water supply from that schedule. History has borne out those projections, as the water shortage in the spring of 2011 was made more severe by the releases of water from the Lake under the LORS 2008 Schedule. We are very concerned that the CEPP appears in contrary to the Savings Clause in WRDA 2000 as a result of its approach to water storage in Lake Okeechobee	Savings Clause requirements were a constraint for CEPP. The Savings Clause analysis is located in Annex B of the Draft PIR/EIS.
CRYSTALS-22	03-30-2012	Recent presentations of hydrologic modeling outputs for the "Future Without Project Condition" reinforce our concerns about impairing the protections of the Savings Clause.In those presentations, water supply restrictions in the Lake Okeechobee Service Area are projected to increase. It is impossible based on the information presented to specify what is causing the impact but at least one of the reasons is likely to be the assumptions about the C-44 Reservoir, a CERP project. The Project Implementation Report for the Indian River Lagoon (IRL) indicates that operation of the C-44 Reservoir will lead to a significant reduction in flow to the lake in low-water conditions.The Savings Clause prohibits the Corps from implementing such measures to the detriment of existing water uses without ensuring that there is a replacement source available. The IRL Project Implementation Report failed to consider the impact of this reduction in flow to	Savings Clause requirements were a constraint for CEPP. The Savings Clause analysis is located in Annex B of the Draft PIR/EIS.

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		Lake on other users in the Lake Okeechobee Service Area. The fact that the Corps appears to be ignoring the Savings Clause in its analyses of other CERP components, and is implementing the C-44 project despite Savings Clause issues, is troublesome	
CRYSTALS-23	03-30-2012	Once again, the Corps should avoid the problem of waters supply reductions by considering changes to the lake regulation schedule to provide additional storage	The CEPP TSP, Alt 4R2, provides for a 14 MGD and 5 MGD increase in water supply to users in Broward and Miami-Dade County respectively while maintaining the current level of water supply cut-backs to the Lake Okeechobee Service area.
CRYSTALS-24	03-30-2012	Limitation of CEPP to 1999 Approved CERP Plan. We previously commented that WRDA 2000 and the Programmatic Regulations require the Corps to limit the CEPP Project Implementation Report to the 1999 Approved Plan. The Scoping Response did not seem to respond to that point. We recognize the recommendation of the National Research Council that the Corps should follow an "incremental adaptive restoration" approach, and we support the concept of adaptive management in the scientific context. However, that recommendation does not override the limitations in Congress' approval of the 1999 Approved Plan the procedural requirements contained in the Programmatic Regulations or the requirements in NEPA concerning supplementation of the 1999 Programmatic EIS for the CERP. If the Corps believes it can make significant changes to the 1999 Approved Plan through the CEPP Project Implementation Report, then it needs to explain the legal basis for that position	Consistent with the other planning efforts conducted to date on CERP components, the CEPP effort was purposefully focused on the components of CERP that would provide an initial increment of restoration for the central everglades ecosystem. It was recognized in the 1999 Approved Plan (CERP) that implementation would require that the plan be divided into smaller implementable packages of components. It was further recognized that an adaptive assessment strategy requires incremental implementation of the plan components and each increment would be planned and designed to carry the program one step closer to the ultimate goal of ecosystem restoration (Central and Southern Florida Project Comprehensive Review Study, Final Feasibility Report and PEIS, page 10-7).
CRYSTALS-25	03-30-2012	Water Quality Planning Considerations. The	All alternatives were evaluated to be in compliance with WQBEL.

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		Scoping Response does not explain how the Corps can plan the CEPP without knowing the land requirements and water quality targets of the ongoing water quality litigation. See Scoping Response at 49 (response to Sugar-8). The Corps should identify those requirements as soon as possible, because they are fundamental planning constraints which both limit the types of plans which can be considered for the CEPP and whether the SFWMD has the financial resources to satisfy the CEPP.	
CRYSTALS-26	03-30-2012	Water Supply Planning Considerations. The Scoping Response indicates that the Corps will include goals and performance measures related to improved water supply and economic well-being, in response to our suggestion. Scoping Response at 49 (response to Sugar-9). We appreciate the Corps' response to our suggestion. However, we are concerned that the water supply goals are being treated only as "incidental" to other goals for the CEPP, and that only "[w]ater retained in the Lake that is not identified for the natural system may be available for water supply." Corps' Presentation to PDT Regarding CEPP "Revised Objectives," Slide 4 (March 26, 2012). By this language, the Corps is subordinating the water supply needs of the people of South Florida to other goals, which is contrary to the 1999 Approved Plan and WRDA 2000. The Corps does not need to put local communities in a subservient position in order to achieve the environmental goals of the CEPP, and should treat the water supply objective as co-equal with other objectives in the CEPP.	Water supply performance for the LOSA was considered in the formulation of management measures for storage and treatment. Water supply performance was measured by calculating the total cutback volumes (water demand not met) for the eight worst drought years during the 41 year period of analysis. Water supply performance was included as part of the screening criteria during plan formulation of the storage and treatment features within the EAA. The option recommended in the final array of alternatives is a 28,000 acre FEB. The 28,000 acre FEB with Lake Okeechobee operations optimized for water supply maximized benefits while minimizing costs. See Section 3 and Appendix E.1 of the PIR/EIS for further explanation of how this measure was incorporated into plan formulation.
CRYSTALS-27	03-30-2012	Improved Flood Protection. The Scoping Response indicates that the Corps will include "protecting	The CEPP planning effort did not formulate plans for improvements to flood protection within the EAA.

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		existing levels of flood protection" as a planning constraint. Scoping Response at 50 (response to Sugar-10). While we appreciate that improvement, we remind the Corps that we asked the Corps to use as a performance measure improving flood protection, because that is one of the specific authorized features of the EAA reservoir component contained in the 1999 Approved Plan. We ask the Corps not to abandon the goal of improving flood protection that was part of the 1999 Approved Plan and is a key component of the Central & Southern Florida Flood Control Project	
CRYSTALS-28	03-30-2012	Restoration/Rehydration of Holey Land and Rotenberger Wildlife Management Areas. In response to our comment that the Corps should consider improvements to the Holey Land and Rotenberger Wildlife Management Areas as part of the CEPP, the Scoping Response indicates that "[t]he Corps will consider information from previous studies undertaken by the SFWMD to consider this option and determine if applicable for inclusion in the CEPP." Scoping Response at 40, 50 (response to Crystals-11 and Sugar-13). We are unaware of any studies by the SFWMD which address this issue; please identify them so Florida Crystals and others can provide input	Inclusion of structural and operational modifications to existing infrastructure and/or construction of new features in Holeyland and Rotenberger WMA was considered during initial plan formulation efforts for the CEPP (refer to Appendix E for details). Features within the WMA were not further pursued given water quality concerns.
CRYSTALS-29	03-30-2012	In addition, given the Corps' effort to fast-track the CEPP, it is unclear how much time the Corps has to determine if the Holey Land and Rotenberger components of the 1999 Approved Plan should be included in the CEPP. We continue to recommend that the Corps incorporate these components into the CEPP.	Inclusion of structural and operational modifications to existing infrastructure and/or construction of new features in Holeyland WMA was considered during initial plan formulation efforts for the CEPP (refer to Appendix E for details). Features within the WMA were not further pursued given water quality concerns.

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CRYSTALS – 30	10-16-2012	This letter supplements previous letters (1-20-2012 and 3-30-2012). CRYSTALS supports restoration of S Florida and CEPP will represent a great step forward if important projects can be brought online sooner.	Thank you for your comment.
CRYSTALS – 31	10-16-2012	We recommend that the Corps re-initiate formal scoping pursuant to NEPA. The previous scoping period was premature because no proposal had been developed.	A series of NEPA Final Array public meetings were held at 5 locations throughout south Florida December 10-13 and 18, 2012. These public meetings presented the process, the final array of alternatives and discussed the NEPA analyses that will be used on the final array. The CEPP NEPA and plan formulation process includes a robust public process that provides numerous opportunities for agency, Tribal and public participation.
CRYSTALS – 32	10-16-2012	We have several comments how the Corps should approach analysis of alternatives to the CEPP proposal for the EAA. 1. Most important is the consideration of alternatives. 2. The Corps should disclose the alternatives to be analyzed prior to issuance of the draft EIS/PIR. 3. The screening evaluation in the PDT process does not constitute consideration of alternatives for purposes of NEPA. We recommend that if the Corps intends to consider alternatives developed and rejected in the PDT process, that it fully analyze those alternatives in the draft EIS/PIR and identify the criteria by which they were rejected in the PDT process. We don't think this has been done to date. 4. The Corps should analyze an array of reasonable alternatives, and not limit its analysis of alternative to those which it prefers. Potential trade-offs need to be analyzed thoroughly (through the recent NRC guidance).	1 and 2. See response above to CRYSTALS-2. The final array of alternatives were disclosed in December 2012 and are included in this draft PIR/EIS. Public comments have been encouraged throughout the entire CEPP plan formulation process. 3. Information exchanged during PDT meetings was considered in selection of the final array of alternatives for detailed evaluation under NEPA. A detailed description of the screening and evaluation process are included in Section 3 – Formulation of Alternative Plans and Section 4 0 Evaluation and Comparison of Alternative Plans in the CEPP Draft PIR/EIS. 4. A full array of reasonable alternatives was considered. A full explanation of how the final array of alternatives was determined is provided in Section 3 of the Draft CEPP PIR/EIS. 5. Each of the project performance measures for the CEPP planning effort are derived from those performance measures approved for use by RECOVER and the USACE. These performance measures were used to evaluate the final array. Please refer to Section 3 of the Draft PIR and Appendix E for criteria and cost information. 6. The CEPP TSP, Alt 4R2, maintains the current level of water supply cut-backs to the Lake Okeechobee Service area and provides a 14 MGD and 5 MGD increase in water supply to users in Broward and Miami-Dade County, respectively.

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		5. The Corps should be clear in the draft EIS/PIR regarding the evaluation of criteria being applied to each alternative. At 8-29-2012 PDT meeting, cost was a primary consideration in rejecting a 12-foot deep reservoir on the A-2 site. The Corps should identify the relative costs of all these options and the level of costs which it deems to be cost prohibitive. 6. Concerned the Corps is not developing alternative in the PDT process which would address the serious water supply concerns of agricultural interests and public utilities. 1999 plan was premised on both maintaining and improving water supply for existing uses.	
CRYSTALS – 33	10-16-2012	Since it would take relatively little additional storage in Lake Okeechobee to address the water supply concerns of agricultural and urban uses, we once again ask the Corps to examine such options.	The CEPP TSP, Alt 4R2, provides for a 14 MGD and 5 MGD increase in water supply to users in Broward and Miami-Dade County, respectively, while maintaining the current level of water supply cutbacks to the Lake Okeechobee Service area.
CRYSTALS – 34	10-16-2012	The draft PIR/EIS should address whether there is a plan to re-wet the FEBs with local runoff to prevent release of phosphorus from the dried soils to the STAs.	The A-1 FEB and A-2 FEB will operate as a singular FEB. The FEB will accept runoff from the Everglades Agricultural Area (EAA) when the FEB depth is below 3.8 feet (ft). Water from Lake Okeechobee will be accepted when the FEB depth is below 2.0 ft. Discharges from the FEB will be discontinued when FEB depth is below 0.5 ft. No supplemental water supply will be provided to the FEB to prevent dry outs.
CRYSTALS – 35	10-16-2012	A 12-foot reservoir should be analyzed in the NEPA document, even though it was screened out as an alternative due to cost. It was identified as providing the greatest benefits for the Everglades.	The FEB is the least cost option. The 12ft Reservoir provides the greatest benefits to the everglades; however, the cost is prohibitive given the marginal increase in benefits and the 12ft Reservoir configurations were eliminated from further consideration. A full description of the evaluation and screening are provided in Section 3 of the CEPP Draft PIR/EIS.
CRYSTALS – 36	10-16-2012	The Corps should analyze an alternative regarding excess storage in Lake Okeechobee rather than the	See response above to CRYSTALS-33.

LETTER	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		A-2 FEB.	
CRYSTALS – 37	10-16-2012	The Corps should analyze an alternative that would use the A-2 site for agricultural water storage.	Alternatives for the CEPP were formulated and evaluated based on achievement of project objectives. Project objectives identified for the CEPP are consistent with those of CERP. Section 601 (h) of WRDA 2000 (authorizing CERP) states "the overarching objective of the Plan is the restoration, preservation, and protection of the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection. Project objectives are included in Section 1 of the Draft CEPP Project PIR and EIS.
CRYSTALS – 38	10-16-2012	We recommend the Corps also include alternatives related to the delivery and/or management of Lake Okeechobee water before it reaches WCA-3A. The Corps should analyze and consider the reduction of phosphorus using the EAA canals, therefore bypassing the STAs.	Proposed non-CERP projects, including the SFWMD Restoration Strategies project, will ensure that water considered part of the existing water budget will undergo treatment to meet applicable water quality standards.
CRYSTALS - 39	10-16-2012	Another alternative that needs to be the potential for excess lake water to be delivered to the Holey Land and Rotenberger Wildlife Management Areas.	Inclusion of structural and operational modifications to existing infrastructure and/or construction of new features in Holeyland WMA was considered during initial plan formulation efforts for the CEPP. Features within the WMA were not further pursued given water quality concerns.
CRYSTALS - 40	10-16-2012	How is the Corps going to integrate its NEPA review of the two FEBs proposed for the A-1 and A-2 sites? They're clearly connected actions, with cumulative impacts.	The proposed FEB on the A-1 site was analyzed and included in the "No Action Alternative" in the draft EIS/PIR. The Draft EIS for the Everglades Agricultural Area A-1 Shallow Flow Equalization Basin was posted for public review on February 22, 2013.
CRYSTALS - 41	10-16-2012	We hope that agency analyses of phosphorus reductions that will result from use of the A-1 FEB are correct. Also hope that addition of "new" water from Lake Okeechobee will not diminish the phosphorus reduction performance of STA3/4 and Compartment B, or cause a violation of WQBEL. Need to state that if there is a violation, EAA runoff would be the first to be treated.	Water quality for the A-1 FEB is presented in the Draft EIS for the Everglades Agricultural Area A-1 Shallow Flow Equalization Basin. The analysis of the A-2 FEB is presented in the CEPP Draft PIR/EIS.
CRYSTALS - 42	1-4-2013	NEPA requires analysis of all alternatives and their environmental effects, including water quality. We	Environmental Effects were analyzed for all alternatives , including water quality in Section 5 and Appendix C.2.1 and Appendix C.2.2 in

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		ask that the draft PIR/EIS analyze the likely water quality effects of each alternative in the WCA's and ENP.	the CEPP Draft PIR/EIS.
CRYSTALS - 43	1-4-2013	In addition, Corps should also demonstrate various alternatives will result in compliance with WQBELs in the NPDES permits for STAs and provisions of the Consent Decree. Such analysis is appropriate in light of the federal agencies' recent court decision which indicated that compliance with NPDES permits for STAs would not necessarily lead to compliance with the Consent Decree.	All alternatives were evaluated to be in compliance with WQBELs.

Table C.3.2-3. Comment response matrix of emails received through the Task Force.

Email	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
ARTHUR R. MARSHALL FOUNDATION & FLORIDA ENVIRONMNETAL INSTITUTE (AM)			
AM - 1	6/19/12	First, we have a group of Summer Interns also monitoring the phone conference broadcast (our cyberlink server is down). In attending the recent Central Everglades Project Planning (CEPP) process, the interns have been fully briefed on the implications of CERP Table 5-1 Goals & Objectives; they also appreciate the CEPP Project Delivery Team (PDT) relating CEPP Goals and objectives, AKA Management Measures, to CERP Table 5-1 Yellow Book goals as required by the 2011 Adaptive Management Integrated Guide (AMIG) activity 5 protocols. However when the Task Force goals were mentioned starting with getting the water right and ending with foster compatibility with the built up environment, there were a bunch of puzzled looks, on faces not previously exposed to the TF Goals. Perhaps there should be some attempt at fostering compatibility of CEPP and the TF goals, as a better framework of how the TF sees	Thank you for your comment.

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		CEPP meeting TF goals, even though CEPP is an Adaptive Management application of CERP, and therefore subject to CERP Table 5-1.	
AM - 2	6/19/12	Second, the CEPP PDT approach has not dealt directly with the AMIG activity 4 requirements that a Conceptual Ecological Model (CEM) be developed for projects such as CEPP with a given boundary per all the other regional CEM's developed for CERP; the CEPP boundary remains fuzzy under the wishbone concept per CEPP PPT presentations. As indicated previously, the CEPP PDT is using a Ridge & Slough CEM, and apparently the Total System CEM, and "performance measure transfer". This obviates a full consideration of historic significant habitat between Lake O and WCA-3 including the pond apple forest and the sawgrass plains. Our view is that this is a CEPP deficiency because the approach insufficiently goes in the direction of CERP Table 5-1 Goals & Objectives, especially regarding the ecological goals, including habitat and functional value of the pond apple forest and the sawgrass plains.	Project objectives for the CEPP are consistent with the goals and objectives of the C&SF Restudy. Project objectives for the CEPP are presented in Section 1 of the PIR/EIS. The project team has utilized performance measures to evaluate alternative plans. These performance measures were developed from the Lake Okeechobee, Northern Estuaries and Greater Everglades Ridge and Slough Conceptual Ecological Models (CEM).
AM - 3	6/19/12	Third, we appreciate that there will be an ecosystem services valuation (ESV) of the CEPP tentatively selected plan. However it would appear a better approach to use an ESV approach for analysis of various alternatives to depict benefit to cost as a measure of return on investment (ROI) for final selection decision-support for the configuration with the greatest ROI. The habit unit approach appears much less viable.	In practice, USACE ecosystem restoration studies typically measure the ecosystem benefits of alternative plans in terms of habitat units. Habitat units are basically the product of acreage and a Habitat Suitability Index (HSI). The HSI is scaled from 0 to 1, with 1 being a pristine acre. The with-project and without-project habitat units are calculated and the difference between the two is known as the habitat unit lift. This habitat unit lift is the primary benefit used by economists in the cost effectiveness/incremental cost analysis (CE/ICA) to determine best buys and cost-effectiveness among possible alternative plans. Consistent with Corps guidance, habitat units will be used for the CEPP as the basis to compare alternatives and select a plan. The ecosystem services evaluation will be conducted only on the recommended plan. The Ecosystem Services report will be provided separate from the Draft PIR/EIS after it has

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			been through the review process.
AM - 4	6/19/12	Finally, especially on behalf of our Arthur R. Marshall Summer Interns who are looking at the viability of using ESV in the CEPP configuration selection process, we appreciate that many of the Task Force members and supporting staff, and CEPP PDT members were at the GEER/INTECOL conference. The interns used this a networking opportunity to expand their knowledge on the CEPP process and related matters such as Sea Level Rise. Our letter of 12 June to the Honorable Rachel Jacobson amplifies.	Thank you for your comment.
PUBLIC			
Don Wisdom	7/25/13	The major project that I was not able to complete during my tour as the DE in Jacksonville was restoration of the Kissimmee River to its natural flow. I am still very interested in anything that I can do to buy Big Sugar out and restore the natural flow. Would you please send me a map depicting before and after the agricultural interests were able to divert the Kissimmee's natural flow to the east and west. Please include property owned by agriculture and that which is government owned.	In terms of property maps and pre and post maps, SFWMD should have the information you are requesting.
Jack Moller (JM) - 1	9-27-2012	Too much water in the Everglades, should not be adding more because of the stress on the wildlife. Have said this since 1999 without a suitable response.	Environmental effects within northern WCA 3A are described in Section 5 of the Draft PIR/EIS and Appendix C.2.1 and Appendix C.2.2. Implementation of the CEPP is expected to rehydrate much of northern WCA 3A by providing a means for redistributing treated STA discharges from the L-4 and L-5 in a manner that promotes sheetflow and by removing the drainage effects associated with the Miami Canal. Implementation of any of the CEPP alternatives is expected to significantly improve conditions for aquatic invertebrates, fish species, amphibian and reptile communities, and resident bird species. CEPP implementation may negatively affect mammals dependent on upland habitat due to increased water flow.
JM - 2	9-27-2012	ENP wants 100% of historic annual water volumes,	The objectives of CEPP are not to flood WCA 3A. The increase in

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		but only 50% of the Everglades is left. If ENP owned the WCAs they would not do this because they know if will destroy the Everglades. Question no one has answered: How can a flood today become tomorrow's CERP goal and call this restoration?	water flow to WCA 3A will occur primarily in the dry season to reverse the current trend of water levels in northern WCA 3A receding well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation, muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas (Refer to Section 1.2). The CEPP TSP incorporates the Zone A schedule included in the current operation of WCA 3A under ERTP. As such, inflows from Lake Okeechobee would not occur when stages in the WCA 3A are above Zone A consistent with current operations. Additionally, Alt 4R2 includes increased outlet capacity from WCA 3A to better manage extreme wet events. Alt 4R2 generally produced improved inundation patterns in north-western WCA 3A reaching over 70 percent of habitat unit restoration targets for ridge and slough. Water depths for Alt 4R2 in northeast-ern WCA 3A are more conducive to shorter hydroperiods sawgrass marshes. Alt 4R2 would act to rehydrate northern WCA 3A promoting peat accretion, reducing the potential for high intensity fires and promoting transition from upland to wetland vegetation.
JM - 3	10-25-2012	• Don't trust models on elevations/depths because they can't give me a duplicate graph with water depths/elevations in the WCAs along transect L2 using the same data points and processes as graphs presented a few weeks ago. • Need to get them to talk about seepage control from S side of WCA2B and all along US 27 boundary area; there were boils during 1990s flood. • Do not think all tree islands are needed to fill the Miami Canal. Talked about this during 10-22 meeting. • Problem with entire CERP project is DOI/NPS won't allow this or that. They're only interested	The regional hydrologic models proposed as the primary tools for evaluation of the final array have been validated through the Corps Engineering Model Certification process established under the Engineering and Construction (E&C) Science and Engineering Technology (SET) Initiative and/or reviewed during an Agency Technical Review. These models are considered to be appropriate tools for planning for the CEPP. Please see response to comment JM-27 above (Dated 11-29-2012). A portion of the spoil mounds located adjacent to the Miami Canal would remain. In addition, mounds would be created during construction of Alternative 4R2 approximately every 1 mile from S-8 to I-75.

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		in protecting their property. • Want answers to all of my questions sent to whole group that attended 10-22 meeting	The location of seepage management features were identified during evaluation for CEPP. Seepage management features were determined to be needed along the southern portion of WCA 3B and northern portion of ENP. Answers to questions submitted to the USACE during the plan formulation for the CEPP are provided within herein.
JM - 4	10-25-12	The data they presented today was not what they presented on 10/22/12. Today they talked about lowering the water levels from what they desired before 10/22/12. BUT, the amount of water they want to push, after reducing the amount, into the WCAs is still 60% of the time over schedule. This is NOT restoration but clearly a calculated desire by some to bring about a drastic change in the Everglades and to full fill what Aaron Hegar told Tom Shirley and I which was if they do what they want to do they will change the area from Everglades to a littoral zone type habitat. Their plans are very wrong.	The CEPP TSP incorporates the Zone A schedule included in the current operation of WCA 3A under ERTP. As such, inflows from Lake Okeechobee would not occur when stages in the WCA 3A are above Zone A consistent with current operations. Therefore, CEPP does not propose to push water into WCA 3A when it is over schedule. Additionally, Alt 4R2 includes increased outlet capacity from WCA 3A to better manage extreme wet events. The objectives of CEPP are not to flood WCA 3A. The increase in water flow to WCA 3A will occur primarily in the dry season to reverse the current trend of water levels in northern WCA 3A receding well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation, muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas (Refer to Section 1.2).
JM - 5	10-25-12	And, once the things below are done what is the time line for the ACOE to put their "finished stamp" on the project design? What happened to the yellow book plan of building a pumping station at the end of L-28, where we call Sands Point? This pump was to pull water around the N end of the WCA3N and push it into the heart of Shark Slough valley and on to ENP. Is this pump still being built? Why not? Don't know if you're still watching. The conversation from 230 to about 250 was all about how we can use EDEN and field data to get to the depiction of	The CERP Plan did not include a pump station at the end of L-28. The CERP Central Lakebelt Storage component included measures to capture excess water in WCA-2B and divert water through improved L-37 and L33 borrow canals to Northeast Shark River Slough to meet targets or to the Central Lakebelt Storage Area. The Central Lakebelt Storage area component is not included in this first increment of restoration of the central Everglades.

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		data you're looking for I think. The other point that was that some of the analysis has to wait through the screening phase until we have an RSM model run which is happening over the next few weeks.	
JM - 6	10-25-12	Example of what I was talking about at 10-22 meeting: In the data reported at the 10-25-12 meeting the water gauge numbers do not match the water gauge numbers that we are accustom to seeing and using to calculate water elevations and depths. Why did the CERP people change these numbers? If you recall I said the same while on WRAC many years ago. My friend thinks the Corps is cooking the books. Bosses need to ask why engineers are changing base reporting data and not using what is in place. Where is conversion table to allow folks to follow this ever changing data reporting strategy?	The regional hydrologic models proposed as the primary tools for evaluation of the final array included the Regional Simulation Model-Basins (RSMBN) and the Regional Simulation Model Glades-LECSA Implementation (RSMGL). The iModel was also used as part of the plan formulation process for the CEPP. These models were developed by the Hydrologic and Environmental Systems Modeling Department of the SFWMD. Output from the regional models was readily provided to the public during plan formulation for the CEPP. Locations at which model output is provided (*i.e.* Gages, Indicator Regions, Transects etc.) is standard and has not changed from prior use of these models for other CERP projects.
JM - 7	10-26-12	To help with better identification of the area of WCA3N that is to have water managed so that the saw grass is major vegetation type to survive CERP water management goals I have created the following map from Google Earth. The area north of the red line should be considered saw grass prairies with the area west of the orange line being the strongest or healthiest saw grass prairie habitat. The area north of the red line was never ridge and slough, see federal map below. Consider the area west of the orange line as being a transition zone between the deeper water in the ridge and slough area to the west of the Miami River and the historical saw grass prairie. This is strictly my personal opinion and I look forward to other folks thoughts on this topic. (map attached with line drawn on it)	Thank you for your comment and information Alt 4R2 generally produced improved inundation patterns in northwestern WCA 3A reaching over 70 percent of habitat unit restoration targets for ridge and slough. Water depths for Alt 4R2 in northeastern WCA 3A are more conducive to shorter hydroperiods sawgrass marshes. Alt 4R2 would act to rehydrate northern WCA 3A promoting peat accretion, reducing the potential for high intensity fires and promoting transition from upland to wetland vegetation.
JM-8	7/12/13	This, below, was taking from one of the documents from Monday's, July 8, 2013, meeting. It was in the	Open water = unvegetated areas such as ponds, lakes, rivers, bays and estuaries.

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		back up material--if needed section. What is the biological differences between "open water" and "open marsh"? Also can you tell me how many acres of each habitat type, "open water" and "open marsh" are in ALT4 or the most recent model run i.e. ALT4R1 etc.?	Open marsh = open water-dominated freshwater marsh with a mix of sparse graminoids and/or herbaceous vegetation (spikerush, low stature sawgrass, arrowhead, swamp-lily, to name a few). No one has done the calculation in acres between the two for the entire CEPP domain. ELVeS is the model, so we can run it if needed.
Larry Fink (LF) - 1	7-6-2012	Quoting from Page 160 of 267 of the NAS CROGEE Biennial Report on Everglades Restoration (http://www.nap.edu/openbook.php?record_id=13422&page=9): "ELM appears to be the only water quality model that has been approved for use by the USACE and that is actually used in CERP project planning (although not widely so). However, it is not listed among the modeling tools for use in the Central Everglades Planning Project (USACE and SFWMD, 2012). Other water quality models that seem essential to an ongoing Central Everglades Planning Project, such as the Dynamic Model for Stormwater Treatment areas (DMSTA), have not undergone a formal, external peer review. External peer review is important, particularly for models that are used extensively in the planning process, and peer review of the DMSTA is a high priority." Please advise how the SFERTF intends to proceed in this regard, USEPA's acceptance of DMSTA as an expedient notwithstanding.	Response provided by Shannon Estenoz (DOI): To my knowledge the Task Force does not have, at this time, intentions to proceed on a specific course of action related to this subject. On the substance of your comment, please see the perspective expressed in italics by DOI technical staff below .DMSTA is the most widely used and accepted water quality model in South Florida for evaluation of Stormwater Treatment Area (STA) design and performance. It has been used by DOI, EPA, SFWMD, USACE, and others for multiple purposes, especially those related to STA performance, and has been certification by the USACE for use in the Central Everglades Planning Project. For further information on the model's wide use and acceptance, please see the DMSTA page on Dr. William Walker's web site -- http://www.wwwalker.net/dmsta/index.htm <http://www.wwwalker.net/dmsta/index.htm> . Also, please refer to a recent, peer-reviewed article published in a scientific journal by Drs. Walker and Kadlec on the use of DMSTA (below). W.W. Walker Jr, and R.H. Kadlec (2011). Modeling phosphorus dynamics in Everglades wetlands and Stormwater Treatment Areas. Critical Reviews in Environmental Science and Technology, 41:430-446.
LF - 2	7-9-2012	I have read Dr. Walker's web page and the referenced article. Despite its general acceptance, growing accolades, and pending certification by USACE, DMSTA is limited in the water quality parameters it can model, i.e., P, and the physical,	DMSTA is the most widely used and accepted water quality model in South Florida for evaluation of Stormwater Treatment Area (STA) design and performance. It has been used by DOI, EPA, SFWMD, USACE, and others for multiple purposes, especially those related to STA performance, and has been validated and approved for use by

Email	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		chemical, and biological processes important to the transport, transformation, storage, and release of P from the various compartments of engineered and impounded natural wetlands. The former deficiency is only problematic if no surface water constituent other than P is to be considered as a constraint on restoration infrastructure design, operation, or maintenance and/or a source of environmental impacts deriving there from. Based on the CEPP process to which I have been exposed to date, I am under the impression that no surface water constituent other than P is being recognized as a constraint in evaluating restoration design, operation, or maintenance alternatives. This includes mercury, despite the fact that the Everglades and Florida Bay are listed as mercury-impaired waters under the Clean Water Act. Please disabuse me of this impression if you have evidence or intention to the contrary. The latter deficiency is only problematic if the time-to-recovery of the Everglades and Florida Bay is not of primary importance in evaluating restoration alternatives without and with remediation of contaminated sediments. Based on the posted rejection of my recommendation to include time-to-recovery in the alternatives evaluation table, the time-to-recovery of the system is not considered of primary importance in the CEPP process. SFERTF is dependent on SFWMD staff to perform the required water quality modeling to evaluate the water quality impacts of the preferred restoration alternative and various viable alternatives that will be considered in the EIS. SFWMD has not reported, is not reporting, and will not report time-to-recovery information as part of the evaluation of	the USACE for use in the Central Everglades Planning Project. At this time, regional predictive tools are not available for pollutants other than phosphorus. While progress is being made on understanding the factors that affect mercury cycling within the Everglades, no modeling tools are available that can predict the effects of CEPP hydrology on mercury methylation dynamics. Given the strong correlation between atmospheric mercury deposition and methylmercury concentrations in fish and surface water, the most effective means of reducing mercury concentrations is to reduce atmospheric deposition. To this end, the FDEP is developing a state-wide TMDL for mercury emissions. Achieving the guidance concentrations will require national and international cooperation far beyond the control of any local or regional agency. Time to recovery was not added to the evaluation per this commenter's request; however, the timing of habitat recovery is incorporated into the benefits evaluation for all alternatives. The timing of habitat recovery is also implicitly incorporated into the calculation of the project's average annual ecosystem benefit.

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		design, operation, or maintenance alternatives according to the CEPP process unless directed to do so by SFERTF, and it is my impression that SFERTF has no intention of directing SFWMD staff to report time-to-recovery or to add time-to-recovery as a performance objective, evaluation criterion, or water quality constraint as part of the restoration alternatives evaluation process. Please disabuse me of this impression if you have evidence or intention to the contrary.	
LF - 3	6-19-2012	(1) What objective criteria must each of the following sovereign submerged lands and uplands conditions or activities meet to be considered inherently incompatible with the attainment of Everglades restoration water quality performance objectives within 10 years of completion of all CEPP projects: (a) in general, (b) Florida's 10 ppb Total Phosphorus Water Quality Standard in particular; (c) EPA's 0.3 ppm Total Mercury Water Quality Criterion in fish flesh in particular: (i) unremediated in-place contaminated Lake Okeechobee sediments? (ii) unremediated in-place contaminated Everglades Agricultural Area (EAA) soils? (iii) unremediated in-place contaminated Everglades interior marsh soils? (iv) any EAA agricultural practice?	Each CEPP project component will be evaluated for compliance with state and federal water quality criteria as part of the CERPRA permitting process initiated during plans and specifications development. To address EPA's 0.3 ppb Total Mercury Water Quality Criterion in Fish flesh, the FDEP is developing a state-wide Total Maximum Daily Limit for mercury. Regarding contaminated soils or sediments in South Florida, any required remediation will continue to be part of project planning and land management processes.
LF – 4	6-19-2012	(1) How is the development of Florida's statewide mercury TMDL now on public notice being	There is no information available that either sulfur or mercury will be an insurmountable barrier to restoration. The FDEP's October 29,

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		coordinated with CEPP to ensure that the sulfate-mercury relationship is not an insurmountable barrier to Everglades restoration?	2012 Draft TMDL for Mercury focuses on the control of in-state sources of atmospheric and point source mercury emissions. The draft TMDL specifically exempts non-point sources of mercury such as stormwater from the TMDL waste load allocation. The CEPP project is not a source of point source mercury emissions and therefore will not be affected directly by the FDEP mercury TMDL. There is no draft or planned TMDL for sulfur.
LF - 5	6-19-2012	(1) When will the State of Florida numerical Class III 10 ppb Water Quality Standard (WQS) for Total Phosphorus (TP) be met at the points of discharge to the Northern Everglades under the announced agreement between EPA and FDEP? (2) What independent water quality modeling of the combined operation, maintenance, and remediation of Lake Okeechobee, the EAA, the proposed shallow reservoirs, and the existing and proposed Stormwater Treatment Areas did EPA perform using EPA-approved water quality models to validate the agreed-upon plan for attainment and maintenance of Everglades 10 ppb TP WQS within the agreed-upon timeframe?	(1) The September 2012 Consent decree requires that the Water Quality Based Effluent Limitation (WQBEL) be fully met after the completion of the SFWMD's Restoration Strategies plan in 2025. This deadline is specifically written into NPDES and EFA permits. (2) The Restoration Strategies plan was modeled using the DMSTA model. This modeling output was reviewed by experts at DOI and EPA. The modeling report is publically available on the SFWMD website. DMSTA modeling was performed by the SFWMD for the CEPP project to determine the effect of the A2 FEB on phosphorus concentrations of water entering northern WCA3A. This modeling effort was reviewed by DOI and USACE experts as part of the CEPP planning process.
Dave Zuhusky	8/8/13	Can you tell me what the timeline is for the construction of the C-43 reservoir project that is supposed to be built along the Caloosahatchee River. Our waters in the Pine Island Sound and beaches near Ft. Myers are being fouled and polluted by the discharges from Lake Okeechobee. Also, do you know of ways I could learn more about the overall cleanup of the Everglades. Thank you for your assistance.	The Caloosahatchee River (C-43) West Basin Storage Reservoir project Record of Decision was transmitted to Congress for authorization on April 13, 2011. We are currently waiting for the next Water Resources Development Act (WRDA) to authorize this project and a few others. The last WRDA was in 2007 and we are hoping for another one soon. I have attached the current Fact Sheet for that project. For more information about this project and the other Comprehensive Everglades Restoration Plan (CERP) projects please go to http://www.evergladesplan.org/index.aspx. This web site will give you information on all of the CERP projects as well as upcoming public meetings, events and documents out for review.

Table C.3.2-4. Comment response matrix for comments received during the Final Array Public Meetings.

Public Meeting	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
Central Everglades Planning Project Public Meeting – Final Array December 10, 2012 Estero, FL			
RaeAnn Wessel, Sanibel Captiva Conservation Foundation	12/10/12	I thank you, the Corps, for bringing the road show to Fort Myers. Often we are the neglected stepchild that gets forgotten and left in a closet and we have to travel all over the state. So, I'm sorry there aren't more here, but I appreciate you being here and bringing this information. Our comments are that the tentatively selected plan needs to promote the goal and vision of Everglades restoration, using the variety of initiatives and projects that have been proposed, including bridging Tamiami Trail, decompartmentalizing Water Conservation Areas 3A and 3B, Northeast Shark River Slough, and Everglades National Park, to provide water into Everglades National Park. We are particularly taken with Alternative 4 as the best alternative for restoring natural flow to the Everglades and a flow-way, respecting and enhancing the soils, the topography, using, in other words, the natural system to dictate more rather than pumps and some other methods for –for moving water around, that having an influence on water quality, natural ecosystems, while not impacting health and -- and human safety.	Thank you for your comment.
RaeAnn Wessel, Sanibel Captiva Conservation Foundation	12/10/12	The sheet-flow ridge and slough topography are the most defining characteristics of the Everglades, and reestablishing them should be a top priority of CEPP. The tentatively selected plan needs to address restoring flow into and out of Water Conservation Area 3B. And the way that that's done leads us to Alternative **4.**	Thank you for your comment.

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		The removal of the L-29 along the bottom of Water Conservation Area 3B and allowing less forced flow, removing the barrier and allowing the water to move more naturally will provide better conditions for fisheries. We think that Alternative 4 is the best step in decompartmentalizing the system, which has been highly engineered and partitioned, so that we can reconnect and make operational -- well, that makes no sense. Alternative 4 addresses more of the aspects of restoring historic flow as opposed to just operational considerations. Reducing soil oxidation and loss, restoring the degraded ridge and slough habitat, and providing for more natural recession of water across the Everglades landscape, again, we feel Alternative 4 provides more of those alternative benefits. Benefits specific to fish and wildlife, you know, there is a whole range of wildlife that is supported by restoring and managing the restored Tree Island, function of a restored Tree Island, improving fishery conditions by removing L-29, restoring flows in Water Conservation 3B, where there has not been successful wading bird activity and nesting due to the lack of sloughs for fishing. A flow-way such as that proposed in Alternative 4 will increase biological connectivity, open corridors for fish and wildlife to more freely across boundaries in search of seasonal refuge. Also, the Alternative 4 will have benefits to fish and wildlife from protected climate change and sea level	

Public Meeting	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		rise, with improved habitat, increased connectivity, maximizing seasonal concentrations of food, more corridors for movement, reducing wildlife strandings. For those reasons that we see that Alternative 4 provides benefits.	
RaeAnn Wessel, Sanibel Captiva Conservation Foundation	12/10/12	On another note, more maybe to the second increment, we just want to be on the record as documenting the need for dry-season flows to the Caloosahatchee from the greater Everglades system, the Caloosahatchee connection today to Lake Okeechobee. We want to make sure that, in the process of starting kind of at the bottom of the system and working up through the central core, we don't forget that the estuary on the west coast is very intricately linked today to the flows coming out of Lake Okeechobee. So, while we fully support this proposal to restore conveyance in a flow-way down to the south through the Everglades, we want to make sure that there is a placeholder for those needed flows, especially dry season and drought conditions for the Caloosahatchee.	Thank you for your comment.
Brad Cornell, Audubon Florida	12/10/12	I do want to add my perspective from the west coast, policy work that Audubon does over here with the Corkscrew Swamp Sanctuary and Collier County Audubon Society. Thank you very much for coming and allowing us to hear and see some of the perspective on this final array, as well as the comment. We are obviously very concerned with the incredible degradation that has gone on for many years, including to the northern estuaries, so we appreciate the objective of this Central Everglades Planning Process. It's been sorely needed for a long time, I think everybody	Thank you for your comment.

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		recognizes that. And we certainly appreciate and recognize the tremendous amount of work that the Corps and the Water Management District have put into fulfilling this objective of a broader perspective on project permitting and implementation. This is this is a huge objective that we really fully support and are very appreciative of the work that you have done.	
Brad Cornell, Audubon Florida	12/10/12	On the specifics, looking at the alternatives that you have put into the final array, the objective of moving water south is being addressed by all of them. Obviously, this is a phase one. We anticipate that the subsequent phases are going to be moving even more into some of the areas that will benefit some of the western Everglades that we work in here and the northern estuaries, but this increment is absolutely essential as phase one. As part of that, any alternative that you were looking at, we would like to see at least an increment of restoration of Water Conservation Area 3B, so Alternative 4 has the most benefits for 3B that we see that makes a lot of sense. And as the modeling goes forward, subsequent to these sessions of public input, perhaps there will be even more benefits or facets of the other alternatives that could be incorporated into this Alternative 4 that would make sense, too, and provide even more ecological benefits. Obviously our perspective is let's get the biggest bang for our buck, our restoration buck, and we see Alternative 4 as being that at this point.	Thank you for your comment.
Central Everglades Planning Project Public Meeting – Final Array December 11, 2012 Homestead, FL			
Laura Reynolds, Tropical	12/11/12	I wanted to thank you for coming all the way down here to Homestead. It's a lot closer to my house. We represent about 4,000 people in Dade County	Thank you for your comment.

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Audubon Society		and Northern Monroe County. And I think that some of these plans are really visionary	
Laura Reynolds, Tropical Audubon Society	12/11/12	We have supported Alternative 4. It's what the Everglades Coalition has put forward and I'm a board member of the Everglades Coalition. And I was glad to hear Kim talk about making sure that Biscayne receives the same amount of water that it's currently receiving. I think that's really important. I know that there are efforts to even make sure more water is delivered to Biscayne. So when we're moving forward, I just want to caution that we do have another national park to consider and another estuary. So even though I'm excited about Alternative 4, I think that it's very visionary, I want to make sure that we keep in mind the other system that is to the east. And I do want to mention a few specific details about Alternative 4. I think the reason why this is the best plan really comes down to sheet flow and really connecting the north to the south through Tamiami Trail. So it's really the only one that represents real decompartmentalization, because you're connecting the north to the south. So I want to urge all the agencies that are involved in the planning effort to try to think outside the box. I know that there are rules and regulations and permitting for that yellow structure there, which I would like to call a temporary berm. But I know it's been defined in your alternative as a levee. I'm hoping that in being visionary that you can try to re-define a feature to complete the most exciting restoration project, the largest restoration project in the world; and try to maybe	Thank you for your comment. Construction of the ~ 8.5 mile levee in WCA 3B connecting the L-67 A levee to the L-29 levee would be constructed in accordance with USACE Engineering Design and Levee Safety Criteria and consistent with design criteria jointly developed by the SFWMD and the Corps.

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		even make this a habitat feature, an upland habitat feature, or something other than a concrete levee. You know, that's the vision that I have. I don't think it's put there to protect the road. I think it's there so you can actually connect the north to the south. And I just want to encourage you to keep that vision exciting and try to think outside the box.	
Julie Hill-Gabriel, Audubon Florida	12/11/12	Thank you so much for being here. As Laura said, this is closer to us. So really thank you for driving across the entire state in a couple days. I think it's one of these things, it's really important to start to relay to a bunch of different communities; not only things like this that we're in the middle of, but how far we've come in general and how much work we still have going on. We often get the sense that people don't quite understand that. They either think we're done or we're or not doing anything. So thank you for helping clear that up.	Thank you for your comment.
Julie Hill-Gabriel, Audubon Florida	12/11/12	As you all know probably, this has been a huge priority for Audubon for many, many years. In addition to not forgetting that there's another national park, it seems often the water conservation area is the section that is forgotten. People think of Lake O, they think of the estuaries, and then they think of Everglades National Park. And we're forgetting what a hugely important habitat we have right there in the middle. So focusing on the Central, we're just so happy that we're here. I think on that note we're really hoping that this first increment -- we know, of course, it is a first increment. But we are hoping we can get as much focus and as much restoration into Water Conservation Area 3B as possible.	Thank you for your comment.

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Julie Hill-Gabriel, Audubon Florida	12/11/12	We do also see that Alternative 4 is a good way of getting us there and hope that we can do as much as we can to restore the habitat for that region as well, in addition to 3A, and probably in the most cost effective way possible. I would like to also note that there was an Alternative 5, which would have almost definitely been the most expensive alternative. But now that that is not something that's being proposed here, you know, we certainly want to remember that that was sort of the outlier. This is not the outlier. That was the most ambitious plan that was on the table. And even if there is potential for taking certain features out of one and moving them into others, that we keep an open mind to some of the features that were in Alternative 5 as we move forward.	Thank you for your comment. Alternative 5 was screened out because this configuration would likely cause undesirable conditions in WCA-3B during high water conditions by routing large portions of WCA-3A flows through WCA-3B. During drought events there is concern that there is not enough storage in the A-2 FEB to prevent increased probability of damaging peat fires in WCA-3B. Further loss of soils through fire or soil oxidation/subsidence would only compound our difficulties in moving flows out of WCA-3B south across Tamiami Trail.
Aida Arik, Everglades Foundation.		Thanks for coming down to Homestead. I'd just like to emphasize the restoration objective of connecting the system and how Alternative 5, which was taken off the table, represents that full restoration connection by degrading 67A and the L-29 levee. And really we knew that there were issues that couldn't be resolved in the time line that we have for this increment of CEPP. So what we need to do is to take a bold step forward towards connection of the system. And I think Alternative 4 is that bold step forward where we really are doing something towards connecting the system, where Alternative 2 falls short of that. It's just not enough connection between 3A and 3B.	Thank you for your comment. Alternative 5 was screened out because this configuration would likely cause undesirable conditions in WCA-3B during high water conditions by routing large portions of WCA-3A flows through WCA-3B. During drought events there is concern that there is not enough storage in the A-2 FEB to prevent increased probability of damaging peat fires in WCA-3B. Further loss of soils through fire or soil oxidation/subsidence would only compound our difficulties in moving flows out of WCA-3B south across Tamiami Trail.

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		So I urge you to strongly consider Alternative 4 as that full step towards re-connection of the system and the restoration objective that you're trying to achieve.	
Savannah Howington, Public	12/11/12	I'm actually representing myself. I do work for Everglades National Park, but I'm not representing the park or the National Park Service. I have read up on my own on these projects, and there are just a couple points I'd like to make. I want to be careful that my comments aren't confused with any park official comments. One of those is my concern that the people who make their living off of recreational activities have -- I'm sure they have their say -- but they are left with opportunities to pick up some of the less passive recreation that's happening in the park and move it north to the water conservation areas. Some of that is air boating. I'd like to see a continuity of that recreation that is passive -such as canoeing and hiking and even camping -actually cross that road, if possible. I don't know that camping is possible in the water conservation areas. But it would be great if those were promoted somehow. Maybe that would happen in the long future. But most of the recreation that I understand is happening in conservation areas is hunting and fishing. And I think there would be some, you know, agreement that popular activities in the park -because the park is beautiful and it is pristine -can be moved up to the conservation areas more along with this project that would increase its promotion and popularity and, gosh, having fun.	Thank you for your comments. A recreation plan has been developed and included in CEPP Project PIR and EIS in Appendix F.

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Savannah Howington, Public	12/11/12	The other one is in my personal opinion -again, this is my personal opinion. I think the Blue Shanty is an eyesore. I see it there. I don't like it. If I drive down the road, I won't like it. I can probably see it from the roads. Granted, I support national parks and the aesthetic values that we try to maintain. But I don't want to see that. I also think the cost value you'll find is high, you know; where if it's coming from, it may come from the levee that's being downgraded. But there's no guarantee of that. So looking at the other alternatives, I would like to promote Alternative 2. Because for one thing, I think there's a greater chance of that area filling up with water with more gated structures. There is three on that one. I understand there's four in 3. But I think if they're moved down -- and I'm not a hydrologist. But it just looks on the page like it might fill up in that area anyway greater. And the third thing is that in this one, Alternative 4, there's a little X there; which is the levee being downgraded to be west of the shanty where it enters the park. What we have is a problem with exotic species. And it's because of the canals north, it's because of the canals that are all over the Everglades. And when the levee is downgraded, then it becomes a stream. And even the smallest exotic fish can get larger once it's outside of the canal. And there's a gated structure there in Alternative 2. From what I'm just visualizing, it might help prevent the larger exotic species entering the park. And that would help the park, of course. And it	Thank you for your comments. An Invasive Species Management plan has been developed and included in CEPP Project PIR and EIS in Annex G. The evaluation and cost analysis of the final array is in Section 4 of the Draft PIR/EIS.

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		would prevent in the long term problems that may come up in NEPA. It's going to be something that they may have to consider anyway. But I think that is also positive. The only question is the seepage area where they have two pumps, and it's a much smaller seepage wall. And, without the money in front of me, I'm thinking, smaller walls are cheaper. And, we all like to control things. And with that second pump to the south, there is an easier chance to control that water from flooding Kendall, or whatever that area is up there, to the east of the park area. And as much as I don't want to have pumps everywhere, I think running a pump would in the long run possibly be cheaper than building that wall and trying to maintain that wall at that length that it is in Alternative 4.	
Central Everglades Planning Project Public Meeting – Final Array December 12, 2012 Clewiston, FL			
Craig Tepper, Seminole Tribe of Florida	12/12/12	I'm the Director of Environmental Resource Management Department for the Seminole Tribe of Florida, and tonight the Seminole Tribe is making these comments to preserve our rights under the Federal NEPA process. We believe the western Everglades basins are an integral part of the Everglades restoration and their contribution to the Sawgrass Everglades system in the center of the Water Conservation Area that we're speaking about tonight. Federally constructed infrastructure on the Big Cypress Seminole Indian Reservation is underutilized due to the lack of ground and surface water during many times of the year to maintain its and other	The Jacksonville District and the South Florida Water Management District are actively engaged in efforts hosted by the South Florida Ecosystem Restoration Task Force to identify and collect existing data, identify data gaps, and to facilitate the development of appropriate models to address the Western Basins. Part of this process includes capitalizing on knowledge gained from the ongoing construction of the Seminole Big Cypress Critical Project. We will continue to use regularly-scheduled Seminole Big Cypress Critical Project, Project Delivery Team meetings to collaboratively identify and address opportunities to improve that project's performance. In the course of these meetings we collectively determined that addressing the operation of the S-190 structure is a critical step prior to project modifications. Accordingly, the Jacksonville District is currently scoping a plan for a modification to the existing S-190 operations. The USACE will continue to maintain ongoing communications with the Seminole Tribe of

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		surrounding natural resources. CEPP study area encompasses the western Everglades basins, including Lake Okeechobee, Big Cypress National Preserve and additional lands, as well as the Big Cypress Seminole Indian Reservation, but in reality there has been no study of these areas and their essential importance to the restoration of the whole system, no meaningful data collected, no meaningful scientific research, no meaningful modeling in the western basins. Since no study of the western basins have been done, none of the analysis done accounts for the inflows to the Water Conservation Area 3A through the L-28 gap south of Alligator Alley, commonly known by the tribe as Mullet Slough. Western basin options were screened out in early 2012, yet the Corps continues to produce maps such that suggest Big Cypress National Preserve and the additional lands are part of CEPP indistinguishable from the Water Conservation Areas. Little attention has been paid to the northwest corner of Water Conservation Area 3A where the tribe has nonexclusive hunting and fishing rights which are located in this area. Most attention is paid to moving water through this area to Water Conservation Area 3B and Everglades National Park rather than restoring this area. Alternatives divert more water east rather than looking for additional routes west and south. And the tribe remains respectfully to continue to contribute and participate with all of the federal family of agencies and organizations to move this project along. We do not want to stumble and keep	Florida regarding the Big Cypress Reservation.

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		restoration from happening, but we want it, all of it addressed. Thank you.	
Paul Gray, Audubon Florida	12/12/12	Audubon is a bird conservation organization that has been in Florida for more than 100 years, and we approach these projects as to how they can help bird populations, but it's also basically the habitat. When the National Academy of Sciences did their last peer review of Everglades Restoration, they looked at 10 ecosystem components, they call them, to see how well we're doing in trying to restore them or protect them, and only one of those 10 components got an F for a grade, and that was the Everglades Snail Kite, and the reason is Kites just cannot nest in water conservation areas in the Everglades successfully anymore, and, you know, this is a bird named for the Everglades itself and only found in Florida as far as the North American population, and part of the problem is hydrology. So happily Kites have done well in some other areas of the state, but we're really concerned about the Everglades, and they're one of the indicators the Everglades is declining and really needs help quickly. So in that sense, we really appreciate this expedited process. We really appreciate you guys working so hard. We've been to a lot of these meetings, different people with the Audubon, and we support your efforts to try to find the quickest solutions we can to try to repair the Everglades.	Thank you for your comment. Snail Kites are addressed in Section 5 of the Draft PIR/EIS and in Annex A in the Biological Assessment.

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Paul Gray, Audubon Florida	12/12/12	We really liked Alternative 5 but realize it may be a little bit more optimistic or ambitious than we have time for in this effort, so we realize this is the first of many steps. We do favor Alternative 4. We think that's a good alternative. We also would ask that you don't keep these alternatives locked in yet, that maybe there's a little bit of mixing and matching from selected proponents and other alternatives so that we could add in whatever alternative you select. It might even help Mr. Tepper's concerns if we could do something for them. And so that's really our comments. We really support what you guys are doing. We appreciate it. We think 4 is probably the best bet at this point, and we look forward to helping you. One other remaining concern is WCA 3B. It's got the seepage problems, and we're afraid to put water in it, we understand that, but that is something we're going to have go back and that's something, if the Corps puts a little bit more water in there, it gives it a little bit more opportunity in the meantime. So we thank you.	Alternative 5 was screened out because this configuration would likely cause undesirable conditions in WCA-3B during high water conditions by routing large portions of WCA-3A flows through WCA-3B. During drought events there is concern that there is not enough storage in the A-2 FEB to prevent increased probability of damaging peat fires in WCA-3B. Further loss of soils through fire or soil oxidation/subsidence would only compound our difficulties in moving flows out of WCA-3B south across Tamiami Trail.
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Karl Wickstrom, Public	12/13/12	I'm a suffering citizen of Stuart. Early in the presentation, you implied, you actually said it, that you would be diverting water that would be going to the estuaries otherwise south and you said that that's part of the program and you implied such all through at you had said. Isn't the fact, the fact is that you won't be moving a significant amount of water that would be going to the estuaries? In 2005 for instance, there were 900 billion gallons sent off	All of these alternatives involve diverting approximately 200,000 acre feet of water that would be normally discharged to the estuaries south into the flow equalization basin and subsequently into the Everglades. So that's 200,000 acre feet. Now that is not a huge fraction, a very large fraction of the water that's presently discharged to the estuaries. We recognize that. This project is really just an increment of a much larger restoration program. So what we're trying to do is come up with a plan which gives us the next increment of restoration in the Central Everglades. We recognize there are

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		to the estuaries. So the question we all have is, how much of that 900 billion would these projects alleviate if they were all done? And from what we can see, it's almost nothing. So I think it's a deception, isn't it, to imply that you're going to help us a great deal?	unmet needs in the estuaries with this plan.
Mark Perry, Public	12/13/12	On all the footprints it doesn't look like the original footprint for the reservoir, A1 reservoir footprint and the Talisman. Does that include all the Talisman properties and the A1 reservoir property that was started under construction? It looks like on the old A1 reservoir, it actually went further north and then over.	It doesn't include the worn tract on the north end of Talisman A1. That's been excluded from the project footprint. We had some agricultural chemical concentration on that parcel. And as a result of that, it's been excluded from the footprint for the A1 FEB. And then from an engineer and cost effective standpoint on A2, Talisman A2 parcel does include some additional land in the northwest corner that's not in the footprint. That's just due to the fact that from an engineering and cost standpoint, it's much easier to build a facility with four sides than one with seven. And so it doesn't include that small piece of land that's on the northwest corner of A2.
Pete Quasius, Collier County	12/13/12	I represent Collier County and a number of the other West Coast stakeholders with concerns with water flows. I am very encouraged to see a crowd here tonight. Our meeting the other night only had a few folks. It's been decades that we've been asking for water to move south. Not only do we suffer the consequences of very damaging flows to the St. Lucie River and the Caloosahatchee Estuary, but we are also deprived of water in the Biscayne Bay and Florida Bay and ultimately down to the 10,000 Islands. So I have a stake in this from both directions. Karl's question was right on point. From the beginning, the groups, which I represent, have been avid supporters of this process, fully recognizing that the 200,000 acre feet that you are talking about is maybe 20 percent of the damaging flows	All of these alternatives involve diverting approximately 200,000 acre feet of water that would be normally discharged to the estuaries south into the flow equalization basin and subsequently into the Everglades. So that's 200,000 acre feet. Now that is not a huge fraction, a very large fraction of the water that's presently discharged to the estuaries. We recognize that. This project is really just an increment of a much larger restoration program. So what we're trying to do is come up with a plan which gives us the next increment of restoration in the Central Everglades. We recognize there are unmet needs in the estuaries with this plan.

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		that we get in any single year and only a few percentage points if we have a stormy year. So we have been encouraged to think of this as a first increment and I would like to see a better articulation of what our long-term goal is to move significant quantities of water south. And if any of these alternatives start building the infrastructure necessary to allow that to happen sooner at least cost. So our primary interest is to move as much water south as quickly as possible at the least possible cost with the maximum environmental benefits.	
Pete Quasius, Collier County	12/13/12	But at the same time, we need to be assured that the other projects, which are necessary for our basin management, the C-44 reservoir and the St. Lucie, the C-43 reservoir and treatment areas in the Caloosahatchee are also prime candidates because we don't want to see a project built that puts us in competition for the water we need during the dry season and have relatively little impact on the damaging flows we get during the wet season. Thank you very much.	The project dependencies are included in the Implementation Plan in Section 6 of the Draft PIR/EIS.
Joe Capra, Public	12/13/12	I actually am a business owner in Martin County and I'm a resident of Martin County. I'm not here representing anybody yet, to be truthful about the matter. Just to kind of say I offer my support. I, first of all want to thank the Corp and Water Management District for expediting this process. It's long overdue and I know you've been frustrated by it and so have many of the residents and businesses in South Florida. First of all, thank you for that. And second, I'd like to commend you, every time I listen to you, which has been probably over the last	Thank you for your comment.

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		nine months, you have answered every question, and if you haven't, you've researched it and got back to people, and that you should be commended for because it's a hard job. This is a big project. It's world re-known and I think we need to understand that not everything will be perfect and we'll do the best we can. I think you've addressed just about everything that would be necessary for a project of this nature, storage, treatment, distribution, conveyance. I mean seepage canals and so forth. I think you are hitting on every point that needs to be hit on. I'm not going to tell you how to do your job, because I think you know it already. So I see no problem with that.	
Joe Capra, Public	12/13/12	I personally see, the biggest problem is funding. And one thing we learned from this recession is we're going to have to economize. We economize on everything nowadays and this project will be one of those that will have to be economized. And obviously, we did that on the land purchase. And unfortunately, we'll have to decide what did we get -- the most, the best --the most for the least amount of money and that probably will determine what alternative we choose. But as an alternative let's think about what could we expand on in the future when maybe we have a little more funding. So I think funding is going to be your biggest obstacle. And the last thing I would like to say is I would like to see you expedite this process even further during the design and construction phase and in capturing the money. I think that's probably the biggest thing that we need to be thinking about, is let's think of a	The implementation plan in the draft report will lay out how we're going to implement TSP. With respect to design and construction, that depends on Congressional authorization and appropriation after the planning process is complete.

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		time-line that's a little short-term. Poor Mark over here I think has been involved with this probably for 40 years. You know, when I hear him talk about that, I just can't believe somebody spends that much time on this. I mean I'm a novice on this thing but as much time as the people in this room have spent on it, let's get something done and let's stop arguing about it. Let's move forward and that's my last comment. Thank you.	
Maggy Hurchalla, Public	12/13/12	I represent my grandchildren. They're in college now. I would like to echo and applaud what Collier County said. We feel the same way in Martin County. We don't have the problem of needing water, but we have the problem of not wanting it. I would like to thank you for coming. I think you all are well aware that we love to hate the Corp in Martin County. And it's because we want you to be a little less aggressive in moving water to the estuary. I think that's a wonderful euphemism, Kim. We'd like you to be a little less aggressive moving water to the estuary. And yet we do realize the limits in a project of this size and all these pieces of getting it all done once and stopping everything as soon as we want you to stop. I flew over earlier this fall when they were doing the discharges and I have not had an occasion before to see how many miles and miles and miles out to sea you could see what was coming out of the St. Lucie Inlet. I know that the IRL plan says if we don't change our water management system, the St. Lucie River will be irrevocably destroyed. That means dead, gone. You do not get it back. And I think that you will find in Martin County that there are more people who realize that we need you not just to fix the Central Everglades, not just to fix the Northern	Thank you for your comment. All of these alternatives involve diverting approximately 200,000 acre feet of water that would be normally discharged to the estuaries south into the flow equalization basin and subsequently into the Everglades. So that's 200,000 acre feet. Now that is not a huge fraction, a very large fraction of the water that's presently discharged to the estuaries. We recognize that. This project is really just an increment of a much larger restoration program. So what we're trying to do is come up with a plan which gives us the next increment of restoration in the Central Everglades. We recognize there are unmet needs in the estuaries with this plan.

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		Everglades, not just to fix the St. Lucie Project but to fix the whole thing. Because if we don't have the plan for our water shed, because we have to economize for it, if we don't have the plan for the Caloosahatchee so that Lake Okeechobee can continue to function in a sustainable way with the West Coast, as well as the East Coast, if we take don't care of CERP, that's the Comprehensive Everglades Restoration Project, then or estuary is going to die.	
Maggy Hurchalla, Public	12/13/12	So we hate you. We love you. You're the only game in town. I like number four. Please be sure to include in your Environmental Assessment what will happen to us if you don't do this. Yeah, it's only 200,000 acre feet, but I'd like not to that 200,000 acre feet. Please tell them that they should not be economizing and not doing this now because it doesn't do it all. And the last thing I would say to you besides sincerely thank you very much for your efforts, is hurry up.	The Project Implementation Report/Environmental Impact Statement (PIR/EIS) include a description of the Future Without Project condition in Section 3 that details the future without CEPP in place. Section 4 Environmental Effects of the PIR/EIS compares the alternatives and Tentatively Selected Plan (TSP) to the Future Without Project Condition (No Action Alternative).
Bob Ernst, Public	12/13/12	Another inundated Martin County resident. As Maggy said, we really don't want the water you sent to us. Maggy also said she was worried about her grandchildren and we discussed our grandchildren the other day and that was certainly a concern. When I look at your posters back here and I saw that we're going to be still discharging 37 years from now, in 2050, we'll be still discharging water into the estuary, killing the estuary, killing our quality of life. Yes, I'm worried about my grandchildren. But I will never see, a guaranteed clean estuary. I will never see an estuary guaranteed not to get discharges and that's very disheartening. It probably would be better if I didn't come here to get that information.	All of these alternatives involve diverting approximately 200,000 acre feet of water that would be normally discharged to the estuaries south into the flow equalization basin and subsequently into the Everglades. So that's 200,000 acre feet. Now that is not a huge fraction, a very large fraction of the water that's presently discharged to the estuaries. We recognize that. This project is really just an increment of a much larger restoration program. So what we're trying to do is come up with a plan which gives us the next increment of restoration in the Central Everglades. We recognize there are unmet needs in the estuaries with this plan.

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		It was also mentioned, this is a time with very constrictive funding. And here we are proposing a project that's going to do so little, spending the money that we're going to spend to do it and obtaining so little for it. It's hard to stand here and say thanks, you're taking that much water and then realize, in 2050, we're still going to be looking at the same discharges going into this estuary. And probably then it's not going to make any difference because the thing's going to be dead anyway. I'd probably be better to bite my tongue and not speak but this is very, very disturbing. Thank you.	
Deborah Drum, Martin County	12/13/12	Deborah Drum here on behalf of the Martin County Board of County Commissioners. The Board of County Commissioners and Martin County residents have supported the Indian River Lagoon Project South or IRL South Project and the Comprehensive Everglades Restoration Plan since authorization in the year 2000. Martin County has generated an unprecedented $75 million for land acquisition cost through the commitment of local residents and acquired 45,000 acres for various CERP projects to reduce the runoff into the St. Lucie County River and to the Indian River Lagoon. The Martin County Board of County Commissioners has long advocated for completion of the C-44 reservoir and storm water treatment area, the first component of IRL Health Project to move to construction. The Board of County Commissioners also supports	Thank you for your comment. All of these alternatives involve diverting approximately 200,000 acre feet of water that would be normally discharged to the estuaries south into the flow equalization basin and subsequently into the Everglades. So that's 200,000 acre feet. Now that is not a huge fraction, a very large fraction of the water that's presently discharged to the estuaries. We recognize that. This project is really just an increment of a much larger restoration program. So what we're trying to do is come up with a plan which gives us the next increment of restoration in the Central Everglades. We recognize there are unmet needs in the estuaries with this plan.

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		the need for a flow way south. And in September of this year, the Board adopted a resolution in support of the Central Everglades Planning Project. We congratulate the Army Corp of Engineers and the South Florida Water Management District on the effort to reduce the time spent in the planning phase so that projects may more quickly move to authorization, appropriation and construction. Successful implementation of the Central Everglades Planning Project is predicated upon completion of the IRL South Project. We urge the U.S. Army Corp of Engineers, in these times of extreme budget constraints to stay the course and make swift progress on these projects that are already authorized. And in the case of the C-44 reservoir and STA projects that are partially constructed at last week's 16 County Ecosystem attended by Colonel Dodd, the county set their legislative priorities for 2013, emphasizing completing existing projects. The nine county coalition has consistently stressed in the past years, the need to get something done. Such assumes substantial IRL South and Ten Mile Creek Reservoir implementation, that means completion. While we understand that C-44 is currently under construction, there is no guarantee that future funding authorization will be made for the remaining components of IRL South, including the C-24 and 25 reservoir and Ten Mile Creek. If these components do not come to fruition, then the benefits to the estuary identified in the set modeling results will not be realized.	

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		Therefore, while we support CERP, the board expects the Corps can make full completion of the C-44 project an upmost priority. Thank you.	
Mark Perry, Oceanographic	12/13/12	Mark Perry for Oceanographic and been a resident in this area for probably too many years to understand there's so much going on with the degradation of our estuary and also the Caloosahatchee. You know when you look at the Comprehensive Plan and you try to figure out if it's going to actually do anything, even if we implemented all 68 components, we really scratch our heads because we still have the estuaries to deal with and there's not a plan, except for the plan six back in '93, '94 and '95 when they proposed to put water south into Miami and North New River Canal. What really disappoints me now is that water that used to sheet flow. It took six to eight months to get to the Kissimmee chain of lakes down to the lake and then it took another 16 months flowing at about one mile every four days to get through that river of grass 60-mile wide swath all the way down south. Since we've drained everything and shunted it out to the east and west, we've dumped about 1.7 billion gallons a day of fresh water that used to reach our aquifers, used to hydrate the Everglades and we dump it out to the east and west and to the Atlantic and Gulf of Mexico. That waste of water itself is ludicrous. And besides, on the way it's killing our estuaries, it's killed a lot of systems and it's starving the Everglades. Now we	All of these alternatives involve diverting approximately 200,000 acre feet of water that would be normally discharged to the estuaries south into the flow equalization basin and subsequently into the Everglades. So that's 200,000 acre feet. Now that is not a huge fraction, a very large fraction of the water that's presently discharged to the estuaries. We recognize that. This project is really just an increment of a much larger restoration program. So what we're trying to do is come up with a plan which gives us the next increment of restoration in the Central Everglades. We recognize there are unmet needs in the estuaries with this plan.

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		shunt out east and west to the Caloosahatchee and St. Lucie about 64 percent of the 2.2 million acre feet that comes out of the lake. Another 23 percent of that water coming out of the lake goes to agriculture south of the lake. And only 13 percent of that water coming out of the lake actually gets to the Everglades. What happens to that 64 percent or 1.4 million acre feet and you're telling us in this plan you are only doing 200,000 acre feet, that's less than 14 percent of the whole water that actually, just on an average, goes to the estuaries. And that's been mentioned that we get a heck of a lot more during a lot of the times when there's no other alternative. What needs to be done and year after year is the Corp comes to our presence and we get these huge discharges. They say I'm sorry, we feel your pain but we have no other alternative. We've got to have water moving south and we finally got everybody saying that and this alternative or these alternatives present ways for Central Everglades to fast track and hopefully get some projects. But as mentioned, even if we get something started in ten years, by 2022, that's only going to take care of 200,000 acre feet.	
Mark Perry, Oceanographic	12/13/12	So first and foremost my comment is, let's everybody recognize this is a first increment. It is a first increment and there needs to be a second, third and fourth increment to get all of that water that's now moving east and west to go south to the Everglades. Second, I'm really disappointed the A-1 reservoir footprint has been and the lands that we're only	Inclusion of operational and structural modifications to existing infrastructure and/or construction of new features in Holeyland WMA was considered during initial plan formulation efforts for the CEPP. These proposals within the WMA were not further pursued given water quality concerns. The quantity/quality management measures south of Lake Okeechobee are recommended to be located on and maximize the usage of the A-2 Compartment of the EAA land south of Lake

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		using for this, for this process is the lands we already own. We're not buying any more land, understand that. But the lands we already own, such as the A-1 footprint and A-2, it's disappointing that we're not using all of that. Maybe there are other reasons. And the other thing is the Holey Land has been excluded from screening and I really think that the Holey Land Project, which is south of the A-2, ought to be reconsidered to be put back into this planning process, because you got availability of that flow to go south. If there are other objections, that land is being used for other purposes, for hunting or something, let's find another area for that to occur. But you got this position of flow way between Miami and North New River Canal and you got to establish that kind of thing.	Okeechobee that is owned by the State of Florida. The identified project lands are located between and adjacent to the North New River and Miami Canals, which reduces the need to construct any additional conveyance features to move water from Lake Okeechobee to the project features and the WCAs. The robust hydraulic connection to Lake Okeechobee creates flexibility in managing high water levels and improves the timing of water deliveries to the WCAs. The project lands are also adjacent to existing water quality components that are currently being used for environmental purposes, creating a unique ability to optimize C&SF operations. Existing infrastructure, including roads, pump stations, etc., are already in existence and would not require substantial efforts for utilization or any upgrade. Publicly owned lands in the southern portion of EAA demonstrated better cost effectiveness on a cost per acre foot of storage and treatment when compared to other locations. The lands identified for the project have already been purchased and are owned by the State of Florida which reduces the risk and uncertainty associated with real estate costs and acquisitions.
Mark Perry, Oceanographic	12/13/12	We just, we can't really look at another increment or some other increment down the road without considering eventually between Miami and North New River Canal, you have to establish that missing link, that connection between Lake Okeechobee and the Everglades. Without that, we're still going to be dumping into the estuaries over and over and over again. I just can't really emphasize more that we just got to do something. We're killing the system. Just August through, August through November, the beginning of November, that 65 days, we had all this water dumping out and there is nowhere else to put it and we were dumping it out into the St. Lucie Estuary. We got 40 percent, over 40 percent of the oysters -- we saw sea grass beds up near the Crossroads and	Thank you for your comment. All of these alternatives involve diverting approximately 200,000 acre feet of water that would be normally discharged to the estuaries south into the flow equalization basin and subsequently into the Everglades. So that's 200,000 acre feet. Now that is not a huge fraction, a very large fraction of the water that's presently discharged to the estuaries. We recognize that. This project is really just an increment of a much larger restoration program. So what we're trying to do is come up with a plan which gives us the next increment of restoration in the Central Everglades. We recognize there are unmet needs in the estuaries with this plan.

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		the Indian River Lagoon area and the St. Lucie, the Willoughby Creek, that station that the district monitored went from 95 percent coverage of Johnson sea grass down to 2 percent and that's a threatened species and that's just one out of 33 threatened endangered species that we have in this area that constantly get killed and bombarded by those discharges from the St. Lucie. Yes, we've got our own water shed to deal with and yes, it's common and we need to restore the IRL South and it will help us in our watershed, the 400,000 acres so the St. Lucie and Indian River, there will be even more shed. But still, the discharges from the lake need to go south and all of it needs to go south. Not just 200,000 acres. So just do what we can as fast as we can.	
Jason Totoiu, Everglades Law Center	12/13/12	I would just like to say a few words about the specific alternatives that were presented. Restoring flow into Water Conservation Area 3B is a restoration priority, and a tentatively selected plan must advance that objective. And specifically, it needs to reduce soil oxidation loss, restore it to graded ridge and slough habitat, as well as restore wading bird nesting. That's been, not there for quite some time. Removal of L-29 along the bottom of 3B I think represents a clear step forward as it removes a barrier to flow and would improve fisheries. Of these four alternatives, Alternative 4 is the best alternative for the environment and we don't believe it really presents any human health and safety issues. The flow way that is contemplated will increase biological connectivity and I guess in the context of climate change projections between	Thank you for your comment. Alternative 5 was screened out because this configuration would likely cause undesirable conditions in WCA-3B during high water conditions by routing large portions of WCA-3A flows through WCA-3B. During drought events there is concern that there is not enough storage in the A-2 FEB to prevent increased probability of damaging peat fires in WCA-3B. Further loss of soils through fire or soil oxidation/subsidence would only compound our difficulties in moving flows out of WCA-3B south across Tamiami Trail.

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		four, it's probably the best as well as it will maximum a seasonal concentration of food and provides more corridors for movement. Sheet flow, like I mentioned earlier, sheet flow and ridge and slough topography are probably some of the most defining characteristics of the Everglades, of a restoration and re-establishing them should be top priority. Again, Alternative 4 is a real step forward towards a de-compartmentalization of the system. Whereas we believe that one and three do little, if any to re-establish historic flow. I guess in closing, I'm a little dismayed that 5, it appears to be screened out. Well, at least not presented today. We don't think it should be screened out. There are important components in Alternative 5 that would be helpful to model, to get you to really the best outcome for restoring 3B. As it stands now, four is probably the best step forward and we look forward to seeing that implemented. Thank you.	
Drew Martin, Sierra Club	12/13/12	Drew Martin on here on behalf of Sierra Club. I'm also elected to the Palm Beach County Water Conservation District. I'm going to say first that, you know, we do appreciate what you're doing and the environmental communities believes Alternative 4 is your best of the four alternatives. I think you've done a lot of good work. I think that this could be more aggressive and I think that, one of the concerns that I have is that 200,000 acre feet is, you know, I think you kind of shot low. I think what we should have done, what we'd like to	Thank you for your comment. All of these alternatives involve diverting approximately 200,000 acre feet of water that would be normally discharged to the estuaries south into the flow equalization basin and subsequently into the Everglades. So that's 200,000 acre feet. Now that is not a huge fraction, a very large fraction of the water that's presently discharged to the estuaries. We recognize that. This project is really just an increment of a much larger restoration program. So what we're trying to do is come up with a plan which gives us the next increment of restoration in the Central Everglades. We recognize there are unmet needs in the estuaries with this plan.

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		have seen is more than 200,000 acre feet. And I know there's some constraints. And one of the things, the big constraint has been that, you don't want to have anybody else suffer but the problem is that the estuaries are really suffering and you're not sharing the suffering evenly with some of the other communities.	
Drew Martin, Sierra Club	12/13/12	I think that's been one of the problems. We need to get more of a sheet flow, which Mark Perry talked about. Now this does have some sheet flow characteristics and I've attended a lot of science presentations, and one thing you really want to do is you want to get the ridge and slough back. In order to get the ridge and slough back, we need to have a fair amount of water flowing through the system, probably more than is flowing through there in this plan. Now one of the big problems right now is there is some ponding and ponding is a result of the fact that you have dehydrated a lot of these areas pretty significantly, and as a result, there's been subsidence. And so when the water flows through these areas, it doesn't flow out of them. You get a lot of ponding and none of the recreational people are very concerned about that. But we go back historically and look historically, this was really a lot wetter system than a lot of people realized. One of the problems is that people have gotten used to this being pretty dry and we need to go back and we need to look at how we can make it, return it to the wetter system it was. Because if it's wetter, then you can flow a lot more water and it	Thank you for your comment.

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		would be a lot more than 200,000 acre feet.	
Drew Martin, Sierra Club	12/13/12	And I would like to see this plan, say yeah, the first step is 200,000 acre feet. But within this plan, how can we go beyond that 200,000 acre feet to really make a difference? Because I think it's important to start moving more water and I think one of the reasons is climate change. We're going to need to get more fresh water flowing south because that's what's going to push salt water intrusion out. That's --it's going to be protecting these areas. Right now, you know, we're very concerned about flooding from the interior. But the reality is that it's not going to be a problem. We're going to be worried about flooding from the coast line, not the interior. We actually might prefer to have some interior head of fresh water to push that water back out. So I think that we're kind of caught up because we're looking backwards instead of looking forward. We're looking backwards of all the things we've had in past. In the future, we're going to have to look in a more forward way. And one of the ways to protect South Florida is to have a lot more water and it's going to have to be a lot more than 200,000 acre feet.	Thank you for your comment. The Sea Level Rise Assessment is in Annex I of the Draft PIR/EIS.
Drew Martin, Sierra Club	12/13/12	The other issue, which hasn't come up tonight is the water quality. And the reason, one of the reasons you are limited in a 200,000 acre feet, is you can only clean 200,000 acre feet and that's something that we understand because there's a certain number of court cases that are going to limit you to water that has to be ten parts per billion or somewhere in that range in order to send it south.	Thank you for your comment. The USACE and NFS with the consent of the FDEP intend to construct and operate the CEPP project in a manner that is consistent and in compliance with the Clean Water Act and other State water quality criteria as they exist today and as they may be amended at the time of feature construction.

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		That means, I think we need to look at expanding some of this area above the red line to get some additional water improvement. Because water improvement is going to be really crucial here and I think we haven't done enough to improve that water quality. And when Governor Crist looked at this purchase in doing a deal, you know some people called it a plan six or whatever, but to do a real flow way, then we kind of pushed that back. We said well, we're going to only clean water through STAs. We are only putting water through these managed systems and we ignore the fact that if we have a little bit more flow, we could get maybe some additional clean water. The FEB is the first good step.	
Drew Martin, Sierra Club	12/13/12	The other thing is, you've got to learn more and more at how we can add water and we're doing this above the lake, we can be considering river bank, Mark Perry talked about that. How can we store more water on people's land so that we are holding more water, so for dry periods, we have this water in storage. Of course once we send that water out to the estuaries, we don't have that water when it becomes dry. So I think, you know, we're moving in the right direction. There's certainly a lot of benefits to it. We're starting to see real sheet flow in some of these projects. We're seeing improved water quality. But I hope that we look at something a little more aggressive so we can say we are going to start with 200,000 acre feet but we're not going to wait 30 years before we get more than that. That maybe this project, it's going to be incremental but it's	Thank you for your comment.

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		going to be in a lot faster increments than we're talking about today.	
Charles Grande, St. Lucie County	12/13/12	I think the quality of the comments that you've got tonight are incredible. I have only one suggestion that, and is everybody's suggestions for the plans all seem to aim at how do we increase the quantity of water that goes south? And the old plan that seemed to address that was your Plan 6. I think what we would like to see, within the next several months, would be a real high level, if you will, cost benefit analysis comparing, and I'm going to assume that Plan 4, Option 4 would be selected by your computer models, if you took Option 4 and the old Plan 6 and compared the quantities that could be moved and the total cost of implementation of the two plans. I know that the thrust is in this area, the area east of the lake, has always been you had the right answer years ago with Plan 6 but we've kind of moved away from that. If we could go back and compare that historical plan with this part of CEPP, which admittedly is the first step, both on the quantity side and the cost side, I think it would help us to help you in the future.	Thank you for your comment. Alternative 5 was screened out because this configuration would likely cause undesirable conditions in WCA-3B during high water conditions by routing large portions of WCA-3A flows through WCA-3B. During drought events there is concern that there is not enough storage in the A-2 FEB to prevent increased probability of damaging peat fires in WCA-3B. Further loss of soils through fire or soil oxidation/subsidence would only compound our difficulties in moving flows out of WCA-3B south across Tamiami Trail.
Kevin Henderson, Public	12/13/12	I'm struck by the last comment; you talk about moving water south. Martin County was promised that STA34, when it was built, would treat 65,000 lake feet a year of Lake Okeechobee water and that water would go south. And STA34 might have received that much water one year and then it didn't and it hasn't happened since 2004. So forgive me if I'm a little skeptical about 200,000 acre feet of lake water going south.	The Draft Project Operating Manual is in Annex C of the Draft PIR/EIS.

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		But having learned a few things over the years, I will say the Corps could help us and help protect its concept of moving lake water south by going into considerable detail in operational pools for those facilities in this plan made common to all four groups, that is the portions of the Water Conservation Area. Obviously, those parts of the plan can be used to treat drainage and will, and they could be used to treat the Lake Okeechobee water and we hope they will. But if you don't write the operational rules in such a way that connects your current Lake Okeechobee regulation schedule, and in such a way that those of the public can understand them, then you will end up losing control of those parts of the puzzle. They will be taken by other users for pure benefit, mainly the agriculture community and the drainage quality concerns and what the public will receive will be no better than those facilities. So I encourage you, write the rules with the plan and attach them to the Lake schedule and make the decision pretty clear enough that all of us who are looking at this can see that maybe there's a way that you will, some years succeed 200,000 acre feet south. We'd like to see you do the best for us. Thank you.	
Central Everglades Planning Project Public Meeting – Final Array December 18, 2012 Coconut Creek, FL			
Boomslang Meade, Public	12/18/13	My name is Boomslang. I'm a G.I.S. attorney. I'm instinctively drawn to proposition proposal four because it seems to be a natural gravity-generated approach rather than a manmade structural approach. I kind of have the same feeling I have about the Ocklawaha restoration. Many who are in favor of the restoration seek a natural restoration of the forest along it rather than expensive replanting,	Table 4-14 in the Draft PIR/EIS lists the total Project Investment for Alt 1 as $2,040,000,000, $2,187,000,000 for Alt2, $2,301,000,000 for Alt3 and $2,042,000,000 for Alt 4. Alternatives 1 and 4 are both cost effective and Alt 4 is the best buy.

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		and I just have a feeling that proposal four would be a lot less expensive. I know you haven't come out with the figures yet, but I wonder if you could give me a range of the least amount that proposal four would cost and the unbelievable most amount that it might cost. Does it seem logical that proposition Alternative 4 would be cheaper than 1, 2 and 3? The reason I ask that or say that, it seems that Alternative 4 involves removal, and I think the term is deduction or something, but it indicates removal of the structures, whereas the other three alternatives seem to rely to quite a degree on infrastructure being added and constructed. Thank you for the opportunity.	
Fred Fisikelli, Public	12/18/12	I'm Fred Fisikelli. I'm here representing myself. One of the first things I'd like to comment on, and I did it at the WRAC meeting last night, is you're showing on all four of your alternatives, Kim, where you're backfilling that canal completely, and we know that's not true. I think it would be better for the whole thing if it was shown the way it's going to be when you finish. It's going to be a gap canal every so often, but it's misleading to people the way you show it up there as a solid straight line. The second thing I would like to show in the records is, you know, this year is a good example, the conservation areas are way over-staged, and yet we kept pumping water into the north end of 3A. I see you have a route around that. We've used it before. You can come through the 37, the 31 and the 33 and bring it all the way down to where you want it right down there in the corner of the Tamiami Trail, which is where you want the water coming out, where it comes out to 3B. I would like that written into the plan that, during those times that we have	Thank you for your comment. The gaps are shown in the figures in the Draft PIR/EIS.

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		that exceptional amount of water and we have to get rid of it, instead of putting it into an area that's already impacted, to take it around and you would get it to the park who really needs it. So I'd like that comment part of the record. As far as the rest of this, we really can't comment on your water tables because, until you can tell us how much water you're going to put in there and what depth you're going to put in there and what length of time you will put on there, we can't really tell because it's been recommended by the game commission and all their information, and I gave Kim a complete thing on that as part of the record, that we've proven -- the game commission has proven that over 18-inches of water is detrimental to the conservation areas, and at the present time you all were doing that, you were overstaging when you were doing that. But we won't accept anything above 18 inches, and it's got to be a short amount of time. And, until you can give us some information showing that, we really can't comment on that part of it, but as far as that, personally, I'm recommending Alternative 1. Thank you.	
John Rosier, Fulltrack Conservation Club of Dade County	12/18/12	Just a couple things. We talked about them at the WRAC meeting last night. We would like to see access on the L-5 and when we're doing construction, that remain open because a lot of times, when they start working on the levees, they shut them down. So that's an access to the area, and it's very important to the users up there that the access along the L-5 stays open, you know, within constraints. We know that, if you're working down near the S-8 pump or something, you might have to shut that area off, but let's not shut the whole entire levee off because that is access to the	The recreational features of the TSP are described in Section 5 and Appendix F of the Draft PIR/EIS.

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		area for us.	
John Rosier, Fulltrack Conservation Club of Dade County	12/18/12	And then the other thing -- It's amazing, going to all these meetings and stuff, what I start remembering, but what constraints will the park service have on the amount of water, if whatever option is picked and we go through it and we do all this, what constraints will the park service have on water going into the area that we're trying to get water? And I reference that to the Seaside Sparrow or the Cape Sable Sparrow that's out there because we know that every year, November 1st, they shut the S-333 down because they don't want to put the water there because it's their nesting season. So has that been talked about with the park service, that some type of adaptive management program go ahead because it's great that we do this and we start getting sheet flow, but again, if we get a movement of a nesting area or something, they're going to say we can't put water there. So it's kind of for naught that we do this, that we still have another agency telling us, no, we don't want the water. It's going to have to stay up, you know, north of the trail, and basically we're doing this big giant project that's not doing what it's supposed to do. So I just wanted to bring that up.	The Draft Project Operating Manual is in Annex C of the Draft PIR/EIS. The Biological Opinion will be in Annex A in the Final PIR/EIS that will outline the conditions for the Cape Sable seaside sparrow.
Matthew Schwartz, South Florida Wildlife Association	12/18/12	I'm here representing South Florida Wildlife Association, and I have some various comments to make on the proposals. I guess to begin with, I'm a little disappointed in the proposals and the alternatives that have been put forward because, as was said, scoping comments were taken in November, December of last year, and there were quite a few people who requested an alternative that didn't show up in this range of alternatives, and that was the flowway from Lake Okeechobee down to the Conservation Areas STA 3-4, the Holey Land	Inclusion of operational and structural modifications to existing infrastructure and/or construction of new features in Holeyland WMA was considered during initial plan formulation efforts for the CEPP. These proposals within the WMA were not further pursued given water quality concerns. The quantity/quality management measures south of Lake Okeechobee are recommended to be located on and maximize the usage of the A-2 Compartment of the EAA land south of Lake Okeechobee that is owned by the State of Florida. The identified project lands are located between and adjacent to the North New

Public Meeting	Date Received	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		and the Rotenberger, which would have created the beginning of a naturally-restored Everglades. Nobody's talking about the triple land option that we have. We have the option right now to buy a massive piece of that flowway, and we're talking about a piece of land between the Miami Canal and the New River Canal that the Water Management District does have an option to purchase. It was part of that original sugar deal that worked out. The amount of land south of that purchase option is not that much, and, if we get that land, whether by a willing seller from the Fanjuls or by eminent domain which the state does have the power to exercise and you can acquire that flowway, it provides quite a few benefits.	River and Miami Canals, which reduces the need to construct any additional conveyance features to move water from Lake Okeechobee to the project features and the WCAs. The robust hydraulic connection to Lake Okeechobee creates flexibility in managing high water levels and improves the timing of water deliveries to the WCAs. The project lands are also adjacent to existing water quality components that are currently being used for environmental purposes, creating a unique ability to optimize C&SF operations. Existing infrastructure, including roads, pump stations, etc., are already in existence and would not require substantial efforts for utilization or any upgrade. Publicly owned lands in the southern portion of EAA demonstrated better cost effectiveness on a cost per acre foot of storage and treatment when compared to other locations. The lands identified for the project have already been purchased and are owned by the State of Florida which reduces the risk and uncertainty associated with real estate costs and acquisitions.
Matthew Schwartz, South Florida Wildlife Association	12/18/12	Of the alternatives you've presented, I would say we support Alternative 4, so we do support a lot of the stuff you're doing in the lower part of that CEPP project, especially the degrading of the levee north of the Tamiami Trail to allow that water to flow into the park. The park is badly in need of that water, but that water will be much cleaner if it does not pass through thousands and thousands of acres of sugar land north of there. There's no reason for that sugar land to be there given that we have the option to buy about half of it through the U.S. Sugar purchase and we could acquire the rest. At that point -- because right now, the way you have the system set up, one of the major problems with the Everglades is not just what's happening in the Everglades, but it's the discharges to the estuaries to the east and the west.	All of these alternatives involve diverting approximately 200,000 acre feet of water that would be normally discharged to the estuaries south into the flow equalization basin and subsequently into the Everglades. So that's 200,000 acre feet. Now that is not a huge fraction, a very large fraction of the water that's presently discharged to the estuaries. We recognize that. This project is really just an increment of a much larger restoration program. So what we're trying to do is come up with a plan which gives us the next increment of restoration in the Central Everglades. We recognize there are unmet needs in the estuaries with this plan.

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		These flow equalization basins, these four-foot puddles that you're going to build there are not going to be able to accept massive discharges from the lake during high-water periods, and you're going to still be chucking water out to the St. Lucie and water out to the Caloosahatchee and destroying those estuaries as is happening right now. That absolutely should have been, as this is a NEPA process, that should have been an option. I understand people are concerned about the politics. Well, it's not a willing seller. People don't want to get involved with this, but that is the environmentally- preferred option, and it's clear you won't be running water into the FEB's that's polluted. You'll be running water into STA's that's already fairly clean because it's not passing through thousands of acres of sugar land on the way.	
Matthew Schwartz, South Florida Wildlife Association	12/18/12	I would say one other thing. I mean, there's a billion gallons -- two billion gallons of water used in this system, about a billion by us human beings. We drink it up. We flush our toilets with it, etc. Another billion gallons is being used by big sugar. If we get rid of that usage, there's a lot more water in the system.	Thank you for your comment.
Matthew Schwartz, South Florida Wildlife Association	12/18/12	The last thing I would like to say is we're very concerned about the entire thrust of CERP being used to build one impoundment after another, and you've got lots of impoundments already in the works. You've got the Picayune Strand, which I went out there two weeks ago expecting to be able to get in there again. It's closed because it's being turned into a massive water control structure.	Thank you for your comment. Alternative 5 was screened out because this configuration would likely cause undesirable conditions in WCA-3B during high water conditions by routing large portions of WCA-3A flows through WCA-3B. During drought events there is concern that there is not enough storage in the A-2 FEB to prevent increased probability of damaging peat fires in WCA-3B. Further loss of soils through fire or soil oxidation/subsidence would only compound our difficulties in moving flows out of WCA-3B south across Tamiami Trail.

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		Site one impoundment is in construction. Two new impoundments for Broward County, C-9 and C-11, were just approved in October. So we're spending hundreds of millions, probably billions of dollars ultimately in these impoundments, money that we could easily use to acquire the sugar land, which is the main source of the problem in the Everglades system. Let's do a natural restoration. Let's acquire the land. Let's build a flowway. Let's really restore the Everglades. Thanks	
Al Ovies, South Florida Anglers for Everglades Restoration	12/18/12	Who would have thunk that we would be witnessing the transformation from the tortoise to the hare in this process that we've been participating in for over ten years now. Ten years ago, when we looked at this map, we probably would have seen that every canal that we fished and have been fishing for decades would be one of those big heavy black lines that signifies backfilling and degrading and would have signified the end of our sport. Right now we're looking at a small segment of the northern half of the Miami Canal that's going to be backfilled. So I think, from the safest point of view, this is a really optimistic eventuality here. Of course, you guys are the Corps, and eternal vigilance is the key here. I understand there's going to be other parts of the PIR that could, you know, head back into the backfill area, but for now I think what I'm looking at is pretty interesting. We are probably looking at Alternative 4, although we need to discuss this a little bit further.	Thank you for your comment.
Al Ovies, South Florida Anglers for Everglades Restoration	12/18/12	For those of you who aren't familiar with our organization, our main goal has been to prevent the backfilling of the L-67A and C canals as well as the Miami Canal, and with this project, it gives us a chance to kind of move into the direction of a	Thank you for your comment. The recreational features of the TSP are described in Section 5 and Appendix F of the Draft PIR/EIS.

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		couple of our other goals of our mission statement, which is to enhance the current fishing opportunities we enjoy and also to see if we can't get new fishing opportunities. And looking at Alternative 4, we see a little bit of potential for accomplishing both of these goals. The things that would concern us if we were to back Alternative 4 would be the fact that that temporary levee cuts across the L-67C canal and would effectively block off 15 to 20 miles of prime fishing waters. So we would like to see something, some kind of discussion, some kind of alternatives as to how the northern half of the L-67C canal would be made available to boating access. The other thing would be that for the longest time we have looked at the L-29 as a possible fishery. Due to the fact that there's no water movement in or out of that canal, it's kind of been stagnant over the decades, and it's become infested with gar and mud fish and other kinds of fish that aren't exactly the trophy fish that we're looking for, and we would like to see plans that would include some kind of connectivity between WC 3B and the L-29 canal. It's the connectivity between 3A and the 67A canal that has made it the great fishery that it is, and we would like to see if some kind of treatment couldn't be made with reference to the L-29 canal which would kind of help to replicate the conditions on the 67A canal. Thank you.	
Dawn Sherriffs, the National Parks Conservation	12/18/12	I won't take up much time. I think a lot of the key points have really been said. NPCA is very supportive of Alternative 4 for some of the reasons that I think you heard people say tonight.	Thank you for your comment.

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Association		By removing part of L-29, you're actually taking a major step towards decompartmentalizing the Everglades system, which is really the goal of Everglades restoration, and you get gravity-driven sheet flow gets restored, ridge and slough habitat's restored. You get increased fishery opportunities. We really see that this is a meaningful step towards Everglades restoration. You've got to start removing some of the infrastructure that got us to where we are today. We're extremely grateful for everyone in the room's thoughts. I think it's been a very good discussion tonight amongst stakeholders, as well as the Corps. So I congratulate you, and keeping marching forward towards getting a TSP.	
Megan Tinsley, Audubon Florida	12/18/12	I'll try not to be too repetitive, but I wrote this out. And first I would just like to compliment you on this expedited process. Planning projects that are actually related to each other together is really a great step forward in reducing the ecological decline we see in the Everglades, and that's why we're here, the decline, per the National Academy, to say that the Everglades are approaching, at least part of them, irreversible harm. So the process that we've all kind of been a part of, and the Corps and Water Management District especially has kind of answered the question that I think to the surprise of many of us in the room that we've actually planned this project on a time scale we maybe didn't think was possible. But to get at the ecological decline, we're at a point where we need to really select the plan that takes a bold step forward to restoring more natural water flow through the conservation areas to Everglades	Thank you for your comment.

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		National Park and Florida Bay. So as I was mentioning, Alternative 4 at least provides for a small degradation of L-29 and that gets us towards a more decompartmentalized system, and I just wanted to say that Conservation Area 3B is an important component of the Everglades. It's been deprived of water for so long, and an ultimate vision of Central Everglades will get us toward reducing the compartmentalization that has deprived that area of water. And because we know that CEPP is an increment and there will be more and we need more restoration, we think it's particularly important that this first phase really show ecological benefits because through those benefits will it be able to go back and show that it worked, that we did something and look at what we could do if we are able to keep going. So, again, we really, really thank everyone that's been involved in getting us to this point and support moving forward for the Tentatively Selected Plan. Thanks	
George Jones with Everglades, Holiday Park, Broward County	12/18/12	I just encourage in the process, as we're moving forward, that you continue to mention what you mentioned earlier today, Kim, and that's the first I've heard mention of the C-11. The truth is usually less painful than rumors, and there's rumors about backfill and all those things flying around and the gapping of that. I'd just like to see that information presented every time we discuss the alternatives. First, I don't know, is that in every alternative? But it still needs to be part of the discussion at meetings so that it's out there in the public domain	The TSP does not include backfilling of the C-11.

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		and that the benefits as well as any other issues that come up with that get a chance for good, full discussion. That's my only comment. And I appreciate the process. I've been involved in it for a while, and you guys are doing a great job of moving forward.	
Cara Capp, Clean Water Action	12/18/12	I'm here for Clean Water Action, and I'm here also to lend our support to Alternative Number 4 for many of the reasons that my colleague just mentioned. We're really interested in seeing ecological, not just hydrological connectivity. We're concerned that some of the other options are very managed and don't facilitate our vision for a restored, naturally-flowing Everglades. We definitely see that Alternative 4 will go the furthest to removing some major barriers that currently exist to restore that more natural connectivity. We of course want to give our appreciation to this open public process as well. Somebody said before it's amazing how much I've learned coming to these meetings, and I think that the pace and the continued meetings have really served to help people understand, to talk about it frequently, to be able to give meaningful input, and I'm glad to be part of it, and I thank you for that process. We're definitely hopeful and looking forward to CEPP Phase 2. It may be farther in the future, but we know every alternative here presented, we're dealing with 200,000 acre feet of water, which is a great start, but it's not enough. We are hopeful that this process will prove to be so successful that we continue to move forward, get	Thank you for your comment. Alternative 5 was screened out because this configuration would likely cause undesirable conditions in WCA-3B during high water conditions by routing large portions of WCA-3A flows through WCA-3B. During drought events there is concern that there is not enough storage in the A-2 FEB to prevent increased probability of damaging peat fires in WCA-3B. Further loss of soils through fire or soil oxidation/subsidence would only compound our difficulties in moving flows out of WCA-3B south across Tamiami Trail.

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		even more done, keep the momentum up, and we believe that Alternative 4 is the best to set us up for future restoration, whether that is CEPP Phase 2, other CERP projects or restoration in any other capacity. So again I just appreciate being out here tonight and definitely supporting Alternative 4. Thank you so much.	

C.3.2.3 Agency and Public Letters

Audubon Florida * Everglades Foundation * Everglades Law Center
Clean Water Action * Florida Wildlife Federation
National Parks Conservation Association * Natural Resources Defense Council

November 13 2012

Attn: Gina Paduano Ralph, Ph.D
Department of the Army
Planning and Policy Division
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Dr. Ralph;

On behalf of the undersigned organizations, we appreciate the opportunity to comment on Central Everglades Planning Project (CEPP) scoping. As you know, we strongly support the Army Corps of Engineers' efforts to deliver a CEPP project implementation report by May 2013. Over the last 12 months, the Jacksonville team has accomplished an astonishing amount of progress in formulating alternatives that can address the urgent need for delivering increased water flows into the central Everglades and Everglades National Park (ENP). Given that the final array of alternatives will be presented and a Tentatively Selected Plan will soon be chosen, we wanted to take the opportunity to provide feedback in advance of the next Project Delivery Team (PDT) meeting and public workshop.

CEPP must take a clear step toward restoration.

We are heartened to see that the CEPP PDT team has identified an estimated 200,000 acre-feet of new water that can be delivered to the central Everglades. However, for CEPP to meaningfully advance restoration and achieve ecological benefits, the plan must increase ecological connectivity and water conveyance between ENP and Water Conservation Areas (WCAs) 3A and 3B. Partial removal of the L-29 levee represents the clear step forward needed to show progress.

Full restoration of sheetflow from WCA 3A through 3B and into ENP is the ultimate goal, but it is understood that seepage issues constrain our ability to implement such restoration in one complete iteration. Given these concerns, it is vital that the CEPP include phased and/or locally preferred alternatives that will provide interim benefits while additional restoration components, including the authorized elevation and bridging of Tamiami Trail and other projects, come online.

CEPP must remain focused on ecological benefits.

The CEPP process and robust stakeholder participation workshops have allowed for unprecedented dialogue and feedback. We acknowledge the effort required to be inclusive and applaud the PDT's engagement efforts, but want to emphasize that it is not possible for CEPP, nor any other single project in the full Comprehensive Everglades Restoration Plan (CERP), to achieve each individual goal outlined in CERP. It is absolutely essential that CEPP achieve key restoration benchmarks of rerouting flow into Northeast Shark River Slough. To do this, the Tentatively Selected Plan must be selected based on its ability to achieve the following CEPP goals outlined in the December 2011 scoping:

- Restore habitat in the central Everglades, focusing on the "River of Grass";
- Deliver "new" sources of clean water to the central Everglades and ENP; and
- Reduce damaging discharges to east and west coast estuaries.

Compatibility with CERP

We understand that the features of CEPP's first increment are constrained by federal and state appropriations, and appreciate the tremendous effort by the PDT to move this planning effort forward expediently. Given these limitations, it becomes even more critical to ensure that CEPP alternatives create opportunities for sheetflow that can be expanded in future CERP efforts rather than creating an even more managed Everglades ecosystem by installing more pumps and other infrastructure.

Environmental groups have a common vision for the first iteration of central Everglades restoration, supported by numerous recreational stakeholders. This vision includes bridging Tamiami Trail, decompartmentalizing WCA-3A, WCA-3B, and Northeast Shark River Slough in ENP, and completely degrading the L-29 along the bottom of WCA-3B. Implementation of this vision includes a ***temporary*** berm along the existing "Blue Shanty" canal alignment as a construction phase which would be removed following the completion of the Tamiami Trail improvements and other projects.

We believe that a temporary Blue Shanty berm is a cost effective way to utilize existing canal and berm features in southwest WCA-3B and ENP to achieve near-term benefits and "train" the River of Grass through two gated structures to be installed along lower L-67A during an initial CEPP phase. This feature is intended to allow for restoration of sheetflow, the creation of ridge-and-slough habitat, and fishery improvement through marsh connectivity and should not be interpreted or designed as a flood control structure.

We remain committed to assisting in this process and to helping ensure increased water flows to the central Everglades, relief to the northern estuaries, and ecological benefits for America's Everglades. We look forward to working with you in this ambitious endeavor and invite any questions or comments you may have.

Sincerely,

/Signatures waived to expedite delivery/

Megan Tinsley, Everglades Policy Associate
Audubon Florida

Kathleen Aterno, Florida Director
Clean Water Action

Eric Eikenberg, Chief Executive Officer
Everglades Foundation

Lisa Interlandi, Executive Director
Everglades Law Center

Manley Fuller, President
Florida Wildlife Federation

Dawn Shirreffs,
Everglades Restoration Program Manager
National Parks Conservation Association

Bradford Sewell, Senior Attorney
Natural Resources Defense Council

Everglades Coalition

1000 Friends of Florida
Arthur R. Marshall Foundation
Audubon of Florida
Audubon Society of the Everglades
Audubon of Southwest Florida
Caloosahatchee River Citizens Association/ Riverwatch
Clean Water Action
Clean Water Network
Collier County Audubon Society
Conservancy of Southwest Florida
Defenders of Wildlife
Ding Darling Wildlife Society
Earthjustice
Environment Florida
The Environmental Coalition
Everglades Coordinating Council
Everglades Foundation
Everglades Law Center
Florida Conservation Alliance
Florida Defenders of the Environment
Florida Keys Environmental Fund
Florida Native Plant Society
Florida Oceanographic Society
Florida Wildlife Federation
Friends of the Arthur R. Marshall Loxahatchee Wildlife Refuge
Friends of the Everglades
Hendry Glades Audubon Society
Izaak Walton League Florida Division
Izaak Walton League Florida Keys Chapter
Izaak Walton League Mangrove Chapter
Izaak Walton League of America
Last Stand
League of Women Voters of Florida
Loxahatchee River Coalition
Martin County Conservation Alliance
National Audubon Society
National Parks Conservation Association
National Wildlife Federation
National Wildlife Refuge Association
Natural Resources Defense Council
The Ocean Conservancy
The Pegasus Foundation
REEF RELIEF
Sanibel-Captiva Conservation Foundation
Save It Now, Glades!
Sierra Club
Sierra Club Broward Group
Sierra Club Calusa Group
Sierra Club Central Florida Group
Sierra Club Florida Chapter
Sierra Club Loxahatchee Group
Sierra Club Miami Group
The Snook and Gamefish Foundation
South Florida Audubon Society
Tropical Audubon Society
The Urban Environment League
World Wildlife Fund

RESOLUTION SUPPORTING ALTERNATIVE 4 FOR CENTRAL EVERGLADES PLANNING PROJECT

WHEREAS, the Everglades Coalition is committed to the restoration of America's Everglades, and protecting lands critical to the future of Florida's environment, drinking water, economy, recreation and quality of life; and

WHEREAS, the Everglades Coalition has previously supported Central Everglades Planning Project (CEPP) goals to: 1) restore habitat in the central Everglades, focusing on the "River of Grass"; 2) deliver "new" sources of clean water to the central Everglades and Everglades National Park (ENP); and 3) reduce damaging discharges to the east and west coast estuaries.

WHEREAS, removal of the L-29 along the bottom of WCA-3B is consistent with long term restoration goals and represents a clear step forward in Everglades restoration as it removes a barrier to sheet flow and will improve fishery conditions;

WHEREAS, Alternative 4 is the only alternative in CEPP which will begin more natural flow into Water Conservation Area (WCA) 3B and ENP, re-establish ridge and slough topography, and improve ecological connectivity, all of which are priority tenets of Everglades restoration;

WHEREAS, restoration of the Everglades should not significantly increase the footprint of levees in sensitive wetlands;

WHEREAS, restoring the natural flow path of the Everglades, as proposed in Alternative 4, will reduce soil oxidation and loss in WCA 3B, increase biological connectivity, improve the mosaic of landscapes essential to the food chain, and provide more corridors and habitat for fish and wildlife.

THEREFORE BE IT RESOLVED that the Everglades Coalition supports CEPP Alternative 4, with the WCA 3B river training structure implemented with a minimal footprint, as the best alternative for the environment. The Coalition requests that it be designated the Tentatively Selected Plan in the Project Implementation Report because it most comprehensively and meaningfully advances restoration goals, achieves ecosystem benefits, and increases ecological connectivity and water conveyance between ENP and Water Conservation Areas 3A and 3B.

Approved December 27, 2012

Dawn Shirreffs, National Co-Chair
954-961-1280 x 205
dshirreffs@npca.org

Jennifer Hecker, State Co-Chair
239-262-0304 x 250
jenniferh@conservancy.org

The City of Coral Gables

June 15, 2012

Ingrid Sotelo, Chief
Miami Regulatory Division
U.S. Army Corps of Engineers
9900 S.W. 107th Avenue, Suite #203
Miami, FL 33176

Dear Ingrid Sotelo:

At the City of Coral Gables City Commission meeting held on May 8, 2012, legislation (Resolution No. 2012-91) pertaining to supporting the Central Everglades Planning Project for the restoration of the Central Everglades was adopted.

This resolution is being forwarded to you for your information and files.

Sincerely

Walter J. Foeman
City Clerk

WJF/yd

Encl: Resolution No. 2012-91

CITY OF CORAL GABLES, FLORIDA

RESOLUTION NO. 2012-91

RESOLUTION OF THE CITY COMMISSION OF CORAL GABLES SUPPORTING THE CENTRAL EVERGLADES PLANNING PROJECT FOR THE RESTORATION OF THE CENTRAL EVERGLADES; AND FURTHER DIRECTING THE CITY CLERK TO TRANSMIT A COPY OF THIS RESOLUTION TO THE OFFICIALS AS STATED HEREIN.

WHEREAS, the Greater Everglades Ecosystem is a globally imperiled habitat and the primary source of drinking water for the City of Coral Gables; and

WHEREAS, Everglades National Park is critical to South Florida's tourism, with nearly a million people visiting each year; 30 percent of whom are from outside the United States; and

WHEREAS, the Everglades ecosystem has continued to decline in the face of restoration delays and an expedited solution is needed to increase the quality, quantity, timing and distribution of freshwater flows into the central Everglades, Everglades National Park and Florida and Biscayne Bay; and

WHEREAS, increased deliveries of water south of Lake Okeechobee will reduce damaging discharges to the Caloosahatchee and St. Lucie estuaries; and

WHEREAS, the goal of the Central Everglades Planning Project (CEPP) is to significantly reduce planning times and deliver a finalized plan, for a suite of restoration projects in the central Everglades within 18 months; and

WHEREAS, full support and funding by the State of Florida and the U.S. Congress is needed to implement this project, protect regional water supply, create much needed jobs and strengthen the local economy;

NOW, THEREFORE, BE IT RESOLVED BY THE COMMISSION OF THE CITY OF CORAL GABLES:

SECTION 1. That the foregoing **"WHEREAS"** clauses are hereby ratified and confirmed as being true and correct and are hereby made a specific part of this Resolution upon adoption hereof.

SECTION 2. That the City of Coral Gables supports the completion of a Project Implementation Report (PIR) by the South Florida Water Management District and the U.S. Army Corps of Engineers through the CEPP by May 2013 that addresses key obstacles for restoring freshwater flows and implements meaningful ecological and economic benefits toward restoring America's Everglades.

SECTION 3. That the City Commission does hereby direct the City Clerk to transmit a certified copy of this resolution to the South Florida Water Management District, U. S. Army Corps of Engineers, and the Tropical Audubon Society.

SECTION 4. This resolution shall become effective upon the date of its passage and adoption herein.

PASSED AND ADOPTED THIS EIGHTH DAY OF MAY, A.D., 2012.
(Moved: Anderson/ Seconded: Quesada)
(Yeas: Anderson, Cabrera, Kerdyk, Quesada, Cason)
(Unanimous: 5-0 Vote)
(Agenda Item: C-2)

APPROVED:

JIM CASON
MAYOR

ATTEST:

WALTER J. FOEMAN
CITY CLERK

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

CRAIG E. LEEN
CITY ATTORNEY

STATE OF FLORIDA • COUNTY OF MIAMI DADE
I, HEREBY CERTIFY that the foregoing
(Pages 1 – 2, inclusive)
is a true and correct copy of the original
on file in this office.

DATE

CITY CLERK

Florida Crystals Corporation
One North Clematis Street
Suite 200
West Palm Beach, FL 33401

William F. Tarr
Vice President
P: 561-366-5157
F: 561-651-1280

January 4, 2013

VIA E-MAIL AND U.S. MAIL

Dr. Gina Padua Ralph
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, Florida 32232-0019

Re: Central Everglades Planning Project

Dear Dr. Ralph:

I am writing to supplement the comments of Florida Crystals and its affiliates, including Okeelanta Corporation and New Hope Sugar Company, regarding the analysis of alternatives in the Central Everglades Planning Project (CEPP). For the last 18 months this company has been very engaged in the development of the state's Restoration Strategies Plan and we want to make sure the CEPP is fully compatible with that plan.

NEPA requires that for each alternative, the U.S. Army Corps of Engineers (Corps) must analyze the reasonably-foreseeable environmental impacts (40 CFR § 1508.8) and "any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented" (42 U.S.C. § 4332(2)(C)(v)). Among those impacts are potential water quality impacts resulting from implementation of the CEPP. We ask that in the draft Project Implementation Report / Environmental Impact Statement (PIR/EIS), the Corps analyze the likely water quality effects of each alternative in the Water Conservation Areas (WCA's) and Everglades National Park.

In addition to estimating the water quality effects, the Corps also should demonstrate that the various alternatives will result in compliance with (a) the Water Quality Based Effluent Limitations contained in the NPDES permits for the Stormwater Treatment Areas

(STAs), and (b) the provisions of the Consent Decree in United States v. South Florida Water Management District, Case No. 88-1886 (S.D. Fla.). Such an analysis is appropriate in light of the federal agencies' recent court submission which indicated that compliance with the NPDES permits for the STAs would not necessarily lead to compliance with the Consent Decree and that "augmented remedial measures and projects" might be required. See the United States' Opposition to State Parties' Motion for Declaratory Order, pages 9-11 (filed November 26, 2012 in Case No. 88-1886).

Thank you for considering our comments. We look forward to continuing to work with the Corps as it moves forward with development of the CEPP. With kind regards, I remain,

Yours truly,

William Tarr
Vice President
Florida Crystals Corporation

/jcd
Copy w/encl. (via e-mail) to:
Mr. Joe Collins, SFWMD, Chair
Mr. Kevin Powers, SFWMD, Vice Chair
Ms. Sandy Batchelor, SFWMD Board Member
Mr. Daniel DeLisi, SFWMD Board Member
Mr. James J. Moran, SFWMD Board Member
Mr. Daniel O'Keefe, SFWMD Board Member
Mr. Juan M. Portuondo, SFWMD Board Member
Mr. Timothy Sargent, SFWMD Board Member
Mr. Glenn J. Waldman, SFWMD Board Member
Ms. Melissa Meeker, SFWMD
Mr. Ernie Barnett, SFWMD
Mr. Matt Morrison, SFWMD
Mr. Tom Teets, SFWMD
Ms. Kimberly Taplin, USACE
Mr. Steven Kopecky, USACE
Mr. Dennis Duke, Interior
Mr. Neal McAliley

Florida Crystals Corporation
One North Clematis Street
Suite 200
West Palm Beach, FL 33401

William F. Tarr
Vice President
P: 561-366-5157
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March 30, 2012

VIA E-MAIL AND U.S. MAIL

Dr. Gina Padua Ralph
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, Florida 32232-0019

Re: Central Everglades Planning Project

Dear Dr. Ralph:

I am writing to provide additional comments of Florida Crystals and its affiliates, including Okeelanta Corporation and New Hope Sugar Company, on the Central Everglades Planning Project (CEPP). We appreciate the U.S. Army Corps of Engineers' (Corps) consideration of our initial comments on the scope of the CEPP. Based upon our review of the Corps' response to those comments issued March 1, 2012 (Scoping Response), we want to reiterate and expand upon several important points.

Florida Crystals continues to support the goal of the CEPP, which as we understand it, is to bring important restoration projects on-line sooner, consistent with the approved 1999 Comprehensive Everglades Restoration Plan. The 1999 Approved Plan calls for restoring the Everglades while providing for other water-related needs of South Florida. For purposes of the CEPP, this means (among other things) addressing the water supply needs of existing uses that rely on Lake Okeechobee, and designing a project that uses lands purchased in the Everglades Agricultural Area (EAA) and elsewhere to implement the 1999 Approved Plan. We believe that the Corps can develop a plan for the CEPP which meets those criteria and remains true to the stakeholder consensus that led to

Congressional authorization of the 1999 Approved Plan. Our comments today focus on the integration of the CEPP with other ongoing activities, and the Corps' commitment to provide pre-CERP levels of service to agricultural and urban water uses in the CEPP development process.

Misidentification of Stakeholder Comments. As an initial matter, the Corps misidentified comments from agricultural stakeholders in its Scoping Response. Florida Crystals' comments were identified as the comments of the Sugar Cane Growers Cooperative of Florida (and labeled as "Sugar") comments, while the Cooperative's comments were identified as the comments of Florida Crystals (and labeled as "Crystals"). The Corps should correct this error.

Projects Included within the CEPP. We previously identified nine components of the 1999 Approved Plan which fit the general description of the CEPP. The Scoping Response confirms that five of those components are included, included a sixth component ("Bird Drive Recharge Area (U)") which we did not identify, and was silent regarding the remaining four projects on our list. Scoping Response, at 46 (response to Sugar-2).

The Corps needs to explain why it is not including in the CEPP all of the relevant components of the 1999 Approved Plan. The Corps' Federal Register notice indicated that the CEPP is the "heart of CERP" and is the Corps' effort to address water levels in Lake Okeechobee, water deliveries to the Water Conservation Areas, and sheetflow in the Everglades. 76 Fed. Reg. 75539 (Dec. 2, 2011). The project components left off the Corps' list all address those issues. Moreover, the Corps appears to be considering proposals in the CEPP that are addressed by those missing components, e.g., consideration of seepage management measures along the WCA 3A and 3B levee (which is missing component "Q"). We are concerned that failure to include them signals that the Corps effectively is abandoning them. Abandoning components of the 1999 Approved Plan is too significant a change to the CERP for the Corps to do it silently. If the Corps does not include them in the CEPP, then you should explain why and set forth how the Corps intends to address them in some separate process.

We have a much greater concern that the CEPP itself is not integrated with other ongoing Corps and SFWMD projects in the same locations and dealing with the same subject matter. The CERP was conceived of as the "Comprehensive Everglades Restoration Plan."

The expectation of stakeholders and Congress was that the 1999 Approved Plan would be integrated with and guide all changes to the Central and Southern Florida Project. See, e.g., WRDA 2000, §601(b)(1)(B) (directing Corps to integrate implementation of CERP "with ongoing Federal and State projects and activities); WRDA 1996, § 528(b)(2)(B), -(3)(A), -(c)(1) (providing that ongoing Corps actions should be consistent with Governor's Commission for Sustainable South Florida conceptual plan, which is the template of the CERP). The Corps announced the CEPP as "[a]n integrated study effort" for the Central Everglades that will "set the direction for the next decade of CERP implementation." 76 Fed. Reg. 75539 (Dec. 2, 2011).

Despite that guidance the Corps is not integrating other agency activities, such as the rehabilitation of the Herbert Hoover Dike (HHD) and the Lake Okeechobee regulation schedule (e.g., making permanent the 2008 regulation schedule, which is discussed further below). The Corps also is not addressing the State's Long-Term Plan to address Everglades water quality issues approved by the Florida Legislature, § 373.4596(3), Fla. Stat. The Long-Term Plan, in particular, calls for canal conveyance improvements in the EAA and construction of a reservoir at the EAA A-1 site that would include opportunities for agricultural water storage. The Corps also is not addressing the measures under consideration related to ongoing court cases that would affect water quality and discharges from the EAA to the Water Conservation Areas. These measures are inherently interrelated with any CEPP plan designed to use the A-1 site or which involved changes in water flows in the EAA, and yet the CEPP without explanation does not include them within its scope.

The lack of integration of the CEPP with these other projects hobbles the ability of the Corps and SFWMD to address the water-related needs of the region. By keeping activities related to Lake Okeechobee separate, the Corps is taking off the table reasonable alternatives related to the lake which could address water storage. By not integrating the CEPP with consideration of new Stormwater Treatment Areas and related features in ongoing litigation, the Corps has two different projects that potentially will use the same SFWMD-owned lands in the EAA and that will compete for the same limited pool of funds at the SFWMD. The result has been confusion, because the public does not know which lands in the EAA are available for the CEPP or whether the SFWMD will be able to afford to participate in the CEPP at all. This lack of integration is inconsistent with Congress' directives to the Corps. See, e.g., WRDA 2000, § 601(b)(1)(B) ("In carrying out the Plan, the Secretary

shall integrate the [1999 Approved Plan] with ongoing Federal and State projects and activities…"); 33 U.S.C. § 2282a(f)(1)(A)(i) ("assessments for a water resources project shall include recommendations for alternatives … that, as determined in accordance with the non-Federal interest for the project, promote integrated water resources management").

We recommend that the Corps make the CEPP a truly integrated study that will allow all relevant proposals and activities to be evaluated together. This will facilitate transparency regarding available land and funds for new projects, and allow everyone to know the trade-offs inherent in each element of these activities. It is also more likely to identify a plan with the most benefits for the least cost.

Status of 2008 Lake Okeechobee Regulation Schedule (LORS 2008). The Corps' Scoping Response heightens our concerns about Lake Okeechobee water supply issues. In particular, the Scoping Response makes it appear that the Corps is using the CEPP to convert LORS 2008 from an interim to a long-term, effectively permanent regulation schedule.

In its Final EIS for the LORS 2008 regulation schedule (which was adopted in the Record of Decision), the Corps stated:

"The Corps expects to operate under the LORS until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate the Comprehensive Everglades Restoration Plan (CERP Band 1 projects) and the State of Florida's fast track Acceler8 projects, or (2) completion of the [Herbert Hoover Dike] HHD seepage berm construction or equivalent dike repairs for reaches 1, 2 and 3. [T]he Corps will timely shift from the interim LORS to a new schedule with the intent to complete any necessary schedule modifications or deviations concurrent with completion of (1) or (2)." LORS 2008 Final SEIS iv (Nov. 2007) (emphasis added).

The Corps' assurances that LORS 2008 would be a relatively short-term plan were part of the basis for many stakeholders in South Florida to not oppose it in 2008. At that time, the Band 1 Projects all were scheduled to be completed by 2015, which meant that LORS 2008 was projected to be in effect for only seven years.

In its Scoping Response for the CEPP, the Corps now is indicating that LORS 2008 is a long-term, or even permanent, schedule. First, instead of assuming that LORS 2008 will no longer

be in effect once the "Band 1 Projects" and the key HHD repairs are complete, the Corps now assumes it could remain in effect for the next 50 years regardless of those projects' completion. The Scoping Response states that "[t]he future without project condition includes the assumption that the Herbert Hoover Dike (HHD) rehabilitation will be complete." Scoping Response, at 22 (response to FDACS-1). The Corps also assumes that the projects previously referred to as "Band 1 Projects" will be complete: the future without project condition includes the "First Generation" and "Second Generation" (i.e., the Corps is assuming that they will be completed), which when combined with the CEPP itself, represents all of the projects formerly identified as the "Band 1 Projects." In other words, both of the triggers for revision of the "interim" LORS 2008 will occur prior to, or concurrent with, the CEPP. Yet, the Corps Scoping Response indicates that "the LORS 08 schedule will be used" as the future without project condition. The Scoping Response also states that "[t]he CEPP study will not be the mechanism for changing LORS," Scoping Response, p. 22 (response to FDACS-1), and that "any analyses conducted during the study will not predetermine a change to the lake schedule … as a result of additional CERP project implementation," id. at 38 (response to Crystals-3). If the CEPP is the "CERP project implementation" that will trigger changes to LORS 2008 (as indicated by the Corps in 2008), then the logical time to consider such changes to the lake schedule would be in the CEPP itself. The Corps' refusal to even consider such changes is inconsistent with its commitments made in 2008.

Second, the Corps appears to be changing its triggers for revisiting LORS 2008. In 2008, the Corps identified two separate triggers for revisiting LORS 2008: completion of a subset of HHD rehabilitation measures ("seepage berm construction or equivalent dike repairs on reaches 1, 2, and 3"), and the completion of the CERP Band 1 Projects and Acceler8 projects. LORS 2008 Final SEIS iv (Nov. 2007) (quoted above). Now, in its Scoping Response, the Corps states only that "LORS will be revisited upon completion of HHD modifications." Scoping Response at 37 (response to Crystals-2). This new formulation completely drops the trigger associated with completion of the early CERP projects (which will be fully accomplished through the CEPP itself), and it apparently makes consideration of a new regulation schedule dependent on completion of all HHD repairs, which will not be done for many years. The effect is to allow the Corps to keep LORS 2008 in effect for decades, contrary to what the agency told stakeholders only a few years ago.

The Corps' failure to consider changes to LORS 2008 in the CEPP also appears inconsistent with the 1999 Approved CERP Plan. The 1999 Approved Plan includes a new "Lake Okeechobee Regulation Schedule (F)" as a Plan component. The purpose of that component, in part, was to develop operational rules for "discharges … to the Everglades Agricultural Area reservoir." Final CERP Integrated Feasibility Study and Programmatic EIS, at 9-29 (1999). According to the 1999 Approved Plan, "[m]ost of the operational features will be implemented in association with related construction features." Id. For the "Lake Okeechobee Regulation Schedule (F)" component, one of the logical times to implement it would be in plan development for the "Everglades Agricultural Storage Reservoirs (G)" component, which the Scoping Response indicates is part of the CEPP. For the Corps now to say that it will not consider operational changes to Lake Okeechobee in association with the CEPP is inconsistent with the 1999 Approved Plan.

Many stakeholders are very concerned that the Corps is abandoning its commitments made in 2008 that the LORS 2008 schedule would be an interim schedule, and is making the LORS 2008 schedule permanent. This has the potential to undermine the CEPP, because it affects whether stakeholders will have the benefit of the Savings Clause enacted in 2000 with the changes made in the CEPP. The Corps can address this issue by agreeing to consider changes in the Lake Okeechobee regulation schedule as part of the CEPP and defining the water supply level of service in effect in 2000 as one of the goals of the CEPP. Also, if the Corps' statements in the Scoping Response regarding the longevity of LORS 2008 were mistaken, then the agency should immediately clarify its position.

Study Biases Related to Lake Okeechobee Water Storage. The Scoping Response also indicates that the Corps is building an inappropriate bias into the CEPP study related to storage and water levels in Lake Okeechobee. In response to a comment about the need for more water storage in the lake, the Corps stated that it would not consider changes to LORS 2008 in the CEPP and justified that decision based (in part) on the impacts of higher water levels on lake ecology. See Scoping Response, at 37 (response to Crystals-2). By so doing, it appears the Corps is taking "off the table" additional water storage in the lake based on the Corps' pre-study decision that the alleged impacts of higher water levels on in-lake vegetation will outweigh any regional benefits that could be provided by additional water storage in the Lake. This will bias the CEPP's analysis, because it means that the Corps is unwilling

to consider alternative plans which would reduce storage needs in the EAA and still avoid significant impacts to in-lake resources. We believe that is entirely inappropriate.

The Corps also appears to be assuming that LORS 2008 will be implemented in the future, without the adaptive protocols adopted by the South Florida Water Management District in 2010. When LORS 2008 was implemented, the SFWMD developed protocols designed to provide operational guidance in areas where the schedule alone is ambiguous. Among other adjustments, the protocols reflect the desire to eliminate Base Flow releases to the St. Lucie Estuary when the LORS 2008 schedule assumed they would be made. Recent modeling of the "Future Without Project Condition" (which will be the "no action" alternative under NEPA) shows significant reduction in the Lake stage and a noticeable increase in water shortage severity in several drought years. One of the causes of this reduction in the level of service for water supply is likely the way the LORS 2008 Schedule was assumed to be implemented for the FWO condition.

The Corps' failure to consider in-lake storage alternatives is inconsistent with important policy directives. The Florida Legislature made an express statutory finding "that additional water storage may be an appropriate use of Lake Okeechobee." § 373.4592(1), Fla. Stat. The Corps justified the cost of repairs to the HHD, as recently as last month in the FY 2013 Civil Works Budget Detail prepared for Congress, on grounds that such repairs "will allow the Corps to hold more water safely in the Lake, … enable the Corps to release excess water to the estuaries … in a more controlled, less damaging fashion," and "enable the Corps to release more water during dry periods to benefit the ecosystem of the Everglades." The National Research Council, in its 2008 Second Biennial Review of the CERP, stated that "rehabilitation of [HHD] may offer synergistic opportunities for creating additional CERP storage and managing water levels for the benefit of the littoral zone, and the costs, benefit, and hydrological and ecological viability of these options should be considered in any analysis of CERP storage alternatives." National Research Council, Progress Toward Restoring the Everglades: The Second Biennial Review, 182-83 (2008). The Corps should consider such options in the CEPP in light of these statements and recommendations.

This study does not comport with NEPA. The Corps is indicating that it is not going to consider reasonable alternatives

to its proposals to store water in the EAA as opposed to in Lake Okeechobee. All environmental impact statements require an analysis of reasonable alternatives to a proposal. 42 U.S.C. § 4332(2)(C)(iii). Corps project recommendations, in particular, are required to include alternatives that "promote integrated water resource management," without "budgetary or other policy" constraints. 33 U.S.C. § 2282a(f)(1)(A)-(B). Agencies cannot categorically refuse to consider reasonable alternatives because the agency has pre-decided a discretionary policy choice. 40 CFR §§ 1502.2(e), 1502.14(a), -(c). The Corps' use of a "no action" alternative which does not represent reality, as discussed above with regard to the SFWMD operating protocols, is also inconsistent with NEPA. The Corps should take an unbiased, hard look at the environmental choices and include alternatives that would use the lake for water storage instead of adding all new storage in the EAA, and use an accurate "no action" alternative.

Modifications to the Lake Okeechobee Regulation Schedule may be the easiest and least expensive alternative to provide additional water storage for environmental and human needs. We urge the Corps not to "stack the deck" at the start of the CEPP process, by refusing to even consider such modifications.

Loss of Agricultural Water Supply. As indicated in our earlier comments, Florida Crystals continues to be very concerned about the potential loss of water supply as a result of the CEPP. The Scoping Response does not dispute that LORS 2008 provides less water supply to agricultural uses than the previous WSE regulation schedule. See Scoping Response at 39-40 (response to Crystals-10). The Corps' own documents indicate that the LORS 2008 has a significant negative effect on agricultural water supply: attached is a 2007 Corps analysis which shows major negative impacts to agricultural water supply from that schedule. History has borne out those projections, as the water shortage in the spring of 2011 was made more severe by the releases of water from the Lake under the LORS 2008 Schedule. We are very concerned that the CEPP appears in contrary to the Savings Clause in WRDA 2000 as a result of its approach to water storage in Lake Okeechobee.

Recent presentations of hydrologic modeling outputs for the "Future Without Project Condition" reinforce our concerns about impairing the protections of the Savings Clause. In those presentations, water supply restrictions in the Lake Okeechobee Service Area are projected to increase. It is impossible based on the information presented to specify what is causing the impact but

at least one of the reasons is likely to be the assumptions about the C-44 Reservoir, a CERP project. The Project Implementation Report for the Indian River Lagoon (IRL) indicates that operation of the C-44 Reservoir will lead to a significant reduction in flow to the lake in low-water conditions. The Savings Clause prohibits the Corps from implementing such measures to the detriment of existing water uses without ensuring that there is a replacement source available. The IRL Project Implementation Report failed to consider the impact of this reduction in flow to Lake on other users in the Lake Okeechobee Service Area. The fact that the Corps appears to be ignoring the Savings Clause in its analyses of other CERP components, and is implementing the C-44 project despite Savings Clause issues, is troublesome.

Once again, the Corps should avoid the problem of waters supply reductions by considering changes to the lake regulation schedule to provide additional storage.

Limitation of CEPP to 1999 Approved CERP Plan. We previously commented that WRDA 2000 and the Programmatic Regulations require the Corps to limit the CEPP Project Implementation Report to the 1999 Approved Plan. The Scoping Response did not seem to respond to that point. We recognize the recommendation of the National Research Council that the Corps should follow an "incremental adaptive restoration" approach, and we support the concept of adaptive management in the scientific context. However, that recommendation does not override the limitations in Congress' approval of the 1999 Approved Plan; the procedural requirements contained in the Programmatic Regulations; or the requirements in NEPA concerning supplementation of the 1999 Programmatic EIS for the CERP. If the Corps believes it can make significant changes to the 1999 Approved Plan through the CEPP Project Implementation Report, then it needs to explain the legal basis for that position.

Water Quality Planning Considerations. The Scoping Response does not explain how the Corps can plan the CEPP without knowing the land requirements and water quality targets of the ongoing water quality litigation. See Scoping Response at 49 (response to Sugar-8). The Corps should identify those requirements as soon as possible, because they are fundamental planning constraints which both limit the types of plans which can be considered for the CEPP and whether the SFWMD has the financial resources to satisfy the CEPP.

Water Supply Planning Considerations. The Scoping Response indicates that the Corps will include goals and performance

measures related to improved water supply and economic well-being, in response to our suggestion. Scoping Response at 49 (response to Sugar-9). We appreciate the Corps' response to our suggestion. However, we are concerned that the water supply goals are being treated only as "incidental" to other goals for the CEPP, and that only "[w]ater retained in the Lake that is not identified for the natural system may be available for water supply." Corps' Presentation to PDT Regarding CEPP "Revised Objectives," Slide 4 (March 26, 2012). By this language, the Corps is subordinating the water supply needs of the people of South Florida to other goals, which is contrary to the 1999 Approved Plan and WRDA 2000. The Corps does not need to put local communities in a subservient position in order to achieve the environmental goals of the CEPP, and should treat the water supply objective as co-equal with other objectives in the CEPP.

Improved Flood Protection. The Scoping Response indicates that the Corps will include "protecting existing levels of flood protection" as a planning constraint. Scoping Response at 50 (response to Sugar-10). While we appreciate that improvement, we remind the Corps that we asked the Corps to use as a performance measure improving flood protection, because that is one of the specific authorized features of the EAA reservoir component contained in the 1999 Approved Plan. We ask the Corps not to abandon the goal of improving flood protection that was part of the 1999 Approved Plan and is a key component of the Central & Southern Florida Flood Control Project.

Restoration/Rehydration of Holey Land and Rotenberger Wildlife Management Areas. In response to our comment that the Corps should consider improvements to the Holey Land and Rotenberger Wildlife Management Areas as part of the CEPP, the Scoping Response indicates that "[t]he Corps will consider information from previous studies undertaken by the SFWMD to consider this option and determine if applicable for inclusion in the CEPP." Scoping Response at 40, 50 (response to Crystals-11 and Sugar-13). We are unaware of any studies by the SFWMD which address this issue; please identify them so Florida Crystals and others can provide input.

In addition, given the Corps' effort to fast-track the CEPP, it is unclear how much time the Corps has to determine if the Holey Land and Rotenberger components of the 1999 Approved Plan should be included in the CEPP. We continue to recommend that the Corps incorporate these components into the CEPP.

Thank you for considering our comments. We look forward to providing additional comments as the CEPP moves forward and the agencies develop specific proposals for public review.

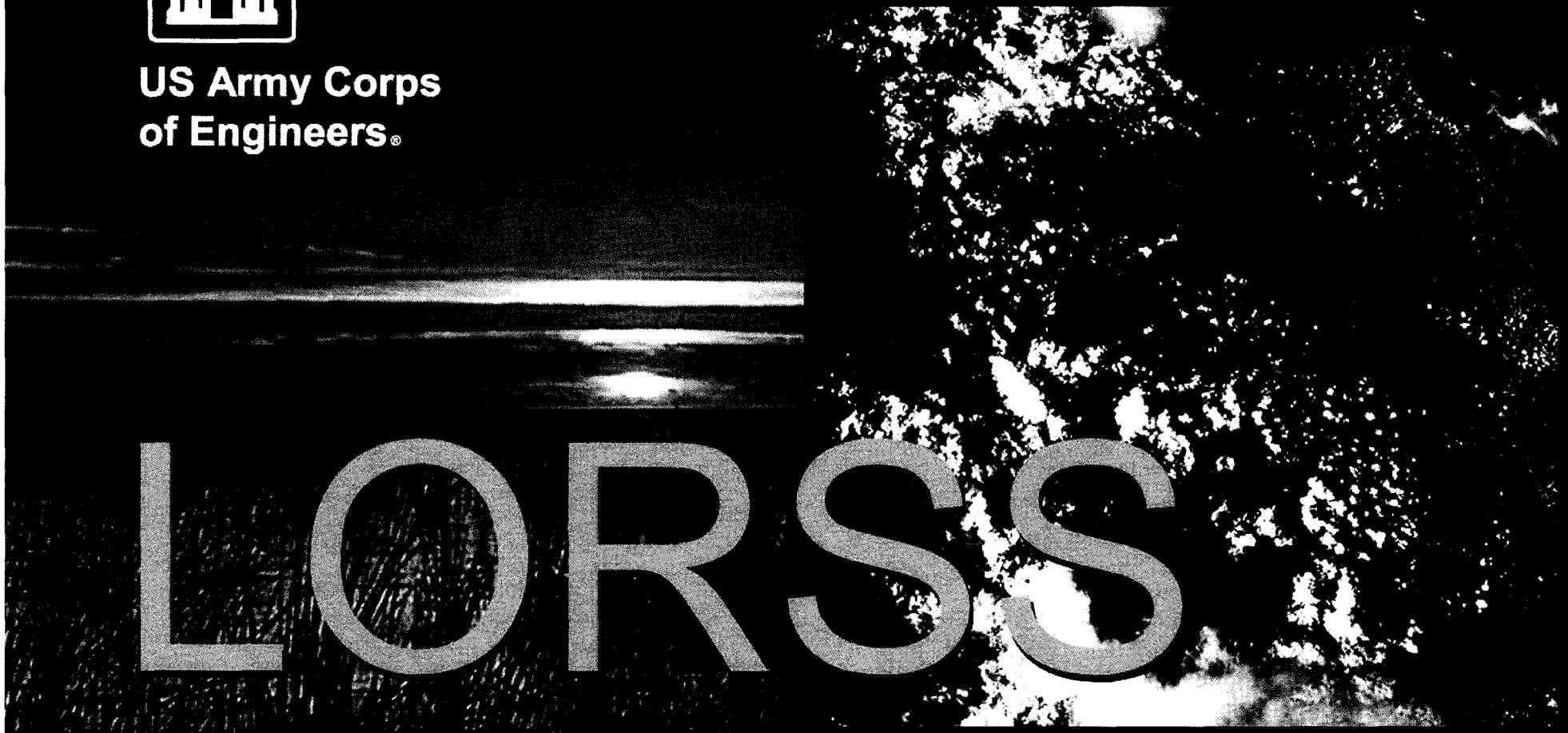
With kind regards, I remain,

Yours truly,

William Tarr
Vice President
Florida Crystals Corporation

/jcd
Enclosure
Copy w/encl. (via e-mail) to:
Mr. Joe Collins, SFWMD, Chair
Mr. Kevin Powers, SFWMD, Vice Chair
Ms. Sandy Batchelor, SFWMD Board Member
Mr. Daniel DeLisi, SFWMD Board Member
Mr. James J. Moran, SFWMD Board Member
Mr. Daniel O'Keefe, SFWMD Board Member
Mr. Juan M. Portuondo, SFWMD Board Member
Mr. Timothy Sargent, SFWMD Board Member
Mr. Glenn J. Waldman, SFWMD Board Member
Ms. Melissa Meeker, SFWMD
Mr. Matt Morrison, SFWMD
Mr. Tom Teets, SFWMD
Ms. Kimberly Taplin, USACE
Mr. Steven Kopecky, USACE
Mr. Dennis Duke, Interior
Mr. Tom MacVicar
Mr. Neal McAliley
Mr. Galen Miller

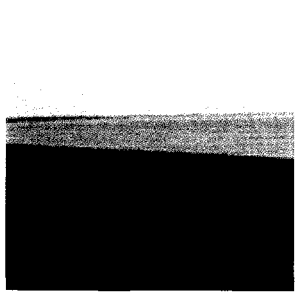
US Army Corps
of Engineers®



LORSS

Lake Okeechobee Regulation Schedule Study

Study Performance Objectives



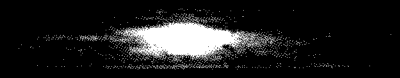




Public Health & Safety	Lake Ecology	Waterway Navigation	Estuaries – Caloosahatchee & St. Lucie	Greater Everglades	Water Supply
Herbert Hoover Dike Structural Stability	Flora/ Fauna Threatened/ Endangered Species	Commercial/ Recreational Traffic Regional Economy	Flora/Fauna Threatened/Endangered Species Regional Economy	Flora/ Fauna Threatened/ Endangered Species	Human & Agricultural Consumption Needs of Environment

Agenda

- Background
- Revisions to Tentatively Selected Plan (TSP) for Lake Regulation Schedule
- Revisions to Draft Supplemental Environmental Impact Statement (SEIS)
- Summary
- Comments



Study Progress

2003 - 2005
High Water/
Hurricane
Activity

Aug - Oct 2006
Released draft SEIS
& TSP for Public
Review

Nov- Mar 2007
Revised draft
SEIS and TSP

Oct 2007
Release final
SEIS
& TSP for 30 Day
Public Review

Aug 2005
Initiated
LORSS
Study

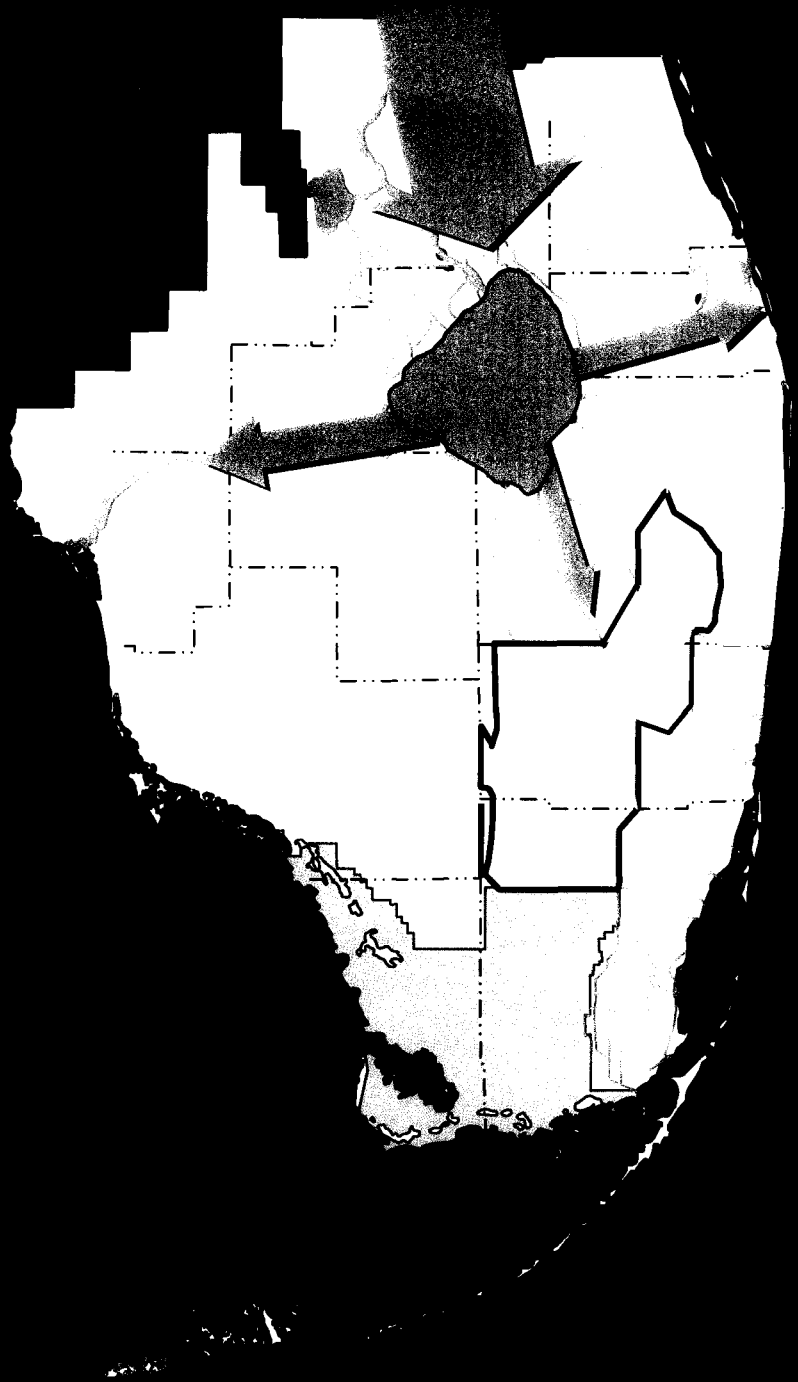
Oct 2006
Received
Public
Comments

6 Jul – 20 Aug 2007
Released revised draft
SEIS & TSP
for 45 Day Public
Review

Nov – Dec 2007
Approve new Lake
Okeechobee
Regulation
Schedule

Lake Management Challenges

One foot of rainfall in an already wet Okeechobee / Kissimmee basin equals about a *four-foot rise* in Lake Okeechobee. It would take about 75 days (max flow) to 230 days (preferred estuary flow) to return the lake to its original elevation.

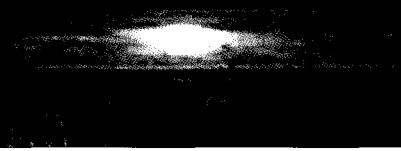


Study Goals & Objectives

- Ensure public health and safety
- Manage Lake Okeechobee at lower lake levels
- Reduce high regulatory releases to the estuaries
- Meet Congressionally authorized project purposes

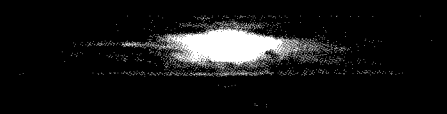
Key Study Assumptions & Constraints

- SFWMD - temporary forward pumps
- SFWMD - implement new Lake Okeechobee Water Shortage Management Plan (DRAFT)
- Herbert Hoover Dike integrity
- Existing C&SF infrastructure
- Storm Water Treatment Area (STA) 3 & 4 capacity
- Simulation period-of-record 36 years (1965 - 2000)



What We Heard

- 17.25 high lake constraint
- Consider SFWMD public / private lands for Lake water storage
- Water supply concerns
- Non-Typical Operations
- More equitable discharges to estuaries and WCA
- Release more low flows to reduce high discharges
- Concerns due to extreme high releases to Caloosahatchee Estuary
- Economic costs of high releases
- Account for wet weather cycle
- Release more water south
- Increase storm water treatment areas and storage reservoirs



What We've Done

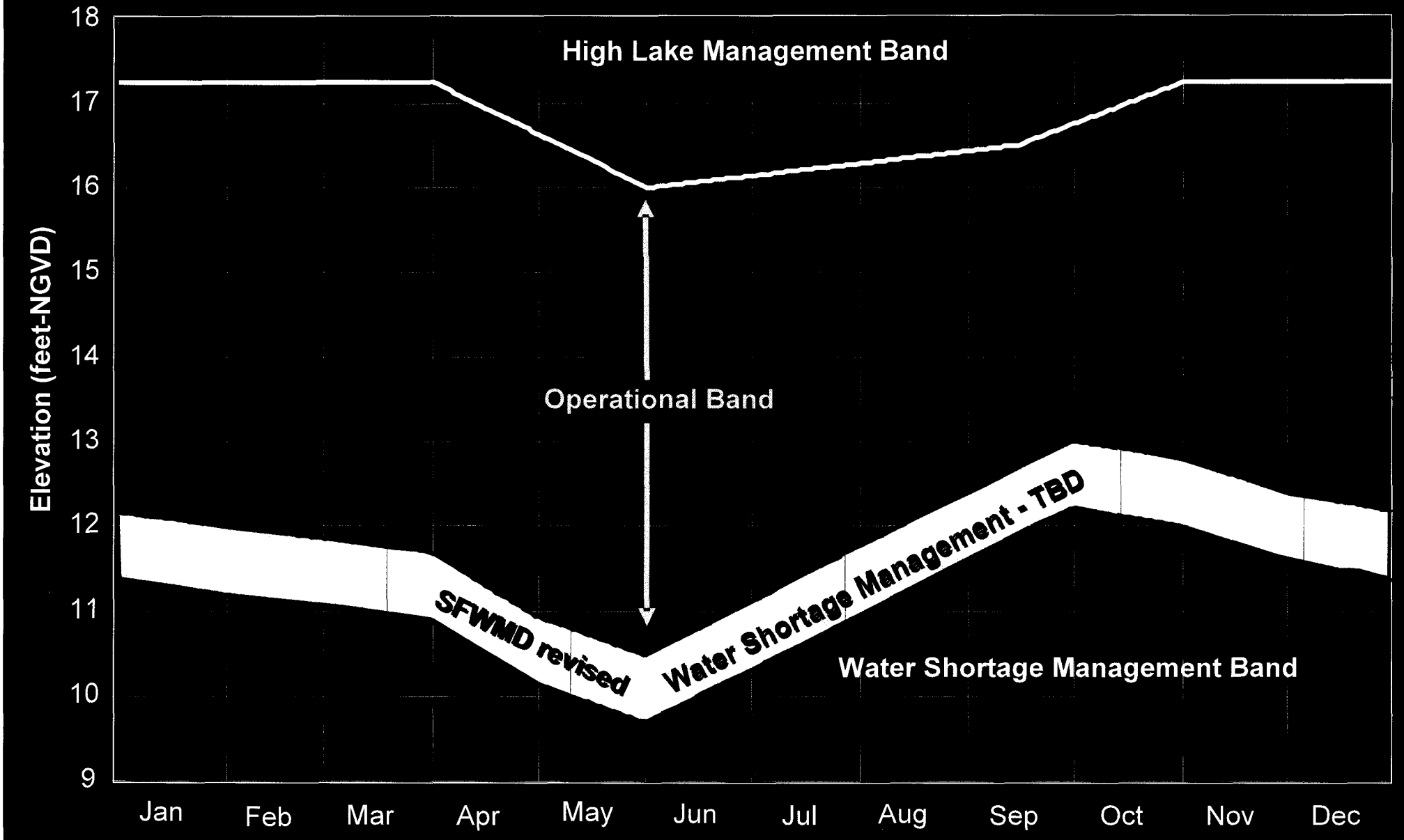
- Treats 17.25 as performance measure
- Manages the lake at lower elevations
- Allows for quicker response and operational flexibility to lake conditions and tributary inflows
- Improves preferred flow to the coastal estuaries
- Is equal to (extreme) and modestly improves (intermediate) high flow discharges to coastal estuaries
- Provides for base flow to the Caloosahatchee and St Lucie estuaries
- Measures pulse releases at S-79
- Allows for use of SFWMD lands for storage
- Expanding agency coordination on lake operations

Tentatively Selected Plan

Revised

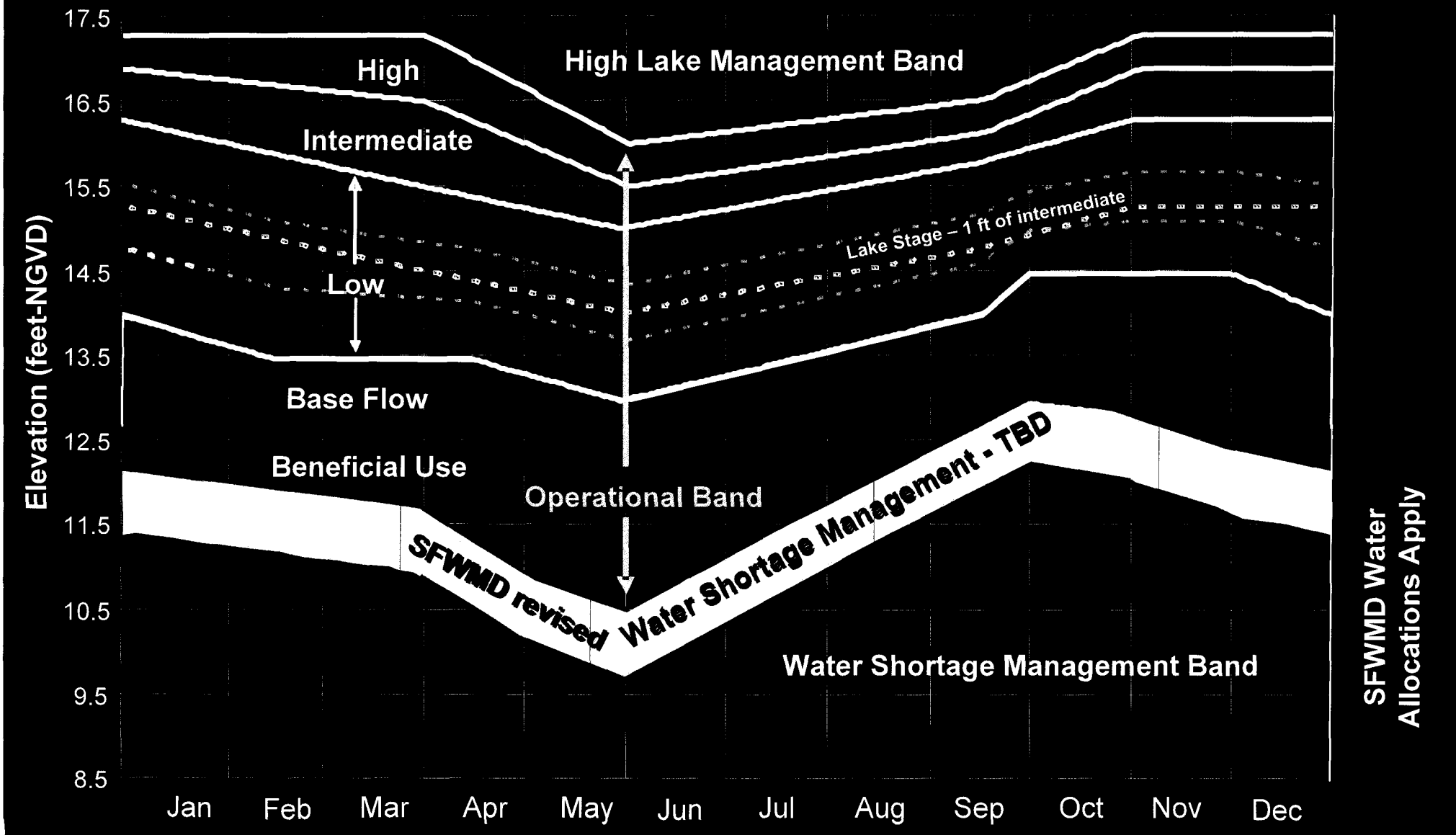
Revised TSP

Part A



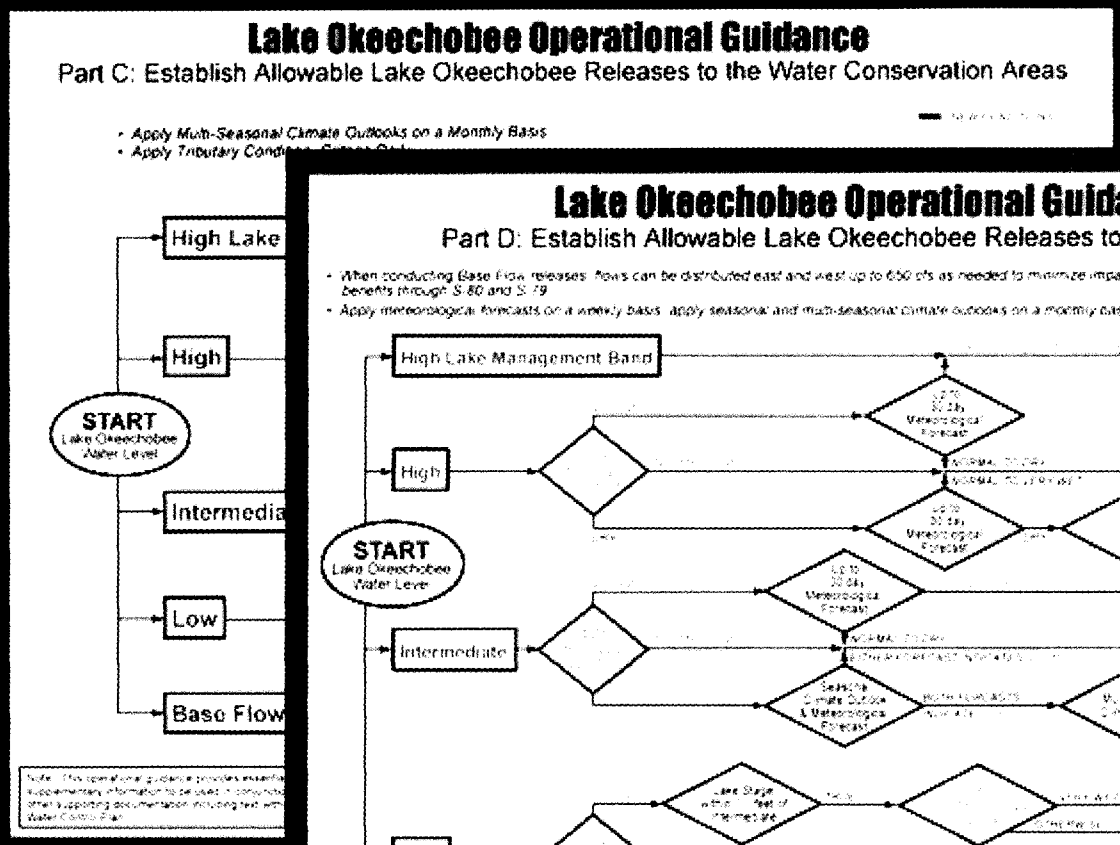
Revised TSP
Regulation Schedule Management Bands

Part B



Revised TSP - Operational Guidelines

Parts C&D



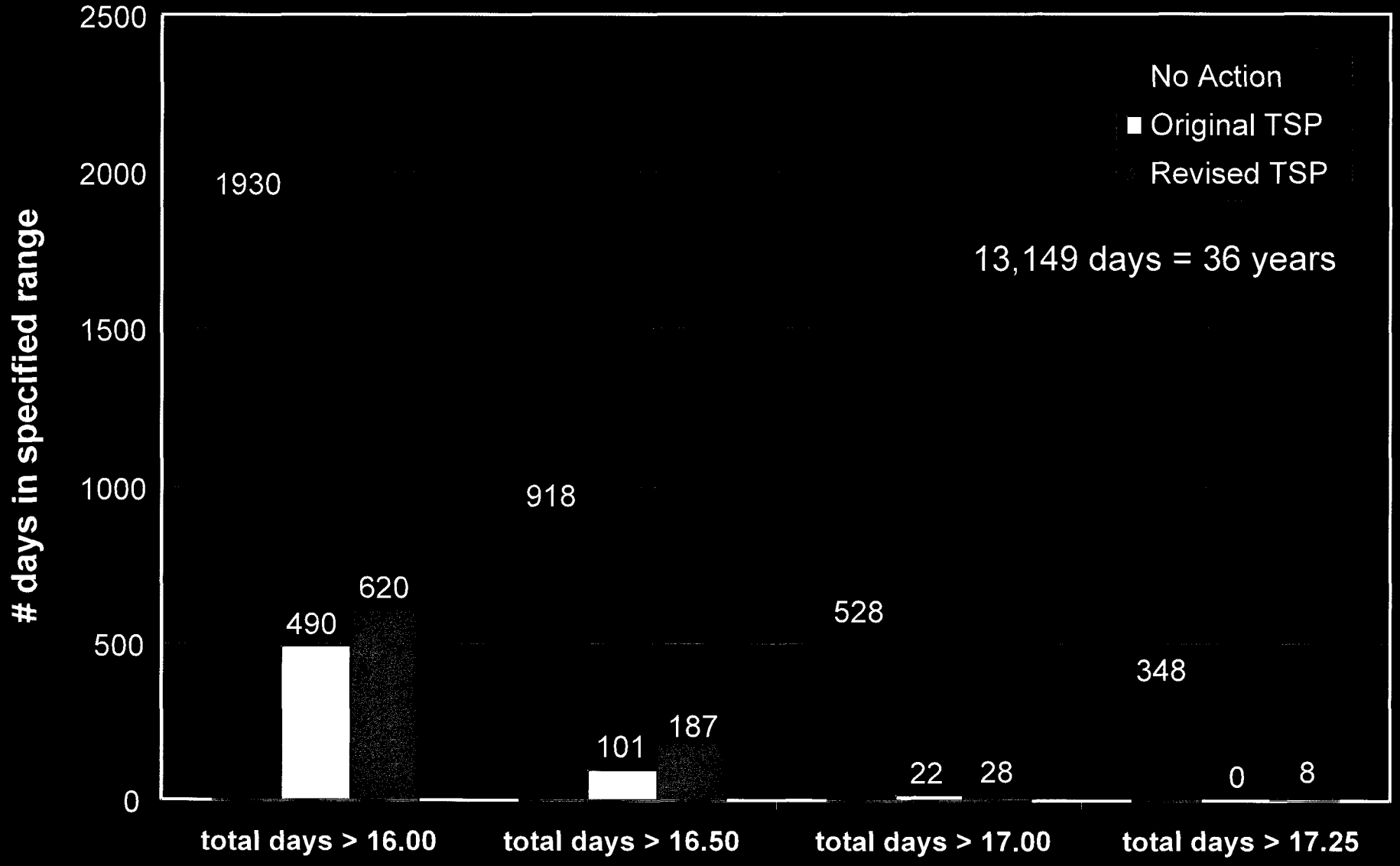
TSP Performance Lake Okeechobee

Revised

TSP Performance

Lake Okeechobee - Public Safety

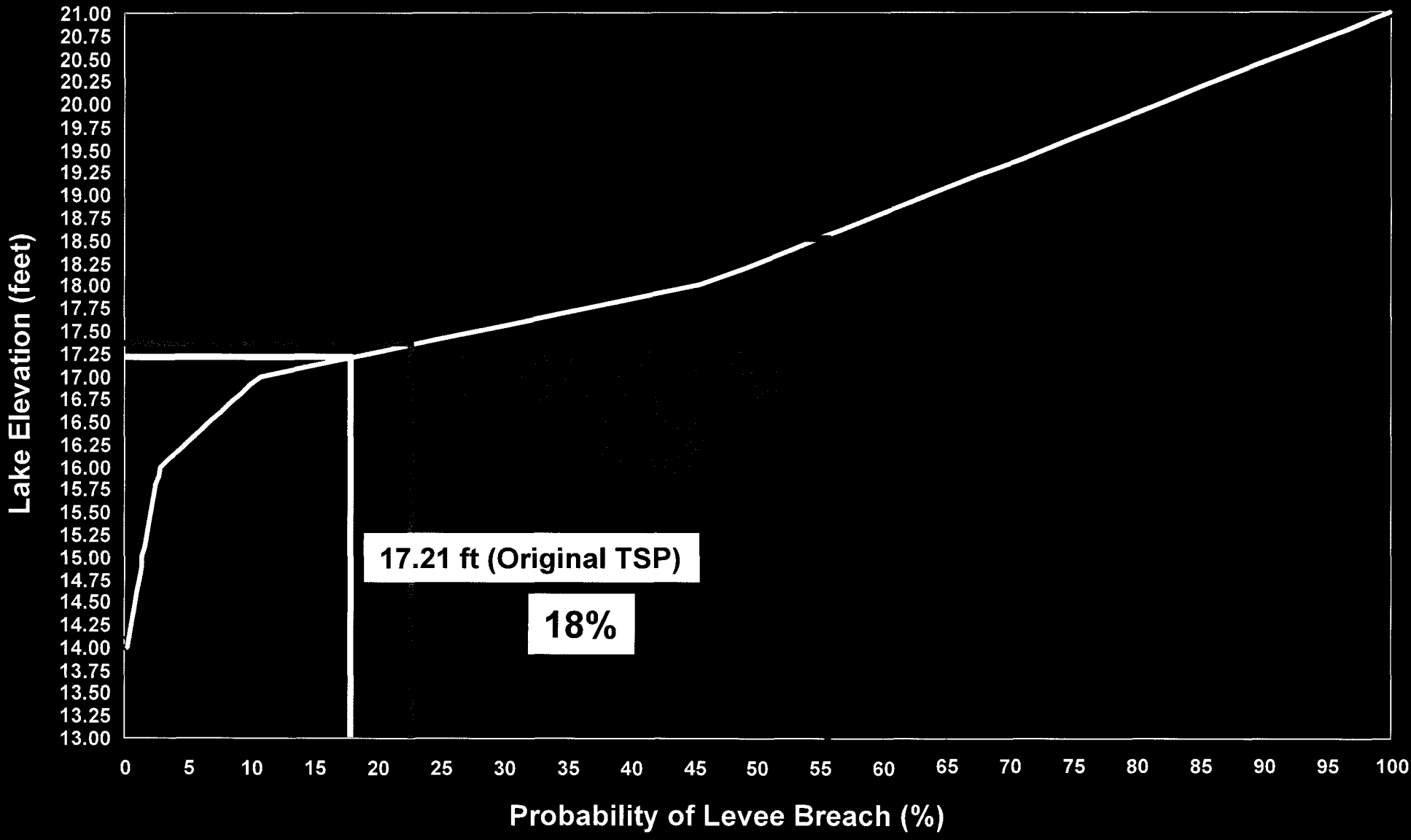
Summary of Lake High Stages (>16.00)



TSP Performance

Lake Okeechobee - Public Safety

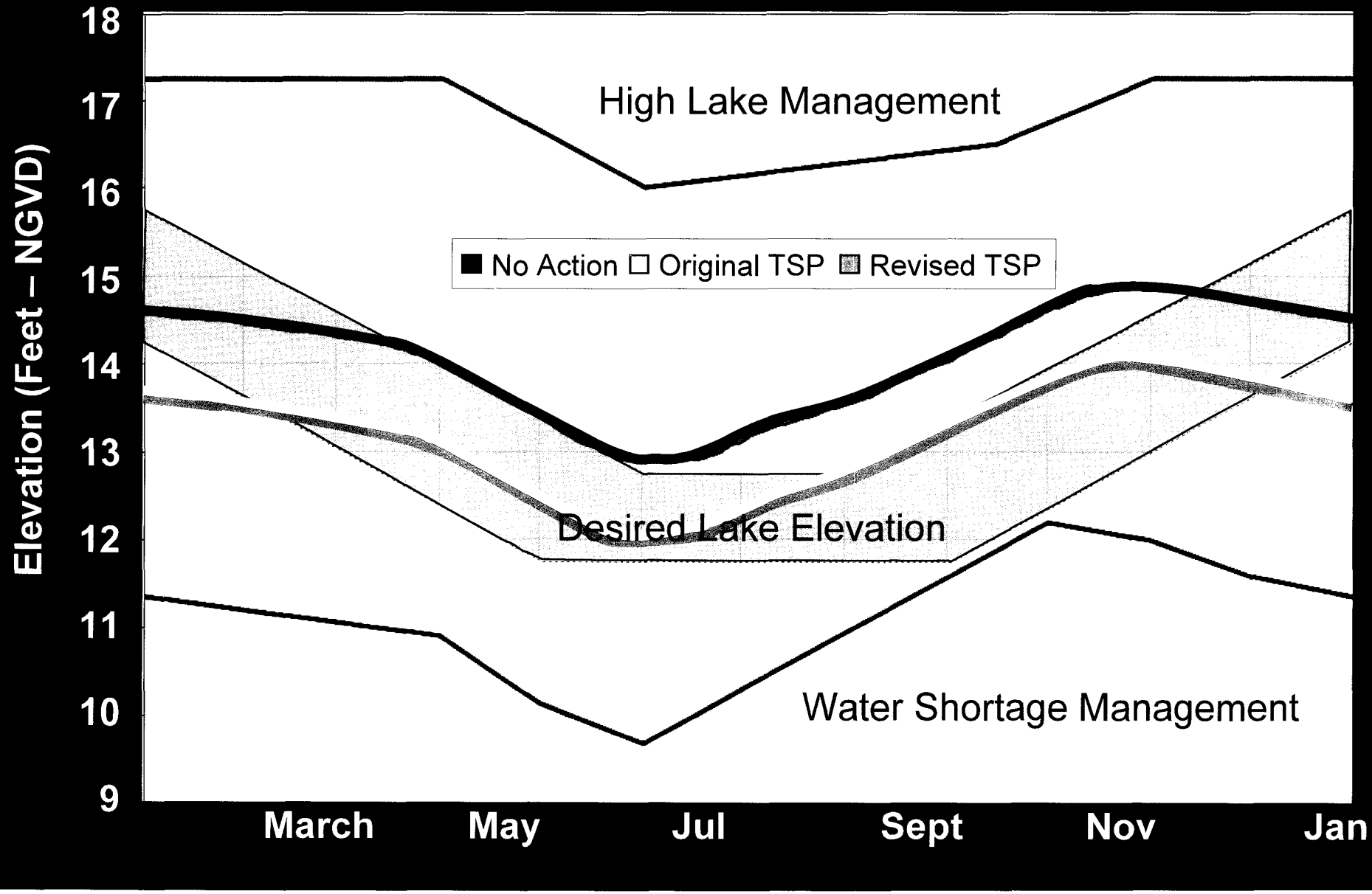
Combined probability of a levee breach at selected lake stages (without intervention)



TSP Performance

Lake Okeechobee - Ecological

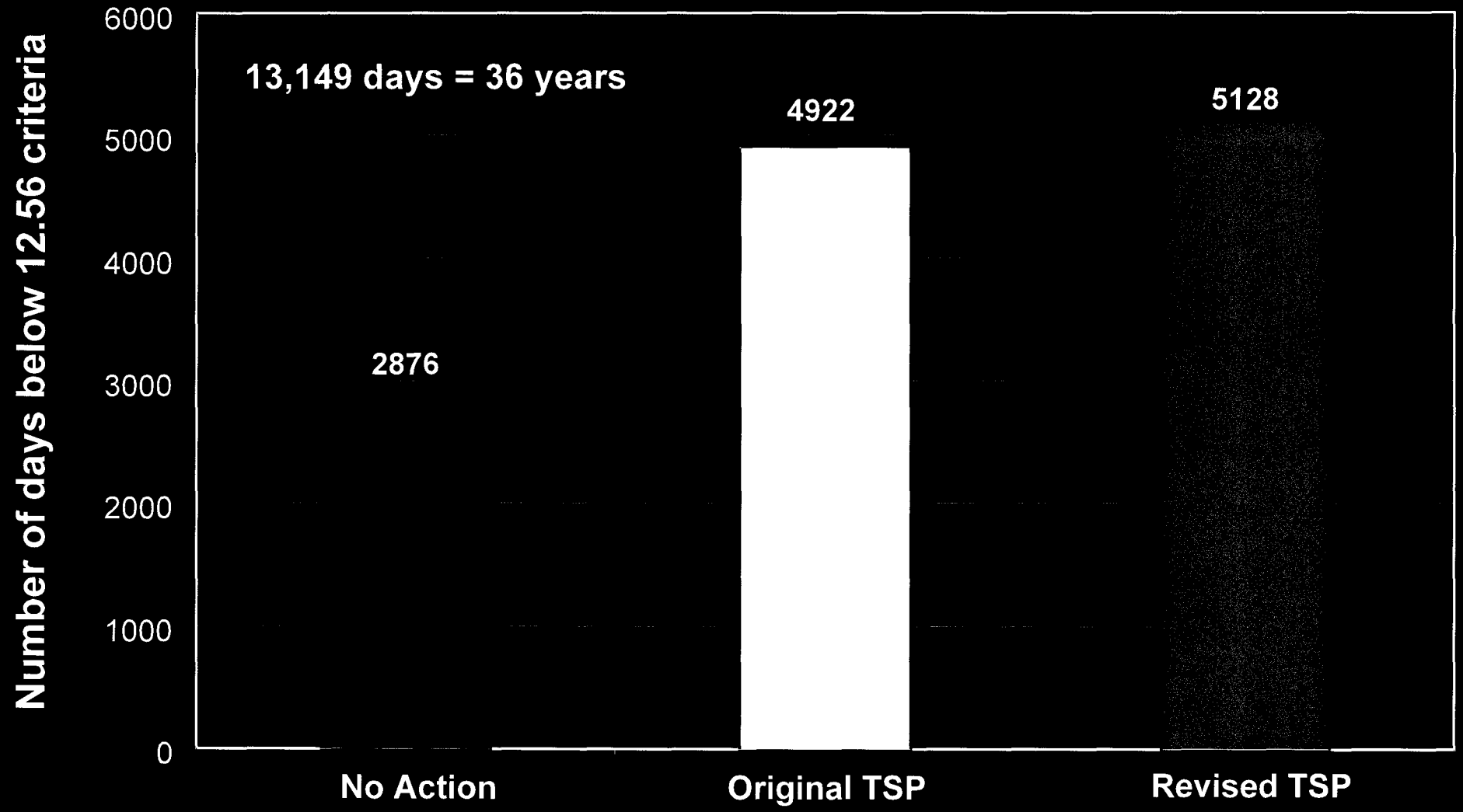
Lake Daily Average Elevation



TSP Performance

Lake Okeechobee Waterway - Navigation

Summary of Navigation Criteria, 12.56 feet



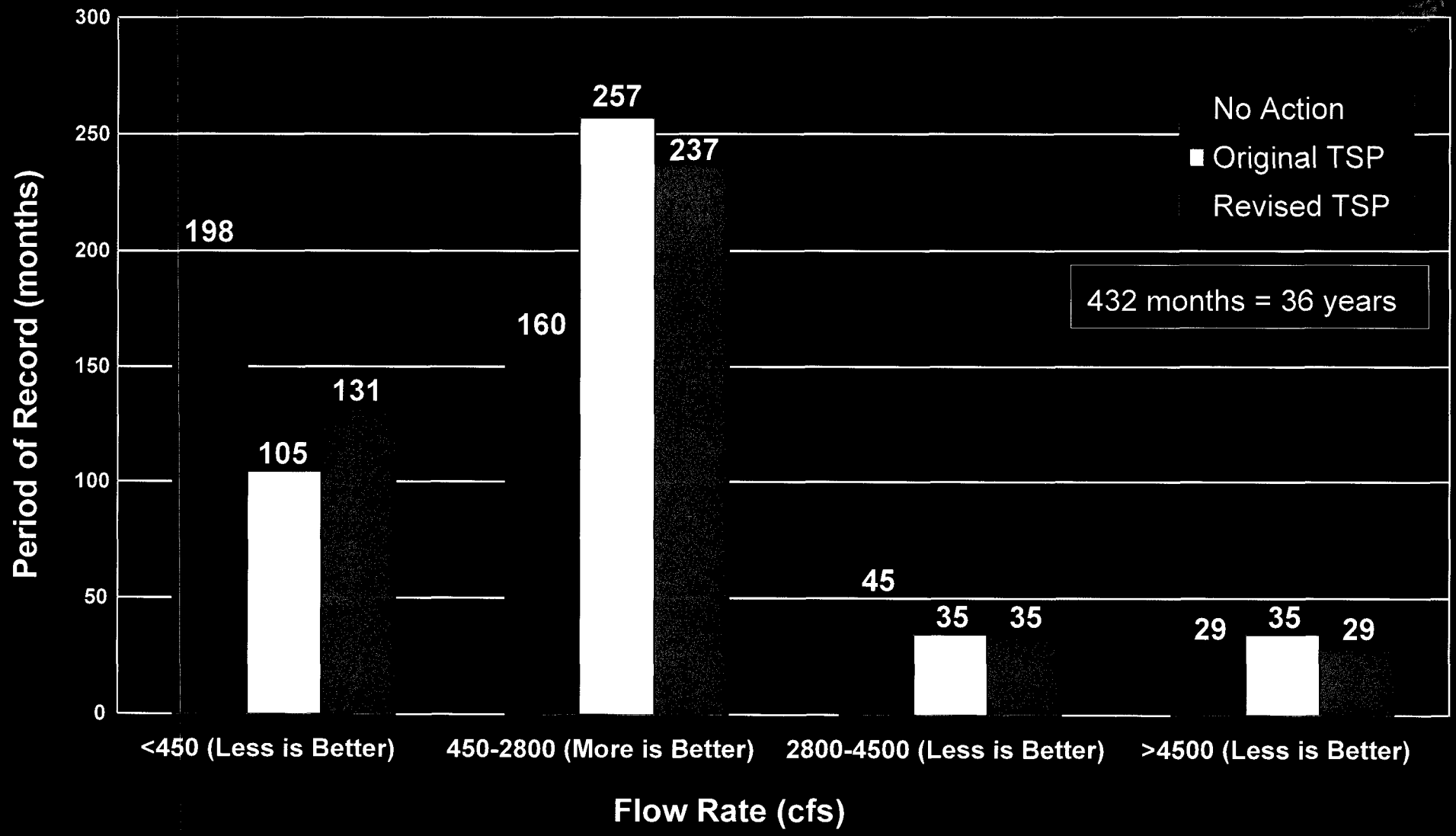
TSP Performance
Estuaries
Greater Everglades

Revised

TSP Performance

Caloosahatchee Estuary

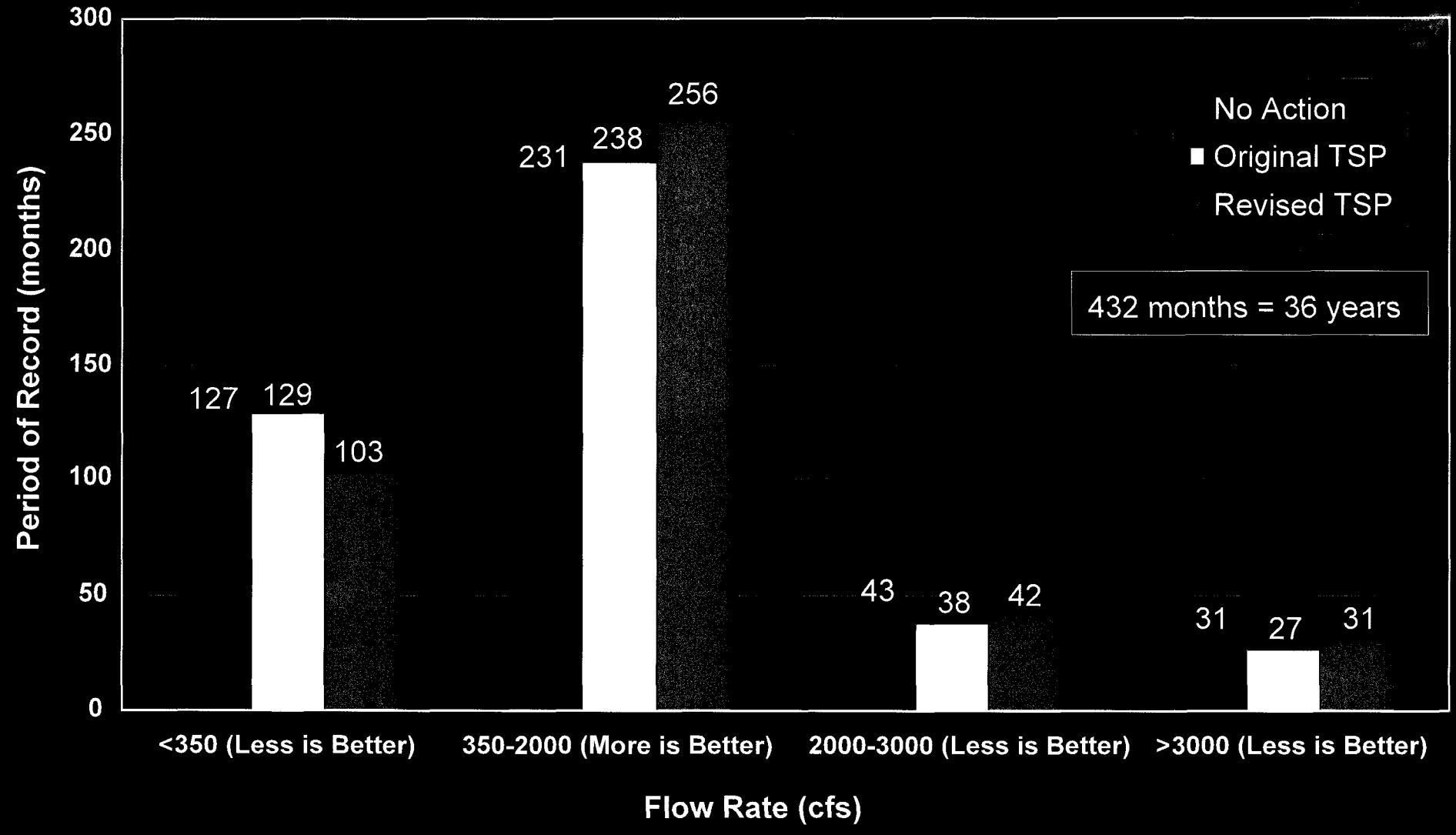
Distribution of Mean Monthly Estuary Inflows



TSP Performance

St. Lucie Estuary

Distribution of Mean Monthly Estuary Inflows



Greater Everglades

Performance Measures: Peat-dry out, tree island inundation, recession rates, water reversals, and snail kite habitat

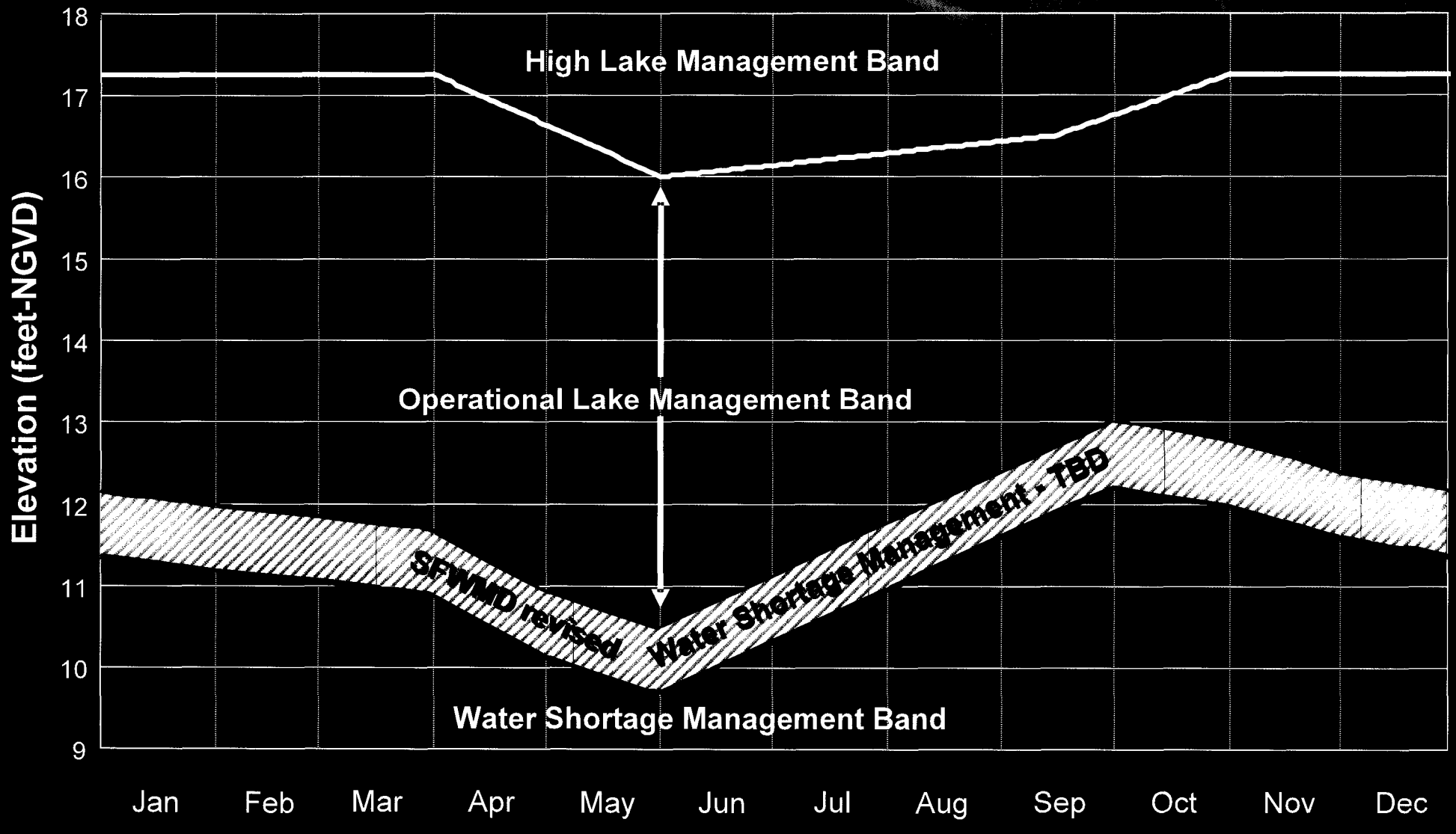
- Results show only minor differences between the alternatives analyzed
- Ecologically, none of the differences are significant

TSP Performance Water Supply

Revised

TSP Performance

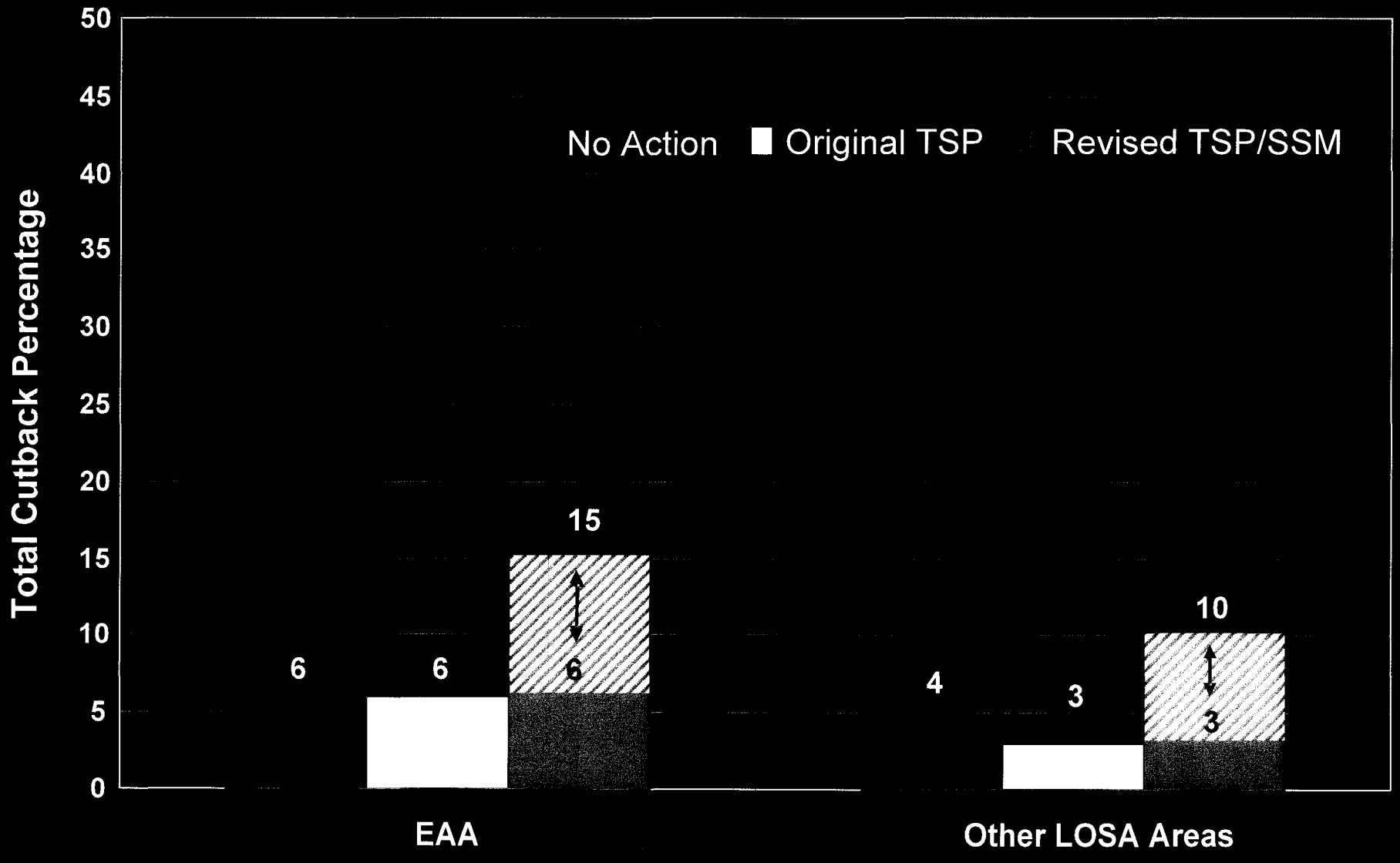
Water Supply – Revised TSP



TSP Performance

Water Supply

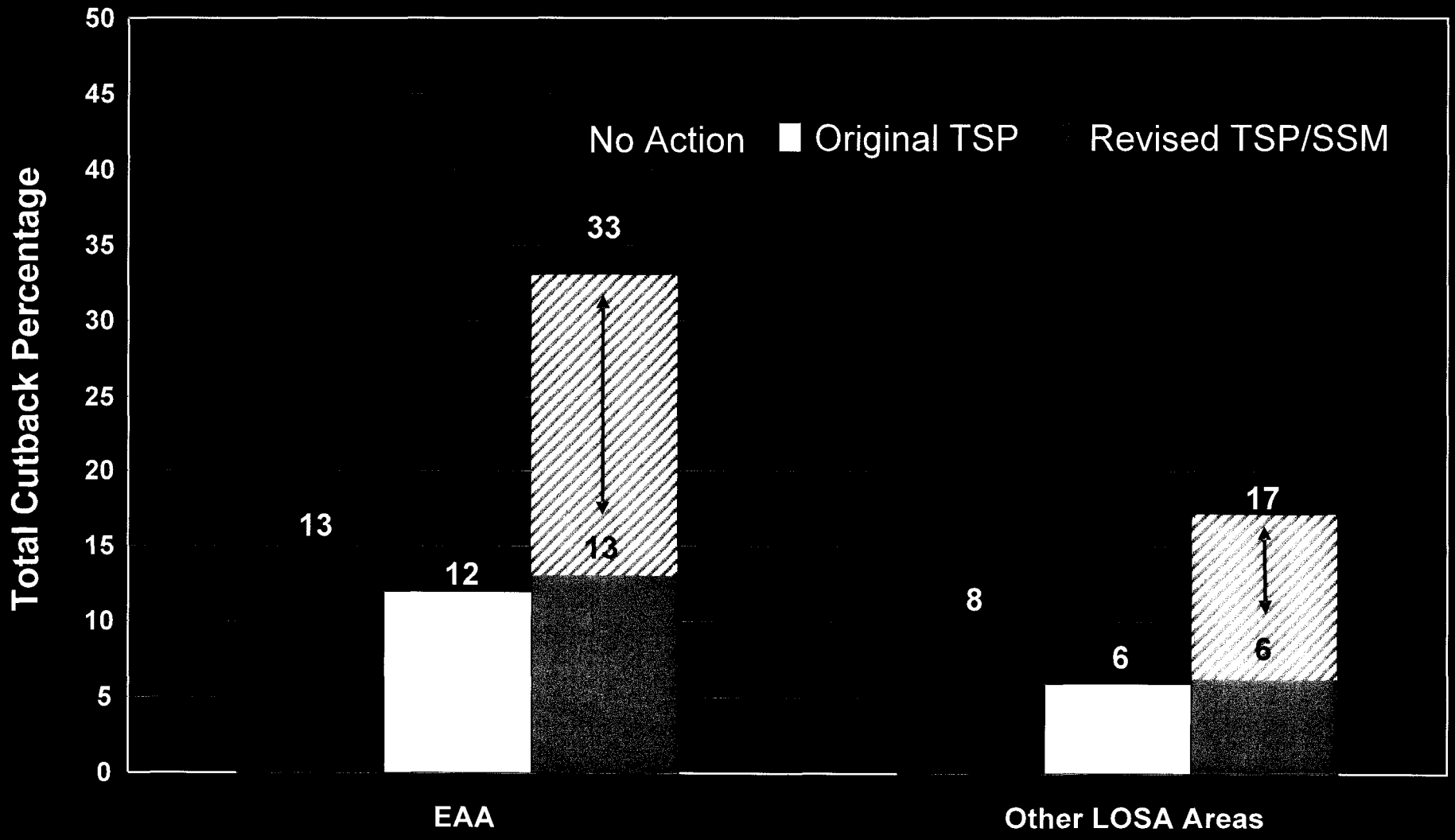
Mean Annual EAA / LOSA Supplemental Irrigation Demands not met for 1965-2000



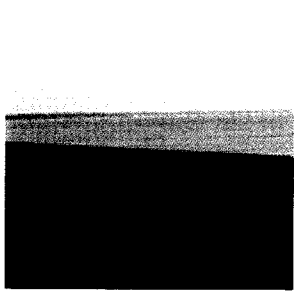
TSP Performance

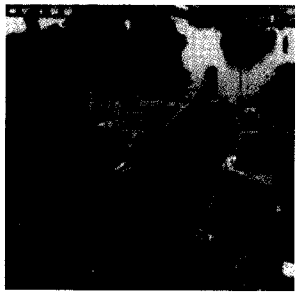
Water Supply

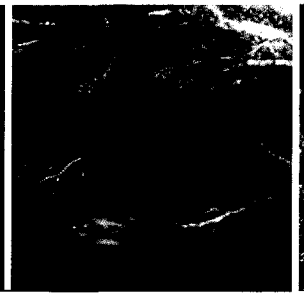
Mean Annual EAA / LOSA Supplemental Irrigation
Demands not met for five drought years 1971, 1975, 1981, 1985 and 1989



Study Performance Objectives







Public Health & Safety	Lake Ecology	Waterway Navigation	Estuaries – Caloosahatchee & St. Lucie	Greater Everglades	Water Supply
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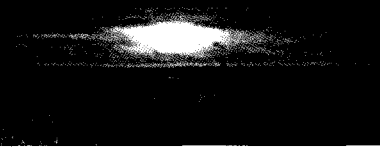
Minimize High Lake Stages	Minimize Extreme Lake Stages (High & Low)	Minimize Lake Stages < 12.56 ft.	Minimize Extreme Rates of Flow	Maintain Desirable Water Depths & Hydroperiods	Meet Demand

LORSS Schedule

Task	Begin	End
Revised DSEIS in Fed Register	6 July 2007	
45 Day Public Comment Period	6 July 2007	20 Aug 2007
NEPA and WCP Public Meetings	7, 8, 13 & 14	Aug 2007
Final SEIS compiled	20 Aug 2007	20 Sept 2007
Final SEIS in Fed Register	5 Oct 2007	
30 Day Public Comment Period	5 Oct 2007	5 Nov 2007
FSEIS ROD & WCP Approval	Nov - Dec 2007	
Implement Interim Schedule	Jan 2008	



LORSS
Lake Okeechobee Regulation Schedule Study

Public Comments

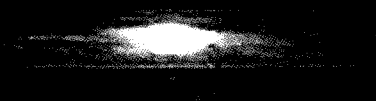
Jacksonville District website

www.saj.usace.army.mil

Contact: Yvonne L. Haberer

U.S. Army Corps of Engineers
Jacksonville District
701 San Marco Blvd.
Jacksonville, FL 32207-8175

Email: LORSSComments@saj02.usace.army.mil



LORSS
Lake Okeechobee Regulation Schedule Study

Comments

LORSS

Lake Okeechobee Regulation Schedule Study

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October 16, 2012

VIA E-MAIL AND U.S. MAIL

Dr. Gina Padua Ralph
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, Florida 32232-0019

Re: Central Everglades Planning Project

Dear Dr. Ralph:

I am writing to provide further comments of Florida Crystals and its affiliates, including Okeelanta Corporation and New Hope Sugar Company, on the Central Everglades Planning Project (CEPP). This letter supplements our previous comment letters dated January 20, 2012, and March 30, 2012.

Florida Crystals supports the restoration of the South Florida ecosystem consistent with the approved 1999 Comprehensive Everglades Restoration Plan (1999 Approved Plan). That plan recognized the importance of restoring the hydrology of the Everglades while at the same time providing for the other water-related needs of communities in the region, including water supply and flood protection for all uses. To the extent that the CEPP can bring important projects on-line sooner, while remaining true to the balance and consensus reached in the 1999 Approved Plan, it will represent a great step forward.

1. Plan Development and Scoping

At the time of our previous comment letters, the U.S. Army Corps of Engineers (Corps) had not actually proposed any specific project for the CEPP. This made it extremely difficult to provide meaningful input, because there was nothing specific for members of the public to consider. When we pointed out that "scoping" was

premature under the National Environmental Policy Act (NEPA), the Corps "request[ed] [our] continued participation and feedback throughout the CEPP planning process." Corps' Scoping Response, at 46 (March 1, 2012).

Based on recent public workshops and presentations, it appears that project features within CEPP are taking shape. Federal and state planners have screened various alternatives north of the "redline" within the Everglades Agricultural Area (EAA), and appear to be proposing a Flow Equalization Basin (FEB) on the 14,000 acre so-called A-2 Compartment. Elements south of the "redline," within the Water Conservation Areas (WCA) and Everglades National Park, are still ill-defined other than a notion to partially fill the Miami Canal to promote sheetflow in WCA-3A. From what we can tell, the Corps has not identified final proposals for the elements of the CEPP in the Water Conservation Areas and Everglades National Park, nor has it identified revised operational rules for Lake Okeechobee needed to achieve the benefits of the proposed structural changes. Since all of these plan elements are interdependent, it is difficult to assess them in isolation and it is unclear when the Corps will announce a proposal for the overall CEPP that integrates all of the plan elements.

With the forthcoming identification of a specific proposal for overall CEPP, we recommend that the Corps re-initiate formal scoping pursuant to NEPA. NEPA regulations contemplate scoping after an agency proposal has been announced. 40 CFR § 1501.7; 33 CFR Part 230, App. C. The previous scoping period was premature because no proposal had been developed. Once the agency announces its proposal for the overall CEPP (which presumably will be in the coming months), the public will be in a position to provide meaningful comments. The Corps should not rush through development of the CEPP at the expense of public participation and input.

Reinitiating scoping will not delay the project. The CEPP proposal for the EAA element is to build an FEB on the A-2 site that would operate in conjunction with an FEB on the adjacent A-1 site, now part of the state's NPDES permits and Consent Order to meet water quality objectives. The proposed plan elements for the two sites apparently would have interdependent operations. The Corps issued its scoping notice for an Environmental Impact Statement (EIS) for the A-1 site proposal on August 28, 2012. Presumably the Corps cannot expect to complete its NEPA process for the CEPP element on the A-2 site before it completes the NEPA

process on the proposal to build an FEB on the A-1 site, because otherwise it cannot fully analyze all of the cumulative impacts of the two proposals. Re-initiating scoping on the CEPP element would put the two NEPA processes on a parallel schedule. Even if reinitiating scoping caused some delay, that would be a small price for having the public more fully engaged in the development of the CEPP.

In our continuing effort to provide constructive input, we offer these comments regarding the analysis of the EAA element of the CEPP for which a preliminary proposal has been identified. Since the Corps has indicated that each element of the CEPP is interdependent with the other portions, we reserve the right to provide additional comments as the Corps reveals more of its intentions to the public.

2. Alternatives to Proposed EAA Plan Elements

A. General Comments. We have several comments regarding how the Corps should approach the analysis of alternatives to the CEPP proposal for the EAA. First, the most important aspect of the Corps' forthcoming EIS for the CEPP is the consideration of alternatives. It is federal policy to "[u]se the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of those actions upon the quality of the human environment." 40 CFR § 1500.2(e). The discussion of alternatives "is the heart of the environmental impact statement" and should "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public." 40 CFR § 1502.14. While the Corps is devoting significant time to developing a proposed plan for the CEPP, it is equally important that it develop a range of reasonable alternatives to that plan so that the choices are sharply defined.

Second, in light of the importance of the alternatives analysis, the Corps should disclose the alternatives to be analyzed prior to issuance of the draft EIS/Project Implementation Report (PIR). The alternatives developed by the Corps so far might be configured in ways that miss important issues or which otherwise fail to sharply define the choices for decision makers. Disclosing those alternatives before issuance of the draft EIS/PIR would enable members of the public to suggest improvements to them before they are analyzed fully, which could save time later in the process by minimizing the need to revise alternatives between the draft and

final EIS/PIR. We make this point because the "Central Everglades Process" chart being used by the Corps in various presentations states that the agency will "Develop TSP [Tentatively Selected Plan] and PIR" at the same time. *See, e.g.*, CEPP Formulation Overview, at 5 (Aug. 29, 2012). Since a draft EIS/PIR must identify and analyze alternatives to the agency's proposal, 33 CFR § 385.26(b), this suggests that the Corps may not inform the public of which alternatives it is considering until the draft EIS/PIR is issued. (Read literally, it also suggests that the Corps will not fully identify its proposal to the public until the draft EIS/PIR is issued.) Presumably, the Corps did not intend to suggest such a late disclosure by this chart, and plans to identify a full suite of alternatives before preparation of the draft EIS/PIR. Such an approach would be consistent with the requirement in the Programmatic Regulations that *"[b]efore completion of the draft Project Implementation Report, the Corps of Engineers and the non-Federal sponsor shall provide the South Florida Ecosystem Restoration Task Force with information about alternative plans developed and evaluated for the Project Implementation Report."* 33 CFR § 385.26(a)(2) (emphasis added).

Third, the screening evaluation in the Project Delivery Team (PDT) process does not constitute consideration of alternatives for purposes of NEPA. The PDT does not include members of the public, agency participation in the PDT does not "substitute for consultation, coordination or other activities required by applicable law," and [d]ocuments and work products prepared or developed by the [PDT] [are] not … self-executing." 33 CFR § 385.17(c)-(d). Moreover, the PDT process inherently involves policy choices relating to cost, comparative environmental effects in different natural areas, and political factors, and those choices are obscured by the fact that potential plan formulations are developed in closed meetings of computer modelers. While such a process may be appropriate for purposes of developing a Tentatively-Selected Plan, NEPA requires that the policy choices be revealed to senior agency decision makers and the public so that they can make their own judgments about the best way to move forward. We recommend that if the Corps intends to consider alternatives developed and rejected in the PDT process, that it fully analyze those alternatives in the draft EIS/PIR and identify the criteria by which they were rejected in the PDT process. We do not believe that this has been done to date, based on the presentations we have reviewed.

Fourth, the Corps should analyze an array of reasonable alternatives, and not limit its analysis of alternatives to those which it prefers. NEPA regulations require consideration of reasonable alternatives "not within the jurisdiction of the [Corps]." 40 CFR § 1502.14(c). "Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant." *Forty Most Asked Questions Concerning CEQ's NEPA Regulations*, 46 Fed. Reg. 18026 (March 17, 1981), Answer to Question 2a. Moreover, the regulations require the Corps to analyze alternatives that "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public." 40 CFR § 1502.14. Such alternatives typically are those which are not necessarily favored by the Corps (or all other agencies), but which highlight the trade-offs inherent in plan development. This means that the Corps should not artificially restrict the range of alternatives being analyzed in the draft EIS/PIR to those which the agency prefers, or which meet some unstated technical or policy criteria. We previously have expressed concern that the Corps is artificially screening out alternatives that it does not prefer related to increased water storage in Lake Okeechobee and may be prioritizing environmental interests in the lake over environmental interests elsewhere in the region. *See, e.g.*, March 30, 2012 Comment Letter, at 4-8. It also appears that the Corps may be impliedly prioritizing the Holey Land and Rotenberger Wildlife Management Areas over the Northern Estuaries and the Water Conservation Areas. The Corps should analyze alternatives in the EIS/PIR which it does not prefer, but which represent valid alternative means to achieve the project goals. The Corps should let the members of the public decide which alternatives they prefer, especially because the end result of the CEPP process will be to present a proposal to the people's elected representatives in Congress. The fact that the Corps analyzes certain alternatives does not mean that it supports such an alternative, but only means that it is allowing members of the public to make up their own minds. We are recommending such analyses in the same spirit, because we cannot know whether any individual alternative merits our support until we see the Corps' thorough analysis of it.

This is especially important in light of recent guidance of the National Research Council ("NRC") in its fourth biennial report on the "Progress Toward Restoring the Everglades" (July 2012). The

NRC is an independent scientific review body which provides input regarding progress toward achieving the natural system goals of the 1999 Approved Plan. In its most recent report, the NRC highlighted the "difficulty in achieving restoration goals for all ecosystem components in all portions of the Everglades," and indicated that "[n]early all Everglades restoration projects carry tradeoffs," including "tradeoffs between water quality and quantity." Since "[t]hese tradeoffs can be produced deliberately or as unintended consequences of project sequencing," the NRC recommended that there be "rigorous scientific analyses" of tradeoffs. In the context of the CEPP, the Corps needs to follow this advice of the NRC and expressly analyze different types of plan options so that potential tradeoffs are explored.

Fifth, the Corps should be clear in the draft EIS/PIR regarding the evaluation criteria being applied to each alternative. In the August 29, 2012 PDT meeting, it appears that cost was a primary consideration in rejecting a 12-foot deep reservoir on the A-2 site, and the proposed FEB was characterized as cost effective at $165 million. See CEPP Formulation Overview, at 13-14 (Aug. 29, 2012). The Corps should identify the relative costs of all of these options and the level of costs which it deems to be cost prohibitive. Similarly, the Corps should identify the criterion it is using to weigh relative impacts to environmental interests in Lake Okeechobee, the Northern Estuaries, and the WCA's.

Finally, we are concerned that the Corps is not developing alternatives in the PDT process which would address the serious water supply concerns of agricultural interests and public utilities. We have noted in both previous comment letters that the 1999 Approved Plan was premised on both maintaining and *improving* water supply for existing uses. The Florida Legislature, in approving the SFWMD's participation as local sponsor, expressly stated that one of the plan's purposes was "the *enhancement* of water supplies." § 373.470(3)(b)(2), Fla. Stat. (emphasis added). This is illustrated by the "Everglades Agricultural Area Storage Reservoirs (G)" component of the 1999 Approved Plan, which called for water storage for agricultural users to mitigate any adverse effect caused by increased deliveries to the WCA's. Moreover, Congress prohibited the "eliminat[ion] or transfer [of] existing legal sources of water" in plan implementation "[u]ntil a new source of water supply of comparable quantity and quality as that

available on the date of enactment of [WRDA 2000] is available." WRDA 2000, Pub. L. No. 106-541, § 601(h)(5).

Despite these commitments, the Corps has exhibited an unwillingness to consider alternatives that would modify water regulation schedules to increase the water supply in Lake Okeechobee. *See, e.g.*, Corps' Scoping Response, at 37. In contrast, at the June 2012 public workshop there were extensive presentations regarding potential modifications to the regulation schedules to address perceived environmental concerns in the lake and in the Northern Estuaries. *See, e.g.*, Lake Okeechobee Ecology and Tier 2 Alternatives Evaluation (June 26, 2012). Moreover, to the extent the Corps has modeled effects of CEPP on water supply, it is our understanding that there would have been worse performance if the CEPP had been in place during the 2001 drought. We remain very concerned that the Corps is making no effort to address the important and valid water supply concerns of multiple uses in the development of the CEPP. Since it would take relatively little additional storage in Lake Okeechobee to address the water supply concerns of agricultural and urban uses, we once again ask the Corps to examine such options. This would be consistent with the Corps' significant progress in rehabilitating the Herbert Hoover Dike, and the Corps' assurances in 2008 that the current Lake Okeechobee Regulation Schedule would be revisited as progress was made on the dike rehabilitation efforts.

B. Potential Alternatives for Analysis

i. Alternatives Identified in the PDT Process

It appears that the Corps may have identified in the PDT process at least some potential alternatives related to the EAA elements of the CEPP.

Proposed Action. The Corps has identified the Proposed Action as a 14,000 acre FEB on the A-2 site which will operate in conjunction with the separately proposed FEB on the A-1 site. From what we understand, the Proposed Action assumes that the FEB will reduce phosphorus levels in the water delivered to it, and that the FEB will not have to be kept wet (like an STA) to avoid releasing phosphorus from the soil after drying out.

The Proposed Action will need to define how Lake Okeechobee water control structures will be operated with the "new" water

delivered to the FEB on the A-2 site. The 2008 Lake Okeechobee Regulation Schedule was modeled with the assumption that regulatory releases to the WCA's would be limited to ~60,000 acre feet per year. Lake Okeechobee Regulation Schedule Study, Final EIS, at 22-23 (Nov. 2007). The CEPP apparently assumes that an additional 200,000 acre feet of regulatory releases will be made from Lake Okeechobee to the WCA's, more than quadrupling deliveries from the lake.

In analyzing the Proposed Action, the Corps should critically analyze the validity of its assumptions underlying that plan. In particular, the Corps should analyze how "new" lake water can be held in the proposed FEB for the A-2 site, and whether all of the additional 200,000 acre feet identified for treatment in STA 3/4 and Compartment B can be delivered through that FEB. In addition, the Corps should analyze whether in fact the FEB will reduce phosphorus levels in the lake water delivered to it. The Corps also should analyze the assumption that the FEB could be allowed to dry-out, as there is a risk that phosphorus trapped in the soil of the FEB could be released. Keeping the FEB wet, even in dry periods, would require special water deliveries to the FEB when all water users need water, and could exacerbate water supply conflicts. The draft PIR/EIS should address whether there is a plan to re-wet the FEBs with local runoff in such a way that release of phosphorus from the dried soils will not be passed on the STAs. If so the basis for such a plan, and the data used to derive it, should be presented.

No Action. NEPA regulations also require the Corps to analyze the "No Action" alternative. 40 CFR § 1502.14(d). Based on indications to date, it appears that the No Action alternative would assume no new water management features on the A-2 site, but would assume that an FEB would be built on the A-1 site. Since the CEPP assumes there is excess capacity in the A-1, STA 3/4 and Compartment B facilities, the No-Action Plan should to provide some of the benefits expected by adding the A-2 site. This information should be presented as part of the No-Action Plan.

Reservoir Options. It appears that the Corps has considered several reservoir configurations on the A-2 site, including reservoirs with depths in the range of 4-12 feet. *See, e.g.*, CEPP Overview, at 11-13 (Aug. 29, 2012). In particular, the PDT screening exercise indicated that "[t]he 12-ft Reservoir provides the greatest benefits for the Everglades; however, the cost is

prohibitive and 12-ft Reservoir configurations were eliminated from further consideration." *Id.* at 13. Even if the Corps eliminated a 12-foot deep reservoir on the A-2 site for purposes of identifying the agency's proposal, that does not mean that it should be eliminated from the NEPA analysis. Based on this preliminary analysis, we assume that the Corps will include at least the 12-foot reservoir as an alternative for analysis, because that could highlight the tradeoff between providing additional water and cost.

ii. Additional Alternatives for Analysis

In addition to those alternatives identified by the PDT, we ask the Corps to analyze several other alternatives to its Proposed Action in the draft EIS/PIR. All of these alternatives could meet the CEPP's goals of delivering "new" water to the Water Conservation Areas, and are reasonable from a technical and economic standpoint.

Lake Okeechobee Storage Alternative. The Corps should include an alternative that would store additional water in Lake Okeechobee instead of at the A-2 site. The Corps would do this through modification of Lake Okeechobee operations or the regulation schedule and Water Control Plan if necessary. As noted above, the 2008 Lake Okeechobee Regulation Schedule assumes a limitation on regulatory releases to the WCA's of approximately 60,000 acre feet per year. The Proposed Action seeks to deliver approximately 200,000 additional acre feet per year to the WCA's. Under this alternative, the Corps would store and move the additional water from Lake Okeechobee to the A-1 FEB or directly to STA 3/4 and Compartment B when there is capacity. This alternative also could analyze conveyance improvements in the EAA to facilitate delivery of that water.

This alternative is reasonable from a technical standpoint. Water levels in Lake Okeechobee historically were maintained at significantly higher stages than currently occur under the 2008 Lake Okeechobee Regulation Schedule. The primary reason why the Corps adopted the 2008 schedule was due to the age of the Herbert Hoover Dike, and the belief that rehabilitation of the dike is needed to safely hold higher water levels in the lake. Since 2008, the Corps has made significant progress in its rehabilitation of the Herbert Hoover Dike. Earlier this year, the Corps reported to local stakeholders that all repairs were scheduled to be completed by approximately 2022 and the repairs in the most critical segments

would be complete sooner. *See, e.g.*, Herbert Hoover Dike Rehabilitation Project, Water Resources Advisory Commission, at 15 (Feb. 2, 2012). It is unclear that any additional improvements to the dike would be necessary for this alternative, because it could require only a relatively small amount of additional water to be stored in the lake. Recent statements by the Corps have confirmed that the 20 miles of slurry wall that have been completed have addressed the most at-risk sections of the dike. Even if dike rehabilitation work would need to be completed to accommodate more water storage, the time frame for substantial completion of this project is comparable to a realistic schedule for the CEPP, which after plan development, approval by Congress and the Florida Legislature, and construction, probably could not be implemented until at least 2020.

A limited lake-storage alternative would present multiple advantages over the Proposed Action. This alternative would allow for the storage of much greater quantities of water than the Proposed Action, and presumably would be able to store amounts of water comparable to or greater than the "12-foot Reservoir" alternative which the PDT determined "provides the greatest benefits for the Everglades." CEPP Overview, at 13 (Aug. 29, 2012). Since at least some of the storage could be achieved almost immediately without regard to the longer-term dike repairs, this alternative could provide benefits to the WCA's much sooner than the Proposed Action. This alternative would avoid the need to spend any funds at the A-2 site (estimated at $165 million for the Proposed Action), freeing up those funds for CEPP elements south of the EAA. To the extent that additional funds would be needed to expedite repairs of the Herbert Hoover Dike, those funds would serve the dual purpose of public safety and environmental restoration.

The Corps does not have to prefer the lake-storage alternative at this stage, but it must include it in the draft EIS/PIR to "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision makers and the public." 40 CFR § 1502.14.

EAA Water Supply Alternative. The Corps also should analyze an alternative that would use the A-2 site for agricultural water storage. Currently, it appears that the Corps assumes that all water stored at the A-2 site would be used for environmental purposes only; it is our impression that the Corps has not looked

in the PDT process at the potential for the site also to provide agricultural water supply. This is contrary to the 1999 Approved Plan, where the EAA reservoir feature explicitly called for stored water to be used both for agricultural and environmental water supply.

An EAA Water Supply Alternative would be consistent with the "Everglades Agricultural Storage Reservoirs (G)" component identified in the 1999 Approved Plan. As described in that plan (at pages 9-9 and 9-10),

> "Runoff from the EAA, Miami and North New River Canal Basins and regulatory releases from Lake Okeechobee will be pumped into the reservoirs. [There would be three equally sized compartments.] Compartment 1 discharges will be used to meet EAA irrigation demands only. Compartment 2 discharges will be used to meet environmental demands as a priority and can be used to supply a portion of agricultural demands if the environmental demands equals zero. Compartment 3 discharges will be used to meet environmental demands."

Since the Corps separately is considering an FEB on the A-1 site, which is equivalent to a compartment that will discharge EAA runoff into STA 3/4 and Compartment B, the A-2 site could be used for both environmental and agricultural water supply.

We are concerned that the failure to include an agricultural water supply feature to the A-2 reservoir signals a de-facto abandonment of the 1999 Approved Plan. At a minimum, in addition to analyzing additional water storage in the lake, the Corps should include an alternative consistent with the 1999 Approved Plan in which the EAA reservoir would store water for both agricultural and environmental uses. If the Corps is unwilling to consider such alternatives, then it should prepare a Comprehensive Plan Modification Report pursuant to the Programmatic Regulations, and explain to Congress how it plans to address water supply to agricultural users and flood protection in the EAA.

Conveyance, Delivery and Treatment Alternatives. We recommend that the Corps also include alternatives related to the delivery and/or management of Lake Okeechobee water before it reaches WCA-3A. The Proposed Action calls for water to be sent from Lake

Okeechobee to the FEB on the A-2 site, and then sent to STA 3/4 or Compartment B for treatment before being discharged directly to WCA-3A. From what we understand, the Corps assumes that phosphorus levels in the lake water will be reduced as a result of storage in the FEB and treatment in the Stormwater Treatment Areas.

The Corps should consider the efficacy of canal improvements within the EAA, which could improve the ability to deliver more water to the Central Everglades. In particular, improvements to the Eastern Bolles Canal could improve the ability to deliver additional flow to the STA's in wet periods when the canals otherwise are at capacity.

The Corps also should evaluate the phosphorus reduction abilities of the EAA canals themselves. It long has been known by the SFWMD that phosphorus concentrations decrease in water being conveyed in primary EAA canals. For example, there is significant long-term data indicating the STA 3/4 Supply Canal reduces phosphorus levels by approximately 25 ppb from the point where water enters that canal at the G-370 and G-372 structures to the point where it enters STA 3/4. (A summary of this data is attached.) It has also been demonstrated that water that is now sent to the STAs from Lake Okeechobee is much higher in phosphorus when it leaves the lake than it is when it enters the STAs. The Corps should analyze this phosphorus-reduction effect in the CEPP, because it both provides an opportunity for additional phosphorus removal, and the bypassing of the STA 3/4 Supply Canal in the Proposed Action could have the effect of reducing treatment of the "new" water delivered from the lake.

Another alternative the Corps should analyze is the potential for excess lake water to be delivered to the Holey Land and Rotenberger Wildlife Management Areas, which are located in the EAA, perhaps in the manner (for the Holey Land) discussed at the August 29, 2012 PDT meeting. This concept was raised by several Everglades scientists at a recent PDT meeting, and by representatives of interests in the Northern Estuaries. Both of these areas are unnaturally dry, do not function as historic Everglades marshes, and could benefit from rehydration and provide additional system-wide benefits by facilitating the conveyance of more excess Lake water to the Central Everglades. So long as existing users' water supply is not compromised, there is an opportunity to deliver excess water from Lake Okeechobee to these areas to restore their natural hydrology and to reduce the amount

that must be diverted to the estuaries. This is an example of the type of trade-off the National Research Council thought should be debated, and it seems like an opportunity for restoration that the Corps should not ignore.

Each of these concepts has the potential to be combined with different alternatives in the draft EIS/PIR. We recommend that you consider them, either alone or in combination, as they have the potential to improve the performance of other alternatives. We suggest them here because we believe that the EIS/PIR should sharply define the choices, not because we know that they will be effective or even that we support them. Like other members of the public, we need the Corps to present the options and analyze them so that we have sufficient information to make informed decisions.

iii. Integration of Review of CEPP and A-1 Flow Equalization Basins

The Corps needs to address the coordination between the EAA elements of the CEPP and the new water quality restoration measures for the EAA. There now are two proposals for FEB's that would store water for delivery to STA 3/4 and Compartment B: one 14,000-acre FEB on the A-1 site proposed by the SFWMD related to the recent water quality settlement with federal agencies, and a second 14,000-acre FEB on the A-2 site proposed by the Corps as an element of the CEPP. Both of these FEB's would be located on the property purchased from the Talisman Sugar Company in the 1990s. Under the CEPP both FEB's would operate in conjunction with one another, but under the water quality settlement the A-1 is operated solely to serve its existing drainage area.

We recommend that the Corps explain how it will integrate its NEPA review of the two FEB's proposed for the A-1 and A-2 sites. These two FEB's clearly are connected actions, with cumulative impacts. NEPA regulations generally require agencies to include in a single NEPA document "proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action." 40 CFR § 1520.4(a). Yet, the Corps is moving forward with two separate EIS's on the two FEB's at the same time. This appears to be an improper approach to NEPA review, which at a minimum will complicate the analysis of cumulative impacts of the two FEB's. The Corps should very clearly explain how these two NEPA reviews will be coordinated to minimize overlap, ensure that

cumulative impacts are evaluated fully, and avoid any predetermined outcomes for the CEPP.

The Corps also should clearly explain how the two FEB's will be operated in relation to STA 3/4 and Compartment B. It has been explained by the Corps and the SFWMD at public meetings that the FEB on the A-1 site would receive only EAA runoff, and would hold that water before treatment in STA 3/4 and Compartment B to meet the Water Quality Based Effluent Limitation (WQBEL) in the new NPDES permits. The agencies also have explained that the FEB on the A-2 site would receive "new" water from Lake Okeechobee, and that it can be treated in STA 3/4 and Compartment B when there is excess capacity there, without causing a violation of the WQBEL. The operational rules for these two FEB's should be made explicit in the two NEPA documents, so that there is no confusion at a later date.

We hope that the agencies' analysis of phosphorus reductions that will result from use of the A-1 FEB are correct. We also hope that the addition of "new" water from Lake Okeechobee will not diminish the phosphorus reduction performance of STA 3/4 and Compartment B, or cause a violation of the WQBEL. However, the Corps should make clear that if there is a violation of the WQBEL in the NPDES permits for STA 3/4 and Compartment B, that the first priority for treatment in those stormwater treatment areas will be EAA runoff. In other words, if the agencies later determine that the inflows to STA 3/4 and Compartment B need to be reduced in order to comply with the NPDES permits, then inflows of "new" water from Lake Okeechobee should be the first to be reduced. This is important because the first priority of STA 3/4 and Compartment B is to treat EAA runoff. The Corps therefore should make clear in the various NEPA documents, including the draft EIS/PIR for the CEPP, the operational rules for sending water to STA 3/4 and Compartment B. The Corps also should make clear that EAA runoff will be 'held harmless' if there is a WQBEL violations in STA 3/4 and Compartment B resulting from introduction of new water from Lake Okeechobee.

From what the agencies have explained at public workshops, the goal of the CEPP is to increase annual regulatory releases from the lake to the WCA's from ~60,000 acre feet to ~260,000 acre feet. The CEPP project in the EAA to accomplish that goal is the combination of a new FEB on the A-2 site and what is assumed to be an existing FEB on the A-1 site. That indicates that an FEB the

size of the entire A-1 site might not be needed to handle EAA flows, and that the proposed A-1 FEB is at least in part being designed for restoration purposes. This would open up opportunities for 50-50 federal-state cost sharing on at least part of the proposed A-1 FEB, which could help stretch the total state dollars available to restore the Everglades.

Thank you for considering our comments. We look forward to continuing to work with the Corps as it moves forward with development of the CEPP. With kind regards, I remain,

Yours truly,

William Tarr
Vice President
Florida Crystals Corporation

/jcd
Enclosure
Copy w/encl. (via e-mail) to:
Mr. Joe Collins, SFWMD, Chair
Mr. Kevin Powers, SFWMD, Vice Chair
Ms. Sandy Batchelor, SFWMD Board Member
Mr. Daniel DeLisi, SFWMD Board Member
Mr. James J. Moran, SFWMD Board Member
Mr. Daniel O'Keefe, SFWMD Board Member
Mr. Juan M. Portuondo, SFWMD Board Member
Mr. Timothy Sargent, SFWMD Board Member
Mr. Glenn J. Waldman, SFWMD Board Member
Ms. Melissa Meeker, SFWMD
Mr. Matt Morrison, SFWMD
Mr. Tom Teets, SFWMD
Ms. Kimberly Taplin, USACE
Mr. Steven Kopecky, USACE
Mr. Dennis Duke, Interior
Mr. Neal McAliley

The charts below show the relationship between the flow, load and concentration of the water pumped from the District's primary canals (Miami(G-372) and North New River (G-372)) toward STA 3/4 and the flow that actually enters the STA. The data show a 1.3 percent reduction in the flow quantity over the 7 year period the STA has been operating with an accompanying 23 percent reduction in load and 26 percent reduction in phosphorus concentration.

Figure 1. Flow pumped from the District's primary canals (Miami(G-372) and NNR (G-372)) and the flow that enters STA-3/4. (in thousands of acre-feet)

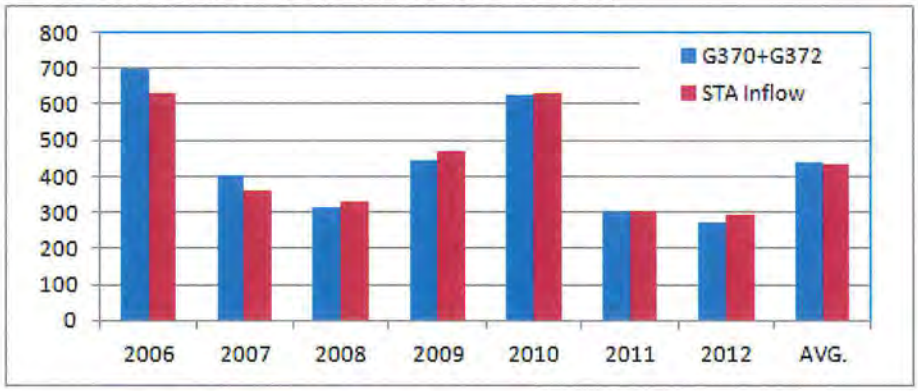


Figure 2. Phosphorus Load pumped from the District's primary canals (Miami(G-372) and NNR (G-372)) and the load that enters STA-3/4. (in kilograms)

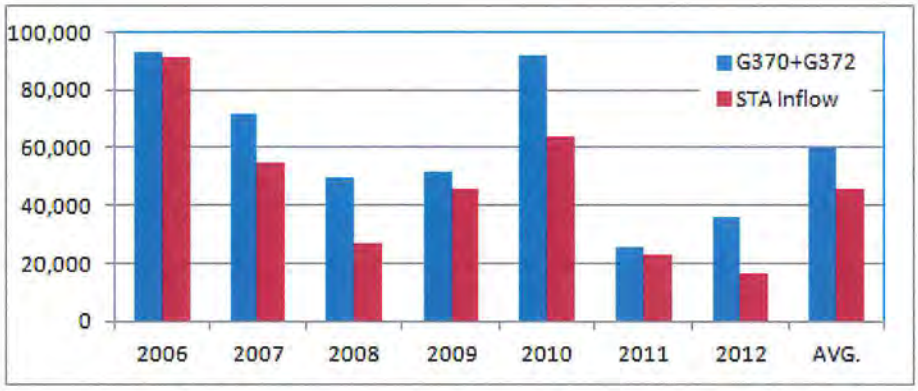
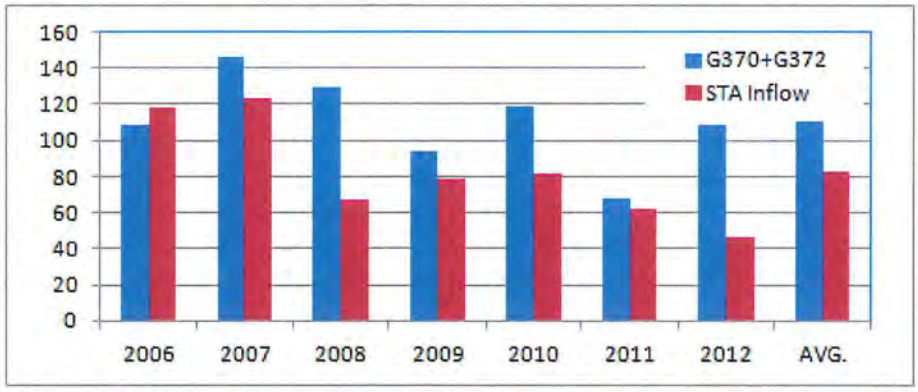


Figure 3. Phosphorus concentration of runoff pumped from the District's primary canals (Miami(G-372) and NNR (G-372)) and the concentration that enters STA-3/4. (in kilograms)



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December 17, 2012

LTC. Thomas M. Greco
Deputy District Commander
United States Army Corps of Engineers
1400 Centrepark Boulevard
Suite 750
West Palm Beach, FL 33401

Dear Colonel Greco:

It is so heartening that Army Corps is listening to our plea to protect the Estuary from Lake Okeechobee releases. We all recognize that 200,000 acre/feet is just a beginning, but it is a strong, positive beginning. There is no magic; it will take vast complex planning and significant funding. But now, Army Corps has embarked upon a path that can eventually lead to a solution; a solution requiring perseverance and continued dedication of us all to achieve.

Many thanks for your strong efforts in this quest.

In gratitude,

Ed Fielding

Ed Fielding
Martin County Commissioner
District 2

EF:rz

1000 Friends of Florida • Audubon Florida
Clean Water Action • CRCA Riverwatch
Everglades Foundation • Everglades Law Center
Everglades Trust • Florida Wildlife Federation
National Parks Conservation Association • Sierra Club

June 1, 2012

Colonel Alfred A. Pantano, Jr.
U.S. Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207-0019

Melissa Meeker
Executive Director
South Florida Water Management District
3301 Gun Club Road
West Palm Beach FL 33406

Re: Central Everglades Planning Project

Dear Col. Pantano and Ms. Meeker,

We write to express our great appreciation to you and your hardworking team for your efforts in moving forward the Central Everglades Planning Project ("CEPP"). This project has the potential to provide significant benefits for the natural system on a timeframe that recognizes the immediate need to reverse ongoing declines in the Everglades ecosystem. We are concerned, however, with recent statements by some members of the agricultural community suggesting that CEPP must "make up" for irrigation water lost due to implementation of the Lake Okeechobee Regulation Schedule of 2008 (LORS 08), or risk violations of the Savings Clause. This position is entirely without merit and is contradicted by State and Federal law, the Programmatic Regulations, and interpreting guidance memoranda.

As the Water Resources Development Act of 2000 ("WRDA 2000") provides, "the overarching objective of the Plan is the restoration, preservation, and protection of the South Florida Ecosystem while providing for other water-related needs of the region, including water supply and flood protection." Thus, we believe it is critical to ensure the focus of CEPP remains on environmental restoration objectives, while maintaining the protections for water users envisioned by WRDA 2000. To this end, we're pleased the presentations at the May 14, 2012 CEPP Project Delivery Team meeting indicated that all

alternatives currently being evaluated provide environmental benefits for the Everglades and estuaries without reducing agricultural water supplies.

We understand the agricultural community's desire to use the CEPP planning process as a means of increasing its level of certainty for water supply purposes to levels experienced under previous Lake regulation schedules. However, CEPP is simply not the appropriate forum in which to undertake a revision of the Lake's regulation schedule. Additionally, LORS 08 was "an intervening non-CERP action," and therefore, any diminished quantity of water that any user may experience as a result of that non-CERP action does not result in a Savings Clause violation.

WRDA 2000 contains the provision commonly known as the Savings Clause. It states, "[u]ntil a new source of water supply of comparable quantity and quality as that available on the date of the enactment of this Act is available to replace the water to be lost *as a result of implementation of the Plan*, the Secretary and the non-federal sponsor shall not eliminate or transfer existing legal sources of water, including those fo an agricultural or urban water supply."[1] This provision requires that the existing legal sources of water for the environment, agriculture, or any user not be eliminated *as a result of implementation of the Plan.* LORS 08 was not developed as part of CERP, but rather was developed and implemented because of threats to human health and safety due to a compromised dike.

The Programmatic Regulations Pre-CERP Baseline Memorandum makes clear that governmental actions can and will affect CERP projects outside the scope of CERP,[2] without triggering violations of the Savings Clause, and the CERP Guidance Memoranda even include the Lake Okeechobee Regulation Schedule as an example of such an intervening condition.[3]

The Programmatic Regulations state, "In many cases, the existing legal sources and levels of service for flood protection that existed in December 2000 will be altered or changed before a CERP project is implemented. These changes may result from actions by Federal, State and local governments – actions that are wholly outside the Plan process. These 'intervening' non-Plan conditions, brought about by the implementation and operation of non-Plan actions after December 2000, but before a Plan project becomes operational, will change the hydrologic conditions from those reflected in the Pre-CERP Baseline."[4]

The CERP Pre-CERP Baseline Guidance Memoranda states:

> "Examples [of such 'intervening non-Plan conditions] include…changes to operations of the C&SF Project system (e.g., IOP, CSOP, *Lake Okeechobee Regulation Schedule*)…This Guidance Memorandum provides guidance to PDTs in their analyses when dealing with intervening non-CERP activities. In general, the

[1] WRDA 2000, § 601(h)(4)(A) (*emphasis added*).
[2] *See* Programmatic Regulations Pre-CERP Baseline Memorandum at 10 (April 2005).
[3] *See* Guidance Memoranda at 3-8, 2007.
[4] Programmatic Regulations Pre-CERP Baseline Memorandum at 10 (April 2005).

following principles will apply:

> The Savings Clause does not require CERP to make up for reductions in quantity and quality of existing legal sources of water or levels of service for flood protection caused by intervening non-CERP activities, but it does prohibit CERP projects from further reductions."[5]

Using LORS 08 as a planning constraint for CEPP is not a violation of the Savings Clause. Any reduced level of service for agricultural uses since the passage of WRDA 2000 as a result of LORS 0 is an intervening non-Plan condition, and therefore, any resulting diminished quantities of water to any user does not violate the Savings Clause.

We support current efforts to maximize flexibility within the LORS 08 schedule to increase environmental benefits to the Everglades while reducing harmful discharges to the estuaries and protecting the ecology of Lake Okeechobee. However, we are concerned about any suggestions to use CEPP as a vehicle for changing the regulation schedule. The Lake regulation schedule involves a suite of issues that have been in the past, and will continue in the future, to be the subject of complex and independent decision-making. Sweeping those issues into CEPP would impossibly complicate efforts to formulate a restoration project for the central Everglades in an 18-month timeframe. CEPP, given its importance and scope, must maintain its focus on restoring the natural system within the limits of LORS 08 and other constraints established at the outset of this planning process.

As LORS 08 is the current operating regime, incorporating it as the "future without plan" condition is appropriate. Reliance on any other plan yet to be developed as part of a process outside of CERP and CEPP, would be speculative. We note that Congress understood that a variety of factors might affect the precise suite of projects and plans that would comprise CERP; what mattered was not "adherence to the modeling on which the April, 1999 Plan was based," but rather "restoration of the Everglades."[6] In short, Congress made clear that it would not want adherence to modeling that did not reflect current conditions to impede progress toward Everglades restoration.[7]

Instead of considering wholesale revisions to LORS 08 or a new regulation schedule entirely, we are pleased to see that the involved agencies are evaluating additional flexibility within the existing schedule as a way to maximize benefits to the natural system. We are encouraged by early modeling results which suggest that by utilizing the flexibility built into LORS 08, we can further minimize harmful impacts to the

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[5] Guidance Memoranda at 3-8, 2007 (*emphasis added*).

[6] Legislative Report to the U.S. Senate Committee on Environment and Public Works for WRDA 2000 at 40-41 (emphasis added). The report states:

> Endorsement of the Plan as a restoration framework is not intended as an artificial constraint on innovation in its implementation. The committee does not expect rigid adherence to the Plan as it was submitted to Congress…*Restoration of the Everglades is the goal*, not adherence to the modeling on which the April, 1999 Plan was based.

[7] *Id.*

Caloosahatchee and St. Lucie estuaries, while also increasing water quantities delivered south for the Everglades without reducing the levels of service for agricultural users. As the CEPP progresses into the evaluation and development of plan components, we urge the team to identify and select the components that produce the greatest quantity of beneficial water for the natural system and to clearly identify that water so that it can be reserved by the South Florida Water Management District for these purposes.

We ask the U.S. Army Corps of Engineers and the South Florida Water Management District to reiterate a commitment to ensuring that CEPP results in meaningful restoration of the heart of Everglades by sharpening the focus on restoration and increased water for the ecosystem. We remain committed to supporting this groundbreaking effort, and thank you again for your tremendous vision and hard work.

Sincerely,

(signatures waived to expedite delivery)

Charles G. Pattison, FAICP
President
1000 Friends of Florida
cpattison@1000fof.org

Megan Tinsley
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Kevin Powers, SFWMD, Vice Chair
Sandy Batchelor, SFWMD Board Member
Daniel Delisi, SFWMD Board Member
James J. Moran, SFWMD Board Member
Daniel O'Keefe, SFWMD Board Member
Juan M. Portuondo, SFWMD Board Member
Timothy Sargent, SFWMD Board Member
Glenn J. Waldman, SFWMD Board Member
Matt Morrison, SFWMD
Tom Teets, SFWMD
Lt. Col. Tom Greco, U.S. Army Corps of Engineers
Steve Kopecky, U.S. Army Corps of Engineers
Kimberly Taplin, U.S. Army Corps of Engineers

SEMINOLE TRIBE OF FLORIDA

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July 2, 2012

Col. Alan Dodd
District Commander, Jacksonville
US Army Corps of Engineers

Melissa Meeker
Executive Director
South Florida Water Management District

Dear Col. Dodd and Ms. Meeker,

On behalf of the Seminole Tribe of Florida, I am requesting a meeting to discuss the Tribe's concern regarding the impact of the developing Central Everglades Planning Project (CEPP) on our Big Cypress Reservation. We anticipate that the Big Cypress National Preserve (BCNP), with whom we share a border north of the Addition Lands, might share our concerns about reserving water necessary to support a healthy ecosystem in our mutual native areas.

While we agree that the Everglades is a unique ecosystem, as acknowledged by its World Heritage Site designation and consistent multi-decade bi-partisan national support for structural and operational water projects to restore and protect it, we want to highlight the uniqueness of the "Everglades" that compose the Tribe's Big Cypress Reservation. In the western flow-way of the historic Everglades, Big Cypress incorporates a collection of varied ecosystems from saw grass prairie to hardwood hammocks that is home to many species, including some classified as threatened and endangered, and most that represent some cultural and/or religious value to the Tribe. The Tribe interprets the "health" of its people upon the health of its lands and waters, as guided by our elders. And we note that it will not be possible to restore the Everglades without rehydrating the Big Cypress Reservation and the BCNP Addition Lands.

Over the last 20 years, the Seminole Tribe has planned and implemented water infrastructure projects designed to improve the hydrology on the Big Cypress Reservation, located in Hendry and Broward Counties, north of the BCNP border, in the C-139 Basin. The hydrology and environment on the Reservation had been negatively and cumulatively impacted by the Central and South Florida Project, as well as by Bureau of Indian Affairs (BIA) supported agricultural drainage projects. The Tribe is building, in full partnership with the Corps of Engineers (Corps,) the Big Cypress Reservation Critical Project as part of the Critical Project Program authorized by WRDA 1996. While this project has and will address many of the

problems created by earlier federally supported water control projects, minimum flows and levels needed for adequate hydration of the native areas on the Reservation and in the northern part of the BCNP, including the Addition Lands, still must be addressed. A new water reservation for the environment must be considered in excess of the Tribe's existing water rights as described in our Water Rights Compact. As the Tribe has been involved in the greater Everglades Restoration effort along with our projects focused on our lands, we have come to appreciate the need for minimum flows and levels to supply clean water to support the environmental needs of our lands. This realization has led us to this meeting request.

Over the past few months, representatives for the Tribe have been participating in numerous meetings to discuss CEPP, including some meetings with your staff focused on the issue of moving water to the western Everglades through the Big Cypress Reservation and the Addition Lands of the Big Cypress National Preserve. We look forward to getting some feedback on our proposals in the upcoming meeting now scheduled for July 13. More specifically, we seek your agencies feedback on:

1. How to assure water reservations to supply environmental needs on our and federal native lands adjacent to the Big Cypress Reservation; and
2. How to deliver water to the Big Cypress Reservation for use by the natural system.

While CEPP is being fully vetted, we believe that consideration of the new water reservations to sustain the environment on Big Cypress and in the BCNP Addition Lands is well timed. Attached for your consideration is a draft agenda to guide this meeting. Patricia Powers on behalf of the Tribe will follow-up with your office to confirm participation in the July 13 meeting.

Thank you for your consideration.

Sho Na Bish,

James E. Billie
Chairman of the Tribal Council

JEB/pd

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

OCT 05 2012

Executive Office

Chairman James Billie
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, Florida 33024

Dear Chairman Billie:

This letter is in response to your July 2, 2012 letter in reference to the hydration of the native areas on the Reservation and in the northern part of Big Cypress National Preserve (BCNP). We continue to appreciate the Seminole Tribe's unique commitment to the health of the broader ecosystem and understand the "uniqueness of the 'Everglades' that compose the Tribe's Big Cypress Reservation." The July13, 2012 meeting referred to in your letter proved to be a fruitful dialogue between your staff, personnel from the Jacksonville District, U.S. Army Corps of Engineers (Corps), and representatives from the South Florida Water Management District. Such opportunities are always welcome. We believe this meeting in particular proved to be a powerful forum for identifying solutions to the challenges you noted.

The Corps remains fully committed to ecosystem restoration and over the past several years has found success in doing so through continued engagement with key partners and stakeholders. I understand your interest in seeing the Central Everglades Planning Project (CEPP) used as a planning vehicle to deliver the long-term hydrologic benefits you are seeking. However, within the broader Comprehensive Everglades Restoration Plan (CERP), the current CEPP study unfortunately cannot specifically address multiple restoration projects, to include the delivery of water to the Big Cypress Reservation as you envision. As only the first of several increments to support restoration, the ongoing CEPP study is seeking to identify a suite of projects in an unprecedented 18-month period that most effectively capitalizes on existing data, knowledge, evaluation tools, previously constructed restoration features, and lands currently available. I am optimistic that the new streamlined planning paradigm will provide restoration benefits quicker than ever. Implementing an incremental approach along with the continued gathering of critical scientific data and knowledge will certainly facilitate future studies and subsequent progress in restoration.

In addition, the discussions on July 13, 2012 resulted in several potential remedies to address the hydration concerns on the Big Cypress Reservation and in the northern part of BCNP. The first includes incorporating adaptive measures as described in the September 24, 2003 Wetland Management Plan prepared by AMS Engineering and Environmental, Incorporated which in part

states that "if, after three years of operation, the annual success criteria evaluation at any given project feature indicates deficiencies in attainment of successful enhancement/restoration of wetland resources or abatement of phosphorus discharges to off-reservation waters, the Tribe will confer with the Corps." Pursuant to the outcome of the review, the Tribe will prepare an adaptive management plan for review and approval by the Corps prior to implementing any changes in the operations of the feature. This plan should focus on Basin 1 outlets and siphon design elevations with the intent of delivering more water to native areas by, in part, minimizing the loss of water underground and to the feeder canal.

Secondly, a change to the schedule governing the S-190 water control structure may yield higher groundwater elevations within the western portion of the Big Cypress Reservation by increasing water storage in the West Feeder and North Feeder canals. This effort in particular would likely be realized through a temporary deviation to the existing regulation schedule which would be coordinated with Corps and South Florida Water Management District operations staff. It should be noted that our staff continues to explore possible alternatives within the criteria of the existing Water Control Plan (WCP) to closely meet intended outcomes.

Finally, the Corps team members are exploring the process for conducting a Watershed Study that would best identify the hydrologic conditions underlying the Big Cypress Reservation and adjacent areas. Section 203 of the Water Resources Development Act of 2000 authorizes the Secretary of the Army, in cooperation with Indian tribes and the heads of other Federal agencies, to study and determine the feasibility of carrying out projects that will substantially benefit Indian Tribes. Section 203, titled Tribal Partnership Program, also establishes cost sharing provisions, defines cooperation and consultation requirements, and authorizes appropriations. Please reference the enclosed booklet for details on this authorization and additional programs the U.S. Army Corps of Engineers have available and could possibly be a benefit to the Big Cypress Reservation.

Taken together, the above three actions would have the strategic goal of gaining a better understanding of groundwater conditions which can be used in future planning studies. In the near-term, of course, the first two actions may provide environmental benefits by themselves.

We are looking forward to a follow-on discussion of the above at your earliest convenience with your staff. Ms. Natalie Garrett, Tribal Liaison, will coordinate the upcoming meeting with

In the meantime, we will continue to work on these actions so that a future meeting can be used as a forum to finalize the details and to chart a mutually-agreeable path forward.

Sincerely,

Alan M. Dodd
Colonel, U.S. Army
District Commander

Enclosure:

Copies Furnished:

Mr. Craig Tepper, Director, Water Resource Management, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Dr. Paul Backhouse, Acting Tribal Historic Preservation Officer, Seminole Tribe of Florida, 34725 West Boundary Road, Clewiston, Florida 33440
Ms. Cherise Maples, Assistant Director, Water Resource Management, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Ms. Patricia Power, Vice President, Federal Relations, Bose Public Affairs Group, 700 North One Lafayette Centre, 1120 20th Street NW, Washington, DC 20036
Mr. Stephen A. Walker, Attorney, Lewis Longman & Walker P.A., 515 North Flagler Drive, Suite 1500, West Palm Beach, Florida 33401
Mr. Ken W. Dodge, Attorney, Lewis Longman & Walker P.A., 515 North Flagler Drive, Suite 1500, West Palm Beach, Florida 33401

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November 7, 2012

Colonel Alan M. Dodd
Jacksonville District Commander
United States Army Corps of Engineers
701 San Marco Blvd.
Jacksonville, Florida 32207-8175

Dear Colonel Dodd:

Thank you for your response letter of October 5, 2012, regarding hydration on the Big Cypress Reservation and other federal lands adjacent to the southern border of our Reservation. While we appreciate the acknowledgement of the Seminole Tribe of Florida's commitment to restoring the South Florida Ecosystem, we are not convinced that the Corps of Engineers understands vital importance of a healthy ecosystem to our identity as the Seminole Tribe of Florida. While we focus on the lands within the reservation boundaries, we also watch the land and water that surrounds this boundary because our history is not limited to the lines on current day maps. Our future will be controlled by a large extent by the decisions made regarding land use and water control all around our reservation. So we look to our region, including lands in the western basins, to see how the federal, state, and local governments are providing resources and planning for a healthy future. And what we now see causes great distress.

As you note in your letter, the Seminole Tribe has been actively engaged in the South Florida Ecosystem Restoration effort for nearly 20 years. We have supported this effort technically and politically through all of these years. More specifically, we are constructing in full partnership with the Corps, an extensive water control system on the Big Cypress Reservation. This project is important to us and to our region and we appreciate the Corps' work and federal funding. But focusing solely on the land and water within our Reservation's legal boundaries is short-sighted. And this has been our position for nearly two decades. We have urged over and over again through all the planning efforts, including the Restudy which is the basis for CERP, to include the western basins in the Central Everglades system in the monitoring, modeling, data gathering, design, planning, and project implementation. So please appreciate our deep disappointment to be told that waters in the western basins that impact the Central Everglades Planning Project (CEPP) are not included in the scope of CEPP because the monitoring, data gathering, and modeling have still not been done in this region, despite our repeated requests to do so for over 14 years. We applaud the Corps' drive to complete the CEPP planning process in 18 months, but we remain very concerned by the long-standing inattention to this region.

Apart from the fact that we, a valued partner in Everglades Restoration by all accounts, have been effectively ignored in our repeated requests for monitoring, modeling, and planning in this region, we note that

the federal government has an obligation through its trust responsibilities to restore the northwest corner of WCA 3A, where the Seminole Tribe of Florida retains hunting and fishing rights, at a minimum. Beyond CEPP, we would like to discuss further how the Corps and its State partner intend to address the Central Everglades north and west of the redline in the current CEPP models.

As to your specific suggestions for addressing our water supply concerns, we welcome your offers. Regarding your suggestion to exercise adaptive management of Basin 1 of the critical project, we look forward to working with your engineering and wetlands regulatory staff on crafting operational changes to the outlets and siphons in order to deliver more water to the native areas south of the West Feeder Canal in the Big Cypress Seminole Indian Reservation. We assume that such work will be eligible for funding under the Operations & Maintenance provisions of the project's Project Cooperation Agreement.

Regarding the S-190 water control structure temporary deviation, we are encouraged by the option to work effectively within the existing regulation schedule to increase water storage in the West and North Feeder Canals, which will allow more water to replenish groundwater of the reservation. We would like to schedule meetings as soon as possible with the Corps and the South Florida Water Management District (District) to discuss the details and timing of the temporary deviation. I note here that we are also concerned about the structural integrity of the S-190 water control structure and urge the Corps and the District to carefully review the soundness of the structure and take all actions necessary to make it secure.

And thank you for the information on the Tribal Partnership Program as authorized by Section 203. We will take a careful review of this program and make a decision about whether or not to apply at a later date.

Managing water resources in South Florida is a steep challenge. The only way to meet this challenge is to work together to plan a future that balances competing needs fairly, which requires a more comprehensive view of the system. For as long as the monitoring and modeling in the western basins is not addressed, the South Florida Ecosystem restoration plan is incomplete.

We look forward to continue to work with you to remedy this situation and to address the pressing needs of the Tribe to correct the hydrology surrounding our Big Cypress Reservation. I have directed my staff to arrange another meeting with the Corps through Ms. Garrett.

Thank you for your attention to this critical resource issues for the Seminole Tribe.

Sho-na-bish,

James E. Billie
Chairman of the Tribal Council

Jeb/Pd

Cc: Jim Shore, General Counsel, Seminole Tribe of Florida
Craig D. Tepper, Director, Environmental Resource Management Department, Seminole Tribe of Florida
FILE

GLADES SUGAR HOUSE

Sugar Cane Growers Cooperative of Florida

POST OFFICE BOX 666

BELLE GLADE, FLORIDA

33430-0666

March 29, 2012

Dr. Gina Padua Ralph
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, FL 32232-0019

Re: Central Everglades Planning Project

Dear Dr. Ralph:

We have many concerns about the scoping comment responses as well as the direction the Central Everglades Planning Project (CEPP) is taking. Please accept the following additional comments on behalf of Sugar Cane Growers Cooperative of Florida regarding this initiative.

The Comprehensive Everglades Restoration Plan (CERP), consisting of some-68 components, was designed to protect and restore the remaining Everglades while meeting the water related needs of the region. This included improving the timing, flow and distribution of water while providing the level of service for flood protection and water supply as of the date of enactment of CERP, known as the Savings Clause protections. In all likelihood Congress would not have approved CERP without the broad-base stakeholder support that was derived by the commitments to meet the needs for both the built and natural environments.

We noted that the project team has modified its goals by adding "Enhance Economic Values and Social Well Being" in its goals and objectives statement at the March 26, 2012 Project Delivery Team meeting. However the sub-objectives under this goal give us concern. The presentation stated, *"the formulation and evaluation of alternatives will include the objective of providing water supply as* ***incidental*** *to the objective of fulfilling the ecological needs of the South Florida ecosystem."* And further states, *"Water retained in the Lake that is not identified for the natural system* ***may*** *be available for water supply."* These two sub-objectives clearly indicate to us that water supply needs are not being addressed on equal footing as Congress intended when approving the CERP.

While we support the Corps' desire to streamline the process and acknowledge the National Academy of Science's recommendation to evaluate groups of complementary components to

achieve benefits that would not be attained with the piece-by-piece approach, we are concerned that an appropriate evaluation of alternatives to flow more water through the Central Everglades will not be conducted. The CEPP cannot be undertaken in a vacuum. It must consider current and on-going Lake Okeechobee and Everglades projects in the region (including the rehabilitation of the Herbert Hoover Dike), projects anticipated to be built during the planning horizon, and it must be compatible with and complementary to whatever remedy is adopted to settle the federal litigation.

One of the objectives of the CEPP is to capture and divert water from the Lake now lost to tide to reduce harmful discharges to the Caloosahatchee and St. Lucie Estuaries. CERP envisioned that these discharges would be stored in a series of strategically located Aquifer Storage and Recovery Wells (ASR) to provide carry over storage capacity or storage in a series of deep above ground reservoirs in the Everglades Agricultural Area (EAA), Caloosahatchee Basin and the St. Lucie Basin. The plan was also dependent on improving conveyance capacity within the EAA canal network.

Subsequent to the passage of CERP, the state pledged the Everglades Conveyance and Regional Treatment (ECART) project, and the EAA- A1 Reservoir as critical components of the Long-Term Plan to meet Everglades water quality standards as mandated by the Florida Legislature in the 2003 amendments to the Everglades Forever Act (Section 373.4592(3) Florida Statutes). The Long Term Plan is periodically updated by the South Florida Water Management District (SFWMD) and submitted to the Florida Department of Environmental Protection (FDEP) for approval. The legislation mandates that SFWMD and DEP annually report to the Governor and the Florida Legislature summarizing the water conditions in the Everglades Protection Area, the status of the impacted areas, the status of the construction of the Stormwater Treatment Areas, the implementation of on-farm Best Management Practices, and actions to monitor and control exotic species. Section 373.4592(13) Florida Statutes. It was the intent of the Legislature that *"implementation of the Long-Term Plan shall be integrated and consistent with the implementation of the projects and activities in the congressionally authorized components of the CERP so that unnecessary and duplicative costs will be avoided."* Clearly, there was a well thought out plan, including process development and engineering components, that was mandated by the Florida Legislature for the Long-Term Plan and by the Congress for CERP.

While undertaking CEPP, the Corps must be mindful of the Savings Clause requirements in CERP—that there shall be no elimination or transfer of existing legal sources of water, existing as of December 2000, until a new source of water supply of comparable quality is available. The Savings Clause constraint should be built into the front end of the screening process for any alternative to move forward. Given the decision to use the LORS08 Lake Schedule as the future without project planning condition, and the lack of support for recognizing the ability to store more water in Lake Okeechobee as improvements are made to the Herbert Hoover Dike, we are concerned that a plan to meet the objectives of CEPP, and the requirements of the Savings Clause, will not be possible.

Also puzzling are the scoping comment responses regarding ASR wells as a component that will not be evaluated as part of the *first increment* of CEPP, but will be put off to be evaluated at a later date. The preliminary data regarding the effectiveness of ASR technology are promising and other than the Lake, this may be the only viable solution to store water for carry-over supply.

During the March 9, 2012 EAA component screening presentation, a matrix was presented evaluating the costs and benefits between deep and shallow storage. Both configurations will require canal conveyance improvements. Deep storage reservoirs have the potential to provide additional storage and flow capacity albeit at a higher cost. Focusing on improved utilization of the storage capacity in the Lake would seem likely to be a part of the most cost effective alternative.

We believe that NEPA requires that all reasonable alternatives be evaluated as part of the process and that evaluation must include the option of storing additional water in Lake Okeechobee. As the National Research Council said in its Second Biennial Report in 2008, *"Lake Okeechobee is a critical linchpin of the South Florida Ecosystem...The challenges of water quantity and quality in the Lake have important ramifications for the entire ecosystem because the Lake supports important elements of the region's biota, and it also has the potential to serve as a major source of water storage and water supply for downstream ecosystems. This potential will become more critical if other planned and proposed sources of water do not become available."* At page 186. The Corps is at that critical decision point now.

The second juggernaut in the CEPP is the water quality constraint. The without-project condition assumes that water quality standards under the Clean Water Act are being met. While this seems straightforward, it is anything but. The issue is tied up in two federal court cases under two different judges. While there are ongoing discussions and negotiations regarding this issue between state and federal parties, there currently is no agreement on what the water quality standards will be or what projects on what lands will be necessary to achieve the ultimate standard.

These issues must be resolved so that the CEPP planners know what water quality target must be met. Potentially the same set of state owned lands could be identified to meet existing water flow as an outcome to the federal litigation as well as for the new water to be delivered as part of CEPP. How this water quality dispute is resolved also has obvious financial ramifications to the South Florida Water Management District, as well as the state.

Please make available the Memorandum of Record for Decision Point 1 that was reached on January 27, 2012 and the Risk Register that will help planners evaluate potential risks associated with various assumptions during the modeling phase. In view of the accelerated beginning of the CEPP process we view these comments as a supplement to our previous submission during the formal scoping process.

Please reconsider your position regarding your goals and objectives in meeting the water related needs of the region, the future storage capabilities of Lake Okeechobee and the need to integrate on-going and future planned Lake Okeechobee/Everglades initiatives into the CEPP process.

We look forward to working with you to make this effort a success.

Sincerely,

Barbara J. Miedema
Vice President, Public Affairs & Communications

BJM:swd

cc: Ms. Melissa Meeker, Executive Director, SFWMD
Mr. Joe Collins, SFWMD, Chair
Mr. Kevin Powers, SFWMD, Vice Chair
Mr. Sandy Batchelor, SFWMD Board Member
Mr. Daniel DeLisi, SFWMD Board Member
Mr. James J. Moran, SFWMD Board Member
Mr. Daniel O'Keefe, SFWMD Board Member
Mr. Juan M. Portuondo, SFWMD Board Member
Mr. Timothy Sargent, SFWMD Board Member
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Mr. Steven Kopecky, USACE

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Via Email

June 15, 2012

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Pam Mac'Kie
Intergovernmental Representative
SFWMD
3301 Gun Club Road
West Palm Beach, FL 33406

Dear Col., Kim, Matt and Pam:

Your visit with us was greatly appreciated. I understand that there are financial and time constraints on the initial segment of Central Everglades Planning so present plans do not include considering the Lake releases that now go into the estuaries.

But, I am hopeful that in the future we will incorporate systems in our planning to conserve these billions of gallons of fresh water now being sent to tide. This is fresh water that can be used to rejuvenate our aquifers and rehydrate the Everglades. I hope we will design the system to flow south up to 10,000cfs, so that there truly will be a way to protect our estuaries.

In addition to having as an eventual objective a significant southern flow from the Lake, I encourage us to actually move water south every opportunity we get. Not just consider the possibility during emergencies, but make moving water south part of the regular routine, even if it is just a few cfs.

Please call on me when I can be of assistance. Many thanks for your support and strong efforts on behalf of Martin County.

Sincerely,

Ed Fielding
Martin County Commissioner
District 2

EF:rz

FLORIDA WILDLIFE FEDERATION

Affiliated With National Wildlife Federation

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June 4, 2013

Mr. Daniel O'Keefe
Governing Board Chairman
South Florida Water Management District
Post Office Box 24680
West Palm Beach, FL 33416-4680

Dear Chairman O'Keefe:

The Florida Wildlife Federation respectfully requests the South Florida Water Management District Governing Board to re-affirm the District's role as local sponsor of the Central Everglades Planning Project (CEPP), which is currently being developed by the U.S. Army Corps of Engineers with District support.

The CEPP has proposed an array of projects in its Alternative 4-R that, together with the District's and Governor Scott's Everglades Water Strategies program, will move significant amounts of fresh water into Shark River Slough, the core of Everglades National Park. With these projects and the already commenced Picayune Strand restoration projects on the west and the C-111 spreader canal moving water into Taylor Slough on the east, the state and federal governments will secure the future of the park and revitalize a large portion of the historic "River of Grass" through Water Conservation Areas 3 A and B.

Specifically, we are asking SFWMD Governing Board to take such formal action as is necessary to permit release of the ACOE's Draft Project Implementation Report (PIR) for the proposed Tentatively Selected Plan, Alt.4-R. Release of the PIR will start compliance reviews under the National Environmental Policy Act and formal public comment, as modeling and refinements continue to address remaining concerns. Taking action now provides sufficient time to ensure that a Chief's Report can be submitted to Congress by December 2013, making CEPP projects eligible for Congressional authorization under the Senate-passed Water Resource Development Act (WRDA). It is not possible to predict when the House will take up a WRDA bill. It would be politically foolish, however, for us in Florida not to make every attempt to meet the Senate's conditions and deadline for the next WRDA bill.

Urging Congressional authorization for CEPP projects is not to say that other projects such as the Caloosahatchee and St. Lucie reservoirs, Broward Water Preserves, Biscayne Bay

Coastal Wetlands should be sidelined. All of us are aware of the enormity of the restoration laid out in the Comprehensive Everglades Restoration Plan, of which CEPP is a component. It is that enormity and its potential rewards that make "Everglades Restoration" *worth* implementing.

Florida Wildlife Federation's message is that we are still in "a process" and, at this point in that process, all of us should push forward to obtain Congressional authorization for CEPP projects. By statute and court orders, the District and its taxpayers have incurred an obligation to meet water quality standards; formally agreeing to the role of "local sponsor" for CEPP does not add to that obligation. Long term, implementing the projects proposed may make achieving those standards easier. If the Governing Board feels it needs an "escape clause," the process builds one in: the Project Construction Agreement. Prepared after design, the PCA spells out responsibilities for the costs of construction, operations and maintenance. You are NOT now being asked to sign a PCA.

The Comprehensive Everglades Restoration Plan was adopted unanimously by the Florida Legislature in 2000, which also designated the South Florida Water Management District to be the state's "local sponsor." The plan also was adopted by Congress, winning every vote save that of one senator. At that time, it was anticipated that implementation would take thirty years to complete. As we approach the half-way point, the Federation urges all to continue moving forward to full implementation.

Sincerely,

Manley Fuller

Manley K. Fuller
President

cc:
Governor Rick Scott
Col. Alan Dodd
Shannon Estenoz

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

07 FEB 2012

Planning and Policy Division
Environmental Branch

Honorable Colley Billie
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021, Tamiami Station
Miami, Florida 33144

Dear Chairman Billie:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Central Everglades Planning Project (CEPP). The goal of CEPP is to develop an integrated, comprehensive technical plan for the first increment of project features to be recommended for authorization for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem. The Corps respectfully requests to meet with you and your staff routinely throughout the planning process to ensure any issues or concerns the Tribe may have are identified and we receive your input regarding development of this plan. The Corps is requesting a standing bimonthly (every other month) meeting with you and/or designated staff to discuss the Tribe's views on the CEPP. This bimonthly meeting request is in addition to tribal staff's participation in the regular Project Delivery Team meetings. The rationale behind this request is to provide a standing opportunity for open dialogue and government-to-government consultation throughout the CEPP planning process.

The next step for implementation of the Comprehensive Everglades Restoration Plan (CERP) is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park and Florida Bay. The CEPP (Figure 1) will develop the initial increment of project features that provide for water storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3, and seepage management features to retain water within the natural system.

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We look forward to the opportunity to meet with you. Please contact Ms. Kim Taplin at 561-801-0285 at your earliest convenience to schedule these bimonthly meetings.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
4/27/12

Enclosure

Copy Furnished:

Bernie Roman, Miccosukee Tribal Attorney, PO Box 440021 Tamiami Station, Miami, Florida 33144
Fred Dayhoff, Section 106 and NAGPRA Consultant, PO Box 440021 Tamiami Station, Miami, Florida 33144
James Erskine, Water Resources Director, PO Box 440021 Tamiami Station, Miami, Florida 33144
Rory Feeney, Miccosukee Wildlife Director, PO Box 440021 Tamiami Station, Miami, Florida 33144
Terry Rice, Colonel (Ret'd), PhD, PE, Miccosukee Everglades Consultant, 6526 S Kanner Highway, PMB 316, Stuart, Florida 34997

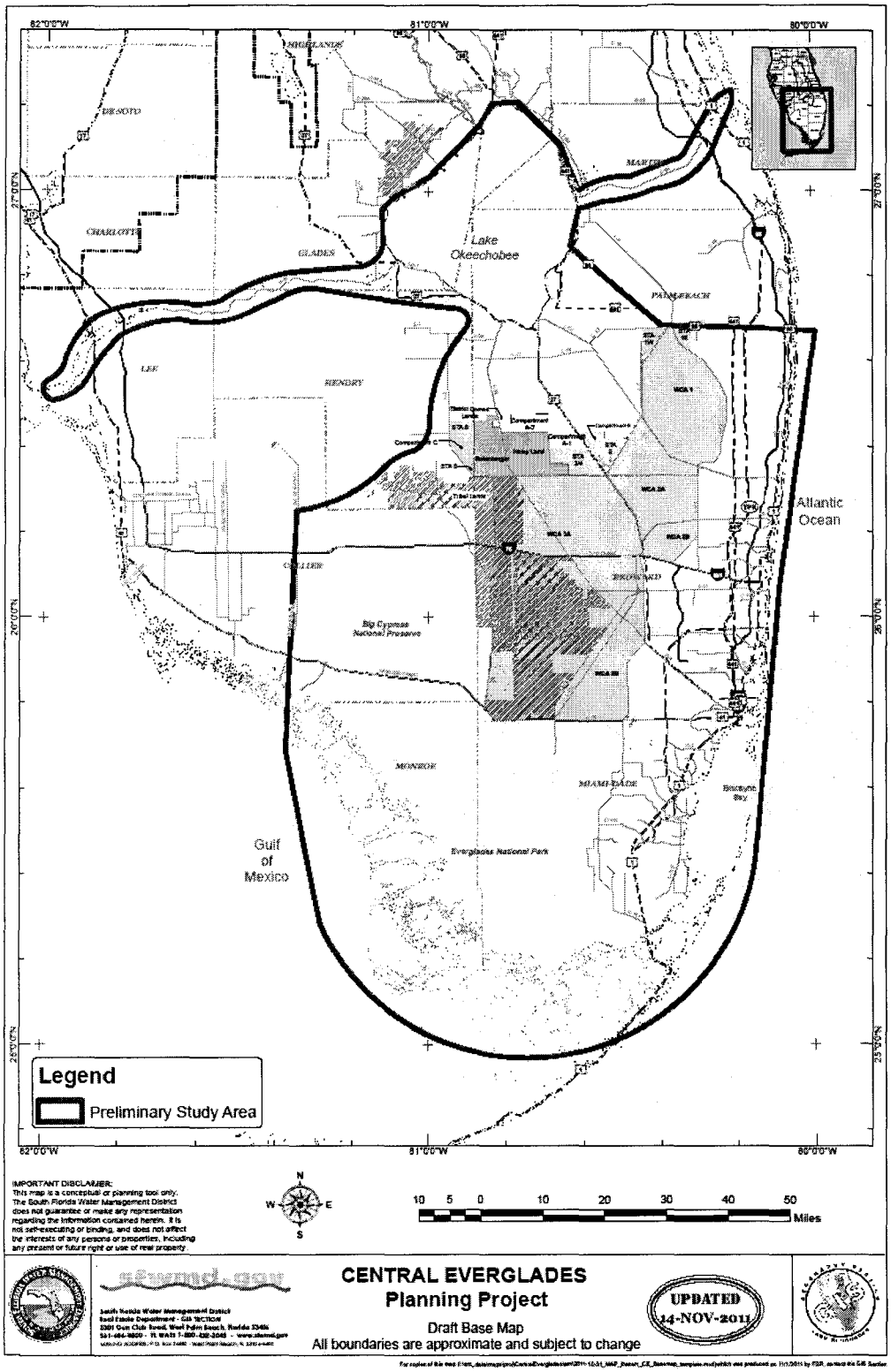

Figure 1. Central Everglades Planning Project Preliminary Study Area.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

Honorable Colley Billie
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021, Tamiami Station
Miami, Florida 33144

Dear Chairman Billie:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Central Everglades Planning Project (CEPP). The goal of CEPP is to develop an integrated, comprehensive technical plan for the first increment of project features to be recommended for authorization for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem. The Corps respectfully requests to meet with you and your staff routinely throughout the planning process to ensure any issues or concerns the Tribe may have are identified and we receive your input regarding development of this plan. The Corps is requesting a standing bimonthly (every other month) meeting with you and/or designated staff to discuss the Tribe's views on the CEPP. This bimonthly meeting request is in addition to tribal staff's participation in the regular Project Delivery Team meetings. The rationale behind this request is to provide a standing opportunity for open dialogue and government-to-government consultation throughout the CEPP planning process.

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We look forward to the opportunity to meet with you. Please contact Ms. Kim Taplin at 561-801-0285 at your earliest convenience to schedule these bimonthly meetings.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
12/27/12

Enclosure

Copy Furnished:

Bernie Roman, Miccosukee Tribal Attorney, PO Box 440021 Tamiami Station, Miami, Florida 33144
Fred Dayhoff, Section 106 and NAGPRA Consultant, PO Box 440021 Tamiami Station, Miami, Florida 33144
James Erskine, Water Resources Director, PO Box 440021 Tamiami Station, Miami, Florida 33144
Rory Feeney, Miccosukee Wildlife Director, PO Box 440021 Tamiami Station, Miami, Florida 33144
Terry Rice, Colonel (Ret'd), PhD, PE, Miccosukee Everglades Consultant, 6526 S Kanner Highway, PMB 316, Stuart, Florida 34997

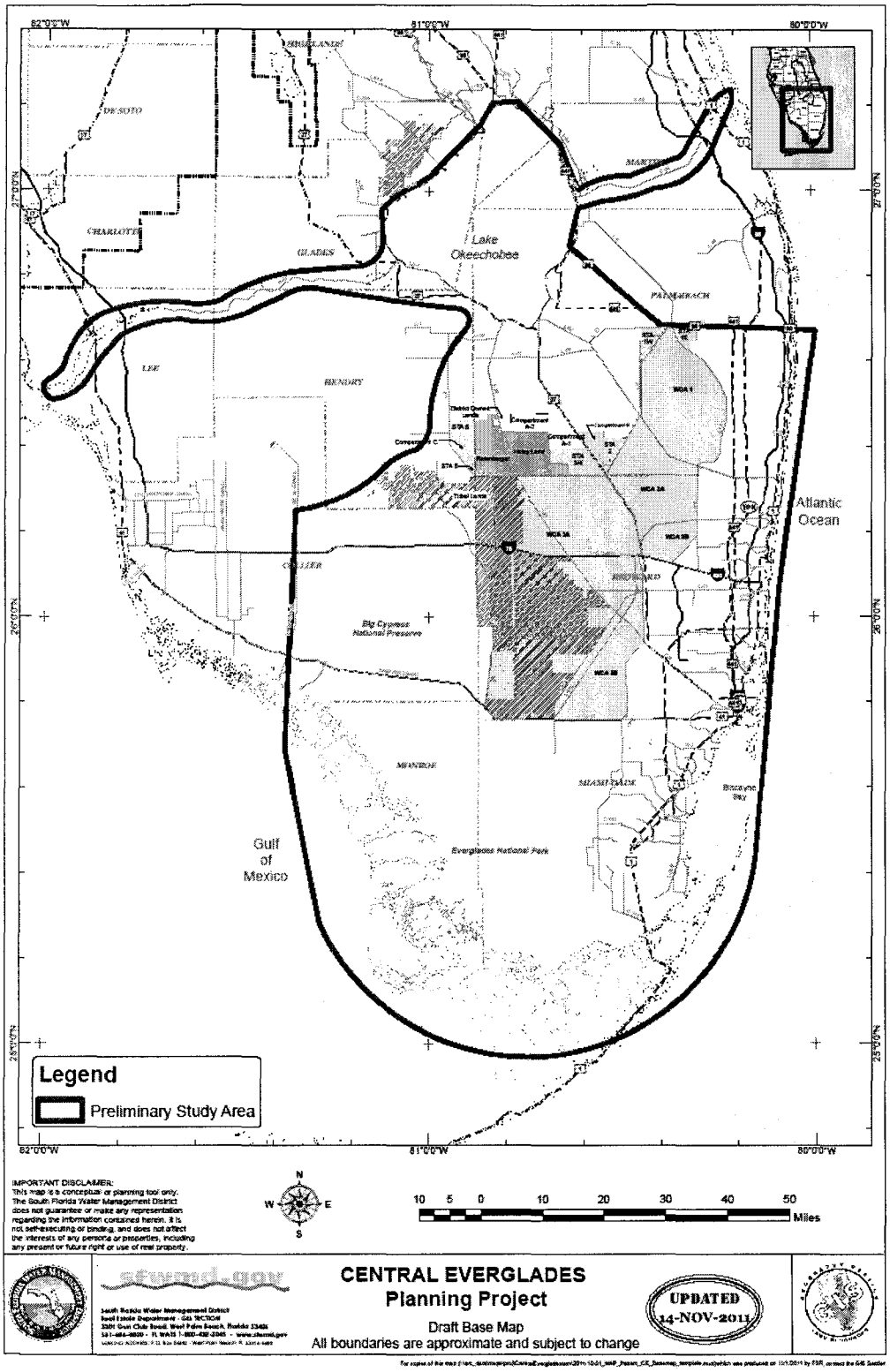
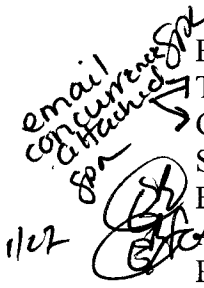


Figure 1. Central Everglades Planning Project Preliminary Study Area.

Ralph CESAJ-PD-?/2336
Taplin CESAJ-PD-?
Garrett CESAJ-PM-E
Summa CESAJ-PD
Bush CESAJ-PD-PD
Appelbaum CESAJ-PD
~~Pax~~ CESAJ-OC
Hobbie CESAJ-PM
LTC Barker CESAJ-DED
Gapinski CESAJ-DX
COL Pantano CESAJ-DE

L:\ GROUP\PDES\Ralph\Central Everglades\CES Consultation Letter Request Miccosukee Tribe January 2012



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LTC Barker CESAJ-DED
Gapinski CESAJ-DX
COL Pantano CESAJ-DE

L:\ GROUP\PDES\Ralph\Central Everglades\CES Consultation Letter Request Miccosukee Tribe January 2012

Ralph, Gina P SAJ

From: Taplin, Kimberley A SAJ
Sent: Wednesday, January 18, 2012 9:18 AM
To: Ralph, Gina P SAJ
Subject: RE: Responses to Marshall Jones' Questions (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Thanks Gina. I am good with your current letters requesting standing meetings. Please feel free to start routing...thanks for all you do.

Very Respectfully, Kim T.

Kimberley Taplin, P.E.
US Army Corps of Engineers
1400 Centrepark Blvd, Suite 750
West Palm Beach, FL 33401
(561) 801-0285

-----Original Message-----
From: Ralph, Gina P SAJ
Sent: Wednesday, January 18, 2012 6:14 AM
To: Taplin, Kimberley A SAJ; Auvenshine, Stacie SAJ; Thomas, Cynthia SAJ; Vitek, Kimberly A SAJ
Cc: Garrett, Natalie S SAJ
Subject: RE: Responses to Marshall Jones' Questions (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Please find the requested information attached.

Thank you,
Gina

Gina Paduano Ralph, Ph.D.
Planning Division, Environmental Branch
US Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019
(904) 232-2336
Gina.P.Ralph@usace.army.mil
-----Original Message-----
From: Taplin, Kimberley A SAJ
Sent: Wednesday, January 18, 2012 12:52 AM
To: Ralph, Gina P SAJ; Auvenshine, Stacie SAJ; Thomas, Cynthia SAJ; Vitek, Kimberly A SAJ
Cc: Garrett, Natalie S SAJ
Subject: FW: Responses to Marshall Jones' Questions (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Ralph, Gina P SAJ

From: Garrett, Natalie S SAJ
Sent: Wednesday, January 18, 2012 4:01 PM
To: Taplin, Kimberley A SAJ
Cc: Ralph, Gina P SAJ; Thomas, Cynthia SAJ
Subject: RE: CEPP Government to Government Bimonthly Meeting Request Letter (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I believe I've commented on these letters before. My only concern is that the Chairmen understand this request is in addition to tribal staff participation on the PDT, and a chance for their direct involvement. I have no problem with the letters as worded, but I hope they are not just taken as request for further meetings with staff. I suppose once we receive a response, tribal staff can be encouraged to make sure respective Chairmen are involved.

Thank you,

Natalie

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From: Taplin, Kimberley A SAJ
Sent: Wednesday, January 18, 2012 11:03 AM
To: Garrett, Natalie S SAJ
Cc: Ralph, Gina P SAJ; Thomas, Cynthia SAJ
Subject: FW: CEPP Government to Government Bimonthly Meeting Request Letter (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED
Caveats: NONE

Natalie - can you please review and approve for routing. Thanks a bunch.

Very Respectfully, Kim T.

Kimberley Taplin, P.E.
US Army Corps of Engineers
1400 Centrepark Blvd, Suite 750
West Palm Beach, FL 33401
(561) 801-0285

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From: Ralph, Gina P SAJ
Sent: Monday, January 09, 2012 1:27 PM
To: Taplin, Kimberley A SAJ; Thomas, Cynthia SAJ; Garrett, Natalie S SAJ
Cc: Vitek, Kimberly A SAJ
Subject: CEPP Government to Government Bimonthly Meeting Request Letter (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED
Caveats: NONE

Good Afternoon,

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

09 FEB 2012

Planning and Policy Division
Environmental Branch

Honorable James Billie
Chairman, Seminole Tribe of Florida
6300 Stirling Boulevard
Hollywood, Florida 33024

Dear Chairman Billie:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Central Everglades Planning Project (CEPP). The goal of CEPP is to develop an integrated, comprehensive technical plan for the first increment of project features to be recommended for authorization for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem. The Corps respectfully requests to meet with you and your staff routinely throughout the planning process to ensure any issues or concerns the Tribe may have are identified and we receive your input regarding development of this plan. The Corps is requesting a standing bimonthly (every other month) meeting with you and/or designated staff to discuss the Tribe's views on the CEPP. This bimonthly meeting request is in addition to tribal staff's participation in the regular Project Delivery Team meetings. The rationale behind this request is to provide a standing opportunity for open dialogue and government-to-government consultation throughout the CEPP planning process.

The next step for implementation of the Comprehensive Everglades Restoration Plan (CERP) is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park and Florida Bay. The CEPP (Figure 1) will develop the initial increment of project features that provide for water storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3, and seepage management features to retain water within the natural system.

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We look forward to the opportunity to meet with you. Please contact Ms. Kim Taplin at 561-801-0285 at your earliest convenience to schedule these bimonthly meetings.

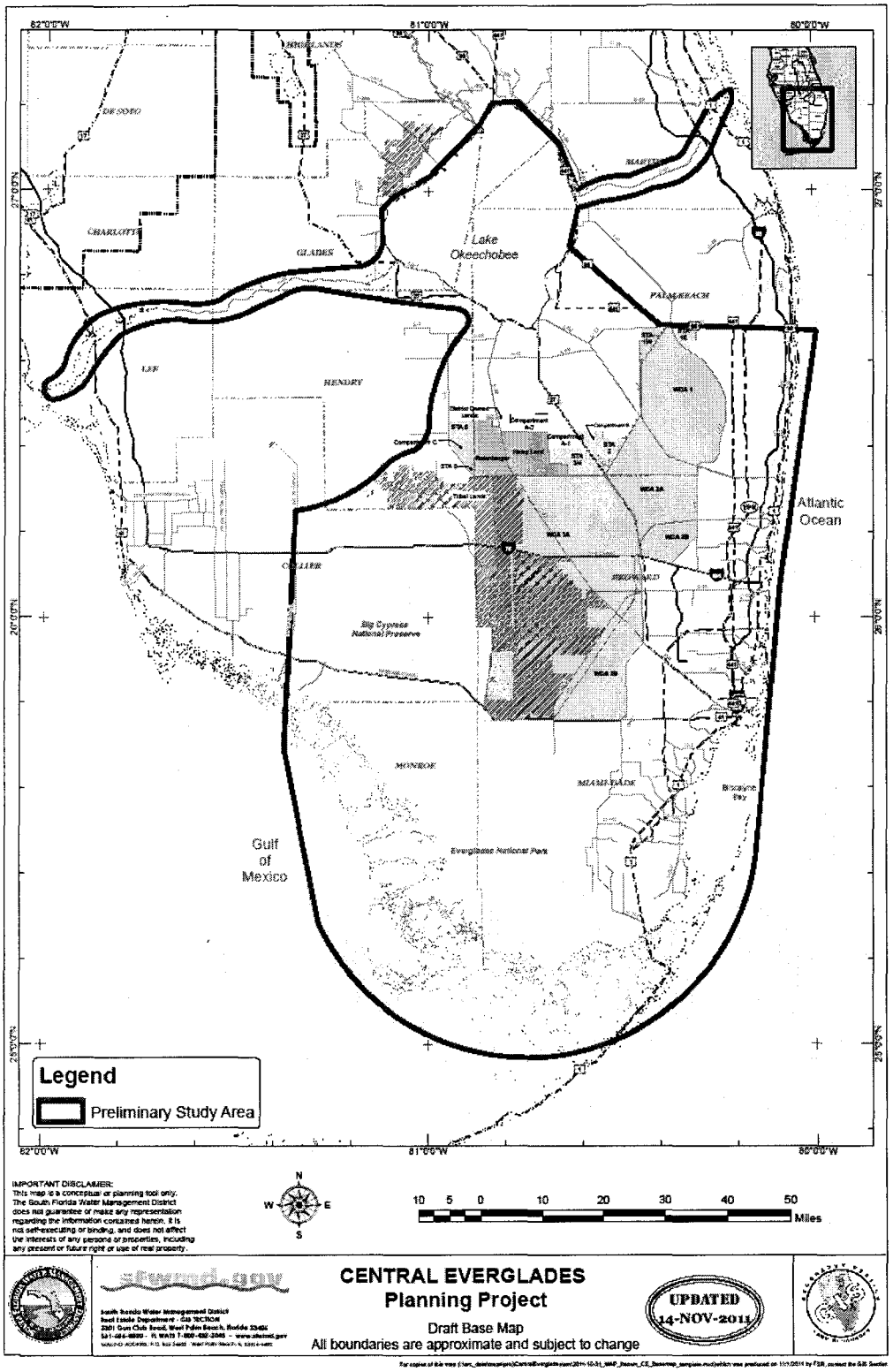
Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
7/12

Enclosure

Copy Furnished:

Craig Tepper, Director of Water Resource Management, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Jim Shore, General Counsel, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Willard Steele, Seminole Tribe of Florida, Tribal Historic Preservation Officer, 30290 Josie Billie Highway, PMP 1004, Clewiston, Florida 33440



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Gapinski CESAJ-DX
COL Pantano CESAJ-DE NP 1/26/12

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
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Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander

Enclosure

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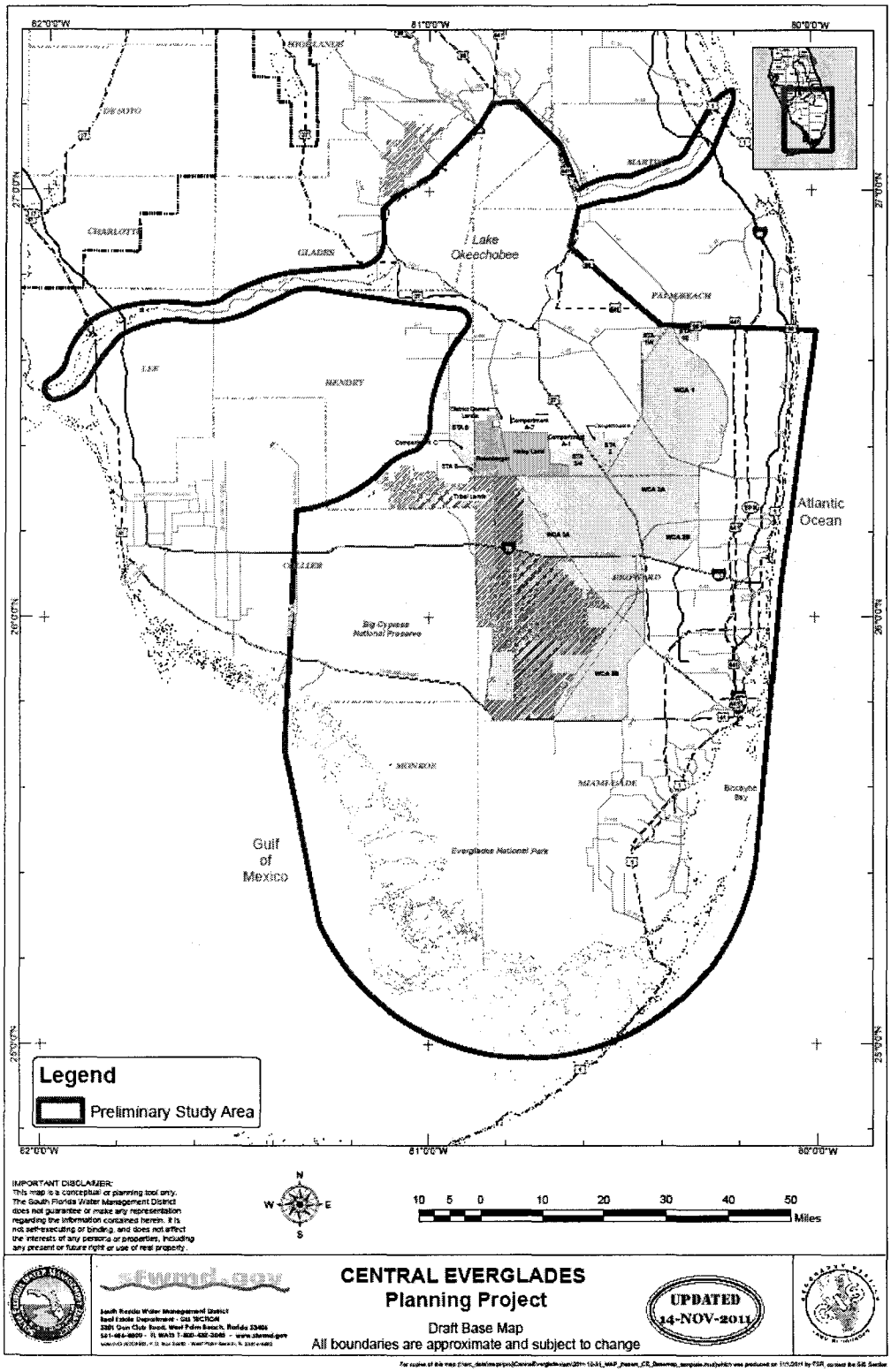

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L:\GROUP\PDES\Ralph\Central Everglades\CES Consultation Letter Request Seminole Tribe January 2012

Ralph, Gina P SAJ

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Sent: Wednesday, January 18, 2012 9:18 AM
To: Ralph, Gina P SAJ
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Classification: UNCLASSIFIED
Caveats: NONE

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Kimberley Taplin, P.E.
US Army Corps of Engineers
1400 Centrepark Blvd, Suite 750
West Palm Beach, FL 33401
(561) 801-0285

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To: Taplin, Kimberley A SAJ; Auvenshine, Stacie SAJ; Thomas, Cynthia SAJ; Vitek, Kimberly A SAJ
Cc: Garrett, Natalie S SAJ
Subject: RE: Responses to Marshall Jones' Questions (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Please find the requested information attached.

Thank you,
Gina

Gina Paduano Ralph, Ph.D.
Planning Division, Environmental Branch
US Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019
(904) 232-2336
Gina.P.Ralph@usace.army.mil
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From: Taplin, Kimberley A SAJ
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To: Ralph, Gina P SAJ; Auvenshine, Stacie SAJ; Thomas, Cynthia SAJ; Vitek, Kimberly A SAJ
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Importance: High

Classification: UNCLASSIFIED
Caveats: NONE

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Kimberley Taplin, P.E.
US Army Corps of Engineers
1400 Centrepark Blvd, Suite 750
West Palm Beach, FL 33401
(561) 801-0285

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Cc: Vitek, Kimberly A SAJ
Subject: CEPP Government to Government Bimonthly Meeting Request Letter (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED
Caveats: NONE

Good Afternoon,

C.3.3 Draft Project Implementation Report (PIR) and Environmental Impact Statement (EIS)

C.3.3.1 Draft PIR/EIS Notice of Availability

The Notice of Availability (NOA) of the Central Everglades Planning Project Draft Project Implementation Report and Environmental Impact Statement was published in the Federal Register (FR Volume 78, Number 169) August 30, 2013 and mailed to interested stakeholders to begin the 64 day review period. The Draft EIS was filed in accordance with ER-FRL-8994-7, Amended Environmental Impact Statement Filing System Guidance for Implementing 40 CFR 1506.9 and 1506.10 of the Council on Environmental Quality's Regulations Implementing the National Environmental Policy Act and made available for public and agency review. Five NEPA Draft PIR/EIS Public Meetings were held September 16, 2013 in Plantation, Florida; September 17, 2013 in Fort Myers, FL; September 18, 2013 in West Palm Beach, FL; September 19, 2013 in Stuart, FL and September 25, 2013 in Homestead, FL. The draft EIS was published on the following websites:
http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx

and

http://www.saj.usace.army.mil/About/DivisionsOffices/Planning/EnvironmentalBranch/EnvironmentalDocuments.aspx#Multiple_Counties

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

To Whom It May Concern:

Pursuant to the National Environmental Policy Act (NEPA) and the U.S. Army Corps of Engineers (Corps) Regulation (33 CFR 230.11), this letter constitutes the Notice of Availability of the Central Everglades Planning Project Draft Project Implementation Report and Environmental Impact Statement (PIR/EIS). The project is located in south Florida, in St. Lucie, Martin, Okeechobee, Glades, Hendry, Palm Beach, Broward, Miami-Dade, Monroe, Collier, Lee, and Charlotte Counties.

The Draft PIR/EIS is available for your review on www.evergladesplan.org and the Corps' Environmental planning website, under multiple counties:

http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx

http://www.saj.usace.army.mil/About/DivisionsOffices/Planning/EnvironmentalBranch/EnvironmentalDocuments.aspx#Multiple_Counties

A printed copy of the report is also available at the following libraries:

OKEECHOBEE COUNTY PUBLIC LIBRARY 206 S.W. 16TH STREET OKEECHOBEE, FLORIDA 34974	MAIN LIBRARY 100 S. ANDREWS AVENUE, FORT LAUDERDALE, FL 33301
MAIN LIBRARY 101 W FLAGLER ST. MIAMI, FL 33130	MAIN LIBRARY 3650 SUMMIT BOULEVARD WEST PALM BEACH, FL 33406
BLAKE LIBRARY 2351 SE MONTEREY RD STUART, FL 34996	

Any comments you may have must be submitted in writing to the letterhead address by October 13, 2013. Questions concerning the project can be submitted to Dr. Gretchen Ehlinger at the letterhead address or at CEPPcomments@usace.army.mil. Dr. Ehlinger may also be reached by telephone at 904-232-1682.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

To Whom It May Concern:

Pursuant to the National Environmental Policy Act and the U.S. Army Corps of Engineers Regulation (33 CFR 230.11), this letter constitutes the Notice of Availability of the Central Everglades Planning Project Draft Project Implementation Report and Environmental Impact Statement. The project is located in St. Lucie, Martin, Okeechobee, Glades, Hendry, Palm Beach, Broward, Miami-Dade, Monroe, Collier, Lee, and Charlotte Counties, FL.

Any comments you may have must be submitted in writing to the letterhead address by October 13, 2013. Questions concerning this project can be submitted to Dr. Gretchen Ehlinger at Gretchen.S.Ehlinger@usace.army.mil or by telephone at 904-232-1682.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

Dear Librarian:

Enclosed is a copy of the Central Everglades Planning Project Draft Project Implementation Report and Environmental Impact Statement. The project is located in south Florida in St. Lucie, Martin, Okeechobee, Glades, Hendry, Palm Beach, Broward, Miami-Dade, Monroe, Collier, Lee, and Charlotte Counties.

This Draft Project Implementation Report and Environmental Impact Statement is being provided for public review pursuant to the National Environmental Policy Act. We request that you make the copy available for public viewing in the reference section of your library for a period of 45 days (August 30 – October 13, 2013), after which it may be disposed.

Thank you for your assistance in this matter. If you have any questions or need further information, please contact Dr. Gretchen Ehlinger at 904-232-1682.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

Ms. Lauren P. Milligan
Florida Department of Environmental Protection
State Clearinghouse
3900 Commonwealth Boulevard, MS 47
Tallahassee, Florida 32399-3000

Dear Ms. Milligan:

Pursuant to the National Environmental Policy Act, enclosed for State agency review and comment are 17 CDs of the Central Everglades Planning Project Draft Project Implementation Report (PIR) and Environmental Impact Statement (EIS). The project is located in south Florida, in St. Lucie, Martin, Okeechobee, Glades, Hendry, Palm Beach, Broward, Miami-Dade, Monroe, Collier, Lee, and Charlotte Counties.

Any comments you may have on the Draft PIR/EIS must be submitted in writing to the letterhead address by October 13, 2013. Any questions concerning the Draft PIR/EIS or requests for additional copies of the report should be directed to Dr. Gretchen Ehlinger at 904-232-1682, or e-mail at: Gretchen.S.Ehlinger@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosures

Dated: August 26, 2013.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2013–21197 Filed 8–29–13; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project No. 1256–031—Nebraska Loup River Hydroelectric Project]

Loup River Public Power District; Notice of Proposed Restricted Service List for a Programmatic Agreement for Managing Properties Included in or Eligible for Inclusion in the National Register of Historic Places

Rule 2010 of the Federal Energy Regulatory Commission's (Commission) Rules of Practice and Procedure [1] provides that, to eliminate unnecessary expense or improve administrative efficiency, the Secretary may establish a restricted service list for a particular phase or issue in a proceeding. The restricted service list should contain the names of persons on the service list who, in the judgment of the decisional authority establishing the list, are active participants with respect to the phase or issue in the proceeding for which the list is established.

The Commission staff is consulting with the Nebraska State Historical Society (Nebraska SHPO) and the Advisory Council on Historic Preservation (Advisory Council) pursuant to the Advisory Council's regulations, 36 CFR part 800, implementing section 106 of the National Historic Preservation Act, *as amended,* (16 U.S.C. 470f), to prepare a Programmatic Agreement for managing properties included in, or eligible for inclusion in, the National Register of Historic Places that could be affected by issuance of a new license for the Loup River Hydroelectric Project No. 1256.

The programmatic agreement, when executed by the Commission and the Nebraska SHPO, would satisfy the Commission's section 106 responsibilities for all individual undertakings carried out in accordance with the license until the license expires or is terminated (36 CFR 800.13[e]). The Commission's responsibilities pursuant to section 106 for the project would be fulfilled through the Programmatic Agreement, which the Commission staff proposes to draft in consultation with certain parties listed below. The executed Programmatic Agreement would be incorporated into any Order issuing a license.

Loup River Public Power District, as applicant for the Loup River Hydroelectric Project, the Omaha Tribe of Nebraska, the Pawnee Nation of Oklahoma, and the Santee Sioux Tribe of Nebraska have expressed an interest in this proceeding and are invited to participate in consultations to develop the Programmatic Agreement. For purposes of commenting on the programmatic agreement, we propose to restrict the service list for Project No. 1256 as follows:

John Eddins or Representative, Advisory Council on Historic Preservation, The Old Post Office Building, Suite 803, 1100 Pennsylvania Avenue NW., Washington, DC 20004

L. Robert Puschendorf or Representative, State Historic Preservation Office, Nebraska State Historical Society, 1500 R Street, P.O. Box 82554, Lincoln, NE 68501–2554

Neal Suess or Representative, Loup River Public Power District, P.O. Box 988, 2404 15th Street, Columbus, Nebraska 68602

Rodney Morris, Tribal Chairman, Omaha Tribe of Nebraska, 100 Main St., P.O. Box 368, Macy, NE 68039

Marshall Gover, President, Pawnee Nation of Oklahoma, P.O. Box 470, 881 Little Dee Dr., Pawnee, OK 74058

Roger Trudell, Tribal Chairman, Santee Sioux Nation, 108 Spirit Lake Ave. West, Niobrara, NE 68760–7219

Any person on the official service list for the above-captioned proceeding may request inclusion on the restricted service list, or may request that a restricted service list not be established, by filing a motion to that effect within 15 days of this notice date. In a request for inclusion, please identify the reason(s) why there is an interest to be included. Also please identify any concerns about historic properties, including Traditional Cultural Properties. If historic properties are to be identified within the motion, please use a separate page, and label it NON–PUBLIC Information.

The Commission strongly encourages electronic filing. Please file motions using the Commission's eFiling system at *http://www.ferc.gov/docs-filing/efiling.asp*. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov, (866) 208–3676 (toll free), or (202) 502–8659 (TTY). In lieu of electronic filing, please send a paper copy to: Secretary, Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426. The first page of any filing should include docket number P–1256–031.

If no such motions are filed, the restricted service list will be effective at the end of the 15 day period. Otherwise, a further notice will be issued ruling on any motion or motions within the 15-day period.

Dated: August 23, 2013.

Kimberly D. Bose,

Secretary.

[FR Doc. 2013–21199 Filed 8–29–13; 8:45 am]

BILLING CODE 6717–01–P

[1] 18 CFR 385.2010.

ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–9010–8]

Environmental Impacts Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564–7146 or *http://www.epa.gov/compliance/nepa/*

Weekly receipt of Environmental Impact Statements Filed 08/19/2013 through 08/23/2013

Pursuant to 40 CFR 1506.9.

Notice

Section 309(a) of the Clean Air Act requires that EPA make public its comments on EISs issued by other Federal agencies. EPA's comment letters on EISs are available at: *http://www.epa.gov/compliance/nepa/eisdata.html*

EIS No. 20130250, Draft EIS, USACE, FL, Central Everglades Planning Project, Comment Period Ends: 10/15/2013, Contact: Gretchen Ehlinger 904 232–1682.

EIS No. 20130251, Final EIS, USFS, MN, BWCAW Non-native Invasive Plant Management Project, Review Period Ends: 10/15/2013, Contact: Jack Greenlee 218–229–8817.

EIS No. 20130252, Final EIS, USN, CA, Hawaii-Southern California Training and Testing, Review Period Ends: 09/30/2013, Contact: Cory Scott 808–472–1420.

EIS No. 20130253, Final EIS, USN, 00, Atlantic Fleet Training and Testing, Review Period Ends: 09/30/2013, Contact: Lesley Dobbins 757–322–4645.

EIS No. 20130254, Draft EIS, USFS, UT, Smiths Fork Vegetation Restoration Project, Comment Period Ends: 10/15/2013, Contact: Pete Gomben 801–999–2182.

EIS No. 20130255, Draft EIS, NOAA, 00, Amendment 7 to the 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP), Comment

Period Ends: 10/23/2013, Contact: Thomas A Warren 978–281–9260.

Amended Notices

EIS No. 20130087, Draft EIS, BLM, NM, TriCounty Resource Management Plan, Comment Period Ends: 09/12/2013, Contact: Jennifer Montoya 575–525–4316.

Revision to FR Notice Published 04/12/2013; Extending Comment Period from 07/11/2013 to 09/12/2013.

Dated: August 27, 2013.

Cliff Rader,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 2013–21276 Filed 8–29–13; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OA–2013–0124]

Good Neighbor Environmental Board; Notification of Public Advisory Committee Teleconference

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of public advisory committee teleconference.

SUMMARY: Pursuant to the Federal Advisory Committee Act, Public Law 92–463, notice is hereby given that the Good Neighbor Environmental Board (GNEB) will hold a public teleconference on Tuesday, September 24, 2013. The meeting will take place from 12 p.m. to 4 p.m. Eastern Standard Time. The meeting is open to the public. For further information regarding the teleconference and background materials, please contact Mark Joyce at the number listed below.

DATES: Tuesday, September 24, 2013. The meeting will take place from 12 p.m. to 4 p.m. Eastern Standard Time.

SUPPLEMENTARY INFORMATION:

Background: GNEB is a federal advisory committee chartered under the Federal Advisory Committee Act, Public Law 92–463. GNEB provides advice and recommendations to the President and Congress on environmental and infrastructure issues along the U.S. border with Mexico.

Purpose of Meeting: The purpose of this teleconference is to discuss the Good Neighbor Environmental Board's Sixteenth Report and preliminary advice letter. The report and advice letter will focus on ecological restoration in the U.S.-Mexico border region.

General Information: The agenda and meeting materials will be available at *http://www.regulations.gov* under Docket ID: EPA–HQ–OA–2013–0124. General information about GNEB can be found on its Web site at *www.epa.gov/ofacmo/gneb.*

If you wish to make oral comments or submit written comments to the Board, please contact Mark Joyce at least five days prior to the meeting. Written comments should be submitted at *http://www.regulations.gov* under Docket ID: EPA–HQ–OA–2013–0124.

Meeting Access: For information on access or services for individuals with disabilities, please contact Mark Joyce at (202) 564–2130 or email at *joyce.mark@epa.gov.* To request accommodation of a disability, please contact Mark Joyce at least 10 days prior to the meeting to give EPA as much time as possible to process your request.

Dated: August 21, 2013.

Mark Joyce,

Acting Designated Federal Officer.

[FR Doc. 2013–21268 Filed 8–29–13; 8:45 am]

BILLING CODE 6560–50–P

EXPORT-IMPORT BANK

Notice of Meeting of Advisory Committee

ACTION: Notice of Open Meeting of the Advisory Committee of the Export-Import Bank of the United States (Ex-Im Bank).

TIME AND PLACE: Wednesday, September 18, 2013 from 11:00 a.m. to 2:30 p.m. The meeting will be held at the Export-Import Bank in Room 326, 811 Vermont Avenue NW., Washington, DC 20571.

SUMMARY: The Advisory Committee was established November 30, 1983, to advise the Export-Import Bank on its programs and to provide comments for inclusion in the reports of the Export-Import Bank of the United States to Congress.

Agenda: Agenda items include briefings and discussions on the following topics: Ex-Im Bank business update and subcommittee reports.

Public Participation: The meeting will be open to public participation, and the last 10 minutes will be set aside for oral questions or comments. Members of the public may also file written statement(s) before or after the meeting. If members of the public wish to attend, they must contact Niki Shepperd via email at *niki.shepperd@exim.gov* by 5 p.m. on September 17, 2013. If any person wishes auxiliary aids (such as a sign language interpreter) or other special accommodations, please contact, by September 16, 2013, Niki Shepperd.

FOR FURTHER INFORMATION CONTACT: For further information, contact Niki Shepperd, 811 Vermont Ave. NW., Washington, DC 20571, (202) 565–3202 or TDD (202) 565–3377 or *niki.shepperd@exim.gov.*

Cristopolis A. Dieguez,

Program Specialist, Office of General Counsel.

[FR Doc. 2013–21163 Filed 8–29–13; 8:45 am]

BILLING CODE 6690–01–P

FEDERAL COMMUNICATIONS COMMISSION

Information Collection(s) Being Submitted for Review and Approval to the Office of Management and Budget (OMB)

AGENCY: Federal Communications Commission.

ACTION: Notice; request for comments.

SUMMARY: As part of its continuing effort to reduce paperwork burden and as required by the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3502–3520), the Federal Communications Commission invites the general public and other Federal agencies to take this opportunity to comment on the following information collection(s). Comments are requested concerning: Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; the accuracy of the Commission's burden estimates; ways to enhance the quality, utility, and clarity of the information collected; ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology; and ways to further reduce the information collection burden on small business concerns with fewer than 25 employees.

The FCC may not conduct or sponsor a collection of information unless it displays a currently valid OMB control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a valid OMB control number.

DATES: Written Paperwork Reduction Act (PRA) comments should be submitted on or before September 30, 2013. If you anticipate that you will be submitting PRA comments, but find it difficult to do so within the period of time allowed by this notice, you should

C.3.3.2 Statement Recipients

The November 23, 2011 scoping letter was mailed to the parties listed in **Table C.3.3-1**. The August 27, 2013 Notice of Availability (NOA) of the Draft EIS letter was mailed to the same list of stakeholders. Recipients include Federal, State, and local agencies, affected Indian Tribes, and other interested private organizations and individuals. A complete mailing list is available upon request.

Table C.3.3-1. List of Recipients

Recipients	
Federal	Federal Emergency Management Administration
	Federal Maritime Commission
	National Center for Environmental Health
	U.S. Department of Agriculture (Natural Resources Conservation Service and U.S. Forest Service)
	U. S. Department of Commerce (National Oceanic and Atmospheric Administration, Florida Keys National Marine Sanctuary, and National Marine Fisheries Service)
	U.S. Department of Homeland Security (U.S. Coast Guard 7th District)
	U.S. Department of Housing and Urban Development
	U.S. Department of the Interior (Bureau of Indian Affairs, National Park Service [Big Cypress National Preserve, Biscayne National Park, Everglades National Park], U.S. Fish and Wildlife Service, U.S. Geological Survey, Office of Environmental Policy and Compliance)
	U.S. Department of Justice
	U.S. Environmental Protection Agency
	U.s. Department of Transportation (Federal Highway Administration)
	U.S. Congressman – Florida Districts 17, 18, 19, 20, 21, 22, 23, 24, 25
	U.S. Senators – Florida
State	Florida Department of Agriculture and Consumer Services (Office of Agricultural Water Policy)
	Florida Department of Environmental Protection
	Florida Department of Transportation
	Florida Fish and Wildlife Conservation Commission
	Florida Keys Aqueduct Authority
	Florida Governor's Office
	Florida House Representatives - Districts 78, 82, 83, 84, 85, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120
	Florida State Clearinghouse
	Florida State Senators - Districts 25, 27, 28, 29, 30, 32, 33, 34, 35, 36, 38, 39, 40
	South Dade Soil and Water Conservation District
	South Dade Government Center

Recipients	
	South Florida Regional Planning Council
	Southwest Florida Regional Planning Council
	South Florida Water Management District
	State Historic Preservation Office
	University of Florida Cooperative Extension Office, Homestead, Florida
Tribe	Miccosukee Tribe of Indians of Florida
	Mucogee (Creek) Nation of Oklahoma
	Poarch Band of Creek Indians
	Seminole Nation of Oklahoma
	Seminole Tribe of Florida
County Agencies	Broward County Biological Resources Division
	Broward County Environmental Protection and Growth Management
	Lee County Public Utilities
	Martin County
	Miami-Dade County Department of Environmental Resources Management
	Miami-Dade County Department of Planning and Zoning
	Miami-Dade County Park & Recreation
	Miami-Dade County Water & Sewer
	Miami-Dade County Water Resources
	Monroe County Growth Management Department
	Palm Beach County Water Resources
County Government	Broward County Board of County Commissioners
	Miami-Dade County Board of County Commissioners
	Monroe County Board of Commissioners
	Palm Beach County Board of Commissioners
Municipalities	City of Delray Beach
	City of Florida City
	City of Fort Lauderdale
	City of Hollywood
	City of Homestead
	City of Lighthouse Point
	City of Pembroke Pines
	City of Sanibel
	City of Miami
	Lake Worth Drainage District
	South Broward Drainage District
	Town of Medley
	Town of Southwest Ranches
Libraries	Collier County Public Library, Everglades City Branch
	Broward County Public Library, Ft. Lauderdale Branch
	Miami-Dade Public Library, Homestead Branch
	Miami-Dade Public Library, Main Branch
	Northwest Regional Library, Coral Springs
Groups and Organizations	100 Friends of Florida
	Airboat Association of Florida

Recipients	
	Broward 298s
	Broward County Airboat Association
	Charleston Museum
	Clean Water Action
	Coopertown Airboat
	Dade County Farm Bureau
	Defenders of Wildlife
	Duke University
	Environmental and Land Use Law Center
	Everglades Coordination Council
	Everglades Foundation
	Everglades Protection Society
	Florida Atlantic University
	Florida Gulf Coast University
	Florida Biodiversity Project
	Florida International University
	Florida Keys Fishing Guides Association
	Florida Limerock and Aggregate Institute
	Florida Wildlife Federation
	Friends of the Everglades
	Homestead/Florida City Chamber of Commerce
	Las Palmas Homeowners Association
	Naples Pathways Coalition,
	National Parks Conservation Association
	Natural Resources Defense Council
	Northwestern University
	Nova University, Environmental and Land Use Law Center
	The Nature Conservancy
	Reef Relief
	Rutgers University
	Sierra Club
	Sierra Club, Miami Group
	South Florida Ecosystem Restoration Task Force
	The Conservancy
	Trail Glades Bassmasters of Miami
	Tropical Audubon Society
	Trust for Public Land
	University of Chicago, Field Museum of Natural History
	University of Florida
	University of Miami, School of Law
	University of West Florida
	Wildlife Foundation of Florida
	World Wildlife Fund of Florida
Businesses	Alednam Development
	Applied Environmental Services

Recipients	
	Coopertown Airboat
	Florida Power and Light
	Everglades Research Group, Inc
	Everglades Safari Park
	Florida Citrus Mutual
	Florida Rock Industries
	Gator Park
	Greenacres Farm
	Lehtinen, Vargas and Riedi
	Lewis, Longman and Walker
	Lincoln Financial
	Lone Star Environmental Studies
	Mac Vicar, Frederico and Lamb
	Miami Engineering Company
	Milian-Swain and Associates
	Palm Beach Post
	Pentavista Corporation
	Radio One, Pepper Hamilton
	Rinkers Materials Corporation
	Salem Communications Corporation
	South Dade News Leader
	Tarmac America
	White Rock Quarries
	WVCG Radio

C.3.3.3 Draft PIR/EIS Comment Response Matrices

Table C.3.3-2. CEPP NEPA Draft PIR/EIS Formal Letter Comment Response Matrix.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
FEDERAL		
CONGRESS OF THE UNITED STATES		
Congress-1	Thank you for your continued dedication to the restoration of America's Everglades. We are writing to express our support for the approval of the Central Everglades Planning Project (CEPP).	Thank you for your comment.
Congress-2	We are hopeful that the U.S. Army Corps of Engineers will complete the final planning stages as soon as possible to provide an opportunity to advance this and the interdependent projects in a WRDA bill. There are already four Everglades projects with completed Chief's Reports. Ensuring that these projects are all authorized in the upcoming WRDA bill will ensure restoration can progress without further delay.	Thank you for your comment. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget (OMB) for administrative review. This will occur upon completion of the State and agency review of the Final Central Everglades Planning Project (CEPP) Final Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS).
Congress-3	CEPP will increase flow to the south by 217,000 acre feet (70 billion gallons) of water, thus reducing harmful discharges to the St. Lucie and Caloosahatchee estuaries, while still maintaining needed dry season flows. By delivering more water to the Southern Everglades, critical habitat will be improved, leading to a better functioning ecosystem that will benefit Florida's economy.	Thank you for your comment. Please note the following correction: the Recommended Plan provides an average of approximately 210,000 acre-feet per year of additional freshwater flow.
Congress-4	As one of the Corps of Engineers' pilot projects for streamlined planning, the project formulation timeline was reduced from five to seven years to two years. That is something to be celebrated. Completing the final stages of project planning, however, is essential to reap the benefits of this reform.	Thank you for your comment. Please see response to comment Congress-2 above.
UNITED STATES DEPARTMENT OF THE INTERIOR (DOI)		
DOI-1	The Department of the Interior (Department) supports the Recommended Plan as contained in the Draft PIRIEIS.	Thank you for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
DOI-2	The Department, like the Florida Department of Environmental Protection (FDEP), would like to see the streamlining of both the timeframe and process for Corps feasibility studies utilized in this pilot program become a national practice for Corps feasibility studies.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
DOI-3	The well-balanced Alternative 4R2 recommended plan was made possible by the innovative development and application of many cutting edge assessment and modeling tools, and the adoption of a highly inclusive planning process combining inter-agency project teams with regular stakeholder workshops. The Department commends the Corps and South Florida Water Management District (SFWMD) for these efforts.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
DOI-4	The CEPP recommended plan represents an important first increment toward our longer-term efforts to restore the historic flow connection between Lake Okeechobee and the downstream Everglades.	Thank you for your comment.
DOI-5	Within the nearshore areas of Biscayne Bay, recent operational changes have been implemented that redirect additional available freshwater into the southern Miami-Dade coastal canal system. These small flow changes appear to temper high salinity events and lengthen the beneficial salinity window as the region transitions into the dry season. These operational flow improvements should be sustained and, where possible, expanded through the implementation of the CEPP and the Biscayne Bay Coastal Wetlands project. In addition, the Department recommends that the CEPP Adaptive Management Plan include an acknowledgement of the importance of maintaining beneficial freshwater flows to Biscayne Bay.	CEPP Uncertainty ID # 62 within the AM Plan currently addresses the ecological effects of CEPP hydrology on Biscayne Bay. See **Section 1.4.4.2** of **Annex D** (**Adaptive Management and Monitoring Plans**) for reference. This section of the AM Plan currently notes the importance of Biscayne Bay as a Florida Outstanding Water and focuses on adaptively managing constructed and operational features of the CEPP in order to maintain the current level of surface and groundwater base freshwater flows to this area to where there is no change in the ecological condition of this region.
DOI-6	The Department recommends that the Corps also implement a robust endangered species	The Final PIR/EIS will include the USFWS preliminary Biological Opinion that will outline the monitoring and costs required for endangered species.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	monitoring plan and assess the results in coordination with the U.S. Fish and Wildlife Service and other wildlife agencies to allow timely modifications to project operations for the protection of those species.	
DOI-7	Given the uncertainty and risk associated with mercury in the Everglades, the Department recommends additional monitoring and assessment at major project features and in associated downstream systems, beyond Annex D's sole specification for monitoring the A-2 Flow Equalization Basin (FEB).	Appendix D, Water Quality Monitoring Plan will be modified to include discussion of potential effects of CEPP hydrology on mercury methylation patterns. The discussion will include mention that during design of major CEPP features, the CEPP monitoring plan may be modified to include mercury and sulfate monitoring in the event that existing non-CEPP mercury and sulfate monitoring is insufficient to capture the potential effects of the project. The monitoring plan will not be modified at this time because in the intervening years between plan authorization and project construction, 1) existing mercury monitoring plans are likely to be changed, 2) existing geographical distribution of methylmercury bioaccumulation patterns is likely to shift, and 3) mercury science is likely to evolve. A future monitoring prioritization and optimization process will be conducted, as specified in the CEPP Adaptive Management Plan, to determine how the project's monitoring budget will be allocated among important monitoring needs such as mercury and sulfate monitoring.
DOI-8	The Department concurs with the FDEP that the Draft PIRIEIS, as currently written, provides the appropriate framework to address water quality issues that may occur as a result of the implementation of CEPP.	Thank you for your comment.
DOI-9	The Department agrees with the State of Florida that although the implementation schedule requires refinement and optimization, this need not and should not delay completion of the PIR/EIS and submittal to the Congress for authorization. The implementation schedule should be flexible to allow changes in the sequencing of CERP projects (including the CEPP components) and non-CERP projects and activities as appropriate. Flexibility is essential to successful CEPP implementation given the uncertainties associated with the lengthy implementation period and the inevitable improvement in scientific knowledge about the	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Please see response to comment DOI-10 regarding potential sequencing of the proposed PPAs in the Final PIR/EIS. Other viable options for the implementation of project features and subsequent groupings into PPAs may be considered in the future and is acknowledged within the Final PIR/EIS. The project construction contracts are sequenced to optimize the varied internal and external project dependencies as well as capitalize on the sequential construction dependencies. For example, some projects could not start simultaneously due to competition of multiple contractors for the limited site access, staging and disposal.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	functioning of the greater Everglades and estuaries that will occur as planned CERP and non-CERP projects and activities are completed. The Department recommends that the Corps explicitly acknowledge, in the PIRIEIS, the importance of such flexibility.	
DOI-10	The well documented history of high water problems in southern WCA 3A is a good example of how modest refinements in CEPP project sequencing *could* be used to address adverse ecological conditions more quickly than the CEPP component sequencing currently proposes. As the CERP/CEPP planning process moves forward, the Department will recommend at the appropriate time that the Corps adjust the timing of conveyance and seepage management features around Tamiami Trail to move toward earlier implementation of WCA 3A outflow capacity improvements to convey existing water southward during times of high rainfall.	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Project features are grouped into three separate PPAs based upon the spatial distribution of the project features and the locations within the CEPP study area where separable hydrologic and environmental benefits would accrue. These groupings include a PPA of project features in northern WCA 3A (PPA North), a PPA of project features in southern WCA 3A, 3B, and ENP (PPA South), and a final PPA which provides the new water and required seepage management features that benefits the entirety of the study area (PPA New Water). The Final PIR/EIS presents two potential implementation sequencing scenarios that are possible with the three separate Project Parntership Agreements (PPA) currently identified: 1) PPA North → PPA South → PPA New Water and 2) PPA South → PPA North →PPA New Water. With each scenario, non-CEPP project features and non-CERP project features identified as project dependencies in **Table 6-10** of the Draft PIR/EIS still apply. The features mentioned in the provided comment have been included in PPA South. Other viable options for the implementation of project features and subsequent groupings into PPAs may be considered in the future and is acknowledged within the Final PIR/EIS. The implementing agencies are committed to engaging in a public process after Congressional authorization and appropriations of CEPP to integrate CEPP into the CERP Master Implementation Sequencing Plan that defines the order in which CERP projects would be planned, designed, and constructed.
DOI-11	The State's recent commitment to jointly fund the 2.6-mile Tamiami Trail Bridge (the first increment of the Tamiami Trail Next Steps project) creates a unique opportunity to pull several, relatively low cost CEPP southern conveyance and seepage management features (S-333N, the S-355W/L-29 divide structure, and the removal of Old Tamiami Trail) forward and make faster progress on	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. The features mentioned in the provided comment have been included in PPA South. Implementation of PPA South would include conveyance features that function to re-distribute water from WCA 3A to WCA 3B and ENP. Please see response to comment DOI-10 above regarding potential sequencing of the proposed PPAs in the Final PIR/EIS. Removal of Old Tamiami Trail is included in PPA South; however the Final PIR/EIS acknowledges that Old Tamiami Trail can be completed at any time during

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	improving the conditions in both WCA 3A and Northeast Shark River Slough. The current CEPP implementation schedule assumes that these features will not be implemented for approximately 15-20 years, while our Tamiami Trail Next Steps first increment efforts would presumably have the western portion of the Tamiami Trail flow-ready 5-10 years earlier. We acknowledge that moving these CEPP conveyance and seepage management features earlier would require completion of upstream water quality improvements (specifically the A-1 FEB). Fortunately, the A-1 FEB is currently scheduled to be on-line by approximately 2019, which should either coincide with or precede the completion of Tamiami Trail Next Steps first increment.	implementation given project dependencies, but must precede backfilling of the L-67 Extension.
DOI-12	We also believe that we would gain significant additional public support for, and alleviate stakeholder concerns about, the upstream WCA 3A hydropattern restoration improvements by focusing on addressing the current WCA 3A high water problems and generally on increasing WCA 3A outflow capacity prior to increasing inflow capacity.	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Please see response to comment DOI-10 above regarding potential sequencing of the proposed PPAs in the Final PIR/EIS.
DOI-13	Another example of beneficial sequencing flexibility is the implementation of the L-31N seepage barrier in the CEPP, which is currently included in phase 7 (contract 10), or near the end of the CEPP implementation. The CEPP recommended plan conservatively included a seepage barrier of the length and depth necessary for CEPP project seepage management requirements, in the event the barrier must be constructed as part of CEPP. The recently completed 2-mi1e L-31N seepage barrier project constructed by the Miami-Dade Limestone Products Association (Association), as mitigation	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Please see response to comment DOI-10 above regarding potential sequencing of the proposed PPAs in the Final PIR/EIS. Other viable options for the implementation of project features and subsequent groupings into PPAs may be considered in the future and is acknowledged within the Final PIR/EIS. The project construction contracts are sequenced to optimize the varied internal and external project dependencies as well as capitalize on the construction dependencies. For example, some projects could not start simultaneously due to competition of multiple contractors for the limited site access, staging and disposal.

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	for seepage increases caused by rock mining, is currently being analyzed. This non-CERP approach could pull these features forward to correspond with the general completion of the Tamiami Trail Next Steps first increment, or approximately 15-20 years earlier than is currently anticipated in CEPP. This possibility should be examined in future revisions to the sequencing schedule.	
DOI-14	The Department recommends that further improvements in freshwater flows to BISC and Biscayne Bay be included in the next increment of CEPP, as most of the Bay is designated as an Outstanding Florida Water (OFW).	Thank you for your comment.
DOI-15	While the completion of MWD is not a precondition for CEPP authorization, as CEPP moves toward authorization this spring, the Department urges the Corps to work with the Department, FDEP and the SFWMD to initiate the development of a WCP so that MWD features are operational as soon as possible and long before the *construction* of WCA 3 decompartmentalization and sheetflow enhancement features of CEPP.	The Corps is re-initiating pursuit of operational testing (relaxation of G-3273 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Information from the test will be used to develop the Final Water Control Plan for the Modified Water Deliveries project which will allow for re-distribution of water flows to NESRS. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation.
UNITED STATES ENVIRONMETAL PROTECTION AGENCY (EPA)		
EPA-1	Overall, EPA is supportive of the selection of Alternative 4R2 as the TSP. EPA appreciates the USACE's collaborative, multi-agency effort in formulating the TSP. EPA has some concerns with the current project's scheduling of the implementation of A-2 FEB, statements made concerning water quality, the format of the DEIS and the need for additional environmental justice analysis. These concerns are outlined in the attachment.	Thank you for your comment.
EPA-2	The A-2 FEB will be constructed in Phase 7 (the last phase) and year 19 of overall project construction. EPA strongly recommends that USACE consider moving the construction of A-2 FEB forward in the	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Project features are grouped into three separate Project Partnership Agreements) (PPAs) based upon the spatial distribution of the project features and the locations

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	schedule because most of the hydrological benefits of CEPP (averaging 210,000 acre-ft/year) will be realized upon construction of A-2 FEB. The A-2 FEB will provide increased water storage (averaging 210,000 acre ft/year) and will have more far reaching benefits to the estuaries, and to the Everglades. It is EPA's view that expediting the construction of this important component of the overall project would be in the best interest of the environment and the public.	within the CEPP study area where separable hydrologic and environmental benefits would accrue. These groupings include a PPA of project features in northern WCA 3A (PPA North), a PPA of project features in southern WCA 3A, 3B, and ENP (PPA South), and a final PPA which provides the new water and required seepage management features that benefits the entirety of the study area (PPA New Water). The Final PIR/EIS presents two potential implementation sequencing scenarios that are possible with the three separate PPAs currently identified: 1) PPA North → PPA South → PPA New Water and 2) PPA South → PPA North →PPA New Water. With each scenario, non-CEPP project features and non-CERP project features identified as project dependencies in **Table 6-10** of the Draft PIR/EIS still apply. Implementation of PPA New Water would decrease high volume freshwater discharges from Lake Okeechobee that are currently sent to the Northern Estuaries. While water could be moved away from the Northern Estuaries, only a limited amount could be passed south into WCA 3 without the additional outlet capacity provided by PPA South. As a result, the FEB storage capacity would remain largely unavailable following the initial FEB filling each year and the opportunities to divert water away from the Northern Estuaries that the full CEPP plan provides would be extremely limited. The additional water sent south from the Northern Estuaries to the A-2 FEB would provide some benefit to northern WCA 3A. Additional storage capacity resulting from the construction of the A-2 FEB would help to improve the timing of deliveries to northern WCA 3A; however benefits would be limited. The Miami Canal would continue to function as a source of drainage for WCA 3A. PPA New Water would provide no benefits to WCA 3B as it does not include conveyance and distribution features located on the L-67 A/C canals. Limited benefits would be expected in ENP due to construction of the seepage barrier wall, since additional inflows from WCA 3A to NESRS would be constrained by water supply and the need to maintain preferred hydrology in WCA 3A with existing inflows (prevent increased dry outs). Florida Bay may benefit as it is largely influenced by changes in freshwater flows upstream. The ability to increase flows to the south as envisioned with the project depends on the construction of the A-2 FEB and a seepage wall in PPA New Water, as well as the distribution and conveyance features in PPA North and PPA South. Commencing construction on PPA New Water may occur after an executed agreement between the SFWMD and USACE occurs for both PPA North and PPA South. Construction of PPA New Water may be in parallel with construction of PPA North and PPA South

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		components.
EPA-3	In regards to water quality, some of the discussions of water quality expectations, especially regarding Total Phosphorus (TP), are inconsistent with EPA's understandings. EPA recommends USACE address these inconsistencies (as discussed in our attached detailed comments). Additionally, given the potential changes in phosphorus loads and flows into the Everglades, the EPA is encouraged that the USACE and the SFWMD will closely monitor these loads and flows. EPA is committed to providing technical assistance to USSACE to address these issues when developing the FEIS.	Thanks for the comment and assistance in addressing outstanding comments on the FEIS.
EPA-4	We rate this document EC-1 (Environmental Concerns with adequate information) and request that our comments be addressed in the FEIS. Enclosed is a summary of definitions for EPA ratings. We appreciate the opportunity to review the proposed action and will work with the USACE to help to resolve our issues.	Thank you for your comment.
EPA-5	**Wetlands:** EPA is concerned regarding the current project implementation schedule. Currently, A-2 FEB will be constructed in Phase 7 (the last phase) and year 19 of construction (page ES-6). EPA recommends that USACE consider moving the construction of A-2 FEB to an earlier date because most of the hydrological benefits of CEPP (averaging 210,000 acre-ft/year) will be realized upon construction of A-2 FEB (Figure 6-11, page 6-40).	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Please see response to comment EPA-2 above regarding potential sequencing of the proposed PPAs in the Final PIR/EIS.
EPA-6	EPA notes that project sequencing is critical to assuring that the Everglades receive water that meets applicable water quality standards. In particular, projects involving the L-4 levee degradation, L-5 canal improvements and L-6 diversion are planned for years 1-3. EPA is concerned that these projects will provide the	Water quality compliance considerations will be integrated into all phases of the implementation plan. No additional Lake Okeechobee flows to the south are anticipated until completion of FEB A-2.

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	ability to increase flow and discharge water (such as STA bypass events) directly into the northern marsh of WCA3A, regardless of the quality of that water. It is important that this water be fully treated by the Restoration Strategies projects prior to discharge into the Everglades. EPA requests to be involved with development of Operations Manuals for CEPP implementation and to be a member of the interagency Operations/ Adaptive Management teams in order assist with addressing these water quality issues. The A-2 project, currently scheduled for year 19, is an essential component of treating flows greater than those in the Future Without (FWO) condition and Restoration Strategies prior to discharge into northern WCA3.	
EPA-7	**Water Quality:** a. Main Report: 1. On page ES-7, USACE states, " ... FEB included in SFWMD's "Restoration Strategies" project. To achieve restoration objectives for WCA 3A, the recommended plan involves discharges from these stormwater treatment areas to previously un-impacted areas. Concerns were expressed about the effects of the new discharges on water quality and native flora and fauna in those un-impacted areas. Flows into WCA 3A must meet state water quality standards before discharges to un-impacted areas occur. To ensure that the recommended plan meets state water quality standards, discharge permits with associated effluent limits will govern discharges from the state facilities." All discharges to the Everglades must meet applicable water quality standards. Accordingly, EPA recommends that this statement should say, "discharges into WCA 3A. ... " not flows, and deleting the reference to un-impacted areas. It is important to note that	The term “un-impacted areas” has been replaced with WCA 3A. The term “flow” was replaced with discharges.

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	all regulated discharges into all areas of the Everglades, not just un-impacted areas, must meet the WQBEL.	
EPA-8	2. On page ES-8, USACE states, "The recommended plan also increases flows into Shark River Slough in Everglades National Park subject to the limits for total phosphorus contained in Appendix A of the 1991 Settlement Agreement for U.S. vs. SFWMD (Case No. 88-1886-Civ-Moreno) and in accordance with state water quality standards. Since the compliance determination calculation is inversely proportional to flow, increases in flow will lower the compliance limit. State and federal water managers expressed concerns that the recommended plan may increase the probability of exceeding the compliance limit and agreed to consider reevaluating the Shark River Slough compliance calculation." The United States Department of Justice (DOJ) will need to agree to this language. Similar language shows up in Chapter 8.	The DOJ participated in the negotiated water quality language in Section 8."
EPA-9	3. On In Table 2-8, under water quality, USACE states, "The SFWMD Restoration Strategies water quality treatment plan will be fully in place by 2025. Compliance with the 2012 Consent Order WQBELs is expected after 2025 when the SFWMD has completed implementation of the Restoration Strategies water quality treatment plan." The NPDES permit also requires that the remedies be implemented and specifies that the WQBEL is effective immediately. EPA recommends US ACE better explain this point in the FEIS.	Table 2.3 on page 2-8 has been amended to include discussion of the NPDES permit and the fact that the WQBEL is effective immediately.
EPA-10	4. On Table 6-3, page 6-28 (under water quality), USACE states, "Implementation of the project is not expected to significantly affect the water quality of Lake Okeechobee or the Northern Estuaries. Changes in the quantity, timing, and	The impact of CEPP on water quality within the Everglades Protection Area is expected to vary geographically and temporally as detailed in the main document, Annex F, and Appendix C. The USACE and the SFWMD are committed to ensuring that project implementation is done in a manner that minimizes the risk that water quality violations will occur.

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	distribution of flows within WCA 3A and WCA 3B may result in temporary increases in phosphorus concentrations at some TP Rule monitoring stations; however, this should not significantly affect TP Rule compliance. Over the long-term, distributing the flow over the northern WCA-3A marsh, reducing short-circuiting down the canals, adding more flow from the lake that is treated to the WQBEL, should result in improved water quality within WCA 3 and a reduction in flow weighted mean total phosphorous concentration entering the Park. Southern Estuaries salinity conditions are expected to be improved by the project. Actions by the State of Florida's Restoration Strategies would decrease pollutant concentration and future loadings to the project area. If authorized in the next Water Resources Development Act Actions (WRDA), the Broward County WP A Project, (report approved in 2007) would reduce storm runoff deliveries to WCA 3 and improve water quality coming across Tamiami Trail." Also under the cumulative effect section, USACE states, "While anthropogenic effects on water quality are unlikely to be eliminated, water quality is expected to slowly improve over existing and recent past conditions." These paragraphs infer that water quality standards (TP) will not be met. The SFWMD cannot exceed water quality standards. EPA requests clarification regarding this paragraph and recommends that this paragraph better explain whether the proposed project will cause violations of standards.	The paragraph will be clarified by adding the following after. …. While anthropogenic effects on water quality are unlikely to be eliminated, water quality is expected to slowly improve over existing and recent past conditions... " During detailed planning and design, the USACE and SFWMD are committed to ensuring that project feature implementation will not result in violations of water quality standards."
EPA-11	5. In Table 5.1-3, Effects of Alternatives on Water Quality (page 5-14), USACE states, "There is risk that [W]QBEL will not be met without future modification of the Restoration Strategies plan; however, this risk is being minimized through	Discussion of meeting the WQBEL has been removed since risk to USACE is minimal given that sufficient time between initial operation of the A-1 FEB and initiation of construction of CEPP features will allow State to optimize STA/FEB performance. Additional information on Restoration Strategies can be found at referenced SFWMD sites.

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	implementation of the Restoration Strategies Science Plan which is a requirement of the Restoration Strategies Consent Orders and Framework Agreement." EPA disagrees with the first part of the sentence and believes that the Restoration Strategies projects in concert with an effectively implemented Science Plan should meet the WQBEL. EPA requests clarification and recommends that USACE better describe the Restoration Strategies plan in the FEIS.	
EPA-12	b. Appendix C: 1. Water Quality (C.l.l.12.1 Nutrients, page C.l-52): USACE doesn't mention the Numeric Nutrient Criteria (NNC) or the current status of the 1991 Settlement Agreement compliance. However, further in the document (C.l.1.12.6 Everglades Agricultural Area, page C.l-58, and several other sections within Appendix C and Annex F) USACE better describes the NNC and Settlement Agreement. EPA recommends that the USACE cross-reference C.1.1.2.6 (and other applicable sections) in the Nutrients section.	Section C.1.1.12.1 has been amended with a discussion of numeric nutrient criteria and TMDLs. The phosphorus rule, 1991 Consent Decree, and 2012 Consent Order are discussed and cross-referenced to Annex F.
EPA-13	2. WQBEL: In section C.l.3.12.3 Everglades Agricultural Area, page C.l-120, USACE states, "The [W]QBEL is applied at the discharge of each individual STA. Restoration Strategies documents produced by the SFWMD acknowledge that meeting the [W]QBEL will be difficult given that few of the existing ST As have demonstrated the ability to consistently produce effluent that meets this standard." EPA disagrees with this statement and thinks it incorrect. The Restoration Strategies was developed to ensure water quality standards will be met. EPA requests USACE clarify this statement or delete it from the FEIS.	Discussion of meeting the WQBEL has been removed since risk to USACE is minimal given that sufficient time between initial operation of the A-1 FEB and initiation of construction of CEPP features will allow State to optimize STA/FEB performance.
EPA-14	3. On page C.l-121, USACE states, "Nutrient and sulfate concentrations and loads for WCA 3A for	The text has been corrected to reference the central flow path.

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	the FWO condition should decrease relative to the existing baseline condition because of the implementation of the SFWMD's Restoration Strategies features within the eastern flow path of the EAA." EPA requests US ACE confirm that eastern flow path efforts are projected to affect central flow path discharges into WCA3A.	
EPA-15	c. Annex F: 1. Annex F is generally well presented. 2. On page F-3, USACE states, "Compliance with WQBEL for the STAs cannot be determined until all corrective actions have been completed and sufficient discharge data exists to assess compliance with both components of the WQBEL. Compliance with the WQBEL shall be determined based on the conditions contained within the NPDES permit (FL0778451), EFA permit (0311207), NPDES Consent Order (12-1148), and EFA Consent Order (12-1149)." The WQBEL has two parts which both must be met: STA discharges shall not exceed 13 parts per billion (ppb) as an annual flow-weighted mean (FWM) in more than three out of five years on a rolling basis (Part 1), and shall not exceed 19 ppb as an annual FWM in any water year (Part 2). Once corrective actions have been completed, if in the first subsequent year the STA discharges at higher than 19 ppb, then it is possible to determine that the WQBEL is not met at that time. This phrase should be deleted: "and sufficient discharge data exists to assess compliance with both components of the WQBEL."	Text has been amended as suggested.
EPA-16	3. On page F-7,USACE states, "For instance, it is possible that the water depth and duration of inundation may cause the FEB to be less efficient at removing TP than predicted by the DMST A2 modeling presented here. This may result in a	The Corps is required to acknowledge risk/uncertainty and consequences of projects in the planning documents. Failure to meet WQBEL is a potential outcome. The text has been modified to state that "..It is possible that the STA/FEB system may to be less efficient at removing TP than predicted by the DMSTA2 modeling presented here. …"

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	failure to consistently meet the WQBEL at the outfall of STA 3/4 and STA 2B." A failure to meet the WQBEL is a problem. EPA requests clarification on this statement.	
EPA-17	4. On page F-9, USACE refers to FWM TP concentrations shown in Table F-1. This is the wrong citation.	Reference has been corrected to Table F-3 instead of F-1.
EPA-18	5. On page F-26, USACE, "The TP concentrations at these structures are elevated, although the adjacent marsh concentrations are low, where the average annual concentration (for Federal Water Year Oct-1 to Sep- 30) varies between approximately 10 and 39 ppb." These referenced concentrations are from the structures, not the adjacent marsh, as the sentence currently reads. EPA recommends USACE more accurately discuss this in the FEIS.	The text has been modified to emphasize the contrast between data collected at the closed structures and typical marsh concentrations in the vicinity.
EPA-19	6. On page F-27, Table F-6 provides arithmetic average TP data for grab samples at structures in canals near Shark Slough. Annual water year TP averages presented as a flow-weighted mean or geometric mean would be more informative since all Everglades structure discharge compliance data are presented as flow-weighted means, and marsh data are presented as geometric means.	Annual arithmetic mean concentrations are used in Table 6 appropriately since insufficient flow data is available to calculate flow-weighted mean concentrations. No change to the table has been made.
EPA-20	7. On page F-29, USACE states, ''The TP concentrations at these SRS marsh stations are expected to remain at or below existing background levels given the distribution of flows across the length of the degraded levee." "When more natural overland flow is established with CEPP, there is uncertainty as to how loading and water movement will affect how total phosphorous concentrations in the marsh respond." These two statements appear to be contradictory. How does one conclude what marsh concentrations are expected given the uncertainty? EPA suggests	State and Federal water quality experts extensively debated the effect that CEPP would have on short-term and long-term water quality within the marsh. The text represents the consensus opinion of this group of scientists and may in places not appear to be consistent. Overall, the state and federal partners are committed to designing and implementing CEPP such that water quality standards are met”

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	further qualifying "expected" in the first sentence.	
EPA-21	8. On page F-30, USACE states "(2) although long-term TP concentrations and loads entering northeast SRS are expected to decrease, ... " Flow into the Park is expected to be increased by over 120,000 acre-feet from the FWO, and the FWO TP concentrations are already low at 10 ppb. Please confirm that loads are expected to decrease.	References to decrease in loads have been removed from the text on page F-30 after consideration of the uncertainty in this prediction and understanding that there will be times when loads are higher under with-project conditions.
EPA-22	9. On page F-35, the following statements appear to be contradictory: "Notwithstanding the inability to confidently predict future SRS inflow concentrations, SRS TP concentrations are expected to improve relative to ECB conditions and are likely to improve under ALT4R2 conditions." "Given the magnitude of the hydrologic changes proposed in ALT4R2, this project presents some risk of future non-compliance with water quality criteria particularly in WCA-3 and at SRS." If SRS TP concentrations already meet water quality criteria and concentrations are expected to improve, then how does the project present some risk of future non-compliance?	Since 2007, SRS TP concentrations have been at or slightly below the water quality criteria. State and Federal water managers believe that there is a significant risk of future violations of the SRS criteria under existing conditions. Though TP concentrations at SRS are expected to go down, with the addition of CEPP flows there is risk of non-compliance with current Appendix A compliance methodology. Overall, the state and federal partners are committed to designing and implementing CEPP such that water quality standards are met.
EPA-23	d. Mercury and Sulfur: There are many specific statements about mercury or sulfur in Appendix C and the DEIS that need a citation. There are other statements that tend to overstate the science and overlook scientific uncertainty. EPA is committed to providing technical assistance to the USACE to address these portions of the EIS. Some examples follow. Page C.1-52 states that approximately 90% of atmospheric mercury in peninsular Florida is sourced internationally (no reference, and this is an area of scientific disagreement). Please cite the Florida mercury TMDL as appropriate and confirm the statement or revise as needed. On page 5-15 and elsewhere there are statements that mercury	The mercury and sulfate discussion in Appendix C has been edited with the cooperation of EPA, DOI, FDEP, and SFWMD to address all state and federal agency comments.

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	load available for net methylation in the Everglades is likely to increase as a result of increased atmospheric load (no reference). On page C.1-53 it states that between 1997 and 2012 fish tissue has fallen significantly in response to reductions in local mercury sources. (The 2014 draft SFER notes that any significant decrease in largemouth bass occurred prior to WY2000 and concentrations in the Park have been increasing over this same time period; 2014 draft SFER reports no change in Everglades mercury wet deposition from WY 1996-2012.) The relationship between specific sulfate and mercury concentrations on page C.l-53 is stated as fact rather than hypothesis (this is an area of scientific debate, and citations are needed). EPA agrees with the summary statement on page C 1.121 which better reflects this uncertainty: "Given the complexity of the methylmercury cycle, it is not possible to predict with certainty the effect of future hydrology and mercury/sulfate loading on methylmercury formation and bioaccumulation."	
EPA-24	**3. EIS Lay Out:** The USACE's layout of the DEIS is noticeably different from typical EIS and EISs from other federal agencies as well as USACE regulatory EISs. EPA understands that the USACE has developed a new way of conducting NEPA and feasibility studies called "Smart Planning." EPA appreciates the USACE's attempts at streamlining NEPA to produce more efficient and effective documents; however, 40 CFR Parts 1500-1508 outlines the requirements for an EIS. The current lay out of the EIS omits key sections required by NEP A (40 CFR 1502.1 0). For example, omitted from the DEIS is the "Affected Environment" and "Environmental Consequences" section of the EIS. Omission of these important sections of the DEIS is confusing not only to	In the Table of Contents there is a table that lists the EIS Requirement and the Location Within This Document. Page numbers will be added to the sections lists in the location within this document and the associated appendices will be added. A Table of Contents for the entire document has been added as well. Following the new Smart Planning process and the Integrated PIR/EIS format, we will provide a better crosswalk between our report format and the NEPA requirements to ensure the reader can find the pertinent information and provide full transparency.

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	resource agencies, but other stakeholders and the public. The table of contents table roughly outlines the location of required EIS sections; however, some sections are scattered throughout the DEIS. For example, the required "Environmental Consequences" section can be found scattered throughout Sections 4, 5 and 6 and the "Alternatives Section" can be found in Section 3, 5, and 6. This disjunction can lead to confusion and lacks the transparency required of NEPA. Most of the information regarding "Affected Environment" and "Environmental Consequences" can be found in the main document (Section 2, 4, 5 and 6) and Appendix C. EPA recommends that USACE state the page numbers that various EIS sections can be found within the document to assist the reader in finding the pertinent information. Additionally, EPA recommends that the USACE consider formatting future EIS's to more closely follow the NEPA EIS template instead of the feasibility study template.	
EPA-25	**4. Environmental Justice (EJ) and Children's Health:** There is no mention of EJ in Section 2 (Existing and Future Without Conditions) or Appendix C. There is a short paragraph discussing EJ and NEP A and the US ACE asserts " .... no high or adverse effects." However, the USACE doesn't identify potential EJ communities (other than tribal communities) within the EIS. Did USACE conduct any EJ specific outreach opportunities? Additionally, we recommend that the USACE better outreach to known EJ communities within the study area. In the FEIS, EPA recommends that the USACE identify EJ communities and potential impacts (both positive and negative) to these communities in both Section 2 and Appendix C. For example, reduced flows (and thus lowered nutrient levels)	The Environmental Justice analysis was added to Section 4 under Other Social Effects and additional analysis was added to Appendix C.4. The Protection of Children analysis was added to Section 4 under Other Social Effects and additional analysis was added to Appendix C.4.

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	discharging from the St. Lucie and Caloosahatchee canals could improve fisheries production, which might benefit EJ communities along the coast. Additionally, there is no mention of children's health in the DEIS. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks encourages federal agencies to consider impacts and risk to children's health when planning projects. EPA recommends USACE describe any possible children's health risks in the FEIS.	
EPA-26	**5. Tribal Consultation:** The DEIS discusses ongoing tribal consultation. EPA encourages continued consultation with the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida at all levels of decision-making. The EPA works closely with both Tribes on Everglades matters and is committed to working with other federal partners to prioritize the Tribes' water quality and water management concerns.	Thank you for your comment. The Corps recognizes the importance of early and continuous consultation. Consultation with the Seminole Tribe of Florida and the Miccosukee Tribe of Indians is ongoing pursuant to the NEPA and Section 106 of the NHPA.
EPA-27	**6. Table 2-1. Existing Conditions and Future Without Project Conditions.** a. Cross-reference to Appendix C: This table does an adequate job of briefly describing the existing conditions; however, there are no citations within the table that would reference each specific condition to more detailed information in Appendix C. For ease of use and readability, EPA recommends USACE cite the section in which each specific condition can be found within Appendix C.	Table 2.1 has been edited to include references to specific sections in **Appendix C** (**Environmental and Cultural Resources Information**) where more detailed information is available.
EPA-28	b. Water Quality entry: The water quality entry (pg 2-8) discusses TMDLs, and states that implementation of TMDLs would improve water quality. However, the USACE doesn't list the TMDLs or the status of development or implementation of the TMDLs. EPA recommends USACE better discuss TMDL implementation within Appendix C and cross	TMDL's are mentioned in Appendix C.1, Section C.1.1.12 which references the FDEP website that posts the status and implementation of TMDLs. Additional language regarding the Lake Okeechobee TMDL Basin Management Action Plan process has been added to Appendix C.1, C2.1, and Section 5 of the main report. Annex F includes substantial discussion of the Restoration Strategies Plan as well as refers the reader to the appropriate SFWMD website for more information.

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	reference in Table 2-1. Additionally, USACE states, "Compliance with the 2012 Consent Order WQBELS is expected after 2025 when the SFWMD has completed implementation of the Restoration Strategies water quality treatment plan." However, it is not just the 2012 consent order, but the NPDES permit that also requires the remedies be implemented and the WQBEL is effective immediately. EPA recommends USACE better discuss the Restoration Strategies in the FEIS.	Table 2-1 has been edited to include reference to compliance with related NPDES permits.
EPA-29	c. Air Quality entry: In the Air Quality entry (pg 2-9) under the FWO, USACE states that, "It is anticipated that increased population and economic expansion in southeast Florida will result in an increase in ozone and other air quality pollutants." EPA believes there is no basis for this statement and requests clarification. Additionally, there are inconsistencies in how population numbers are presented. For example, in the Water Supply entry (page 2-8), states "Economic forecasts have changed since the Restudy, decreasing the population projections ... ", which seems contradictory to the population statement in the Air Quality entry. Additionally, in the Populations section (page 2-9) discusses population trends and expansion from 1950 to 2000. EPA recommends that US ACE use the 2010 Census data or more recent population projection data to more adequately discuss population trends and consistently use these numbers in Table 2- 1 and other sections within the document.	The Census Bureau's 2030 projection shows a total population for Florida of 28 million. (Reference: http://www.census.gov/population/projections/files/usinterimproj/10PyrmdFL3.pdf.) According to the Census Burea, the 2010 population of Florida was approximately 19 million. A significant proportion of the additional 9 million Floridians will likely reside in Southeast Florida over the next 20 years. Since air pollutant loading is typically correlated with population, it is reasonable to assume that increased population will adversely impact air quality. The statement regarding water supply and population projections is not contradictory. The population projections referenced in the water supply discussion talk about a decrease in the future population projection relative to prior population projections. This is not a decrease in actual future population relative to present population.
EPA-30	**7. Graphic Displays:** a. Figure 2 (page ES-3) is an excellent graphic comparing the various components of each alternative. However, the graphic is too small and is hard to read. EPA recommends that the Figure 2 (and other displays of this graphic) be enlarged to a	The figures have been enlarged to make them easier to read.

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	full page so it is easier to read.	
EPA-31	b. Appendix C: EPA recommends the map on page C.l-84 depict the difference between the red and yellow highlighted areas.	Text has been added to **Section C.1.2** (**Existing Conditions of Native Americans**) to define the red and yellow coloration depicted on C.1-84. Red coloration depicts reservation and leased lands by the Miccosukee Tribe of Indians of Florida. Yellow coloration depicts reservation and leased lands by the Seminole Tribe of Florida.
NATIONAL OCEANIC AND ATMOSPHERIC ADMINITRATION (NOAA)		
NOAA-1	My comments are from the viewpoint of a scientist at the NOAA-NMFS Southeast Fisheries Science Center who is working with RECOVER, is a member of the RECOVER Leadership Group, and has taken part in some of the planning workshops. My comments in no way supplant or intentionally contradict any comments provided by resource managers in the Habitat Conservation or Protected Resources divisions of the NOAA-NMFS Southeast Regional Office, St. Petersburg, Florida, who may be commenting.	Thank you for your comment.
NOAA-2	I support the objectives of CEPP, as stated in the PIR. I agree that Alternative 4R2, as refined to avoid the potential damage to the water supply of the Lower East Coast and Biscayne Bay that was suggested by the hydrologic models used in plan development, is the best choice as the Tentative Selected Plan. I am encouraged that the tentatively selected plan will, as expected, benefit Florida Bay and the southwest Florida coast by augmenting freshwater flow to these estuaries and thus reducing the intensity and duration of ecologically damaging high salinity levels and variations in both ecosystems. I hope that the implemented plan will prevent the St. Lucie and Caloosahatchee River ecosystems from receiving excessively high regulatory discharges from Lake Okeechobee such as those that occurred this year.	Thank you for your comment.
NOAA-3	My main points of concern are directed at the treatment of Biscayne Bay in the Draft Plan. Although concerns for potential effects of the	Alt 4R2 meets the requirements of the WRDA 2000 Savings Clause by maintaining current levels of service for flood protection and causing no elimination of existing legal sources of water supply within the areas affected by the project. The suggested

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	preferred alternative on freshwater flows to Biscayne Bay are expressed in several places, especially the Adaptive Management Plan, the scarcity of any mention of Biscayne Bay in the main sections of the plan, even where the Lower East Coast (LEC) is mentioned, is surprising. Surely the potential loss of freshwater flow to Biscayne Bay if the water table east of L31-N is lowered by the Tentative Selected Plan is an unresolved issue that should be listed in the ES section. Lack of mention of Biscayne Bay in the description of the South Florida geography, even when the LEC is described (page 1-5), is another glaring omission. This omission might cause confusion to readers when, later in this document, possible impacts of the Project on Biscayne Bay are mentioned. I suggest adding the following wording to the LEC section of Table 1-1, Description of the Study Area Regions: "Biscayne Bay and the contiguous water bodies Card, Little Card, and Barnes sounds and Manatee Bay lie along the eastern mainland boundary of the Lower East Coast and receive their freshwater supplies as inflows of surface and groundwater that are dependent on water table stages east of L31-N."	description provided for Biscayne Bay has been included in **Section 1** (**Introduction**) **Table 1-1**.
NOAA-4	Biscayne Bay also should be mentioned on page 1-11 under "Constraints" and on page 3-30 with respect to seepage management and possible effects on freshwater flows to Biscayne Bay (i.e., in section 3.2.4 Screening of Seepage Management (Yellowline).	Constraints as described in Section 1.3.1.2 (**Constraints**) are consistent with those identified in Section 601(h)(4) and (5) of WRDA. Additional detail is further expanded upon in pertinent sections. Reference to Biscayne Bay has been added to **Section 3.2.4** (**Screening of Seepage Management Measures**) by editing the following introductory sentence. Seepage management measures must also meet the project constraints to not reduce the level of service for flood protection and to maintain existing water supplies for agricultural and urban areas immediately east within the LECSA and Biscayne Bay, which could potentially be affected by restored water levels in the Everglades.
NOAA-5	Finally in Section 4, Evaluation and Comparison of Alternative Plans, Table 4-1, Biscayne Bay is mentioned in the last objective, "Reduce water loss	Reference to Biscayne Bay has been incorporated.

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	(seepage out of the natural system to promote appropriate dry season recession rates for wildlife utilization "; however, the omission is in the last sentence, which reads "The TSP will be modified to reduce seepage management infrastructure and/or improve operations in order to avoid impacts to water supply. (I suggest that you insert the following in front of the period ", including water flows to Biscayne Bay".)	
NOAA-6	The next objective, "Increase availability of water supply", fails to specifically say that efforts will be made to increase water flow to Biscayne Bay.	The objective to increase water supply addresses agricultural/municipal and industrial uses. The two previous objectives found on Table 1-2 in Section 1 address providing freshwater to the natural system. In addition, as part of the Savings Clause analyses found in **Section 6.8** and **Annex B,** the effects of CEPP on existing sources of water to fish and wildlife were evaluated, which included Biscayne Bay.
NOAA-7	Fortunately, these issues and the potential for making improvements in performance relative to Biscayne Bay, are included in the Adaptive Management Plan, although in some cases reference to Biscayne Bay is obtuse.	The title of the appropriate section of the adaptive management plan was renamed "1.4.4.2 CEPP Hydrologic Effects on Lower East Coast Ecosystems including Pennsuco Wetlands, south Miami-Dade wetlands, and Biscayne Bay" to help readers locate this section.
NOAA-8	Looking over the plan, it seems even more unfortunate, in retrospect, than at the beginning of Central Everglades planning, that Biscayne Bay, as a southern estuary influenced by CERP, was not given full membership in the study area and the planning process. Biscayne Bay is important to the economy and wellbeing of Miami-Dade County. Greater Biscayne Bay (including the sounds and Manatee Bay) is the site of Biscayne National Park, a Florida Aquatic Preserve, and the upper part of the NOAA Florida Keys National Marine Sanctuary. Maintaining its freshwater supply is crucial to its future and its natural and economic value.	The CEPP is composed of increments of project components that were identified in CERP. The term "increment" is used to underscore that the study formulated portions (scales) of individual CERP components. It is envisioned that later studies will formulate additional scales of CERP components to expand upon this initial "increment" to achieve the level of restoration envisioned for CERP. It is recognized that there are problems and opportunities remaining in Biscayne Bay.
NOAA-9	In all modeling work exploring the potential for preventing any decrease in flows to Biscayne Bay and augmenting flows to Biscayne Bay, relative to existing conditions, special emphasis should be given to mid and late dry season flows, which are	Analysis of Alt 4R2 average annual flows through individual coastal structures in Biscayne Bay relative to ECB show an increase in flows (north, south-central, and south Biscayne Bay) or no greater than a 5% mean decrease (central Biscayne Bay). Alt 4R relative to the IORBL1 is the same except for a less than 1% decrease in the average annual flows at two northern coastal structures (S-23 and S-27). Additional

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	especially stressful to the ecosystem. Hypersaline conditions have already been recorded near the western shoreline of Biscayne Bay, which has no fresh water inflow to spare.	analysis of Alt 4R2 seasonal flows against IORBL indicate slight decreases in flows during the dry season at most coastal structures in north and central Biscayne Bay with increases in dry season flows in south-central and south Biscayne Bay. To ensure the slight decreases dry season flows do not result in a negative effect on the ecological resources of Biscayne Bay, guidance has been provided in the Adaptive Management Plan (**Section 1.4.4.2** of **Annex D**) to specifically address the effects of freshwater flow on the ecology of Biscayne Bay.
NOAA-10	Two other comments on the CEPP PIR: Longer hydroperiods and higher water tables in the Greater Everglades could potentially increase both local and regional rainfall, since evapotranspiration will increase. An increase in evapotranspiration is mentioned as an effect of the Alternatives, but increased rainfall is not.	Sections 5.1.1 and 5.2.1 (Climate) of the PIR will be updated to include the increases in localized rainfall as a potential effect of CEPP.
NOAA-11	Silica should be added, along with nitrogen and phosphorus, as a nutrient to follow in water released from the Greater Everglades to the southern estuaries (e.g., Florida Bay and Biscayne Bay), because blooms of diatoms that occur in these systems may be promoted by silica loads flushed from the Everglades after release from soils.	Silica is already measured as multiple water quality monitoring stations in the Everglades. Using a mass balance approach, a 10 percent increase in SRS flows from CEPP is likely to only result in a 2 to 5 percent increase in silica load at SRS given additional treatment capacity in the STAs (large silica particles settle). Increased silica load to the southern estuaries is likely to be minimal.
TRIBAL		
SEMINOLE TRIBE OF FLORIDA (Seminole)		
Seminole- 01	The current draft EIS recognizes the meetings that are occurring among the [South Florida Ecosystem Restoration] Task Force member agencies and Tribes, including the Seminole Tribe of Florida, to discuss the issues the Tribe has raised, including restoration of the wetlands on the Tribe's Big Cypress Reservation, Big Cypress National Preserve, and Addition lands. However, due to the lack of data, monitoring , and modeling in this area the agencies are not yet at a point to make significant commitments to the Seminole Tribe of Florida for restoration of the area. The Seminole Tribe remains concerned about the lack of attention	The Corps understands the Seminole Tribe of Florida's interest in seeing the Central Everglades Planning Project used as a vehicle to deliver the long-term hydrologic benefits. However, within the broader Comprehensive Everglades Restoration Plan (CERP), the current CEPP study unfortunately could not specifically address multiple restoration projects, to include the delivery water to the Big Cypress Reservation as the Seminole Tribe of Indians envision. As only the first of several increments to support restoration, the CEPP planning study sought to identify a suite of projects that most effectively capitalizes on existing data, knowledge, evaluation tools, previously constructed restoration features and lands currently available. Implementing an incremental approach along with the continued gathering of critical scientific data and knowledge will certainly facilitate future studies and subsequent progress in restoration. The Corps remains fully committed to ecosystem restoration and continued engagement with key partners and stakeholders. Also, a subset of

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	given to the Western Everglades. The Seminole Tribe's continued support of CEPP is based on the understanding that the USACE and the SFWMD will continue to work with the Seminole Tribe towards restoring and rehydrating the Western Everglades system including the Big Cypress Reservation, Big Cypress National Preserve, and the Addition lands.	South Florida Ecosystem Restoration Task Force (SFERTF) member agencies has convened to discuss this issue and other specific concerns raised you and a mission statement has been drafted in support of the restoration of the Big Cypress Seminole Indian Reservation natural areas and adjacent portions of the Big Cypress National Preserve. Its purpose is to identify and recommend to the SFERTF opportunities to restore ecological and culturally utilized natural areas within the Big Cypress Reservation and adjacent portions of the Big Cypress National Preserve to support the designated uses of water bodies including wetlands. The SFERTF meetings included a Seminole Tribe -- Western Basins meeting on January 29, 2013; Restoration of the Western Everglades Natural System Meetings on March 12, June 19, August 6 and September 18, 2013; and a Big Cypress Seminole Indian Reservation Natural Areas and Adjacent Portions of the Big Cypress Natural Preserve meeting on February 20, 2014.
Seminole- 02	This is the first project that the USACE has conducted early formal government to government consultation on cultural resources with the Seminole Tribe. This approach is greatly appreciated, and we are hopeful this approach will be taken with existing and future projects.	Thank you for the comment. Consultation with the Seminole Tribe of Florida is very important to the Corps.
Seminole- 03	During the consultation process, the Seminole Tribe expressed concerns about the level and quality of the archaeological work conducted by the USACE's consultants.	The Corps acknowledges that the Seminole Tribe of Florida has expressed concern about the lack of Phase I Surveys conducted within WCA 3 and the Tribe's requests for additional surveys to be conducted within the area. Under 36 CFR 800 and ER 1105-2-100 the Corps is required to make a reasonable and good faith effort to identify historic properties. As specified in the Secretary of Interior's Standards and Guidelines for Identification (http://www.cr.nps.gov/local-law/arch_stnds_2.htm), the Corps conducted Phase I and Phase II investigations "to the degree required to make decisions" for this feasibility report. As stated during consultation and in the PIR/EIS, any additional cultural resources fieldwork and/or agreement documents will be completed during the pre-construction engineering and design (PED) phase. Also see Corps response no. Seminole-32.
Seminole- 04	The Seminole Tribe also expressed concerns over the numerous unknowns regarding cultural	To clarify, the Corps is currently drafting a policy guidance memorandum to update and expand the 2008 CERP Policy on Human Remains to apply to all Civil Works and

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	resources within the area of potential effect. In response to the unknown, the USACE committed to the completion of a human remains policy that would be a binding agreement governing the treatment of burial resources and would serve as an adaptive management plan for the protection of burial resources.	Regulatory actions within the respective jurisdiction of these Jacksonville District programs in the State of Florida. This document is an internal guidance document designed to consolidate and clarify existing Corps documents regarding the treatment of human remains pursuant to Section 106 of the National Historic Preservation Act (NHPA) and the Jacksonville District's Federal Trust Responsibilities for the state of Florida. As an internal policy guidance memorandum, the document will not require signatures by partnering agencies and/or the Tribes and will, therefore, not serve as an agreement.
Seminole- 05	The human remains agreement has not yet been finalized; however, we look forward to continuing to work with the USACE on its completion.	The Corps is also looking forward to continuing consultation and working towards finalizing the human remains policy guidance memorandum.
Seminole- 06	It is critically important that the District Engineer's recommendations for CEPP capture this commitment to develop this Agreement. Therefore, we respectfully request that the development of this human remains agreement be included in the District Engineer's recommendations in the PIR	The purpose of the District Engineer's (DE) recommendations (Section 8) is to explain to Corps headquarters what is being proposing and what we are requesting of Congress related to the CEPP Project. This section also states what is required from the non-federal sponsor. This is not the proper place to include language concerning the human remains guidance document.
Seminole- 07	**Letter Enclosure: Appendix A** In Section 2.6…. [and] Section 5.3 states that subsistence activities for members of the Seminole Tribe include hunting and fishing; the Seminole Tribe requests that the terms "trapping" and "frogging" be added to this sentence.	The Corps will make these requested changes to Sections 2.6 and 5.3 to be inclusive of all subsistence rights: hunting, fishing, trapping, and frogging.
Seminole- 08	Section 6.1.2.3, …the Seminole Tribe requests that language be added stating that the Seminole Tribe has customary usage rights in WCA3A. The Seminole Tribe has legally protected interest in these lands that should be acknowledged here. It should also be acknowledged that this area holds significant cultural significance to the Seminole Tribe in addition to its customary usage rights.	Thank you for your comment. Language will be added to the PIR/EIS stating that the Seminole Tribe has customary usage rights in WCA3A and that the area is culturally significant.
Seminole- 09	Annex B …refer to STOF consistently as "Seminole Tribe of Florida".	The language will be adjusted to reflect this request.
Seminole-10	In Table B-4 of Annex B, under (ii), … [t]his	Thank you for your comment. The recommended language will be added.

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	sentence should be completed to say "including the Seminole Tribe of Florida's Brighton and Big Cypress Reservations."	
Seminole-11	Annex B, Section B.3.1.3 …. In addition to changing the document to refer to the Seminole Tribe as the Seminole Tribe of Florida, this sentence should change the word "withdrawals" to "withdraws."	Thank you for your comment. The language will be corrected.
Seminole-12	[P]age C-19 of Annex C …. The Seminole Tribe appreciates that the document references maintaining the existing water supplies, but requests that this sentence specifically identify the Reservation so as to provide greater clarity.	Thank you for your comment, the following language will be changed for Annex C.3.3.1.2 S-630 to read: "The structure would be a pump station with a design capacity of 360 cfs. S 630 would be located in the L 4 Canal, east of the existing L 4 Levee gap, to maintain existing water supply deliveries to the Seminole Tribe's Big Cypress Reservation and to stage up water in the L 4 Canal to allow discharge over the L 4 Levee degrade."
Seminole-13	The Seminole Tribe would also like to reiterate that it remains interested in continued discussions on assisting the USACE and SFWMD in their water management goals by taking excess water from Lake Okeechobee for storage on the Big Cypress Reservation, thereby helping restore the natural areas on the Reservation, as well as Big Cypress National Preserve and the Addition lands. This would be an achievable, positive step towards restoration of the Western Everglades and the Seminole Tribe continues to support CEPP with the understanding and expectation of further consultation on this matter with the USACE and the South Florida Water Management District.	The government-to-government consultation throughout the CEPP study has been invaluable. The Corps remains fully committed to ecosystem restoration and continued engagement with key partners and stakeholders. The Corps will continue to remain engaged with the Seminole Tribe of Florida and other Task Force member agencies in support of the restoration of the Big Cypress Seminole Reservation natural areas and adjacent portions of the Big Cypress National Preserve to identify and recommend opportunities to restore ecological conditions and support the designated uses of water bodies including wetlands within these areas.
Seminole-14	The Seminole Tribe has continuously requested that the USACE consider discussing the possibility of sending water from Lake Okeechobee to the Big Cypress Reservation for storage, which would also benefit the ecological health of the Western Everglades. Although the modeling for CEPP has considered the Seminole Tribe's entitlement to water, it has not considered the Seminole Tribe's restoration needs for the Western Everglades area and the Tribe's potential ability to store excess	Thank you for your comment. The SFWMD is updating the Lower West Coast Surficial Aquifer and Intermediate System Model, a groundwater flow model, to include the intermediate aquifer system. Once peer reviewed, which is tentatively scheduled for completion during Fiscal Year 2014, it will be applied to examine the potential impacts and future groundwater withdraws from the surficial aquifer system. The Corps received and considered the Seminole Tribe's request for sending water from Lake Okeechobee to the Big Cypress Reservation. It was determined that not enough information existed at this point to determine impacts of such action both upstream and downstream of the Big Cypress Reservation. The Seminole Tribe of

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	water from Lake Okeechobee. The Seminole Tribe requests further modeling so the Seminole Tribe, the USACE and the SFWMD can better understand the quality and quantity of any water that might be delivered to determine if such a delivery would be mutually beneficial.	Florida presented their concerns to the multi-agency South Florida Ecosystem Restoration Task Force, headed by the Department of the Interior. The Task Force convened a special sub-group specifically to identify existing data from all available agencies and determine the next steps to achieving the Tribe's request. The sixth meeting of the Restoration of the Western Everglades Natural System team was scheduled for 16 JAN 2014, but had to be rescheduled. Efforts are being made to address the Seminole Tribe's request that could not be met within this PIR/EIS.
Seminole-15	The purpose of the District Engineer's Recommendations in any PIR is to set forth all the necessary agreements with federal, state, Tribal and local governments. However, the current PIR does not include the development of the Jacksonville District Human Remains Policy, which will govern the CEPP project. We therefore request the following language be added to Section 8, the District Engineer's Recommendations: "The USACE is in the process of entering into a binding agreement with the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida setting forth protocols for the appropriate treatment of burial resources throughout the Jacksonville District pursuant to the Federal Trust Responsibility and Section 106 of the National Historic Preservation Act. The USACE shall enter into this binding agreement and it will govern the treatment of burial resources that are culturally /religiously significant to the participating tribal governments."	Please refer to Corps response to no. Seminole-06. To clarify, the Corps is currently drafting a policy guidance memorandum to update and expand the 2008 CERP Policy on Human Remains to apply to all Civil Works and Regulatory actions within the respective jurisdiction of these Jacksonville District programs in the State of Florida. This document is an internal guidance memorandum designed to consolidate and clarify existing Corps documents regarding the treatment of human remains pursuant to Section 106 of the National Historic Preservation Act (NHPA) and the Jacksonville District's Federal Trust Responsibilities for the state of Florida. As an internal policy guidance memorandum, the document will not require signatures by partnering agencies and/or the Tribes and will, therefore, not serve as an agreement.
Seminole-16	The CEPP Area of Potential Effects ("APE") landscape is populated with over 20,000 known archaeological sites, including numerous burial sites. It is suspected that there are many more sites that have not yet been discovered. These sites (known and unknown), especially the burial sites, hold significant cultural/religious importance to the Seminole Tribe. The tree island landscape, which usually hosts these sites, form the fabric of the Seminole Tribe's cultural identity.	The Corps acknowledges that there are areas throughout Florida that hold significant cultural/religious importance to the Seminole Tribe of Florida. 'Unmitigated' effects described in the PIR/EIS began in the late 1800's. Today, there are laws and regulations in place to prevent this type of action. The Corps has committed to treating sites containing human remains in a culturally sensitive manner. As such, the following language will be added to Section 2.6 Native Americans: The Corps is currently drafting a policy guidance memorandum to update and expand the 2008 CERP Policy on Human Remains to apply to all Civil Works and

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	As the PIR/EIS acknowledges, there have been decades of unmitigated impacts to tribal cultural resources due to water control projects. The Seminole Tribe is encouraged by the commitments made by the USACE during the consultation process to move forward with treating these sites in a culturally sensitive manner. We respectfully request the PIR/EIS be amended to reflect those commitments as the Seminole Tribe has made significant efforts to be a partner in Everglades restoration, including CEPP.	Regulatory actions within the respective jurisdiction of these Jacksonville District programs in the State of Florida. This document is an internal guidance memorandum designed to consolidate and clarify existing Corps documents regarding the treatment of human remains pursuant to Section 106 of the National Historic Preservation Act (NHPA) and the Jacksonville District's Federal Trust Responsibilities for programs in the state of Florida.
Seminole-17	The Seminole Tribe is also encouraged by the stated goals of restoring historic water levels/hydrological patterns and restoring/preserving tree islands and ridge/slough systems. Appropriately designing the CEPP project to achieve and monitor these goals will enhance the protection of cultural sites within the APE. Generally, most cultural sites are located on tree islands. Various studies have been conducted noting the significant impacts water control projects have had on tree islands (for example: http://www.sfwmd.gov/portal/pa~e/portai/PG GRP SFWMD WATERSHED/Tree Island Research413?project=1338&ou=440: http://www.sfwmd.gov/portal/page/portai/PG GRP SFWMD WATERSHED/WCA Historical Tree 438?project=1354&ou=440). We are encouraged that the USACE is committed to restoring and preserving these environmentally and culturally significant resources.	Thank you for your comment.

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Seminole-18	During the government to government consultation process, the Seminole Tribe raised a significant concern about the USACE relying on insufficient data (unknowns) concerning cultural resources and impacts. The Seminole Tribe's comments were based on the concern that the lack of cultural resource data and potential errors in hydrological modeling could result in unintended impacts to burial resources. The USACE acknowledged the Seminole Tribe's concerns and a mutual commitment was made that the Jacksonville District Human Remains Policy (currently in development) would serve as the mechanism to address treatment of burial resources within the CEPP APE. This Policy would be formalized as a binding agreement between the USACE and the participating tribal governments. In essence, the Human Remains Policy would serve as a legal agreement: (1) to resolve impacts to burial resources under both Federal Trust Responsibility and Section 106 of the National Historic Preservation Act and (2) to be the basis for an adaptive management plan for cultural resources if unintended impacts occurred.	As consulted on for the current feasibility study, and as required under 36 CFR 800 and ER 1105-2-100, a sample survey within WCA 3 was determined adequate to meet NEPA and NHPA compliance. Please see Appendix C.5, Table C.5.2.1 for specific dates of consultation. Also, to clarify, the Corps is currently drafting a policy guidance memorandum to update and expand the 2008 CERP Policy on Human Remains to apply to all Civil Works and Regulatory actions within the respective jurisdiction of these Jacksonville District programs in the state of Florida. This document is an internal guidance document designed to consolidate and clarify existing Corps documents regarding the treatment of human remains pursuant to Section 106 of the NHPA and the Jacksonville District's Federal Trust Responsibilities for the state of Florida. As an internal policy guidance memorandum, the document will not require signatures by partnering agencies and/or the Tribes and will, therefore, not serve as an agreement.
Seminole-19	The purpose of the District Engineer's Recommendations in any PIR is to set forth all the necessary agreements with federal, state, Tribal and local governments. However, the current PIR does not include the development of the Jacksonville District Human Remains Policy, which will govern the CEPP project. We therefore request the following language be added to Section 8, the District Engineer's Recommendations: "The USACE is in the process of entering into a binding agreement with the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida setting forth protocols for the appropriate treatment of	Please see response to Seminole-06 and Seminole-04 comments respectively.

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	burial resources throughout the Jacksonville District pursuant to the Federal Trust Responsibility and Section 106 of the National Historic Preservation Act. The USACE shall enter into this binding agreement and it will govern the treatment of burial resources that are culturally /religiously significant to the participating tribal governments."	
Seminole-20	The PIR/EIS repeatedly states that the project is in compliance with the National Historic Preservation ACT ("NHPA"); however, the USACE does not state how it is in compliance. It is important to note that the Advisory Council on Historic Preservation's regulations and case law is clear that Section 106, NHPA is not satisfied when an agreement to resolve adverse impacts is not finalized before completion of the National Environmental Policy Act documentations or before the Record of Decision. We understand that the USACE is in the process of developing a human remains policy that would resolve, pursuant to the Trust Responsibility and Section 106, impacts to burial resources. These burial resources may also be Section 106 properties in addition to being trust resources. We also understand that the USACE is in the process of completing studies pursuant to the Environmental Restoration Transitional Plan Programmatic Agreement in order to assess Section 106 impacts resulting from water control projects.	While the Corps is currently in compliance with the procedural requirements concerning the NHPA, the Corps recognizes that additional consultation and other actions are not yet complete, but will be so prior to construction. This phased approach was consulted on and agreed to during consultation. Please see Appendix C.5, Table C.5.2.1. This PIR/EIS meets NEPA requirements for a feasibility study for cultural resources. As stated in the draft PIR/EIS Appendix C.2.1.17 and C.2.2.17, Section 106 consultation for CEPP will not be completed at the time of the PIR/EIS . ER1105-2-100 and 36 CFR 800, including Section 106, requirements will be completed prior to construction. Language located in the above referenced Appendices will be reflected in Section 5.1.16 and 5.2.16 for clarification and consistency. Text will read, “This PIR/EIS meets cultural resources requirements as specified under NEPA. The CEPP will remain in compliance with the NHPA pre and post construction. See Appendix C.5.” See comment/response no. Seminole-04 for information regarding burial resources.
Seminole-21	However, at some point the USACE will need to develop a legally binding agreement to address Section 106 impacts that are not covered by the human remains policy.	The proposed human remains policy guidance memorandum is not intended to satisfy the requirements for agreements required under the implementing regulations of Section 106. As each phase of the project is implemented, any MOA's required will be developed during the Pre-Construction, Engineering and Design Phase as stated in Appendix C.2.1.17 and C.2.2.17. See Corps Response No. Seminole-20. Additional language will be added to the document to clarifying that through

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		consultation, the phased approach listed above would be used for CEPP. This was agreed to by SHPO (1-30-2012 personal communication, Laura Kammerer, DSHPO; 6-25-2012 Email, Laura Kammerer, DSHPO) and the Tribes (2/28/2012 face to face meeting, Willard Steel, THPO and 1-20-2012 face to face meeting, Fred Dayhoff, Miccosukee Tribe CR Representative). Also, see response no. Seminole-30 for clarifying information.
Seminole-22	Until such time as the human remains policy and the Section 106 agreement are finalized, the USACE is in process of complying with the NHPA but is not yet in compliance.	While the corps is currently in compliance with the procedural requirements of the NHPA, the corps recognizes that additional consultation and other requirements are not yet complete, but the project will be in full compliance prior to construction. See Corps response no. Seminole-04 for information regarding burial resources.
Seminole-23	The Seminole Tribe is hopeful that the USACE will continue to honor its commitment to develop the human remains policy.	The Corps has acknowledged the commitment of developing this guidance memorandum through correspondence letters. See Appendix C.5.4
Seminole-24	The USACE acknowledges that compliance has not yet been achieved on page C.2.2-121 of Appendix C but erroneously provides it is in compliance in other sections. The acknowledgement that compliance is not yet achieved but ongoing should be consistently stated throughout the document.	The following language will be added throughout the document where necessary: "While the corps is currently in compliance with the procedural requirements of the NHPA, the corps recognizes that additional consultation and other requirements are not yet complete, but the project will be in full compliance prior to construction."
Seminole-25	The USACE outlines its assessment of direct and cumulative impacts to cultural resources both in the Main Report and in Appendix C. The Seminole Tribe is concerned that this evaluation does not reference avoidance and minimization efforts and implies that only mitigation (excavation of resources) will occur. In Sections 5.1.16 and 6.3.3 of the Main Report, the USACE simply notes that direct and cumulative impacts to cultural resources will be adverse and significant and that mitigation measures might lessen the impacts. There is absolutely no mention of the USACE undertaking avoidance or minimization efforts. The same is true in Sections C.2.1.17, C2.2.17, and C.2.2.19 jTable2.2-16 (Appendix C); the PIR/EIS does not provide any discussion of avoidance or minimization of direct or cumulative impacts to	It was not the intent to imply that 'only mitigation (excavation of resources)' was considered for potential mitigation. The following language will be added to Section 5.1.16, 5.2.16, and Appendices C.2.1.17, and C.2.2.17 for clarification: "Pursuant to 36 CFR 800.1 where possible the project design will be modified to avoid impacting significant historic properties and culturally sensitive resources. Where avoidance is not possible, other mitigation measures will be considered, which could include but are not limited to data recovery excavations. The mitigation measures will be developed in consultation with SHPO, tribal groups and other interested parties as established in implementing regulations for Section 106 of the National Historic Preservation Act (36 CFR 800). Language in 6.3.3 of the main report will not be modified. For clarification, ER 1105-2-100 Appendix C paragraph C-4(b)(3) and the Council for Environmental Quality (CEQ) regulations (1508.02) specify that 'mitigation' includes avoiding, minimizing, etc. of impacts to resources. During consultation, the Corps revealed ongoing internal discussions regarding efforts

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	cultural resources. Conversely, the USACE specifically provides it will undertake efforts to avoid, minimize and mitigate environmental impacts. Based on the exclusion of avoidance and minimization with regard to cultural resources, the Seminole Tribe is concerned that the USACE is not planning on considering or pursuing such measures. Such an approach is inconsistent with both the Federal Trust Responsibility and the NHPA	to avoid or minimize effects to cultural resources. Also, throughout the document, for numerous features, the Corps identified 'Avoidance' as potential mitigation under NEPA. For examples, please see Appendix C.2.2.17.10, C.2.2.17.11, C.2.2.17.12, etc. Language will be added were applicable to read: Avoidance of adverse effects to cultural resources is the Corps preference, therefore, throughout the planning process for CEPP, the archaeologist and engineers have worked closely to determine alternatives and features of alternatives that reduce or eliminate impacts to cultural resources.
Seminole-26	We respectfully request that the assessment of impacts include a discussion on avoidance and minimization.	Thank you for your comment. Language will be adjusted where necessary. Please see Corps response to comment no. Seminole-25.
Seminole-27	Further, it appears the assessment of impacts was only evaluated under the NHPA. It is important that the PIR/EIS evaluate impacts pursuant to the Federal Trust Responsibility as well. The federal government's trust obligation is more than just formal consultation and requires consideration and protection of cultural resources.	There are no quantifiable metrics against which to conduct an analysis of impacts under the Federal trust responsibility. The cornerstone of the Federal trust responsibility is consultation and collaboration with Tribes affected by Federal actions. As the Seminole Tribe of Florida has acknowledged, early and thorough coordination with the Seminole Tribe of Florida was accomplished in connection with the CEPP Project. Therefore, the Corps does not concur that a separate trust analysis should be conducted in connection with this PIR/EIS.
Seminole-28	The Department of Defense's American Indian Policy provides for enhancing tribal capabilities to "effectively protect and manage natural and cultural tribal trust resources whenever [Department of Defense] acts to carry out a program that may have the potential to significantly affect those tribal trust resources." By memorandum dated February 18, 1998, the USACE announced six basic tribal policy principles that must guide the USACE' decision-making when actions may affect tribes and trust resources: (1) tribal sovereignty; (2) trust responsibility; (3) government to government relations; (4) pre-decisional and honest consultation; (5) self reliance, capacity building and growth; and (6) natural and cultural resources. Specifically, the USACE stated that it "will act to fulfill obligations to	Please see Corps response to comment Seminole-27.

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	preserve and protect trust resources" whereby trust resources include cultural resources. See Memorandum for Commanders, Major Subordinate Commands, and District Commands, dated February 18, 1998. In doing so, the USACE "will reach out...to involve Tribes in collaborative processes designed to ensure information exchange, consideration of disparate viewpoints before and during decision making, and utilize fair and impartial dispute resolution mechanisms." Jd. Therefore, the USACE owes the Seminole Tribe the obligation to preserve and protect the cultural resources within CEPP in addition to its obligations under the NHPA (NHPA does not supersede the Trust Responsibility). The Seminole Tribe respectfully requests the PIR/EIS include an evaluation of the impacts pursuant to the Trust Responsibility.	
Seminole-29	Finally, the assessment of impacts is completely void of any discussion of the Jacksonville District Human Remains Policy, which will govern both the treatment of impacts to burial resources and set forth how impacts to such resources will be assessed. This agreement will be critical to the assessment and treatment of impacts to burial resources and should be included in the discussion of impacts to cultural resources.	Language will be added to reflect that the Corps is currently drafting a policy guidance memorandum to update and expand the 2008 CERP Policy on Human Remains to apply to all Civil Works and Regulatory actions within the respective jurisdiction of these Jacksonville District programs in the state of Florida. This document is an internal guidance memorandum designed to consolidate and clarify existing Corps documents regarding the treatment of human remains pursuant to Section 106 of the NHPA and the Jacksonville District's Federal Trust Responsibilities for the state of Florida. Also see Corps response no. Seminole-04 concerning burial resources.
Seminole-30	The ERTP APE overlaps with the CEPP APE. Throughout the PIR/EIS the USACE references studies that will be required pursuant to the ERTP Programmatic Agreement. The ERTP Programmatic Agreement also provides that treatment of burial resources will be conducted consistent with the ERTP Human Remains Policy, which is a binding agreement between the USACE and the Seminole Tribe (along with other state and federal parties).	The ERTP Human Remains Policy is an internal Corps policy document but is enforceable through its incorporation into the ERTP Programmatic Agreement (PA), which is a binding agreement between the Corps, the Seminole Tribe of Florida, Everglades National Park (ENP), the Advisory Council on Historic Preservation (ACHP), South Florida Water Management District (District), and the State Historic Preservation Officer (SHPO) The ERTP PA, however, only governs effects to HR resulting from ERTP operations and does not apply to other, non-ERTP actions occurring within the ERTP APE. Therefore, the CEPP Project is not guided by the ERTP Human Remains Policy, and reference to it would be inappropriate in this context.

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	Until such time as the Jacksonville District Human Remains Policy is formalized, the ERTP Human Remains Policy remains the governing document for resolution of impacts to burial resources within the ERTP APE. The PIR/EIS should be revised to include the ERTP Human Remains Policy in the discussion of existing conditions/present actions and assessment of impacts.	The APE for CEPP, however, falls within the geographic boundaries governed by the 2008 Human Remains Policy for CERP, which remains valid and active. The 2008 Human Remains Policy will be added to Appendix C.5 for reference.
Seminole-31	The Seminole Tribe appreciates the USACE's early consultation efforts concerning cultural resources. This approach has helped create a mutual understanding and hopefully will help avoid future conflicts regarding cultural resources. We hope that the USACE will duplicate this approach for future projects. The Seminole Tribe does want to point out that the CEPP consultation process concerning cultural resources was not just conducted pursuant to the NHPA. The cornerstone of the federal government's relationship with Indian Country is the Federal Trust Responsibility. It is a special fiduciary obligation that carries with it the duty to act "with good faith and utter loyalty to the best interests" of federally recognized Indian Tribes such as the Seminole Tribe. The principal component of a federal agency's fiduciary trust obligation to Indian Tribes is the duty to formally consult with Indian Tribes (government-to-government) on actions that may impact their interests including historic properties. Although the NHPA includes a specific requirement for federal agencies to consult with Indian Tribes during the Section 106 review process, th1:.! duty to conduct government-to-government consultation is primarily a Trust obligation mandating federal agencies to act in a fiduciary capacity. In short, the NHPA requirements do not supersede the Federal Trust Responsibility.	The Corps takes is trust responsibilities seriously and concurs that the requirement to engage in government-to-government consultation is the cornerstone of the Federal trust responsibility, which creates obligations in addition to NHPA requirements.

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Seminole-32	As noted earlier, at this point there are more unknowns about cultural resources within the APE than there are known data. In part, this is due to the archaeological surveys being done during a very wet period which prevented the USACE contracted archaeologists from completing sufficient surveys. Less than one percent of the APE was selected for survey and out of that sample size only a few sites were dry enough to partially test.	The methodology and level of effort used for all cultural resources surveys for CEPP were vetted through the SHPO and both Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida prior to contract execution. Any suggestions/changes brought forward during consultation meeting efforts were addressed during that time. The information gathered during the CEPP cultural resources investigations provided enough information to address specific questions for a feasibility level PIR/EIS. As described in Appendix C.2.1.17 and C.2.2.17 of the PIR/EIS, areas within the APE in need of further cultural resources fieldwork, including identification of historic properties, have been identified. The Corps concurs with the Seminole Tribe of Florida in that cultural resources surveys within wetland environments be conducted within the dry months of the year, whenever possible. See Corps response no. Seminole -33
Seminole-33	It is important to note that despite the self imposed limitations, the surveys discovered culturally significant material including burial resources at a high percentage rate. Therefore, it is highly likely that there are numerous unknown cultural sites within the APE. As the project moves forward, we respectfully request the USACE conduct more survey work during dry periods.	Please see Corps response no. Seminole-32. As described in Appendix C.2.1.17 and C.2.2.17 of the PIR/EIS, areas within the APE in need of further cultural resources fieldwork, including identification of historic properties, have been identified. A portion of the APE is state owned and/or managed. Once CEPP is authorized and funding is allocated, the APE will once again fall under the Corps' purview for Section 106. If the state has not adequately conducted an inventory of specific areas listed in the PIR/EIS pursuant to F.S. 267.061, the Corps will revisit the level of effort needed at that time. Also, another large portion of the APE lies within National Park Service lands. The Corps concurs with the Seminole Tribe of Florida in that cultural resources surveys within wetland environments be conducted within the dry months of the year, whenever possible. Previous survey efforts within the Everglades National Park will be reviewed in consultation with the National Park Service, SHPO, and both Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida to determine if additional work is needed, particularly directly south of the proposed flowway.
Seminole-34	We are also confident that if the USACE protects and restores the tree islands within the APE, that the likelihood of unintended impacts will be greatly lessened. However, sufficient monitoring will be	The Corps concurs that archaeological monitoring could potentially be done in conjunction with monitoring tree islands (i.e. vegetation). Please see comment/response no. Seminole-35.

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	necessary to determine impacts and to appropriately identify sites. The PIR/EIS is currently void of any discussion regarding archaeological monitoring. The Seminole Tribe suspects that archaeological monitoring can be done in conjunction with monitoring tree islands if the right protocols are developed.	
Seminole-35	We respectfully request that the PI R/EIS be revised to note the limitations of the cultural resource data, link the protection and restoration of tree islands to the preservation of cultural resources, and include the commitment to develop archaeological monitoring protocols.	The Corps will add language to the PIR/EIS under Appendix C.1 Existing and Future Without Project Conditions to say that, "All lands within WCA 3 and EAA A-2 are state owned and/or managed, therefore land management responsibilities including cultural resources inventories within those lands should be conducted as described in F.S. 267.061(2) and management plans developed in consultation with the Florida Division of Historic Resources. See Appendix G in "A Conceptual Management Plan for The Everglades Complex of Wildlife Management Areas" at http://myfwc.com/conservation/terrestrial/management-plans/online-mps/. Cultural Resources within National Park Service lands will be managed in accordance to federal laws and pre-established management plans for cultural resources under National Park Service jurisdiction. The protection and restoration of tree islands linked to preservation of cultural resources is identified in Appendix C.2.2.20 Past, Present, and Reasonably Foreseeable Actions Affecting Resources within the Project Area; Table C.2.2-15; Cultural Resources. "Continued improvements to hydroperiods and sheetflow within WCA 3A, 3B and ENP could reduce soil oxidation, which could stabilize the environment, and this in turn could stabilize tree islands containing cultural resources". As previously consulted on, it is the Corps' determination that the Section 106 consultation process will allow for continued coordination and the development of legally binding documentation to address changes to historic properties caused by the CEPP, such as Memorandums of Agreement or Memorandums of Understanding, if warranted as the plan design, construction and operations are refined. See Appendix C.5 USACE to Seminole Tribe of Florida letter dated July 19, 2013. Also, many features (e.g. L-67 Ext., L-67A, and L-67C) discussed within C.2.1.17 and C.2.2.17 recommend monitoring during construction when there is "activity within historic tree island footprints to ensure that any discovery is recorded". The word

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		'inadvertent' will be added.
Seminole-36	The Seminole Tribe appreciates that the USACE included a section concerning the existing conditions of the Native Americans. However, it is important to note that it may not be appropriate to rely on the Seminole Tribe's website or its Museum website as the source for this section. The Seminole Tribe's website serves several functions which include advertising for is commercial activities. It would be more appropriate to consult with the tribal governments in the development of this section versus taking information from websites. Also, the Seminole Tribe's websites are not intended to represent the history or culture of the Miccosukee Tribe of Indians.	Thank you for your comment and clarification. The Corps was unaware that the Seminole Tribe of Florida's Ah-Tah-Thi-Ki website should not be considered as a primary source. During consultation with the Seminole Tribe of Florida on March 20, 2012, the Corps requested language from THPO to include in the Native American sections of the PIR/EIS. Tribal representatives declined, preferring to review text provided in the PIR/EIS and then consider providing comments and/or references that could be used as a source of information. To better represent the Seminole Tribe of Florida, the Corps respectfully requests that you provide specific comments to the Native American sections of the CEPP PIR/EIS and/or applicable references so that future documents produced by the Corps can better reflect your culture. On July 16, 2013 the Corps received informal comments on the draft PIR from Tribal representatives and addressed those comments (see comments/response to Seminole-41 to 59) and those changes were reflected prior to release of the document for public review. Also, prior to public release, a representative for the Miccosukee Tribe of Indians of Florida suggested changes to the PIR/EIS Native American sections, which included removing all information obtained from an ethnographic study conducted by Dr. James Goss titled, "Usual and Customary Use and Occupancy by the Miccosukee and Seminole Indians in Big Cypress National Preserve". All proposed changes were made to the document prior to releasing for public review.
Seminole-37	Finally, the section is entitled "Existing Conditions of Native Americans;" however, the only language concerning the existing conditions is one sentence: "Today most Tribal members live within the confines of their reservations located in South Florida." All of the other language summarizes the Seminole Tribe's history and does not provide any information about the Tribe's existing conditions. We therefore respectfully request the USACE consult with both Tribes and the Independent Native Americans living in the area to more accurately detail the existing conditions for Native	For clarification, the language quoted in the comment is in reference to "Existing Conditions of Native Americans" in Appendix C.1.2. For more information pertaining to existing conditions of Native Americans, please refer to the main document; Section 2.6 Native Americans section. Also, please review Corps response no. Seminole-36 for further information. The Corps acknowledges the importance and necessity to engage in meaningful consultation with all interested groups in hopes of promoting a deeper understanding.

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	Americans.	
Seminole-38	In Section 7 of the Main Report, the USACE discusses how the project is in compliance with various legal obligations. While this section discusses compliance with cultural resource related federal statutes and orders, it is void of any discussion on compliance with the Federal Trust Responsibility. The Federal Trust Responsibility is a legal obligation that requires the USACE's compliance. Therefore, we respectfully request the USACE include a discussion on compliance with the Trust Responsibility regarding cultural resources and environmental resources.	Section 7, Table 7-1 under E.O. 13175 Consultation and Coordination with Indian Tribal Governments, additional language will be added to include: "Pursuant to E.O. 13175, the USACE developed the November 01, 2012 Tribal Consultation Policy Memorandum, which dictates Federal responsibilities, including Trust Responsibilities, to federally recognized Indian Tribes."
Seminole-39	The PIR/EIS does not provide any estimate on the cost of identifying, evaluating and treating cultural resources.	Cost for cultural resource can be found in Table 6.4 Restoration Cost Estimates (2015 Price Level) under line item titled "18 Cultural Resources Preservation".
Seminole-40	Cost is briefly mentioned in a memorandum for the record that is included in the PIR/EIS. The Seminole Tribe requests that the USACE consult with its Tribal Historic Preservation Office on the appropriate cost estimates for cultural resources and that funding for cultural resources (under NHPA and Trust Responsibility) be a specific line item budget for the project.	Funding is an internal mechanism and is not a part of requirements specified by the 36 CFR 800, Engineering Regulations or Policy. Section 6, Table 6.4 Restoration Cost Estimates (2015 Price Level) was provided to THPO on 9/19/2013 via FTP website and was downloaded by a member of the THPO staff on 9/23/2013. The provided information contained the cost estimate for cultural resources under line item titled "18 Cultural Resources Preservation".
Seminole-41	**Letter Enclosure: Appendix B. April 2013 Draft PIR** Section 8, Page 5. We recommend a more holistic analysis of A-1 FEB, CEPP and non CEPP projects that CEPP features are dependent on to ensure that CEPP reaches its full functional potential.	The CEPP planning effort did conduct holistic analysis of all non-CEPP projects, which CEPP would depend on to reach full potential. Summary and explanation of these dependencies is provided in Section 6.7.1.
Seminole-42	We are aware that the Corps' Engineering Regulations provide for the cost of "data recovery" for the Federal sponsor to be no more than 1 o/o of the total project cost. We believe that is a fair cost estimate for data recovery. We are also aware	For clarification, Engineering Regulation 1105-2-100 Appendix C-4 Cultural Resources, para. d(6)(c) states that the cost of data recovery can extend beyond the one percent cap of the total estimated Federal appropriation required for construction of a project, however, a waiver request would need to be submitted (and approved) as specified in Section 208 of the National Historic Preservation Act as Amended.

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	that the same Regulations provide that the following activities are not considered "data recovery:" (1) measures for avoidance, minimization and mitigation; and (2) activities to survey, test and evaluate archeological resources. We request further consultation with the Corps to determine what would be a reasonable cost estimate for the activities and measures that are not considered "data recovery."	Once the CEPP is authorized by Congress and funds are appropriated, the Corps will continue Section 106 consultation with all interested parties to determine what additional cultural resources activities are needed to meet compliance.
Seminole-43	**Letter Enclosure: Appendix B. Email dated Tuesday, July 16, 2013** The Seminole remains supportive of the restoration of the Everglades, including the Central and Western Everglades, of which it is a part. The Tribe's remaining concerns regarding CEPP center largely on the Corps' inability to anticipate impacts, positive or negative to the Big Cypress Reservation, Preserve and Additional lands. The failure to fully assess the impacts to the Western Basins and incorporate benefits for this area into the CEPP planning process continues to be an issue. This inability to model or analyze the Western Basins in connection with CEPP is a fundamental flaw.	The CEPP modeling and evaluations did include assessment of effects to areas adjacent to WCA-3A which were shared and discussed with the representatives for the Seminole Tribe of Indians. The CEPP plan does not import additional water into the Big Cypress Reservation, Preserve and Additional Lands and our current modeling tools were not capable of adequately assessing importing additional water into the Reservation from Lake Okeechobee that Seminole Tribe requested.
Seminole-44	**Letter Enclosure: Appendix B. Email dated Tuesday, July 16, 2013** We are disappointed to see that the PIR does not include any substantive analysis regarding supplemental water for restoration of tribal natural resources and protection of the Tribe's customary usage rights. We believe that the PIR should have discussed in detail, the Tribe's environmental water request. We recommend that the PIR consider development of alternatives which would directly supplemental water to the Big Cypress Seminole Indian Reservation and the Big Cypress	Section 5.3.2 of the PIR has been updated to include a description of the western basins and discussion of the Tribe's request for CEPP to consider opportunities to re-direct water from Lake Okeechobee to the western basins for the purposes of restoring natural areas within the Seminole Big Cypress Reservation and the adjacent Big Cypress Natural Preserve. The CEPP plan does not import additional water into the Big Cypress Reservation, Preserve and Additional Lands and our current modeling tools were not capable of adequately assessing importing additional water into the Reservation from Lake Okeechobee that Seminole Tribe requested.

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	National Preserve and Addition Lands. This is particularly relevant as the Tribe is the local sponsor for a Critical Project in the Western Basins which has the capacity to bring water for the restoration of wetlands on Big Cypress Reservation, Big Cypress National preserve and Addition Lands. There are greater restoration benefits that could be realized by looking at a larger restoration landscape that are being lost by the segmentation of CEPP. At a minimum, the Corps should consider how CEPP and the Tribe's Critical Project could be analyzed in a more holistic manner to better accomplish the environmental goals of CEPP.	
Seminole-45	**Letter Enclosure: Appendix B. May 2013 Draft PIR** Section 2, Page 18. The Seminole Tribe has customary usage rights in WCA3A, the Big Cypress Preserve and addition lands. We recommend adding language to address these rights and analyze how this project will impact these rights under the existing and without analysis.	Customary usage rights are included in Section 2.6 Native Americans of the PIR.
Seminole-46	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 4, Page 21. Section 4.5.2 Additional opportunities should be listed. This will help PDT members understand stakeholders can help work towards mutual goals. The modeling does not demonstrate how the 4M infrastructure or the 3 modeling scenarios will impact the Tribe's water needs for natural resources and customary usage. The modeling should consider the impact on the Tribe's BCR and western basins and better examine how flood impacts will be dealt with in connection with Lake Okeechoee releases.	Section 5.3.2 of the PIR has been updated to include a description of the western basins and discussion of the Tribe's request for CEPP to consider opportunities to re-direct water from Lake Okeechobee to the western basins for the purposes of restoring natural areas within the Seminole Big Cypress Reservation and the adjacent Big Cypress Natural Preserve.
Seminole-47	**Letter Enclosure: Appendix B. May 2013 Draft PIR**	Section 5.3.2 of the PIR has been updated to include a description of the western basins and discussion of the Tribe's request for CEPP to consider opportunities to re-

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	Section 4, Page 24. Section 4.5.3 The modeling has focused on the Tribe's entitlement to water but has not looked at the Tribe's ability to store excess waters released from Lake Okeechobee and can assist with water storage resulting in additional environmental attributes but the Tribe needs to better understand the quantity and quality of the water that would be delivered.	direct water from Lake Okeechobee to the western basins for the purposes of restoring natural areas within the Seminole Big Cypress Reservation and the adjacent Big Cypress Natural Preserve.
Seminole-48	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 6, Page 10. Section 6.1.2.3 The Tribe has customary usage rights that we should be acknowledged in this section.	The following language will be added: "Pursuant to a Settlement Agreement between the Seminole Tribe and the S, dated 29 October 1987, the Seminole Tribe of Florida transferred property, including what is now referred to as WCA-3A, to the SFWMD while retaining traditional hunting, fishing, trapping, and frogging rights within this property. These subsistence rights are also extended to lands perpetually leased to the Miccosukee Tribe of Indians of Florida also in areas within WCA-3A pursuant a Settlement Agreement between the Miccosukee Tribe of Indians of Florida and the State of Florida, dated 15 March, 1982.The Corps also acknowledges that this area continues to hold cultural significance to the both federally recognized Tribes.
Seminole-49	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 6, Page 11. Section 6.1.6 The Tribe has customary usage rights which include activities such as hunting, fishing, frogging, etc. for areas such as WCA 3A, Big Cypress Preserve and addition lands.	The Corps acknowledges that, pursuant to a Settlement Agreement between the Seminole Tribe and the State of Florida, dated 29 October 1987, the Seminole Tribe of Florida transferred property, including what is now referred to as WCA-3A, to the SFWMD while retaining traditional hunting, fishing, trapping, and frogging rights within this property. The Corps also acknowledges that this area continues to hold cultural significance to the Seminole Tribe. Language will be added to the PIR/EIS reflecting this acknowledgment in Section 6.1.2.3 (see response to comment no. Seminole-48), however, the intent of the figure 6-6 of section 6.1.6 is to discuss proposed new recreation facilities only.
Seminole-50	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 6, Page 38. Section 6.5.2.16 Why [is the Native Americans section] removed? A Table that fully analyzes the impacts on the Tribe would be helpful.	The Native American section was relocated to Section 5.3 and expanded into other sections as needed
Seminole-51	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 6, Table 6 Summary of Cumulative Effects, Page 48. Vegetation and Wetlands Future Actions - Could get [??] better benefits with incorp [?] of	The cumulative effects analysis mentions that that there are additional efforts underway by other Federal, State, and local agencies, as well as non-governmental organizations that are all working toward similar restoration goals. The Corps remains fully committed to ecosystem restoration and continued engagement with key partners and stakeholders. The Corps will continue to remain engaged with the

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	additional [??] water to STOF BCR C[??]. Proj.	Seminole Tribe of Florida and other Task Force member agencies in support of the restoration of the Big Cypress Seminole Reservation natural areas and adjacent portions of the Big Cypress National Preserve to identify and recommend opportunities to restore ecological conditions and support the designated uses of water bodies including wetlands within these areas. Vegetation and wetlands would be likely to improve with future restoration efforts within the study area as currently acknowledged with **Section 6.3.3** (**Cumulative Impacts**) and **Table 6-3** of the Draft PIR/EIS.
Seminole-52	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 6, Table 6 Summary of Cumulative Effects, Page 49. The Tribe has the capacity to accommodate and store excess waters on its lands particularly in times of flooding. If the Corps would consider analyzing CEPP together with the broader restoration landscape these efficiencies could be recognized and the Tribe could be a partner in helping the prevent[tion of] fresh water being released to tide. [W]e believe modeling on these effic[??] is essential.	Section 5.3.2 of the PIR has been updated to include a description of the western basins and discussion of the Tribe's request for CEPP to consider opportunities to re-direct water from Lake Okeechobee to the western basins for the purposes of restoring natural areas within the Seminole Big Cypress Reservation and the adjacent Big Cypress Natural Preserve.
Seminole-53	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 6, Page 53. Section 6.6 A more holistic approach to the greater res[??] landscape would allow for greater efficiencies in the system and better ensure that the projects functional value is fully realized. We also believe that the Corps should analyze and provide modeling on the projects impacts to the western basins.	The CEPP planning effort did conduct a holistic analysis of all non-CEPP projects, which CEPP would depend on to reach full potential. A summary and explanation of these dependencies is provided in **Section 6.7**. (**Plan Implementation**). Further detail on the structural and operational assumptions of how non-CEPP projects were represented in the hydrologic model simulation of the FWO project condition can be found in **Section 2.5**. The CEPP modeling and evaluations did include assessment of effects to areas adjacent to WCA 3A which were shared and discussed with the representatives for the Seminole Tribe of Indians. The CEPP plan does not convey additional water into the Big Cypress Reservation, Preserve and Additional Lands.
Seminole-54	**Appendix B. July 2013 Draft PIR** Section 6, Page 54. Section 6.6.3 It is clear that CEPP is dependent on non CEPP projects. Accordingly, a more holistic analysis should be	The CEPP planning effort conducted a holistic analysis of all non-CEPP projects, which CEPP would depend on to reach its full potential. A summary and explanation of these dependencies is provided in **Section 6.7**. (**Plan Implementation**). Further detail on the structural and operational assumptions of how non-CEPP projects were represented in the hydrologic model simulation of the FWO project condition can be

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	utilized to better understand these dependant non CEPP projects that could result in unintended adverse consequences and inefficiencies in the project.	found in **Section 2.5**.
Seminole-55	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 6, Page 55. Section 6.6.3 #6 The Tribe has capacity to receive water released from Lake Okeechobee and believes modeling on this issue is critical. Please see overall notes regarding a more holistic NEPA analysis for the dependency of CEPP features. Also, we would recommend that Corps consider efficiencies that could be created when the Tribe's critical project is completed and how this could help from an availability of storage perspective.	Section 5.3.2 of the PIR has been updated to include a description of the western basins and discussion of the Tribe's request for CEPP to consider opportunities to re-direct water from Lake Okeechobee to the western basins for the purposes of restoring natural areas within the Seminole Big Cypress Reservation and the adjacent Big Cypress Natural Preserve.
Seminole-56	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 6 Page 56. Section 6.6.5 We believe that these management actions would require additional NEPA analysis and that more holistic NEPA analysis of upstream and downstream flows is required.	The referenced text was updated in the draft PIR and moved closer to the front of Section 6 for clarity. Section 6.1.4 of the PIR now more clearly states that adaptive management options listed in Section 6.1.4 will require additional NEPA analysis. If future managers choose to implement these options, applicable permitting and coordination will be needed. The following text has been added to Section 6.1.4 to convey these points: "…the CEPP AM Plan provides suggestions for potential improvements and refinements of aspects of CEPP if necessary, called Adaptive Management Options (AM Options). The suggestions are based on current experience and knowledge and are not required actions, nor are they meant to limit agencies from considering other options. All of the AM Options are considered part of the CEPP recommended plan for authorization, although some would require more information about project footprint and performance in order to perform a full NEPA analysis, permitting, and agency coordination before they could be initiated. The AM Options are included in the CEPP cost estimates and described here per WRDA 20007 USACE implementation guidance (August 2009). The AM Options are not automatic; they are informed suggestions provided as part of the CEPP recommended plan that capture current knowledge of what may needed in the future to adjust and maximize performance as CEPP progresses…"

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		In addition, with each option, wording such as the following example has been added: "If this AM action were to be employed, all necessary analysis and coordination would be completed prior to implementation of the action."
Seminole-57	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 6, Page 63. Section 6.7 [? Project Specific Assurances?] The Tribe will need an opportunity to analyze this modeling and provide additional comments.	Thank you for your comment. The Project Assurances summary was provided in Section 6.8 of the CEPP draft PIR and the complete analysis is provided in Annex B.
Seminole-58	**Letter Enclosure: Appendix B. July 2013 Draft PIR** Section 7, Page 7. Please add Seminole Indian Lands Claim Settlement Act of 1987 (25 U.S.C.1772e) and Chapter 285, Florida Statures.	The requested language has been added to Section 7.
Seminole-59	**Letter Enclosure: Appendix B. April 2013 Draft PIR** Section 8, Page 5. We recommend a more holistic analysis of A-1 FEB, CEPP and non CEPP projects that CEPP features are dependent on to ensure that CEPP reaches its full functional potential.	The CEPP planning effort did conduct holistic analysis of all non-CEPP projects, which CEPP would depend on to reach full potential. Summary and explanation of these dependencies is provided in Section 6.7.1.
STATE – FLORIDA STATE CLEARINGHOUSE		
FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES (FDACS)		
FDACS-1	As noted in the draft PIR/EIS, WRDA 2000 requires preparation of a PIR to implement components of the Comprehensive Everglades Restoration Plan (CERP). CEPP does not implement any CERP components; instead it provides a conceptual plan for a suite of CERP components. The CERP components included in the CEPP will not be implemented for many years and likely under different conditions than exist today. Further, the detailed project planning and analyses that would normally be conducted for PIR purposes have not occurred for these components. While we recognize the value of the CEPP as a planning	The PIR/EIS identifies the features, cost and sequencing required to recommended a plan and seek Congressional Authorization to implement components of CERP. While further analysis will be undertaken during the detailed plans and specifications phase (PED), these features are not conceptual in nature in that they will require future congressional approval to deviate from the identified plan. A thorough plan formulation screening and evaluation was conducted that analyzed hundreds of management measures and incorporated highly sophisticated and complex hydrological modeling with USACE-approved modeling tools. USACE acknowledges that multiple externalities exist that will invariably lead to lengthy implementation and construction timeframe, and through the implementation process identified in Section 6.7.1, further opportunity will be taken to update project operating manuals, capture updated conditions and ensure constraints are met.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	process, we do not believe it satisfies the planning requirements necessary for preparation of a PIR to implement CERP components.	
FDACS-2	Implementation of the CERP components included in the CEPP is constrained by the WRDA 2000 Savings Clause. This is clearly recognized in the draft PIR/EIS, which indicates that completion the C-44 Reservoir (IRL-S) and connection to the C-23 Canal, as well as modification of the Lake Okeechobee Regulation Schedule, must occur in order satisfy the requirements of the Savings Clause. There is certainly value in recognizing these future constraints, but we believe their resolution should occur within the context of PIRs prepared for implementing the CERP components that are subject to such constraints.	It is recognized that prior to implementation of each phase, additional detailed information pertaining to that phase of implementation will be developed. Federal laws and regulations applicable to implementing the CERP require PIRs to address certain assurances as part of the project recommendation for approval and subsequent implementation. For the CEPP PIR, the analyses for CEPP associated with Section 601(h)(4) and 601 (h)(5) of WRDA 2000 and the Programmatic Regulations for the CERP (33 CFR Part 385) for Project-Specific Assurances and Savings Clause were conducted for the CEPP. Should the project be implemented in multiple PPAs, the USACE District Engineer will ensure that Project-Specific Assurances and Savings Clause requirements are met per PPA, per applicable policies and laws. NEPA Documentation will be updated if appropriate as revisions are made to Water Control Plans and/or Project Operating Manuals associated with each PPA. Compliance with the requirements of the Savings Clause will be maintained throughout the entirety of the CEPP implementation period. This statement has been included in **Section 6.7** (**Plan Implementation**) of the Final PIR/EIS.
FDACS-3	Water quality considerations also constitute a significant barrier to implementing the CERP components included in the CEPP. The draft PIRIEIS identifies a number of "project dependencies," projects that must be completed and operational, or conditions that must exist, prior to implementation of the CERP components included in the CEPP. In regard to water quality the draft PIR/EIS provides, "All features of the State's Restoration Strategies must be completed and meet state water quality standards prior to initiating construction of most CEPP project features," (Pp. 6-38). If those water quality improvement features are completed and operational by 2029 as currently anticipated, there would still need to be a determination that the CERP components included in the CEPP would not cause or contribute to a violation of State water quality standards. Again, an issue that we believe	The current implementation plan includes consideration for the completion of the Restoration Strategies features. Projects constructed and/or cost-shared by the USACE are required to obtain water quality certification from the FDEP. During design and prior to construction of CEPP project features, the USACE or SFWMD will apply for and obtain a CERPRA permit which will constitute water quality certification.

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	would best be addressed when the detailed project planning occurs for the affected CERP components.	
FDACS-4	The recommended plan resulting from the CEPP provides a blueprint for the future implementation of a suite of related CERP components, and should be viewed as provisional. Project dependencies associated with the plan are substantial, and experience suggests that conditions may be very different by the time any of these components are implemented. We are concerned that PIR requirements for CERP components are being deferred to other undefined processes. For example, the draft PIR/EIS indicates that the plan will be implemented in phases and that Savings Clause analyses and projected assurances will be "updated" for each implementation phase. We support the concept of implementing logical groupings of CERP components in phases, but also that each such phase should be the subject of an individual PIR.	Please see response to comment FDACS-2 above. It is not anticipated that additional PIRs will be necessary for each phase.
FDACS-5	**Permittability and relationship to Preconstruction Engineering and Design (PED) and Project Partnership Agreement (PPA):** The CEPP Draft PIR & EIS presents a conceptual plan containing many components that are projected to be implemented in separate phases over a time frame encompassing the years between 2023 to 2040 – and beyond. The text and documentation provided in many sections to address this is appreciated, particularly Section 6 – Tentatively Selected Plan, Section 8 – District Engineer's Recommendation, Annex B – Analyses Required by WRDA 2000, and Annex C – Draft Project Operating Manual that acknowledge the uncertainties inherent in this planning process due to modeling limitations and uncertainties, engineering and design limitations during the CEPP planning process, and unknowns	It is recognized that prior to implementation of each phase, additional detailed information pertaining to that phase of implementation will be developed. In recognition of this, additional information will be gained through detailed project planning and collaborative work efforts will be maintained to resolve any outstanding issue(s) prior to the implementation of each phase. If additional information is necessary to determine that reasonable assurances exist with regard to the maintenance of existing flood protection and water supply, this information will be provided prior to the execution of a project partnership agreement. Additional language recognizing the additional information will be gained through detailed project planning and continued collaborative work efforts has been added to the Section 5 – Reasonable Assurances of the State Compliance Report Appendix A- Engineering documents analyses and efforts to be completed upon the accrual of site specific subsurface and topographic data in PED. Additional text regarding permittability has been added to **Section 6.7.2** (**Preconstruction Engineering and Design**) and **Section 6.7.3** (**Construction**). Please see response to comment FDEP-16 for information about permit review in the future

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	associated with the future conditions scenarios developed for CEPP planning purposes. The CEPP Draft PIR & EIS recognizes that permittability can only be determined based on real world conditions existing at the time of project component implementation. Compliance with Florida rules, regulations and statutes regarding CERP as well as Federal rules, regulations, and statutes regarding CERP can only be evaluated with an acceptable level of confidence when specific project components are in the Preconstruction Engineering and Design (PED) phase during which project assurances, savings clause analyses and operating manuals will be updated consistent with the implementation phases (Section 6 – page 6-42 – 6.7.2). Annex B, B.4.5 page B-71 states that "The Corps and the District will undertake updated project assurances and savings clause analyses for the implementation phases that are selected to be included in a Project Partnership Agreement or amendment thereto prior to entering into the PPA or PPA amendment." The CEPP PIR should provide a comprehensive description on what PIR elements will be covered in the PED and PPA to ensure compliance with CERP's programmatic requirements and any applicable regulatory requirements. We recommend that these issues be addressed in a separate subsection of 6.7 – Plan Implementation so the expectations and strategy are well-defined and vetted during the CEPP PIR & EIS public review process. We believe this is necessary to make it clear that regulatory and programmatic requirements are left unresolved and will need to be addressed prior to implementation of CEPP project components.	
FDACS-6	**Replacement of the Everglades Agricultural Area**	USACE is not seeking to de-authorize the Everglades Agricultural Area (EAA) Phase 1

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	(EAA) Storage Reservoir Project with alternative projects is not sufficiently described and addressed in the CEPP Draft PIR & EIS. It is misleading to describe CEPP as an increment of the EAA Storage Reservoir Project. More accurately, CEPP completes the elimination the EAA Reservoir Project benefits; the EAA Storage Reservoir Project footprint is to be used for the A1 FEB (SFWMD Restoration Strategies) and the CEPP A2 FEB. On page ES-3, the first bullet describes Component G as "Everglades Agricultural Storage Reservoirs". The term should be "EAA A2 Flow Equalization Basin (FEB)" and this correction should be made throughout all CEPP documents. The CEPP Draft PIR & EIS should describe the historic formulation of CERP, the purchase of the EAA Storage Reservoir footprint, and the earlier work of EAA Storage Reservoir Project Delivery Team. An understanding of this background explains why the replacement of the EAA Storage Reservoir Project with alternative projects is problematic to many stakeholders, including those advocating for capacity to convey larger volumes of Lake Okeechobee water south, agricultural interests in the EAA that are losing the opportunity for their water supply to be "off the lake" along with some flood risk reduction, and ENP where deliveries during the dry season could be increased by more storage in the EAA. The A1 FEB model results show it decreases deliveries to the Everglades National Park (ENP) and the volume of water the CEPP A2 FEB will be able to store and deliver is yet to be determined. It is unlikely that the planned CERP benefits of the EAA Storage Reservoir Project (water storage and delivery, as well as flood risk reduction) will ever be realized.	conditionally authorized project. The CEPP Recommended Plan A-2 FEB does not preclude future increments of CERP planning for additional storage in the EAA to provide additional water supply deliveries for either agricultural irrigation or ecosystem restoration. For example, the A-2 FEB could be converted to an STA and/or deeper reservoir that works in conjunction with the State's existing STA system to accommodate any future upstream storage to further increase water deliveries to the Water Conservation Areas, and/or the CERP EAA Storage Reservoirs – (Phase I) storage functions could be implemented.

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	Loss of benefits that were to be provided by the EAA Storage Reservoir Project and the controversy related to this decision should be acknowledged in the CEPP PIR & EIS.	
FDACS-7	**Relationship to Modified Water Deliveries Project:** Not including the Modified Water Deliveries operations in the future conditions scenarios because an operational plan has not been authorized for this project while including CERP projects yet to be authorized or funded is an arbitrary and unsupportable position. The Modified Water Deliveries Project facilities are in place and should be operational long before the first component of CEPP is implemented and long before the C-43 West Storage Reservoir is operational. Moreover, some evaluations estimate that once completed and operational, the Modified Water Deliveries Project can potentially deliver three-fourths of the projected CEPP volume of water to the ENP. Operation of the Modified Water Deliveries Project should have been analyzed in the future conditions scenarios, should be included in any future CEPP updates, and any information gathered once the Modified Water Deliveries Project is operational should be used in adaptive management for CEPP features.	The purpose of the MWD project is to improve water deliveries to ENP and to the extent practicable, take steps to restore the natural hydrological conditions within the park. The MWD project will re-distribute the existing water flow into ENP from western Shark River Slough to eastern Shark River Slough. The Corps is re-initiating pursuit of operational testing (relaxation of G-3273 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Planning for the G-3273/S-356 field test has started but is not complete and necessary approvals (including FDEP) have not been attained. Information from the test will be used to develop the Final Water Control Plan for the MWD project which will allow for re-distribution of existing water flow from Western Shark River Slough to Northeastern Shark River Slough. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation. The final operational plan for the MWD project has not yet been developed. Therefore, the CEPP FWO project condition modeling effort includes ERTP as the operational plan. The ERTP contains an operational constraint at gage G-3273 of 6.8 ft NGVD and a maximum operational stage limit of 7.5 ft NGVD in the L-29 borrow canal. Merely including a maximum operational stage limit of 8.5 ft NGVD assumption for the L-29 canal in the model would result in a representation of the FWO condition that violates other project purpose constraints in the system and would not represent a likely FWO project condition. The detailed modeling evaluations of alternative operational scenarios necessary to determine the operational plan for the MWD project are planned. Best available information will be considered as part of CEPP implementation and any future CEPP updates, if updates are required. Best available information, including Information gathered from operation of the MWD Project where applicable, will be considered as part of the adaptive management for CEPP features.
FDACS-8	**Indian River Lagoon South Project/C-44 Reservoir and connection to C-23 Canal:** In order for CEPP project components to meet the Savings Clause requirements for existing water supply for the Lake	The **Executive Summary**, **Section 6.8** and **Annex B** have been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. These sections of the FPIR/EIS now clarify that the transfer of water from Lake Okeechobee south to WCA 3 and ENP to achieve CEPP objectives does not affect existing legal sources. Water that

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	Okeechobee Service Area (LOSA), the C-44 Reservoir, the canal connecting it to the C-23 Canal, and the A-2 FEB must be built and operating. However, the CEPP Draft PIR & EIS creates uncertainty regarding this dependency. Page ES-7 refers to a "potential partial transfer." It is unclear what a "potential partial transfer" means and what role it plays in meeting the full transfer needed to meet the Savings Clause constraint. It should be made clear that the full transfer of water needed to meet the Savings Clause constraint is available before water can be re-directed south.	would otherwise be discharged to the St Lucie estuary when it doesn't need it will be conveyed from the C-44 Reservoir/STA and Canal to Lake Okeechobee to ensure existing legal sources of water for the LOSA and the Lower East Coast are not eliminated or transferred, consistent with the requirements of the Savings Clause. The Final PIR/EIS presents two potential implementation sequencing scenarios that are possible with the three separate PPAs currently identified: 1) PPA North → PPA South → PPA New Water and 2) PPA South → PPA North →PPA New Water. With each scenario, non-CEPP project features and non-CERP project features identified as project dependencies in **Table 6-10** of the Draft PIR/EIS still apply. **Table 6-10** identifies the dependency on the C-44 Reservoir.
FDACS-9	**Modification to the Lake Okeechobee Regulation Schedule – currently LORS08:** According to Table 6-10 (Pp. 6-39), "Changes to the 2008 LORS08 will be needed prior to the full utilization of the A-2 FEB in order to achieve the complete ecological benefits envisioned through re-directing the full 210,00 ac-ft/yr south and to avoid low Lake levels that would affect LOSA." The PIR & EIS should clearly state that the Lake Regulation Schedule must be modified to achieve the CEPP benefits projected and to maintain the level of service for water supply in the LOSA.	Although the CEPP dependency on modifications to the LORS was clearly indicated in the draft PIR, the draft PIR text in Section 6.1.1 regarding the LORS revisions has been further clarified based on consideration of all review comments received to the draft PIR. The final PIR will include the following text: CEPP benefits gained from sending new water south from Lake Okeechobee are derived in part from operational refinements that can take place within the existing, inherent flexibility of the 2008 LORS, and in part with refinements that are beyond the schedule's current flexibility. Modifications to 2008 LORS will be required to optimally utilize the added storage capacity of the A-2 FEB to send the full 210,000 ac-ft/yr of new water available in CEPP south to the Everglades, while maintaining compliance with Savings Clause requirements for water supply and flood control performance levels. Approximately 60% of the overall CEPP benefits are attributed to sending new water south from Lake Okeechobee, based on the implementation analysis in Section 6.7.1., and it is expected that most of these benefits can be achieved under the inherent flexibility of the 2008 LORS schedule. However, in a worst case scenario, up to 60% of the CEPP TSP's benefits may not be attained if no new water could be delivered because the 2008 LORS is not adjusted. The hydrologic modeling conducted for all CEPP alternatives to optimize system-wide performance incorporated the current Regulation Schedule management bands of the 2008 LORS. The hydrologic modeling of the CEPP alternatives included proposed revisions to the 2008 LORS flow chart guidance of maximum allowable discharges, which are dependent on the following criteria:

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		• Class limits for Lake Okeechobee inflow and climate forecasts, including tributary hydrologic conditions, seasonal climate outlook, and multi-seasonal climate outlook; • Stage level, as delineated by the Regulation Schedule management bands; • Stage trends (whether water levels are receding or ascending).
FDACS-10	**Water Quality:** CEPP Draft PIR & EIS language states that CEPP project components cannot be implemented if agreements between the Federal and State partners cannot be reached to ensure that their implementation will not cause or contribute to a violation of State water quality standards. This has already proven to be problematic for the Modified Water Deliveries Project as evidenced by the inability to obtain a permit for operation of the 356 Pump Station in the 10 years since it was constructed. This suggests the uncomfortable, but very real possibility that the project components proposed in the CEPP Draft PIR & EIS cannot be permitted or operated. Water Quality is also a major factor in determining the feasibility of CEPP's hallmark goal of diverting excess water from the Lake to WCA-3A. The State of Florida is in year one of a fifteen year program to implement the $880 million project to make sure water entering the Everglades from the EAA meets the water quality based effluent limitation (WQBEL) developed by EPA and included in Clean Water Act permits for the STAs. This plan includes the construction of a FEB on the site of the former A-1 Reservoir. The FEB is an entirely new type of feature and there is no information on whether it will perform as simulated in the CEPP water quality model during the drought and flood cycles typical in this area. It	The SFWMD and the USACE have extensive experience planning, designing, and operating constructed wetland water quality treatment facilities such as STAs. Flow equalization basins are a new concept. However, they are similar in many ways to STAs. The nutrient removal capability of the A-1 FEB was extensively evaluated by State and Federal agencies during the negotiation of the Restoration Strategies Plan. The modeling assumptions used for Restoration Strategies were also used for the CEPP A-2 FEB. Modeling results included in Annex F of the FEB/STA system indicates that these facilities will be capable of meeting the WQBEL. The draft FEIS already includes discussion of the need to meet the WQBEL as well as acknowledges the fact that failure to meet the WQBEL is a project risk.

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	will take several years of operations of the A-1 FEB before any conclusions can be drawn about the potential performance of the A-2 FEB recommended in the CEPP. This should be described more clearly in the final PIR so decision makers not as familiar with the project needed to meet the WQBEL are fully informed during the next phases of Congressional and Federal Agency review of the CEPP. Careful consideration should be given to whether the CEPP Draft PIR & EIS should go forward before there is some certainty that these water quality issues will be resolved.	
FDACS-11	**Savings Clause – No Increased Flood Risks:** Model results indicated an increase flood risk in South Dade for RSM-GL cell 4382. This result is characterized as an anomaly in water levels created by model flaws rather than a condition that will exist in the real world. Any possibility that this result will be seen as legitimate by the next generation of CEPP implementers must be removed. Section 6 – 6.8.2, Annex B.3.2.5 and Annex B.4.2 describe this model result and the review conclusion that the results indicate a Savings Clause violation but further evaluation of the results indicate they are an artifact of the model inputs for that area. However, Annex B.4.2 does not include the cell identification and Section 6.8.2 and Annex B.3.2.5 do. The Model Documentation Report graphic of the water levels for RSM-GL cell 4382 should be labeled as recommended by the Water Supply and Flood Protection Subteam, and should be included in Section 6 and Annex B so there is no opportunity for misinterpretation of the model results as indicative of acceptable CEPP performance. The	Section B.2.2 of Annex B describes the CEPP PIR criteria for assessing the Savings Clause requirements. Consistent with the WRDA 2000 and the Programmatic Regulations, the savings clause analysis identifies the effects of the plan, not non-CERP actions (including, for example, LORS). The analysis therefore compares the Initial Operating Regime with the project (Alt 4R2) to the Initial Operating Regime baseline without the project (IORBL1). Although Annex B additionally includes comparison of Alternative 4R2 with the two existing baseline conditions (2012EC and ECB), to inform evaluators of the cumulative potential effects of both CEPP and other intervening CERP and non-CERP projects relative to conditions experienced previously, this information is not used to determine compliance with the requirements of the Savings Clause. The Annex B analysis of RSM-GL cell 4382, as referenced by the commenter, indicates that the stage duration curve for indicator cell 4328 (Figure B-38) for the with project condition (Alt 4R2) is essentially the same as the without project condition (IORBL1) during the wettest hydrologic conditions, up to the 20th percentile. Although stage increases are observed compared to the existing condition baselines and stages are higher than the calibration data, the observed effects are not resultant from implementation of the CEPP components. For the Final PIR, Section B.4.2 has been updated to include the cell identification number, and the stage duration curve graphic (Figure B-38) will include a note that the results for this cell are not predictive of project performance. Project performance throughout the South Dade Conveyance System will likely be revisited and assessed in more detail prior to CEPP implementation, as additional details from

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	Subteam recommendation was to include the following text on the graphic itself, "The results for this cell are erroneous, not predictive of project performance, and are not being used for the Savings Clause analyses." You should also consider including language to the effect that this area will be scrutinized as part of the future process to approve implementation of individual components of the CEPP and project operations will be adjusted if necessary to ensure that the problems indicated by the current model will not occur.	PED (most notably, seepage wall design) become available and as additional details are developed for the Project Operating Manual. For the CEPP PIR, the analyses for CEPP associated with Section 601(h)(4) and 601 (h)(5) of WRDA 2000 and the Programmatic Regulations for the CERP (33 CFR Part 385) for Project-Specific Assurances and Savings Clause were conducted for the recommended plan. Should the recommended plan be implemented in multiple PPAs, the USACE District Engineer will ensure that Project-Specific Assurances and Savings Clause requirements are met per PPA, per applicable policies and laws. NEPA documentation will be updated, if applicable, as revisions are made to Water Control Plans and/or Project Operating Manuals associated with each PPA. Compliance with the requirements of the Savings Clause will be maintained throughout the entirety of the CEPP implementation period.
FDACS-12	1) Section 1 page 1-6 : The first paragraph contains cfs rates but not the location associated with them.	Thank you, the text has been corrected. Specifically, the current paragraph notes that freshwater flows less than 450 and 350 cfs are undesirable for the Caloosahatchee and St. Lucie Estuaries. For further information on where these flows are measured with respect to RSM-BN modeling, please refer to **Appendix G** (Benefit Model).
FDACS-13	2) Section 2 page 2-12, Table 2-2: The first row "Status of Non-CERP projects includes the "Seepage Barrier Near the L-31 N Levee (Miami-Dade Limestone Products Association)" in the Future Without (FWO) condition. It is our understanding that this barrier was not included in the future conditions scenarios, unless it is a different barrier than the one discussed at length in the PDT meetings.	**Table 2-2** summarizes the status of non-CERP projects, CERP projects and operational plans assumed to differ between the ECB and FWO. Project features listed in **Table 2-2** were represented in the model unless otherwise noted in **Sections 2.5.1** through **2.5.15**. **Section 2.5.12** (**Seepage Barrier near the L-31 N Levee**) notes that since the capability of the seepage wall to mitigate seepage losses is under ongoing analysis, CEPP will not include any length and depth of seepage wall in the FWO project assumptions.
FDACS-14	3) Section 2 page 2-16, item 4.c. states that the G-3273 Relaxation and S-356 Pump Station Test (1st year) are in progress. The proper status is inactive or EIS pending.	Submittal of permit application to FDEP is pending. The Final PIR/EIS has been clarified to indicate that planning for the G-3273/S-356 field test has started but is not complete, and necessary approvals (including FDEP) have not been attained.
FLORIDA DEPARTMENT OF TRANSPORATION (FDOT)		
FDOT-1; District 6	CEPP Draft Integrated PIR, Figure 4-6. This figure outlines the main components of the TSP (Alt 4R2). One of the key components that could potentially impact the Tamiami Trail roadway base is raising the L-29 max stages to 9.7 feet. The report and figure do not define the datum. From the	Figure 4-6 (end of Section 4) indicates that the Tamiami Trail roadway modifications will be "Future Work by Others." Section 2.5.11 of the CEPP PIR describes the future without project assumptions for the eastern portion of the Tamiami Trail Roadway, based on the assumed DOI completion of the Tamiami Trail Modifications: Next Steps Project – "The remaining unbridged sections of roadway would be elevated to allow a design high water stage of 9.7 ft NGVD in the L-29 borrow canal and to improve

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	Appendices and Annexes provided, it appears that this elevation will be relative to the NGVD of 1929. The report and figure should specify the datum referenced. In addition, the report does not define the duration that the peak stages will be maintained. As defined in the comment below, the flood duration is critical in determining if the portions of the Tamiami Trail will be required to be raised. The figure also states that the Tamiami Trail western 2.6-mile bridge will be "others." The report should clarify who are the "Other" entities that will be responsible.	distribution of downstream flows"; the specified datum for the 9.7 stage is NGVD. "This road height is expected to accommodate the maximum potential range of future stage increases envisioned by CERP without damage to the road…Preliminary indications from the DOI are that the proposed western bridging along Tamiami Trail will be included in the initial DOI implementation increment. The FWO project condition assumes that additional bridging and road elevation will be accomplished under DOI authority." Figure 4-6 of the Draft PIR/EIS has been edited to include the correct datum with reference to 9.7 feet.
FDOT-2; District 6	CEPP Draft Integrated PIR, Table 1. This table defines the total project cost for the TSP (Alt 4R2) at $1,748,800,000. From the Appendix B – Cost Engineering Appendix (Cost Estimates and Risk Analysis), the SAJ-CEPP Cost and Schedule Risk Analysis Table, Risk No. BG-TL (Tamiami Trail Bridges and Road Raising) is identified as Very Unlikely, Negligible and Low, for Likelihood, Impact and Risk Level, respectively, and it appears that there was no cost associated with this risk. Does the projected cost include raising portions of Tamiami Trail? If not, a cost should be associated with raising portions of Tamiami Trail, because raising the L-29 canal elevation to 9.7 ft NGVD will require raising portions of this roadway as described in Annex C – Draft Project Operating Manual, Page C-27, Section 5.3, second paragraph, third sentence.	The CEPP project does not include any costs for the raising of Tamiami Trail as it is a project that will be completed by others, DOI and the State. But it is recognized that it is a necessary component for the project to function fully.
FDOT-3; District 6	Annex A-2: Hydrologic Modeling, Page 83, last paragraph. This paragraph states that Figures 78 through 81 include stage duration curves for the L-29 Canal. However, there were no stage hydrographs provided for the L-29 as provided for the 3A-3G gauge (Figures 55 through 57), which appears to be located within WCA 3A. It would be	Additional statistical stage hydrographs for the L-29 Canal have been provided in Section A.8.3.2.2 of Appendix A in the Final PIR.

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	helpful to have stage hydrographs provided for the L-29 for an average, a wet and a dry year. This will show the duration of when stages in the canal will be above the existing Tamiami Trail roadway base, which is critical to determine if the durations will require raising the roadway.	
FDOT-4; District 6	It is not clear in the CEPP Draft PIR/EIS documentation what the anticipated stages in the area of Tamiami Trail from Structure S-343 to Structure S-12A/S-14 are. If the stage in this area is also anticipated to be raised to 9.7 ft. NGVD, approximately 2.5 miles of Tamiami Trail in this area will have to be raised for roadway base protection. District 6 advises that the L-29 canal stage may be raised to a maximum elevation of 8.5 ft NGVD in accordance with the operation criteria outline in Article III. Operation issues contained in the Contract between the U.S. of America and FDOT for Relocation, Rearrangement, or Alteration of Facilities, MWD to ENP Project (Tamiami Trail Modifications), dated September 25 (2008) attached.	Modifications to the Tamiami Trail roadway under the USACE MWD Project and the proposed DOI Tamiami Trail Next Steps Project are only applicable to the eastern segment of Tamiami Trail between S-333 and S-334. The frequency, duration, and magnitude of high water stages in southern WCA 3A, including along Tamiami Trail from S-343 to S-12A/S-14, are reduced by the CEPP TSP, compared to the future without project (FWO) and existing condition (ECB) baseline conditions. Maximum RSM-GL period of record (1965-2005) simulated stages (December 1994-January 1995) with the CEPP TSP for the WCA 3A-28 and S-12A headwater locations are approximately 11.9 feet NGVD, compared to approximately 12.5 feet NGVD for the ECB and FWO. For reference, the crest elevation of U.S. Highway 41 (Tamiami Trail) in the reach between S-12A and S-12D is approximately 14.95 feet NGVD. Complete RSM-BN and RSM-GL hydrologic model performance measure output are posted on the Everglades Plan public web site for the CERP, as indicated in Section 5.2 and Appendix A: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx Upon authorization, appropriation and start of PED, early coordination will begin with FDOT regarding CEPP project features.
FDOT-5; District 4	District 4 has several transportation structures within the CEPP area including, but not limited to, I-75 (SR 93), US 27 (SR 25), and US 441 (SR 80/SR15). Proposed increases in water flow need to be evaluated in terms of roadway engineering and safety. The report highlights the need to maintain levels of flood protection for the urban and agricultural areas east of the WCAs and ENP. However, little discussion, other than Tamiami Trail, is included regarding the potential impacts to	Upon authorization, appropriation and start of PED, early coordination will begin with FDOT regarding CEPP project features adjacent to US 27 and US 441 corridors. Preliminary assessments completed for the I-75 roadway and bridging infrastructure indicated that additional water from the CEPP project would not impact the functionality of the existing facilities. In PED further analyses and efforts will be completed as site specific subsurface and topographic data becomes available.

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	current and future transportation structures (roadways, rail and bridges). The District requests further information regarding how CEPP will integrate transportation infrastructure within its planning framework.	
FDOT-6; District 4	The FDOT is evaluating the feasibility of widening US 27 and developing rail capacity along the corridor, as an alternative to shipping freight along the eastern seaboard from the South Florida Seaports to proposed Inland Logistics Centers around Lake Okeechobee and Central Florida. The addition of a rail corridor has potential to reduce existing rail/highway conflicts along existing FEC and CSX lines in south Florida by shifting freight traffic to a more rural area, with significantly fewer at -grade crossings. Proposed increases in water flow through the North New River Canal, as well as creating STAs and other water control structures along the US 27 corridor, should be coordinated with the FDOT to work towards mutual regional goals.	Upon authorization, appropriation and start of PED, early coordination will begin with FDOT regarding CEPP project features adjacent to US 27 corridors.
FDOT-7; District 4	It should be noted that historic agreements exist between the FDOT and State and Federal regulatory agencies regarding recreational access and natural resources/mitigation along US 27 and I-75. These agreements should be included within the framework and planning of CEPP.	An annotation indicating that agreements exist between the FDOT, State and Federal regulatory agencies regarding recreational and natural resource access points along US27 and I75 will be added to Appendix F recognizing these FDOT approved access points.
TREASURE COAST REGIONAL PLANNING COUNCIL (TCRPC)		
TCRPC-1	Although the recommended plan provides a significant increase in freshwater needed for the restoration of the central Everglades, additional actions are needed to further reduce harmful discharges of freshwater from Lake Okeechobee. Therefore, it is important for the CEPP to proceed in a way that complements other components of CERP currently underway in the region. Approval of the CEPP should not delay or interrupt	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.

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	implementation of other approved CERP projects.	
TCRPC-2	The CEPP recommended plan is consistent with the Strategic Regional Policy Plan. Specifically, the recommended plan furthers the policies in the following goal areas: Regional Goal 6.2: A regional water supply managed to provide for all recognized needs on a sustainable basis. Regional Goal 6.3: Protection of water quality and quantity. Regional Goal 6.5: Protection of estuarine resources. Regional Goal 6.6: Protection of wetlands and deep water habitats. Regional Goal 6.8: Protection of endangered and potentially endangered species. Regional Goal 6.9: Protection and sustainability of the Everglades Ecosystem.	Thank you for your comment.
TCRPC-3	Implementation of the recommended plan will help to achieve ecosystem restoration, increased water supplies, improved water quality, and the maintenance of flood protection. This plan represents an opportunity to accomplish these goals and balance the need to provide water for natural systems and urban and agricultural uses.	Thank you for your comment.
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP)		
FDEP-1	**State Water Quality Standards:** A number of water quality issues that could impact the State of Florida's ability to commit as the local sponsor for CEPP were identified as critical issues throughout the planning process. Of these, a fundamental assumption made as part of the future without condition for CEPP was that existing volumes of water would be treated to meet the State's phosphorus criterion prior to discharge to the Everglades Protection Area. Parallel to the CEPP planning process, the State of Florida delivered on its commitment to address water quality in existing	Thanks for the comment. PIR reports include the responsibilities of the state and federal parties.

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	flows to the Everglades Protection Area through development of Governor Rick Scott's Everglades Restoration Strategies Water Quality Plan in 2012. The Governor and Florida Legislature strengthened this commitment through passage of House Bill 7065/Chapter 2013-59, Laws of Florida, which also provides a recurring dedicated source of funds to implement the 880 million dollar plan. The PIR acknowledges that all features of the State's Restoration Strategies must be completed and meet State water quality standards prior to initiating construction of most CEPP project features. The Department issued a National Pollutant Discharge Elimination System (NPDES) watershed permit (File # FL0778451) and associated consent order (OGC # 12-1148) for the operation and maintenance of the Everglades Stormwater Treatment Areas (STAs), and an Everglades Forever Act (EFA) watershed permit (File # 0311207) and associated consent order (OGC # 12-1149) for the construction, operation and maintenance of the Everglades STAs to the SFWMD on September 10, 2012. These permits are issued pursuant to the requirements of the EFA, Section 373.4592, F.S., and the NPDES program delegated to the State of Florida, pursuant to Title 122, Code of Federal Regulations, and Sections 403.088 and 403.0885, F.S. The consent orders that accompany the NPDES and EFA watershed permits require the design, construction and operation of a series of projects identified in the State's Restoration Strategies Water Quality Plan. Implementation of CEPP will complement the	

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	State's effort to restore water quality in the Everglades, build upon the significant investment the State of Florida has made to restore water quality in the Everglades, and complement the acquisition of land, design and construction of the first generation components of CERP. Continued close coordination between the Corps, SFWMD (as local sponsor), and the Department will be needed to ensure that the integration of CEPP with State facilities designed to meet State water quality standards will meet the regulatory requirements set forth in the NPDES and EFA watershed permits and associated consent orders referenced above as well as other relevant provisions of state law. Several enhanced procedures (e.g., identifying risks early to aid in addressing uncertainties such as water quality in plan formulation, and improving vertical communication and decision making within the participating agencies and the Corps) were introduced during the planning process. An issue critical to the State of Florida is CEPP's effect on the provisions of the Settlement Agreement/Consent Decree1 with regard to water quality within ENP. This issue was recognized early in the risk register and elevated for resolution. Since CEPP involves redistribution of flows and increased water volume above existing flows, it was recognized that water quality will be impacted as currently measured by the compliance methodology in Appendix A of the Consent Decree and that future conditions may warrant additional water quality features. Through consultation with the principals of the parties to the Settlement Agreement, it was recognized that implementation of CEPP would require revisions to the existing	

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	Appendix A compliance methodology. The process and scope for accomplishing these goals has subsequently been established and agreed upon by the settling parties. Language was negotiated and added to the District Engineer's Recommendations in Section 8 to memorialize this outcome. It is imperative that all parties follow through with this important commitment to work together to develop a scientifically supportable revised compliance methodology and continue to assess whether additional water quality features are necessary to treat additional water moved into the system via CEPP implementation. Failure to reach agreed upon revisions to Appendix A and a cost share agreement on any additional water quality features to address additional water to the Everglades as a result of CEPP implementation will impact the State's ability to approve and/or implement these projects. In addition to the recognition that Appendix A water quality compliance must be addressed for new project water entering ENP, the PIR establishes other basic principles considered during the development of CEPP with respect to water quality, including: 1) All features of the State's Restoration Strategies must be completed and meet State water quality standards prior to initiating construction of most CEPP project features. 2) Construction of CEPP project features cannot proceed until it is determined that construction and operation of the feature: a. Will not cause or contribute to a violation of State water quality standards;	

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	b. Will not cause or contribute to a violation of any applicable water quality permit discharge limits or specific permit conditions; and c. Reasonable assurances exist that demonstrate adverse impacts on flora and fauna in the area influenced by project features will not occur. 3) Additional CEPP water quality treatment features, including operational and structural modifications, may need to be constructed if State water quality standards are not met upon operations of CEPP project features. As part of the State's regulatory process, the Department will require reasonable assurances that State water quality standards in the Everglades Protection Area, including the WCAs and ENP, will not be violated. Keeping this in mind, and through inclusion of the agreed upon water quality principles and aforementioned language regarding the Consent Decree, the Department believes that the PIR, as currently written, provides the appropriate framework to address water quality issues that may occur as a result of the implementation of CEPP. It is important to note that the District Engineer's Report states that should any of the existing recommendations be modified prior to the PIR being transmitted to Congress, that the Sponsor and the State will be advised of these modifications and afforded an opportunity to comment further. It is imperative that the Corps follow through with this commitment, as any changes to the agreed upon language could impact the State of Florida's ability to find the CEPP plan consistent with the enforceable policies of the Florida's federally approved Coastal Management Program and	

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	willingness to accept the role of local sponsor. We expect to see the agreed upon language mirrored in the Chief of Engineer's Report and Record of Decision, and anticipate concurrence that the plan, as currently proposed, is consistent with the provisions of the Florida Coastal Management Program – if both adequately support the statements contained in the negotiated language.	
FDEP-2	**Expedited Planning Process:** Successful restoration of the Everglades is contingent on integrating and streamlining both the State and Federal efforts. The CEPP is one of seven projects being tested through a nationwide pilot program designed to improve the Federal planning process by significantly reducing the timeframe and process necessary to develop a Corps feasibility study – in the case of CERP, a PIR/EIS. The State of Florida strongly supports this effort and committed resources early on to ensure a successful outcome. The Department is pleased to see language in the draft versions of WRDA currently circulating through the U.S. Congress that could turn this pilot program into a national practice for Corps feasibility studies. Completion of CEPP, and continued streamlining by all Federal and State agencies as CEPP moves through the final approval phases will demonstrate the success of this pilot program on a national level. Department staff have actively participated in the development of the recommended plan and associated PIR. We commend the Corps and SFWMD for delivering a draft PIR in record time, and believe the planning process was significantly improved over previous CERP efforts. This was due in part to focusing the efforts and resources on one project that allowed for innovative plan	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.

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	formulation processes to be developed using Multi Criteria Decisional Analyses. Having a focused planning team that worked systematically through multiple formulation phases under a very tight timeline was helpful for moving the plan formulation process forward on an accelerated schedule. Perhaps more importantly, however, in terms of developing a plan that has broad stakeholder support was having the public actively participate in the planning process and providing opportunities for valuable input through the South Florida Ecosystem Restoration Task Force Working Group Sponsored Workshops.	
FDEP-3	**Sequencing:** The PIR states that CEPP is composed of implementation phases that include features or logical groupings of plan features, and that individual Project Partnership Agreements (PPAs), or amendments to existing PPAs, will be executed prior to construction for each implementation phase. The PIR also recognizes dependencies on both CERP and non-CERP projects that must be in place prior to the implementation of CEPP. Many of these will require integration into the sequencing of CEPP to avoid unintended adverse consequences, and to allow for restoration benefits to be achieved as early as possible. However, the PIR is lacking in detail regarding these groupings, interdependencies, phasing, and the estimated year of initiation for features. Although the Department believes the implementation schedule requires refinement and optimization, we stress that this need should not hold up completion of the PIR and submittal to Congress for authorization. Rather, this process would be the logical next step in the overall implementation of the restoration of the greater	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Project features are grouped into three separate PPAs based upon the spatial distribution of the project features and the locations within the CEPP study area where separable hydrologic and environmental benefits would accrue. These groupings include a PPA of project features in northern WCA 3A (PPA North), a PPA of project features in southern WCA 3A, 3B, and ENP (PPA South), and a final PPA which provides the new water and required seepage management features that benefits the entirety of the study area (PPA New Water). The Final PIR/EIS presents two potential implementation sequencing scenarios that are possible with the three separate PPAs currently identified: 1) PPA North → PPA South → PPA New Water and 2) PPA South → PPA North →PPA New Water. With each scenario, non-CEPP project features and non-CERP project features identified as project dependencies in **Table 6-10** of the Draft PIR/EIS still apply. Other viable options for the implementation of project features and subsequent groupings into PPAs may be considered in the future and is acknowledged within the Final PIR/EIS. Should the project be implemented in multiple PPAs, the USACE District Engineer will ensure that Project-Specific Assurances and Savings Clause requirements are met per PPA, per applicable policies and laws. NEPA Documentation will be updated if applicable as revisions are made to Water Control Plans and/or Project Operating Manuals associated with each PPA Figure 6-11 of the Draft PIR/EIS provided the earliest that the TSP contracts could initiate based on internal/external project dependencies and sequential construction limitations (i.e. staging, access, disposal and utilization of materials).

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	south Florida ecosystem, taking into account recent progress that has been made on both CERP and non-CERP projects in the region. The PIR acknowledges that the Corps and the SFWMD will undertake integration of CEPP and the other CERP projects awaiting authorization into the Integrated Delivery Schedule. We caution, however, that the need for additional refinement of the phased implementation and sequencing plan be considered carefully, so as to take regulatory requirements, water supply and flood control issues into account and not drive up programmatic costs.	
FDEP-4	**Sequencing:** Section 6.7.1 identifies a number of basic principles that were considered in developing the implementation sequence proposed in the PIR. However, it is important to note that these guidelines were not provided to the PDT, and to our knowledge were not identified during the public workshop held to solicit public input on the sequencing of projects. We recognize that many of these represent policy issues that were being resolved concurrently during development of the CEPP. Since the PIR states that a robust public process will be used to integrate CEPP into the integrated delivery schedule for the south Florida restoration program, it will be important to clearly present these issues and define how they affect the implementation and sequencing plan so that all stakeholders can better understand the constraints (and opportunities) moving forward.	**Section 6.7.1** (**Implementation Phasing and Construction Sequencing**) of the Draft PIR/EIS and exercises designed to receive PDT input on implementation was presented and conducted at various PDT meetings (July 8th, 2013, March 5th, 2013, March 20th, 2013). This section of the report has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. New information contained within this section will be subject to a 30 day public review period during the release of the Final PIR/EIS.
FDEP-5	**Sequencing:** Figure 6-11 provides a broad view of implementation phases and sequencing of construction, but it is not clear how this schedule was derived and the logic behind the duration of the projects. More information regarding the estimated timeframes for CEPP is needed so that a	Figure 6-11 of the Draft PIR/EIS utilized the durations in Appendix B based on $100 million a year funding constraint, added in adaptive management preferred scope, internal and external project dependencies and sequential construction dependencies which lengthened the actual time. The A-2 FEB shown in Figure 6-11 of the Draft PIR/EIS depicts 13 features constructed in 5-6 different contracts based on spatial constraints, i.e construction access, staging, disposal etc. This is best to ensure

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	realistic sequencing plan can be developed, taking into account necessary project authorizations, Federal and State funding streams, and other related requirements. The State's schedule for restoration strategies has been established, so these dates should be hard-wired into the implementation plan for CEPP. While the PIR acknowledges that completion of restoration strategies and the need for these features to meet State water quality standards prior to initiating construction, it does acknowledge that this is for most CEPP project features. CEPP features that may be independent of this requirement should be identified to determine whether early sequencing of project phases is feasible. Again, we stress that the sequencing effort should not hold up completion of the PIR, but rather be identified as the logical next step after CEPP and the other CERP projects with completed Chief's reports have been authorized through the next WRDA.	that multiple contractors are not vying for the same spaces as each feature is completed. Some works logically are dependent upon others to be complete for usage. These factors were considered as well as cost. All assume that PED, 3 years, is completed prior to the initiation of each construction contract.
FDEP-6	**Project Costs:** The State of Florida, particularly the Department and SFWMD, have spent a significant amount of time and money acquiring more than 243,000 acres of land for the implementation of CERP. We commend the PDT for focusing planning efforts for storage and treatment projects on lands already in SFWMD ownership, which results in significant savings for taxpayers and puts the State's significant investments to work. Authorization of CEPP, and the other four CERP projects with completed Chief's Reports, will allow the State to receive credit for early efforts on land acquisition and construction, which is critical to balancing the 50-50 cost-share under CERP and keeping Federal construction efforts on pace. The Department recommends continuing to work	Level of detail, associated risks and costs have been affirmed as sufficient for the CEPP expedited effort. The next phase of the Corps Civil Works process, PED, will involve refinement of design, risks and costs based on the detailed site specific data yet to be acquired. The project contingencies were established using a cost risk register and CORPS methodologies. Multiple risk analysis meetings were held, and input was provided from all stakeholders including SFWMD and FDEP. The biggest risks are the unknowns, but this was recognized at the onset of the project to help expedite the planning process. The programmatic costs cover PED, EDC and S&A for the project and are based on historical averages. Without an acquisition strategy or construction schedule, it is difficult to predict exactly what will happen. One of the CORPs primary objectives for the report is to establish a budgetary 902 limit that the construction will not exceed.

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	in parallel during the final approval for the PIR to further refine the cost estimates for the CEPP. The project contingencies (currently at 42 percent) in particular should be evaluated to identify further reduction in costs. In addition, almost half a billion dollars has been budgeted for additional planning, detailed design, and to oversee construction of 1.3 billion dollars worth of project components (total construction cost). These estimates, which add 37 percent to the total project costs, appear to be excessive. Typical engineering costs are generally 10 percent of the project construction cost. We urge the Corps to identify ways to streamline and reduce costs associated with planning and design, and staffing, in particular. In order to continue the State's partnership with the Federal government, it is imperative to find ways to more equitably balance programmatic costs between the Corps and SFWMD as the local sponsor to more effectively balance the 50-50 cost share. These costs should be tied to the partnership agreements between the agencies to control the expenditures and ensure cost efficiency.	
FDEP-7	**Regulatory Considerations:** Upon completion of detailed design, phases of CEPP will require a Comprehensive Everglades Restoration Plan Regulation Act (CERPRA) permit under Section 373.1502, F.S. Other Department permits may be required during the construction phase of this project, as applicable. Further coordination will needed to ensure that appropriate permit type is identified early to ensure that reasonable assurances needed for regulatory authorization can be considered during detailed design. This will, to some degree, be dependent on the implementation sequencing plan developed for all of CEPP, so it is important that regulatory	Thank you for your comment.. The USACE and SFWMD will continue to work closely with FDEP during project design, permitting, construction, and operation to ensure that the project is consistent with existing permits and state/federal water quality standards.

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	considerations be incorporated into the sequencing development process. The Corps and the SFWMD should work closely with the Office of Ecosystem Projects to ensure that the appropriate regulatory milestones are built into not only the overall plan for CEPP, but also for individual project schedules, and are consistent with the requirements of the existing State and NPDES permits. While further refinement of the implementation and sequencing plan and cost estimates are needed, and further action to address water quality issues may be required, at this stage, the Department supports the implementation of CEPP and believes the plan complements the State's efforts to restore water quality and our continued commitment to the restoration of the Greater Everglades ecosystem. We would like to reiterate, however, that any changes to the negotiated language or principles established in the PIR could impact the State of Florida's ability to find the CEPP plan, or phases of the CEPP plan, consistent with the enforceable policies of the Florida's federally approved Coastal Management Program and effect the State's ability to act as the local sponsor. Provided there are no changes that require further discussion and negotiation between the State of Florida and the Federal government, the Department supports continuing forward with the CEPP approval process on an expedited schedule. The State of Florida has expedited the necessary reviews to determine whether or not the project, as currently proposed, is consistent with the requirements of State law. We strongly urge the Corps and other Federal agencies to continue in	

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	this expedited fashion and commit to streamlining and expediting the remaining reviews through the vertical team in order to position the final PIR for authorization in any potential future WRDA bill. Completion of CEPP will also serve to demonstrate success of the nationwide pilot program, which will garner further support for inclusion of the expedited feasibility program in a final WRDA.	
FDEP-8	**Section 2.5.9 Picayune Strand Restoration Project, page 2-17:** This section gives very specific project features (83 canal plugs and 227 miles of road removal). These may not be completely accurate and it may be better to give more broad ranges (up to 260 miles, plugs placed in 48 miles of canals).	**Section 2.5.9** (**Picayune Strand Restoration Project**) has been edited to be consistent with the most recent fact sheet presented on www.evergladesplan.org dated July 2013.
FDEP-9	**Section 3.2.1.3, page 3-11:** As noted in the text, plan formulation and modeling performed during screening included provisions to modify the operations of Lake Okeechobee within the existing operational flexibility available in the 2008 Lake Okeechobee Regulation Schedule Study (LORSS). However, the PIR states that the assumptions made during CEPP formulation ultimately extended beyond this flexibility due to adjustments made to the tributary/ climatological classifications. This section implies that a separate NEPA analysis will be necessary, which is surprising given the careful consideration the PDT placed on working within the existing LORSS. Please clarify whether or not a NEPA analysis to evaluate the assumptions made during CEPP formulation will be needed, along with an explanation and justification for these changes.	CEPP benefits gained from sending new water south from Lake Okeechobee are derived in part from operational refinements that can take place within the existing, inherent flexibility of the 2008 LORS, and in part with refinements that are beyond the schedule's current flexibility. Modifications to 2008 LORS will be required to optimally utilize the added storage capacity of the A-2 FEB to send the full 210,000 ac-ft/yr of new water available in CEPP south to the Everglades, while maintaining compliance with Savings Clause requirements for water supply and flood control performance levels. The hydrologic modeling conducted for all CEPP alternatives to optimize system-wide performance incorporated the current Regulation Schedule management bands of the 2008 LORS. The hydrologic modeling of the CEPP alternatives included proposed revisions to the 2008 LORS flow chart guidance of maximum allowable discharges, which are dependent on the following criteria: • Class limits for Lake Okeechobee inflow and climate forecasts, including tributary hydrologic conditions, seasonal climate outlook, and multi-seasonal climate outlook; • Stage level, as delineated by the Regulation Schedule management bands; • Stage trends (whether water levels are receding or ascending).

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		Most of the 2008 LORS refinements applied in the CEPP modeling lie within the bounds of the operational limits and flexibility available in the current 2008 LORS, with the exception of the adjustments made to the class limits for the Lake Okeechobee inflow and climate forecasts. Under some hydrologic conditions, the class limit adjustments made to the Lake Okeechobee inflow and climate forecasts reduced the magnitude of allowable discharges from the Lake, thereby resulting in storage of additional water in the Lake in order to optimize system-wide performance and ensure compliance with Savings Clause requirements. However, these class limit changes represent a change in the flow chart guidance that extends beyond the inherent flexibility in the current 2008 LORS. Additional information and documentation of the CEPP Recommended Plan modeling assumptions for Lake Okeechobee operations are found in the **Appendix A** (Engineering) of the CEPP PIR. Independent of CEPP implementation, there is an expectation that revisions to the 2008 LORS will be needed following the implementation of other CERP projects and Herbert Hoover Dike infrastructure remediation. The USACE expects to operate under the 2008 LORS until there is a need for revisions due to the earlier of either of the following actions: (1) system-wide operating plan updates to accommodate CERP "Band 1" projects, as described in **Section 6.1.3.2**, or (2) completion of sufficient HHD remediation for reaches 1, 2 and 3 and associated culvert improvements, as described in **Section 2.5.1.** When HHD remediation is completed and the HHD DSAC Level 1 rating is lowered, higher maximum lake stages and increased frequency and duration of high lake stages may be possible to provide the additional storage capacity assumed with the CEPP TSP . The future Lake Okeechobee Regulation Schedule which may be developed in response to actions (1) and/or (2) is unknown at this time. It is anticipated that the need for modifications to the 2008 LORS will be initially triggered by non-CEPP actions and that these actions will occur earlier than implementation of CEPP. Therefore, the CEPP PIR will not be the mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule. However, depending on the ultimate outcome of these future Lake Okeechobee Regulation Schedule revisions, including the level of inherent operational flexibility provided with these revisions, CEPP implementation may still require further Lake Okeechobee Regulation Schedule revisions to optimize system-wide performance and ensure compliance with Savings Clause requirements.
FDEP-10	**Section 3.2.2.1, page 3-22:** As part of plan formulation, the need to provide new or modified pump stations to distribute flows across	The plan formulation description in PIR section 3.2.2.1 provides the conceptual management measure and features, including new or modified pump stations. Plan formulation efforts established the degree of technical detail necessary for

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	northern WCA 3A was considered as the infrastructure at the existing S-8 pump station is over 40 years old and may require repair or replacement. This does not appear to be acknowledged in the PIR in this section or the alternatives as presented in Section 3.0. However, the engineering appendix includes the design of a new gated culvert structure and a new canal rather than retrofit or replacement of the existing structure. Please provide an explanation for this change, along with an analysis to demonstrate that the existing pump station can handle the additional lift required, which may potentially affect flood protection capacity at the S-8 pump station. Also, has the cost-effectiveness of the new design as compared to the original plan proposed by the PDT been evaluated? The PIR indicates that there will be further analysis of the S-8 pump station during detailed design.	assessment of alternative components within the hydrologic modeling tools, and preliminary engineering design recommendations were generally coordinated with the PDT. The limited, preliminary design of the TSP is described in Appendix A- Engineering of the CEPP PIR. Assumptions for design of CEPP TSP features are detailed within Appendix A (to the extent applicable) for cost development purposes. Further analyses will be completed in PED for all CEPP features upon accrual of site specific data to refine the preliminary design completed to date. Appendix A specifically indicates that potential design modifications to the existing S-8/G-404 complex will be assessed during PED. Appendix A further recognizes the significant design uncertainties to be addressed during PED: "For CEPP, the S-8 pump station and/or G-404 may require design modifications (or possible replacement). The TSP cost estimate includes costs for the potential S-8 complex modifications, which are included as the new S-8A (canal connection to L-4 and two culverts structures). During PED, the following design uncertainties will be assessed/reassessed in further detail: modifications to S-8 and/or G-404, to address pump efficiency concerns; the proposed S-8A culvert and associated canal connecting the Miami Canal to the L-4 Canal; and the required length of the unmodified Miami Canal to maintain hydraulic getaway conveyance capacity. Flood control operation capability will be maintained during S-8 modification construction. S-8 is equipped with four 1,040 cfs diesel pumps for a total capacity of 4,160 cfs. The pump station is located in the alignment of the Miami Canal at the northern boundary of WCA-3A" (Sections A.5.3.3.2.2, A.6.3.3.2.2, and A.6.3.4.2). The anticipated need for additional hydraulic design modeling of the S-8 complex is also stated in Section A.8.4.
FDEP-11	**Section 4.2.2.1, page 4-13:** The habitat unit calculations provided appear to be based an assumption that benefits will be achieved starting from year 2022, and that about 50% of the Greater Everglades (WCA 3 and ENP) benefits are achieved in the first two years. However, elsewhere in the PIR, it states that most of the associated features will not be constructed before 2029. Please provide a more detailed explanation for these calculations, as it appears that 50% of the benefits occur before construction starts. Please verify	The unconstrained base year for the period of economic analysis for CEPP is the year 2022. The base year assumes CEPP will be authorized, designed, and constructed by 2022. This assumes authorization in the year 2014, followed by a 2-3 year period of pre-construction engineering and design and construction duration of 6 years. This assumption was derived early in the planning process and assumes unconstrained resources and funding. At the time that the economic analysis was completed the CERP period of analysis was used, which ends in 2050. See PIR Section 2.2 (Planning Horizon) for discussion.. The Final PIR/EIS has been updated to also include a base year of 2029 to reflect the best schedule for implementing project features and has extended the period of economic analysis to 2079 to reflect a 50 year period.

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	that the same schedule has been included in all parts of the report.	
FDEP-12	**Figure 6-10, page 6-18:** Figure label incorrectly makes reference to 1989 as a wet year. Top of the figure shows the year to be 1995. Text in the label needs to be corrected.	Thank you. The figure label has been corrected.
FDEP-13	**Section 6.1.3 Project Operations, page 6-9:** Will each phase have its own stand-alone Project Operating Manual (POM), or will the overall CEPP POM be submitted with each phase, with modifications specific to the phase? This could impact how the Department evaluates projects from a regulatory perspective.	There will not be individual stand-alone POMs for multiple phases. There will be one document that is continually revised.
FDEP-14	**Section 6.4, page 31:** The text explaining cost estimates for the TSP states that costs were estimated at Fiscal Year 2013 and escalated to October 2015 price levels "to coincide with the expected project authorization." If the actual expected date is 2015, then all cost estimates should be reported at the 2015 price level (currently some are FY 2013).	The estimate costs will be in FY14 since that will be the FY that the estimate is prepared. FY15 Dollars will be used for the first cost if the report is not ready till FY15.
FDEP-15	**Section 6.7.1:** It is not clear how Figure 6-11 was derived and the logic behind the duration of the projects. For example, why does it take 9 years to construct the Flow Equalization Basin (FEB)? Please provide further explanation.	Figure 6-11 of the Draft PIR/EIS utilized the durations in Appendix B based on $100 million a year funding constraint, added in adaptive management preferred scope, internal and external project dependencies and sequential construction dependencies which lengthened the actual time. The A-2 FEB shown in Figure 6-11 of the Draft PIR/EIS depicts 13 features constructed in 5-6 different contracts based on spatial constraints, i.e construction access, staging, disposal etc. This is best to ensure that multiple contractors are not vying for the same spaces as each feature is completed. Some works logically are dependent upon others to be complete for usage. These factors were considered as well as cost. All contract sequencing assumed that PED will take three years and will be completed prior to the initiation of each construction contract.
FDEP-16	**Section 6.7.3 Construction, page 6-42:** This section regarding construction sequencing and phasing should also consider permitting requirements and reasonable assurances needed. Early coordination with the Department will help	Added to 6.7.2 Preconstruction Engineering and Design section. "After completion of 60 percent final plans and specifications for a given project feature, the lead construction agency (USACE or SFWMD) will prepare and submit a CERPRA permit application (Florida Statutes: 373.1502) to the FDEP. The FDEP will review the application material to determine if reasonable assurance has been provided that the

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	streamline the permitting process. Please include timeframes associated with the permitting process.	feature will be consistent with state water quality standards. The FDEP typically requires from 6 to 12 months to review and issue a CERPRA permit which for Corps constructed features will constitute water quality certification. " Added to 6.7.3 Construction "Construction contracts for project features will not be awarded by the USACE prior to obtaining CERPRA permit authorization or other water quality certification."
FDEP-17	**Section 6.9.3 Water Quality and Effects on State Facilities, page 6-50:** The PIR states that "…discharge permits with associated effluent limits will govern discharges from the state facilities." Note that this is only relevant when discussing STA facilities permitted under the NPDES and EFA watershed permits. Please make the appropriate clarification.	Sentence has been amended to clarify that "NPDES discharge permits and EFA watershed permits with associated effluent limits will govern STA discharges from the state facilities."
FDEP-18	**Section 7.1.2 FEB Operations, page C-32:** The last bullet states that no supplemental water supply is provided to the FEB to prevent dryout. Please note, however, that the FEB is expected to provide some treatment and through adaptive management, operation of the FEB should work towards optimizing performance. During permitting of the State's A-1 facility, we discussed monitoring to address dryout and Science Plan efforts to determine what adaptive management techniques should be implemented. The A-1 Adaptive Operations and Management Plan (AOMP) is referenced on page C-43. We recommend utilizing a similar approach for the A-2 FEB for consistency.	Thank you for the update. The suggestion to seek information and consistency with the A-1 Adaptive Operations and Management Plan (AOMP) has been added to the FEB strategy in the CEPP Adaptive Management plan (Annex D Part 1 pg 16).
FDEP-19	**Section 7.3 Compliance with USACE CERP Agricultural Chemical Policy, page 7-8:** The Department's Waste Compliance Assistance and Enforcement Section provided a memorandum dated April 4, 2013, regarding the Phase II Environmental Site Assessment for A-2 Flow Equalization Basin. The Department's review was	Barium has been added to text on page 7-8. Per the comment, the following has been added to the page 7-8. "The water quality monitoring plan in Appendix D includes a start-up operation sampling event that should be performed at the 30- or 60-day period from inundation, as well as an additional surface water sampling event that should be performed after one year of operations."

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	performed following the "Protocol for Assessment, Remediation and Post Remediation Monitoring for Environmental Contaminants on Everglades Restoration Projects" known as the White Paper. Based on this memorandum, please also include barium in the list of contaminants that will be sampled. Also, please clarify that initial operations includes a start-up operation sampling event that should be performed at the 30- or 60-day period from inundation, as well as an additional surface water sampling event that should be performed after one year of operations.	
FDEP-20	**Section 7.4, page 7-9:** Please change Florida "Stature" to "Statutes."	Thank you. The text has been corrected.
FDEP-21	**Section 7.4, 2nd paragraph**: Reference is made to the SFWMD's State Compliance Report required by Section 373.1501, F.S., being included in Annex B. As noted elsewhere in the document, the draft PIR does not contain this report, it only includes "Analyses Required by WRDA." Please coordinate with the SFWMD to ensure that sufficient and timely information is provided and that the report is included in the final PIR.	The 1501 Compliance Report has been included in Annex B as indicated in Section 7.4.
FDEP-21	**Section 9.0:** We recommend revising this section to recognize stakeholders that actively participated and provided meaningful contributions during the CEPP planning process. In addition, the list of preparers and reviewers does not appear to fully represent everyone that contributed to writing sections of the PIR.	Section 9.0 provides a list of persons directly involved in the preparation and review of the document. Section 9.0 has been revised to include individuals who directly contributed to writing sections of the CEPP PIR/EIS.
FDEP-22	**CEPP Appendix B Cost Engineering:** The PIR states that the construction cost estimate may be further refined after the release of the draft report (section B.1.6). As noted elsewhere in our comments, the Department supports further refining costs to ensure that the proposed TSP is cost effective. Based upon the cost breakdown	The initial costs developed were for comparative purposes only and were not actual construction costs. The costs were refined with input from SFWMD on construction methods and assumptions. The cost estimate is based on the preliminary design for the FEB with the associated risk of not having site specific information. All features have been scoped to a level of detail with the available data using best professional judgment. This work has been vetted through stakeholders, local sponsor and external reviewers and affirmed as sufficient for CEPP PIR. Design refinements will

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	provided in this section, the FEB accounts for approximately 43% of the total construction cost for the TSP. During plan formulation, the FEB was retained as a cost effective management measure based upon the cost effectiveness (preliminary cost of $175 million versus $1.2 billion for the 12-foot-deep reservoir). The assumptions associated with the A-2 FEB appear to be very high, in part based upon the assumptions that went into the engineering design for this facility. Please provide more details regarding the development of costs for the four alternatives and an explanation for the high cost of this facility.	occur in PED.
FDEP-23	**Section B-3:** This section provides a breakdown of the cost estimates for each structural component of the Tentatively Selected Plan. The most costly feature of the plan is the FEB and the associated infrastructure. The estimated construction cost for the 14,000-acre A-2 FEB is approximately $480 million, where the 2013 FY contract cost is estimated at $338 million at the remaining cost are contingencies (42% or $142 million). The SFWMD recently received bids for construction on the A-1 FEB that the State of Florida is constructing under Restoration Strategies, which ranged from approximately $60 million to $88 million. The low bid was just less than what the SFWMD engineering division had estimated and previously shared with the Corps. The two FEBs are similar in many ways – size, requirements, location, and both use the same inflow pump stations and require the same type of levees and distribution system. Therefore, it is unclear why there is such a large discrepancy in the cost estimates for both facilities. In reviewing the cost and engineering appendices it appears	NOTED. The current bid price to complete the A-1 FEB does not include the approx $200 million already spent on the A-1 FEB. A-1 FEB and A-2 FEB are similar yet different in some aspects. The two FEBs differ in scope, ranging from higher levees, larger structure sizes and a larger number of structures and canals. These differences of design, construction assumptions and associated risks are reflected in the costs which were thoroughly vetted with joint USACE/SFWMD engineers and construction staff. This resulted in a refinement of the costs that were previously higher. These are the costs to date. Any further design refinements will occur in PED once A-1 and subsequent site specific data is obtained.

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	the Corps design is quite different for A-2 FEB and costs estimates were used for Kissimmee River structures rather than more recently constructed adjacent projects such as STA 3/4 and Compartment B. We strongly urge the Corps work closely with the SFWMD to further refine design and costs estimates to ensure that a feasible and cost-effective alternative for the A-2 FEB can be constructed.	
FDEP-24	**Section B-6, page B-31:** There is a statement that the Total Project Cost Summary (TPCS) was prepared based upon the scope of the recommended plan and the "official project schedule". There appear to be a number of inconsistencies in the scheduling assumption throughout the Draft PIR and it is not clear which schedule is assumed here. Please provide the schedule that was used for the TPCS estimate. If this is the same schedule as provided in section B.4, please make reference to the schedule provided there.	The schedule that the estimate is based upon is included in the cost appendix. Full project implementation to include adaptive management scope, funding of $100M a year, PED and sequential internal/external construction dependencies, is shown as Figure 6-11. Figure 6-11 depicts the implementation Scenario (North, South, New Water).
FDEP-25	**Section B-6.1:** The total cost summary sheet is dated July 1, 2013. The total project cost shown is $2.2 billion. It is our understanding that total costs have been updated to include consideration of the local sponsor's input, and are approximately $400 million less than what is shown here. Please revise and update this text accordingly.	The total costs have been updated to include consideration of the local sponsor's input. The $2.2B is fully funded. The estimated cost is $1.68M. No revision to the cost is required.
FDEP-26	**Appendix C Environmental and Cultural Resources, Section C.2.2.7.13:** The majority of Appendix C compares the Alternatives to the Future Without (FWO) condition rather than Initial Operating Regime Baseline 1 (IORBL1). In Section C.2.2.7.13, two sentences are dedicated to explaining impacts to Biscayne Bay when alternative 4R2 is compared to IORBL1. Please further clarify the difference of the IORBL1 and	The revised IORBL1 updated the FWO to include the final SFWMD proposed operational intent for the Restoration Strategies Project, the 2.6 mile western Tamiami Trail bridge proposed with the initial increment of the DOI Tamiami Trail Next Steps Project, operational updates to the CERP IRL-S Project, and operational refinements to the CERP BCWPA project (to reduce excess discharges to tide via S-29, including accounting for the effects of the Lake Belt expansion assumed in the CEPP FWO project condition), in addition to minor localized corrections to improve RSM-GL representation of the S-9/9A operations and the L-28 weir.

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	FWO in relation to Biscayne Bay. Please explain how reasonable assurances will be provided to ensure that operations will be changed in order to prevent these negative impacts to Biscayne Bay. (See our comments on Annex D.)	Differences in performance when comparing Alt 4R2 to the FWO and IORBL1 in relation to Biscayne Bay are a result of estimated canal discharges at S-29. After the development of Alt 4R, the project team evaluated potential improvements in water supply to the LEC. An in depth review of the model assumptions resulted in changes in the volume of water discharged to S-29 (i.e. Northern Biscayne Bay). Average annual surface water canal discharges to northern Biscayne Bay are affected by the assumed operations of the CERP BCWPA project. Operations of the BCWPA project were updated from the FWO to IORBL1 to better represent the desired BCWPA project outcomes (consistent with the BCWPA PIR), which resulted in less water being directed to the C-9 canal and reduced S-29 discharges. It was also identified that as an artifact of an assumed Lake Belt expansion in the FWO, there was too much water being exchanged in RSM-GL between the lakes and canal network. In the FWO, water was moving easily out of the lakes and into the C-9 Canal, resulting in higher discharges out of S-29. In the IORBL1 and Alt 4R2 the lake/canal exchange was more restricted in the model, resulting in less flow out of S-29 (this assumption was consistent with the Lake Belt permit requirements for the miners to avoid or compensate for increases in groundwater seepage). Federal laws and regulations applicable to implementing the CERP require PIRs to address certain assurances as part of the project recommendation for approval and subsequent implementation. For the CEPP PIR, the analyses for CEPP associated with Section 601(h)(4) and 601 (h)(5) of WRDA 2000 and the Programmatic Regulations for the CERP (33 CFR Part 385) for Project-Specific Assurances and Savings Clause were conducted for the recommended plan. Should the recommended plan be implemented in multiple PPAs, the USACE District Engineer will ensure that Project-Specific Assurances and Savings Clause requirements are met per PPA, per applicable policies and laws. NEPA documentation will be updated, if applicable, as revisions are made to Water Control Plans and/or Project Operating Manuals associated with each PPA. Compliance with the requirements of the Savings Clause will be maintained throughout the entirety of the CEPP implementation period. In addition, guidance has been provided in the Adaptive Management Plan (**Section 1.4.4.2** of **Annex D**) to specifically address potential changes to freshwater flow brought about by the project and potential negative impacts to Biscayne Bay.
FDEP-27	**Appendix E Plan Formulation:** Several tables in this chapter have formatting issues where the text is not legible (text on top of text) or not visible. Example, Table E1-45 is in part not legible because	Thank you for the comment. Formatting issues have been resolved.

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	of double print formatting, Table E1-42 is cut off; the last row missing portion of text. Please revise.	
FDEP-28	**Section E.1.5, page E1-30:** The expected cost range of the FEB is given as 360-550 million ($ is missing). These figures do not match the costs provided in the table on the next page (Table E1-18), nor do they match the preliminary estimates used during plan formulation ($175 million). Please explain how the costs were determined. The PDT estimated approximately $1.2 billion estimate during the screening process for the cost of the 12-foot-deep reservoir, whereas Table E1-18 shows approximately $2 billion. Please provide an explanation regarding the change in cost estimates here and in Appendix B.	The $ sign will be added. The initial costs developed were for comparative purposes only and were not actual construction costs. Costs were prepared using parametric planning spreadsheet tool vetted through the PDT as they were prepared. Costs for screening and ATR were further updated as process moved from screening to alternative development then plan selection. The process included an abbreviated Cost Schedule Risk Analysis which produced the costs in Appendix B.
FDEP-29	**Table E1-44 and Table E1-45:** These tables appear to utilize preliminary cost estimates that were used during screening. Please explain how the costs for this section were derived. We also recommend reviewing this section to ensure that a consistent approach was used in this section and elsewhere in the PIR. These costs do not appear to match the higher cost estimates that are provided in Appendix B. Additionally, the Cost column needs units displayed.	Unlike tradition planning level cost estimates, which have typically included very minor contingencies on the price estimates, the CEPP team took a risk based approach and used a high contingency (82%) for a risk based formulation approach due to the high level of uncertainty when dealing with alternatives concepts. The initial costs developed were for comparative purposes only and were not actual construction costs. Costs were prepared using parametric planning spreadsheet tool vetted through the PDT as they were prepared. Costs for screening and ATR were further updated as process moved from screening to alternative development then plan selection. The process included an abbreviated Cost Schedule Risk Analysis which produced the costs in Appendix B. Detailed refinement of the TSP led to a slightly higher construction cost but a lower contingency (42%). This refined contingency resulted in a lower overall cost. There was also minor savings identified through the use of the value engineering workshop that occurred between the formulation and draft PIR publication. Units will be displayed on Tables.
FDEP-30	**Annex B Analysis Required by WRDA 2000 (Project Assurances):** Section B, Table B4 identifies Biscayne Bay as an existing Legal Source/ User under (v) Water supply for fish and wildlife. Since Biscayne Bay is part of the Savings Clause, as noted above, monitoring may need to continue for longer than the durations listed in Annex D. Please review and	For the CEPP PIR, the analyses for CEPP associated with Section 601(h)(4) and 601 (h)(5) of WRDA 2000 and the Programmatic Regulations for the CERP (33 CFR Part 385) for Project-Specific Assurances and Savings Clause were conducted for the recommended plan. Should the recommended plan be implemented in multiple PPAs, the USACE District Engineer will ensure that Project-Specific Assurances and Savings Clause requirements are met per PPA, per applicable policies and laws. NEPA documentation will be updated, if applicable, as revisions are made to Water Control Plans and/or Project Operating Manuals associated with each PPA. Compliance with

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	revise as necessary.	the requirements of the Savings Clause will be maintained throughout the entirety of the CEPP implementation period. Following construction and implementation of CEPP components, additional CEPP project monitoring for Savings Clause compliance is not presently anticipated.
FDEP-31	**Section B.2.1 (page B-6)** states that Compared to the FWO baseline the updated IORBL1 indicates a significant hydrologic difference with response to the St. Lucie Estuary and Biscayne Bay, with other portions of the CEPP Project area performing similar to the FWO. A summary of these performance differences between the FWO and IROBL1 is provided in Appendix C.2.2 for St. Lucie Estuary and Biscayne Bay. Comment: This hydrologic difference is not adequately explained in Appendix C. Please revise the text accordingly. See Appendix C, Section C.2.2.7.13 comment above.	Detailed description of FWO versus IORBL1 operational assumptions for IRL-S project features will be copied from the final MDR reports.
FDEP-32	**Annex C:** The Draft Project Operation Manual does not provide any detail regarding implementation of supplemental deliveries to Biscayne Bay to meet the conditions simulated during modeling. Since the supplemental deliveries were a critical component of meeting the savings clause analysis for water related needs for Biscayne Bay, please provide some discussion of what is planned in the Draft Project Operation Manual.	Compared to the future without project condition (ERTP operations), the CEPP TSP modeling includes changes to the operational triggers at S-335, S-338, G-211, S-176, S-177, and S-18C structures within the South Dade Conveyance System (SDCS). These new operating criteria are summarized in Table 4 of the DPOM (Appendix C of the CEPP PIR). Most notably, all CEPP action alternatives, including the TSP, no longer include Column 2 operations that were previously specified for these structures within the previous IOP and the current ERTP operational plans. Water management operating criteria within ERTP Column 2 occurs when WCA 3A discharges are made via S-333 to the L-29 Canal and L-31N Canal, and the ENP SDCS. The S-338, S-194, and S-196 coastal ridge structures discharge toward the coastal structures along Biscayne Bay; CEPP only changes the operational triggers for S-338. These operational triggers were unchanged between Alternative 4R and Alternative 4R2, and the NEPA assessment of Biscayne Bay canal inflows actually indicated a further additional adverse effect compared to Alternative 4R due to the increased Public Water Supply demand of 12 MGD for LECSA 2 and 5 MGD for LECSA 3 (Table 5.2-1 in Section 5). The improved water budget to Biscayne Bay that is described in Annex B for the

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		Savings Clause assessment is principally the result of updated information and changes to the operational assumptions for the CERP BCWPA project (as further described below) in the future without project condition, which were then retained in Alternative 4R2. The revised IORBL1 updated the FWO to include the final SFWMD proposed operational intent for the Restoration Strategies Project, the 2.6 mile western Tamiami Trail bridge proposed with the initial increment of the DOI Tamiami Trail Next Steps Project, operational updates to the CERP IRL-S Project, and operational refinements to the CERP BCWPA project (to reduce excess discharges to tide via S-29, including accounting for the effects of the Lake Belt expansion assumed in the CEPP FWO project condition), in addition to minor localized corrections to improve RSM-GL representation of the S-9/9A operations and the L-28 weir. Differences in performance when comparing Alt 4R2 to the FWO and IORBL1 in relation to Biscayne Bay are a result of estimated canal discharges at S-29. After the development of Alt 4R, the project team evaluated potential improvements in water supply to the LEC. An in depth review of the model assumptions resulted in changes in the volume of water discharged to S-29 (i.e. Northern Biscayne Bay). Average annual surface water canal discharges to northern Biscayne Bay are affected by the assumed operations of the CERP BCWPA project (included in the future without project condition). Operations of the BCWPA project were updated from the FWO to IORBL1 to better represent the desired BCWPA project outcomes (consistent with the BCWPA PIR), which resulted in less water being directed to the C-9 canal and reduced S-29 discharges. It was also identified that as an artifact of an assumed Lake Belt expansion in the FWO, there was too much water being exchanged in RSM-GL between the lakes and canal network. In the FWO, water was moving easily out of the lakes and into the C-9 Canal, resulting in higher discharges out of S-29. In the IORBL1 and Alt 4R2 the lake/canal exchange was more restricted in the model, resulting in less flow out of S-29 (this assumption was consistent with the Lake Belt permit requirements for the miners to avoid or compensate for increases in groundwater seepage). Since the changes to the BCWPA operations would need to be implemented as part of the BCWPA CERP project, which is cited as a dependency for CEPP in Section 6.7.1, the CEPP project would not need to further change these operations, and the operations are therefore not further described in the DPOM.
FDEP-33	**Annex C, page C-14, Figure 3-6** South Dade	All of those maps use the same legend. Figure 3-6 shows S-356, which is temporary,

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	Conveyance System Map has an icon in the Legend for a Temporary Pump but none are visible on the map. If there are Temporary pumps, please identify them and coordinate with the SFWMD to ensure the most recent shapefiles were used.	and is shown on the map, but its' icon is covered by another icon.
FDEP-34	Please provide the shapefiles used to make line segments, points, and areas for Alternative 4R2.	Shape files will be added to the working files.
FDEP-35	**Annex C, DPOM, Section 4.7:** Capitalize "Seaside Sparrow".	Text does not need to be modified. Do not concur.
FDEP-36	**Annex C, DPOM, page C-27,** last sentence of first paragraph states, "a one-year field test to incrementally relax the G-3273 operational constraint is under consideration for 2013-2014." The recent draft EA actually extended into January 2015. Please correct.	These are two separate issues. The recent draft EA is for a temporary deviation due to high water conditions and not for the field test.
FDEP-37	It appears that the S-152 currently under construction as part of the Decomp Physical Model is not referenced in this Annex or main report. Pages C-12 to C-13, Figure 3-4 WCA-3A Map and Figure 3-5 WCA-3B Map. Please reconcile.	S-152 is planned to be a temporary structure and is scheduled to be removed upon completion of the DPM.
FDEP-38	**Annex D Adaptive Management: Section 1.4.4.2 and Figure D.1.11:** This section covers the CEPP Hydrologic Effects on the Lower East Coast Ecosystems and it covers the CEPP Uncertainty #62: Will the constructed and operational features of CEPP reduced surface and/or groundwater base flows and wetland/groundwater recharge to the east of the L-30 and L-31N in areas such as the Pennsuco Wetlands, south Miami-Dade wetlands, and Biscayne Bay? The adaptive management plan provides monitoring attributes and timeframes, thresholds, and suggested management options.	Thank you for your comment.
FDEP-39	**Timeframes and Attributes:** It is unclear when the monitoring timeframes for each of the attributes will be started and completed. For the attributes	The meaning of the timeframes has been clarified with the following text added to the document on page 10: "The "timeframe in which changes will be measurable" does not imply that changes will be *complete* in that timeframe; rather, the

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	that have listed only a 7-day time frame, please elaborate on if it is a one-time 7-day monitoring period or if multiple 7-day monitoring periods are proposed. For example, wetland and canal/creek stage monitoring is proposed for 7 days. It is unclear how one monitoring event can determine long term effects.	timeframes provide an estimate of time needed to *begin* to be able to distinguish CEPP effects. For practicality, the CEPP AM Plan screening criteria included the need to have attributes measurable within the time of the AM Plan, which in some cases necessitated a 'proxy' attribute to be measured that would represent expected changes on a longer time scale." In addition, where each timeframe is provided throughout the document the following clarification was provided: "Estimated timeframes to begin perceiving changes are listed below in parentheses... The attributes to be measured and time needed to begin perceiving changes are the following (these time frames are indications of speed of response, not limits on the monitoring to be conducted)" Please see Section 1.5 Implementation of CEPP Adaptive Management and associated figures for more detail on the estimated start- and stop-times for each adaptive management strategy. This will be used for future refinement and coordination of the CEPP adaptive management and monitoring with CERP agencies, via RECOVER.
FDEP-40	**Timeframes and Attributes:** The selected durations for the nine attributes should be explained, and possibly extended, as some of the timeframes are not long enough to see if the proposed thresholds are exceeded.	Thank you for your comment. Please see FDEP-39 response.
FDEP-41	**Triggers and Thresholds:** The 3rd paragraph identifies the Biscayne Bay reservation as "proposed" instead of "approved." Please revise, as the rule was adopted July 2013.	Thank you for the update. Change made in document.
FDEP-42	**Thresholds and Management Options:** The management options state that there will be changes in operations for Biscayne Bay if any of the thresholds are exceeded. The operations as they impact Biscayne Bay are not discussed in the Draft Project Operation Manual (Annex C) and, therefore, it is not clear how the operations can be modified to address the exceedances of proposed thresholds. The current operation plan is driven by stage triggers and since most of the management options are not stage related, the integrations need clarification. Please review and	The following response was coordinated with FDEP and added to the adaptive management plan: "The CEPP Operating Manual will undergo several updates and refinements over time as explained in Section 6 of the CEPP PIR and in the current CEPP Operating Manual (Annex C). The triggers, thresholds, and knowledge gained over time will be used in future modeling and updates, and the Operating Manual will be developed in coordination with and consistent with the CEPP Adaptive Management Plan." The following note has been added to the Operating Manual introduction to indicate that future updates will be consistent with and in coordination with the adaptive management plan: "The POM will undergo several updates and refinements over time as explained in Section 6 of the CEPP PIR and in this document. The triggers,

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	address appropriately.	thresholds, and knowledge gained over time will be used in future modeling and updates, and the POM will be developed in coordination with and consistent with the CEPP Adaptive Management Plan."
FDEP-43	**Figure D.1.11, page 1-96:** This figure shows that monitoring for the lower east coast is expected to start in year 7 with 2-3 years of baseline monitoring. The post construction monitoring begins in year 9 and ends around year 18. It appears that the overall monitoring will be ongoing for 10-11 years. Please note that since some of this monitoring is required for saving clause assurances, extended monitoring period may required. Please describe how the attributes ties into this monitoring schedule.	In coordination with FDEP and SFWMD, the following text was added to the adaptive management plan: "In addition, project permits may require monitoring to confirm that the project is remaining within applicable Savings Clause and Assurances requirements. This monitoring may extend longer than the 10-year limit imposed on most adaptive management and ecological monitoring. If so, this monitoring may be extended for an appropriate period according to the permit, and in coordination with the implementing agencies. Costs for the proposed monitoring, and potential extension of permit-required monitoring periods, have been included in the Monitoring Cost Table and in the CEPP project contingency estimations."
SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD)		
SFWMD-1	**Water Quality Requirements, Assumptions, and Cost Share:** A fundamental assumption of CEPP is that the SFWMD will treat 877,300 acre/feet of water on average currently flowing into the Everglades Protection Area (EPA) through the central flow path of the Everglades Agricultural Area (EAA) utilizing the facilities identified in the state's Everglades Water Quality Restoration Strategies Plan finalized in 2012. The state of Florida has established its commitment to complete Restoration Strategies through passage of House Bill 7065 in 2013, which provides a recurring dedicated source of funds to implement the $880 million plan. The Recommendation Section of the PIR in Paragraph v. recognizes that all features of the state's Restoration Strategies must be completed and meet state water quality standards prior to initiating construction of most CEPP project features. The Corps must continue to recognize that CEPP can only be implemented once the SFWMD is in compliance with the requirements of the National Pollutant Discharge	Thank you for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	Elimination System watershed permit, the Everglades Forever Act watershed permit and the associated consent orders for the operation and maintenance of the Everglades Stormwater Treatment Areas. As part of its scoping letter, the SFWMD expressed its concern that the redistribution of additional water flow into the Greater Everglades would cause violation of the Settlement Agreement Consent Decree provisions for water quality flowing into Everglades National Park. In order to implement CEPP, the compliance methodology currently found in Appendix A of the Consent Decree must be updated. Moreover, it is possible that implementation of CEPP will require development of additional features to ensure that the water made available by CEPP meets state water quality standards. The Recommendations section of the PIR in Paragraph z. contains the language setting forth the process and scope for accomplishing these goals. This language was negotiated at the highest levels with the Department of the Army and state government. It is imperative that all parties follow through with this important commitment to develop a scientifically supportable revised compliance methodology and to continue to assess whether additional water quality features are necessary to treat additional water moved into the Everglades. Failure to reach agreed upon revisions to Appendix A and a cost share agreement on any additional water quality features needed as a result of CEPP implementation will impact the state's ability to approve and/or implement these projects. The Corps must also continue to recognize that	

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	CEPP project features must meet state water quality standards. The Recommendations section in Paragraph w. acknowledges the interdependencies of and the necessity for phased implementation in order to assure water quality compliance is met.	
SFWMD-2	**Use of Existing SFWMD Owned Lands in Project Formulation:** It has been clearly communicated to the public and stakeholders that the CEPP will focus on the initial increment of restoration for the central Everglades. In order for this initial increment to be implemented in the most expeditious and cost effective manner, formulation of CEPP project features must be undertaken utilizing lands currently owned by SFWMD. The Tentatively Selected Plan (TSP) meets this requirement. If there are any proposed changes to the TSP, these must be limited to lands within state ownership. The SFWMD will not support a CEPP TSP that requires additional land acquisition for storage and/or treatment for this initial increment.	Section 3.2.1.2 presents the analysis that was used to identify the project footprint to be used for the storage and treatment features identified in CEPP. In order to determine the most appropriate location for project features , and identify the federal interest in the project, there were many factors involved in identifying the specific location for the project features, including existing infrastructure, socio-political and environmental issues, hydrology and construction efficiency. The siting analysis identified the 28,000 acre A-1 and A-2 footprints as being the largest, most efficient footprint for this increment of CEPP.
SFWMD-3	**Completion of Modified Water Deliveries to Everglades National Park and Development of an Operational Plan:** Planning, design and construction of the features associated with Modified Water Deliveries to Everglades National Park is 100 percent the responsibility of the federal government (see Everglades National Park Protection and Expansion Act of 1989, Sec. 104 (16 U.S.C. 410r-8)). Certain project features that were originally envisioned to be completed as part of Modified Water Deliveries have been refined in the CEPP planning process and are included in the TSP. These include surrogates for the following components:	The Corps is re-initiating pursuit of operational testing (relaxation of G-3273 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Planning for the G-3273/S-356 field test has started but is not complete and necessary approvals (including FDEP) have not been attained. Information from the test will be used to develop the Final Water Control Plan for the MWD project which will allow for re-distribution of existing water flow from Western Shark River Slough to Northeastern Shark River Slough. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation. As outlined in the C&SF Comprehensive Review Study (USACE 1999), the CERP plan included the removal of the Modified Water Deliveries Project S-356 pump station and the addition of two new 900 cfs pump stations as part of component (FF). The plan also included three gated culvert structures in the southern reach of the L-67A levee (component AA). Section 6.9.8 has been added to the CEPP PIR and includes a discussion of the comparison of the CEPP proposed features to relevant components

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	1. S-345A, S-3458 and S-345C 2. S-349A, S-3498 and S-349C 3. S-356 Pump (1,000 cfs) 4. Degrading the remaining five miles of the L-67 Extension Canal and Levee SFWMD agrees to cost share construction and operation of the surrogate features developed for CEPP under the CERP authority, Section 601(e) of the Water Resources Development Act of 2000. The PIR identifies all remaining elements of Modified Water Deliveries that are either completed or under construction. See PIR at Sec. 2.5.7. These features must be finished and a water control plan developed as a precursor to CEPP implementation. The additional water identified in CEPP cannot be brought south until Modified Water Deliveries is fully operational.	of the CERP Plan.
SFWMD-4	**OMRR&R Cost Share and Integrated Operation of State Facilities:** In order for CEPP to be implemented in the most cost effective and efficient manner, integration with state owned and operated facilities is required. Section 8 District's Engineers' Recommendations of the PIR sets forth this understanding and includes a cost share percentage of 9.5% for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) costs of the state facilities used by CEPP. It also clearly defines the state and federal roles; the state and the Corps have joint responsibility over OMRR&R decisions for the integrated Flow Equalization Basin feature, while the state retains sole authority over OMRR&R decisions for state owned facilities. The Corps must continue to recognize the state's sovereign role in operations of state facilities	The CEPP plan and PIR includes recommendations to seek Congressional authorization for cost-sharing the OMRR&R costs associated with the increase in water flows through relevant State Facilities. Section 6.6.2, Section 8. and Appendix B include the relevant details of the proposed cost share percentage, how the cost share percentage was derived, what structures are eligible and the estimated costs.

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	whose primary purpose is to ensure compliance with state water quality standards. Moreover, the Governing Board has stated in the attached Resolution that the OMRR&R cost share issues of state-owned and operated facilities to be used by CEPP will need to be resolved in a manner favorable to the SFWMD and such cost-share responsibility included in the CEPP Final PIR/EIS.	
SFWMD-5	**Phased Implementation and the Need for Multiple Project Partnership Agreements:** The PIR recognizes that CEPP will be implemented over an extended time frame. As a result, CEPP is composed of implementation phases that include features or logical groupings of plan features. The PIR also recognizes dependencies on both CERP and non-CERP projects that must be in place prior to the implementation of CEPP. Many of these will require integration into the sequencing of CEPP to avoid unintended adverse consequences, and to allow for restoration benefits to be achieved as early as possible. Moreover, the SFWMD and the Corps will need to ensure that the cost share balance for CERP implementation is maintained over this extended implementation period. The Recommendations Section of the PIR at Paragraph y. contains language recognizing these contingencies and the important role of the Adaptive Management and Monitoring Plan in shaping the implementation phases. It specifically identifies the ability of the SFWMD and the Corps to enter into individual Project Partnership Agreements (PPAs), or amendments to existing PPAs for construction of each implementation phase. The flexibility provided by this language is essential to successful CEPP implementation given the uncertainties associated with the lengthy implementation period	The USACE has maintained ongoing communications with the SFWMD throughout the preparation of the Draft PIR/EIS and has continued to do so for the Final PIR/EIS. The USACE has provided the SFWMD the opportunity to review any suggested revisions that will appear in the Final PIR/EIS.

<table>
<tr><th>COMMENTER</th><th>AGENCY/PUBLIC COMMENT</th><th>CORPS RESPONSE</th></tr>
<tr><td></td><td>and the inevitable improvement in scientific knowledge about the functioning of the greater Everglades that will occur as planned CERP and Non- CERP projects are completed.

In the Resolution approving the draft PIR's release for public review and comment, the Governing Board acknowledged that the document is subject to further review by the public, state and federal agencies as well as the Corps headquarters and Department of the Army. The Board specifically required that any substantive changes must be reviewed and approved before release of the Final PIR. It is critical that the Corps follow through with the commitments contained in the Recommendations Section of the Draft PIR. Any changes to the agreed upon language could impact SFWMD's ability to accept the role of the local sponsor. Governing Board direction has been clear, the Board expects to see the agreed upon language contained in the Recommendations Section mirrored in the Chief of Engineer's Report and Record of Decision for the CEPP Project.</td><td></td></tr>
<tr><td colspan="3">FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION (FWC)</td></tr>
<tr><td>FWC-1</td><td>Sections 5.2.4 and 5.2.5 of the draft PIR/EIS present a list of federally and state-listed species that may occur within the impact area. We concur with most of this list, but note that the Miami blue butterfly (Cyclargus thomasi bethunebakeri) should be included in the list of federally listed species (listed as Endangered). In addition, we would add the following species:
<table>
<tr><th>Common Name</th><th>Scientific Name</th><th>Status*</th></tr>
<tr><td>Audubon 's crested caracara</td><td>Polyborus plancus audubonii agudubongudubonii</td><td>FT</td></tr>
</table>
</td><td>The species have been added to Sections 5.1.4, 5.1.5, 5.2.4 and 5.2.5 as recommended.

The compliance with the Bald and Golden Eagle Protection Act is described in Section 7 and Appendix C.4.</td></tr>
</table>

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	Bald eagle *Haliaeetus* ** Burrowing owl *Athene cunicularia* SSC Florida sandhill *Grus canadensis* ST Osprey (Monroe *Pandion haliaetus* SSC Roseate tern *Sterna dougallii* FT Southeastern *Falco sparverius paulus* ST * SSC - Species of Special Concern; ST - State Threatened; FT - Federally Threatened; **While the bald eagle has been both state and federally delisted , it is still governed by the state bald eagle rule and the federal Bald and Golden Eagle Protection Act (see http:// myfwc.com /docs/Wildlife H abitats/ Eagle Plan April 2008. pdf#page=35)	
FWC-2	High water stages in WCA 3A/Tree Islands/Wet Prairie: Recommendation: The FWC has revisited the recommendations that the FWC's predecessor agency, the Florida Game and Fresh Water Fish Commission, had provided the U.S. Army Corps of Engineers in 1980 (Schortemeyer 1980) and the July 1, 2010, USFWS Multi-Species Transition Strategy for Water Conservation Area 3A (U.S. Fish and Wildlife Service 201 0). Both take a multi-species approach and were based on research in WCA 3A. The former addressed four species or suites of species: the deer, the alligator, passerine birds, and the pig frog. The latter addresses tree islands, wet prairies, wood storks, Everglade kites, and apple snails. We find that these key fish and wildlife in WCA 3A are best served by water stages no higher than 10.2 feet National Geodetic Vertical Datum (NGVD) by late October to early November and then a gradual and steady recession to a low of near 8.2 feet NGVD by late May to early June as measured by the three-gauge average of the G-63,	The AM plan is designed to prevent unintended degradation of the ecosystem due to scientific uncertainty. The AM plan presents a variety of management options to evaluate and adjust CEPP operations. The RSM-GL hydrologic modeling for CEPP indicates that the WCA 3A 3-gauge average stage exceeds the indicated threshold of 10.2 feet NGVD for approximately 26.0 percent of the 1965-2005 period of record for the FWO and 27.3 percent of the period of record for the TSP (Annex A-2 of Appendix A, Figure 19-20 in the draft PIR). The WCA 3A 3-gage average mean daily stage hydrograph for the period of record (Annex A-2 of Appendix A, Figure 47 in the draft PIR) indicates that WCA 3A water levels for the TSP, on average, exceed 10.2 feet NGVD between 10 October and 25 November (47 days). The EN-W performance assessment for the final array of alternatives further reviewed the WCA-3A stage hydrographs for individual years in which the number of days above Zone A increased by more than 20 percent between the CEPP FWO and any of the CEPP alternatives, as shown highlighted in Table 5 and Table 6 of Annex A-2. Annual hydrographs are also provided for each of the twelve years which triggered this further detailed assessment (Figures 25 through 38): 1969, 1980, 1983-1985, 1993-1996, 1999, 2003, and 2005. Additionally, the top of the current ERTP WCA 3A Regulation Schedule (Zone A), which is retained with the TSP as the stage trigger for maximum WCA 3A regulatory releases, varies seasonally between 9.5-10.5 feet NGVD, with the Zone A

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	G-64, and G-65 gauges (assuming their elevations are 8.8, 8.5, and 7.4 feet NGVD, respectively). At that time, water levels would increase back to no higher than 10.2 feet NGVD again by the end of October to early November. During extreme storms or unusually wet seasons, water levels may rise above the desired high levels, but even then depths should not exceed an average of 2.46 feet for longer than 60 days. Water levels for the two-gauge average at the 62 and 63 gauges should not exceed 11.6 feet NGVD (or 10.8 feet for the three-gauge average). If this is to occur, remediating actions must be taken to drop levels within seven days. The DPIR/EIS acknowledges that rehydrating the northern part of WCA 3A may result in the remobilization of nutrients. Recognizing that it would be beneficial to rehydrate this area and begin to restore peat-accretion processes and recognizing the potential for nutrient remobilization, we strongly recommend that CEPP take an incremental approach to introducing more water into northern WCA 3A. This approach would be consistent with the principles of adaptive management both in monitoring vegetation changes in the currently dry areas and in allowing the Project Implementation Manual to adjust water inputs into WCA 3A (and ultimately into WCA 3B and Everglades National Park) in a manner that would avoid invasion of cattails due to increased nutrient levels. It would also allow for refining the operation of the new structures to decrease the chance of flooding tree islands and wet prairies beyond their tolerances.	trigger elevation exceeding 10.2 feet NGVD for 161 days between early September and mid February. The northwestern region of WCA-3A, where a 2.5 mile spreader-canal will functionally replace the Miami Canal, will most likely exceed this two-foot limit during extreme hydrologic events. The CEPP AM plan will work with FWC to use fire to create preferential flow paths that will accentuate sheetflow and minimize excessive ponding. This NW region of WCA-3A has become a dense bank of willow and does not provide the elevation mosaic or the plant diversity needed to support FWC "imperiled species" nor CERP key indicators of restoration, such as prey-based fauna (i.e., crayfish and fish). Preferential flow paths will "jump-start" the elevation mosaics needed to restore the ridge-slough-tree island landscape. The creation of tree islands along the Miami Canal in northern WCA-3A is expected to provide the plant and animal diversity that meet the ecological goals of CEPP and the FWC. High water events are natural, but need not be catastrophic for deer and other terrestrial species. CEPP will continue to coordinate and work with the FWC on tree island construction and management. CEPP made a concerted effort to not increase EWMA closures. Despite the additional 210,000 acre-ft of new water to the Everglades, the RSM-GL hydrologic modeling indicates that the TSP caused EWMA closures twice, in 1994 and 1995. According to the 2-gauge average north of Alligator Alley, the duration of the 1994 event when water depths were over 2 ft for more than 60 days, were 146 days for the TSP, 151 days for the FWO, and 159 days for the ECB. According to the 2-gauge average north of Alligator Alley, the duration of the 1995 event when water depths were over 2 ft for more than 60 days, were 67 days for the FWO, 68 days for the ECB and 85 days for the TSP. The Everglades is a slow moving system and big rain events can cause rapid and extensive ascension rates. Current operations, CEPP and ECB are not effective in preventing water from accumulating in the Everglades during the wet season. The CEPP AM plan will examine both operational and physical options to increase flow velocities and sheetflow It is predicted that with implementation of the TSP, that the largest percent gains in daily average fish density would occur within northern WCA 3A and NESRS due to rehydration. The fish tools used in CEPP showed that in these areas, fish densities often increased in excess of 20%, with extremes of over 50%, however decreases in

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		fish density, or negligible changes (3%), were predicted in the area of WCA 3A along the L-67 A canal. An increase in density of small fishes will directly benefit higher trophic level predators such as wading birds. Therefore, it is predicted that the TSP will also provide a moderate beneficial effect for wading birds. Wood stork species distribution was modeled by Beerens (2013) and indicates that wood storks would more frequently use areas of northern WCA 3A, WCA 3B, and southern ENP under the TSP compared to the existing conditions and FWO. Wading bird use is predicted to increase for wood stork colonies previously and/or currently located within WCA 3B (3B Mud East), along Tamiami Trail (Tamiami Trail East 1, Tamiami Trail East 2, and Tamiami Trail West), and for several colonies located in ENP (Grossman West, Rookery Branch) for the TSP relative to existing conditions and FWO. Wading bird use is predicted to remain stable or decrease for several colonies located in southern WCA 3A adjacent to L-28 (Crossover, Jetport, Jetport South, Hidden) for the TSP relative to existing conditions and FWO; however there is potential for these wood stork colonies to utilize adjacent areas where foraging and habitat suitability are increasing.
FWC-3	Low water stages in WCA 3A: Tables 5.1-9 and 5.2-7 indicate that the EWMA is closed when water levels fall at or below a height of 9.16 feet NGVD, as indicated by the average readings at the 62 and 63 gauges. However, the actual closure criterion is at or below 9.30 feet NGVD. Recommendation: We request that the evaluation of low water closure days be recalculated using the correct criterion.	The current FWC criteria for critical low and high water levels were extrapolated to the entire 41 POR modeled for comparison purposes between alternatives. The days meeting closure criteria err on the conservative side and may not exactly match actual historic closures since FWC criteria have changed over time.
FWC-4	Water levels in WCA 3B: While aerial photographs of WCA 3B indicate that the pattern of ridges and sloughs has been somewhat obscured, this area contains some of the tree islands least affected by high water levels in the EWMA. This is because this area has been subject only to what it receives directly from rainfall and what it loses from seepage and evapotranspiration. With the introduction of water into WCA 3B from WCA 3A, there will need to be careful monitoring of water	The CEPP AM Plan (**Annex D**) for WCA 3B recognizes the sensitivity of tree islands, and as such recommends an incremental restoration of hydroperiods and water depths for WCA 3B based on the ability of these islands to accumulate peat. The Twin Heads tree islands west of the proposed L-67 D is currently being monitored by the SFWMD as part of the Decomp Physical Model (DPM) and is expected to set the criteria for how fast tree islands grow and accumulate peat as a function of longer hydroperiods, high flow velocities (which carry more nutrients and help trees cope with stress) and a pulsing operational design. The response of the Twin Heads is expected to be compared to other tree islands in WCA 3B where the depths will be lower and the hydroperiods shorter. This information would then be used as a feed

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	levels to ensure that inflows equal outflows. If high water levels and/or ponding occurs as a result of transferring water from WCA 3A to WCA 3B, this may result in adverse impacts to tree islands and other natural vegetative communities, thus impacting remaining functional or potential wildlife habitat. Recommendation: We recommend that the USACE and SFWMD initially adopt the following criterion for managing water levels in WCA 3B. If in any year, depths in WCA 3B as measured at the 7-1 gauge for the eastern part and the EDEN 10 gauge for the western part exceed two feet for more than 59 days, extensive monitoring of tree island health will immediately begin. If significant stress to trees is detected, operational steps must be taken to achieve more favorable conditions during the following water year to reduce stress on these key Everglades landscape features. In the longer term, we recommend that the USACE and the SFWMD work with FWC and others as appropriate through the adaptive management program to develop a regulation schedule that supports the redirected flows while avoiding harm to the tree islands in WCA 3B.	back to inform the operations of structures along the L-67A levee and is expected to influence future CERP designs. AM strategies and management options for the Greater Everglades with respect to restoring tree island hydrology can be found in **Section 1.4.2.3** of the **AM Plan** (**Annex D**).
FWC-5	Levee construction: The L-67D levee would be a major new structure in the EWMA and its inclusion seems counterintuitive to moving toward a more natural system. Additionally, by proposing to connect the new L-67D levee to the L-67A levee, Alternative 4R2 would pose a significant impact to recreational fishing access in the L-67C canal and has the potential to cause environmental and habitat impacts associated with construction. Recommendation: We prefer that the new L-67D levee be constructed as one of the last components to come on line and only if it is shown through operational experience to be necessary. If	WRDA 2000 requires (Savings Clause) that CERP does not reduce the level of service for flood protection as of 2000 and in accordance with applicable law. The function and integrity of the C&SF flood protection system provided by the L-67 A and L-67 C levee system must be maintained following CEPP implementation, and CEPP degradation of portions of the L-67 C and L-29 levees must be offset with additional infrastructure and operational constraints that maintain the pre-project level of flood protection and account for any potential increased design risk. The details of additional infrastructure, and how it would interface with operations and existing infrastructure, will be determined in the future as adaptive management, Pre-Construction Engineering and Design (PED), and as other information becomes available for this area. Consideration of a new L-67 D levee (currently included as a component of the CEPP recommended plan), including its footprint (width/height), costs, and permanency, will be cautiously considered and subject to applicable

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	it is constructed, then we recommend that it be terminated at the L-67C levee so as not to impact this important fishery.	policies and permitting. The Blue Shanty Levee will bisect L-67 C. Recreational fishing by prop boat to the northern end of the L-67 C canal would continue to be available from a new public boat ramp located in the northern end of the L-67 C at S-151, providing a beneficial effect. Also at S-151, a new public boat ramp will allow access into the northern 5 miles of the Miami Canal south of S-151 not previously served by a public boat ramp.
FWC-6	Filling of the Miami Canal and removal of spoil mounds: Public use of the Everglades remains strong. The canal system supports thousands of angler-hours of fishing effort; facilitates further travel into the area promoting hunting, fishing, boating, and wildlife viewing; and provides an economic benefit to Florida and our local communities. Our position during the Restudy was, and continues to be, that we do not support filling canals that provide recreational opportunities unless it can be shown to be necessary in order to accomplish hydrological restoration. The CEPP modeling suggested that backfilling south to the S-339 structure provided the most demonstrated benefits; additional benefits from filling from the S-339 structure to Alligator Alley were questionable. Thus, although CEPP proposes to retain 22 of the FWC's highest priority enhanced spoil mounds between the S-339 and Alligator Alley, the use of any spoil material as fill in a recreationally important canal raises both ecological and recreational concerns for the FWC. We do, however, fully support reconstructing tree islands across the footprint of the filled portions of the Miami Canal in locations where they historically were located. Recommendation: FWC should be included in decision making processes during detailed design to re-examine that backfilling of the Miami Canal only be included as far south as the S-339 structure.	Thank you for your comment. During the planning process we worked directly with FWC staff to ensure we preserved the highest priority spoil mounds along the Miami Canal while still meeting the need to backfill the Miami Canal and remove barriers to flow (spoil mounds) to restore sheetflow. The purpose of the Miami Canal backfill is to render the Miami Canal invisible hydrologically and ecologically at a landscape scale. While backfilling the Miami Canal from S-8 to I-75 will have a major adverse effect on the access to recreational fishing by power boats, fishing opportunities throughout the Greater Everglades will have a major beneficial effect by the improvements in boat access and the addition of access points around proposed structures. FWC will be included in the decision-making process during detailed design.

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FWC-7	Exotic Species: The projects' plans for detection, monitoring, and treatment/control of exotic species are largely covered in Annex G. While we agree that exotic fish, wildlife, and vegetation can be cause for concern, we contend that there is currently no evidence that exotic fishes in man-made canals pose a threat to ecosystem function. In 2007, the FWC developed a position paper (enclosed) that details this conclusion. Furthermore, in our experience, electrofishing has not been demonstrated to be an effective method of eradication of exotic fishes, particularly those known to be established in the construction locations for the project. While the FWC supports the pre- and post-construction monitoring and early detection and rapid response (EDRR) approach outlined, we do not support the use of electrofishing to attempt to eliminate exotic fishes from construction locations. Recommendation: We request that Annex G be more value-neutral in addressing the impacts of exotic fishes on canal systems in the Everglades. Further development of the discussion of mechanical control would also be appropriate. Unless restricted to roads or levees, our experience leads us to believe that the kind of mechanical control described is not feasible in the central Everglades. Additionally, we request a clarification of the temporal and geographic context of the statement in G.2.1.3 regarding the dominance of Brazilian pepper in the canopy of small tree islands. Currently, most tree islands in EWMA are treated and in a state of maintenance control.	Additional text will be added to the plan to clarify non-native fish issues/monitoring etc. Electrofishing is intended to be a monitoring tool not a control method. This section will be revisited and text revised if required. In reference to mechanical removal, please refer to response for FWC-26.
FWC-8	Sequencing will be a critical factor in achieving success via CEPP. The DPIR/EIS indicates that one of the later actions will be to remove the Old Tamiami Trail. Recent events have shown that	The southern portion of WCA 3A is primarily affected by long durations of high water and lack of seasonal water depths created by impoundment structures (i.e., L-67 and L-29 Levees). Removal of the Old Tamiami Trail would slightly alleviate the high water conditions currently experienced in WCA 3A by potentially providing a small increase

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	water managers consider breaching it to be an important action contributing to a short-term solution to this year's high water levels. Recommendation: We recommend that the Old Tamiami Trail be removed as early as possible in the implementation of CEPP so it no longer acts as a barrier to water moving south. Additionally, as part of the removal of the Old Tamiami Trail regarding the 1 ,320 foot east-west strip that runs along the entire length of the Tamiami Trail that shares a boundary with ENP, we recommend an easement be established south of Tamiami Trail to facilitate road modifications, maintenance and water delivery. We further recommend during the removal of the old Tamiami Trail that the associated borrow canal west of L-67 Extension be left in place to serve as a spreader canal incoming flows to promote sheetflow into ENP. Similarly, as part of this element, a spreader swale should be established south of Tamiami Trail east of the L-67 Extension to improve distribution of flows downstream.	in the conveyance capacity of the S-12 structures. Removal of Old Tamiami Trail can be completed at any time during implementation of CEPP, but must precede backfilling of the L-67 Extension. ENP supports removal of the Old Trail to improve discharge capacity of the S-12's, however, there has not been a detailed technical analysis to support any estimation of increased flows. We do not see any problem with leaving the east-west borrow canal along the old Trail in place to help with water distribution. Comments identifying the need for an expanded maintenance easement have been provided on the Draft EIS for ENP - General Management Plan. For the area south of eastern Tamiami Trail within NESRS, ENP Draft GMP envisions the establishment of a maintenance zone to the south of the roadway. This zone would presumably allow a higher level of management intervention to help promote improved water flow (such as exotics removal, native vegetation thinning/clearing, and fire management). As far as providing swales south of the eastern portion of the trail, the new additional bridging to be provided under the Next Steps project will be similar to the 1 mile bridge recently constructed in that the existing roadbed will be removed under the new bridging. This will provide for more uniform distribution of flows south of the trail much better than any swales in this area. In a longer-term effort, ENP also wants to specifically investigate options that would create preferred flow paths into NESRS that could presumably aide in the recovery of the historic ridge and slough micro-topography. As an example, we know from field monitoring that burning an area followed by continuous flooding tends to shift the vegetation away from dense sawgrass toward more open eleocharis and other slough vegetation.
FWC-9	Although current analysis of model outputs suggest sustained freshwater flow to Biscayne Bay, numerous concerns about real world performance were raised by a variety of stakeholders during plan formulation. We echo these concerns; it would be	Savings clause analyses described in Section 601(h)(5) of WRDA 2000, is a means to protect users of legal sources of water supply and flood protection that were in place at the time of enactment. Section 385.36 of the Programmatic Regulations require PIRs to determine if existing legal sources of water are to be eliminated or transferred as a result of project implementation. Comparison of the sum of mean annual

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	difficult for FWC to support a project that would decrease freshwater flows to Biscayne Bay. Many of the organisms in the bay, including the pink shrimp, which supports the number one commercial fishery in the bay, thrive in salinity ranges of 20-35ppt. Thus, any decline in freshwater flows to the bay could have negative impacts on ecological conditions in the bay and important recreational and commercial fisheries.	structure flows in the with project condition (Alt 4R2) to the without project condition (IORBL1) indicates the total inflows to Biscayne Bay are slightly increased with Alt 4R2 (839 kAF for IORBL1; 865 kAF for Alt 4R2). All sub-regions of the Bay (north, central, south-central, and south) perform essentially the same relative to ecological performance measure targets used during the planning process. Water sources for fish and wildlife will not be diminished. See **Section 6.8** (**Project Assurances Summary**) and **Annex B** (**Analyses Required by WRDA 2000 &State Law**). CEPP Uncertainty ID # 62 within the AM Plan currently addresses the ecological effects of CEPP hydrology on Biscayne Bay. See **Section 1.4.4.2** of **Annex D** (**Adaptive Management and Monitoring Plans**) for reference. This section of the AM Plan currently notes the importance of Biscayne Bay as a Florida Outstanding Water and focuses on adaptively managing constructed and operational features of the CEPP in order to maintain the current level of surface and groundwater base freshwater flows to this area to where there is no change in the ecological condition of this region.
FWC-10	The discussion of recreation in Appendix F does not adequately address how CEPP could impact recreational access and opportunity. Repeated, legitimate concerns about impacts to hunting access and /or opportunities were raised by stakeholders during plan development and should be addressed. Given the potential for reduced carrying capacity of deer and other mammals dependent on uplands, the potential for some loss of hunting opportunity is real.	The CEPP Recreational Plan maintains and improves existing access and provides additional access points for recreational and hunting opportunities. Please refer to Appendix F, Figures F2, F3 and F4 that identify existing, improved and new access points for recreational opportunities that include hunting.
FWC-11	CEPP is striving to make significant increases in water deliveries to WCA 3A with limited storage components in the EAA or the Lake Belt. Staff is concerned that without sufficient storage capabilities in these areas, CEPP will lead to the continuation of the periodic extreme high water events that have been degrading wildlife habitat in the WCAs for decades.	High rainfall, landscape-scale sheetflow and high velocity water were critical elements of Everglades creation. CEPP goals, like DECOMP before it, have been focused on the need to increase flow and prevent ponding. We agree that the capacity of the current Everglades has been compromised. However, CEPP has added features that increase the outlet capacity of the WCA-3 such as the Blue-shanty flow-way, significant increased capacity of the S-333 and the Old Tamiami Trail degrade to keep the water flowing.
FWC-12	Section 5: This section separates the comparison of effects among Alternatives 1 through 4 from the comparison of effects between Alternatives 4R and	The evaluation of alternatives 1 through 4 identified the need to revise the operations of Alt 4 to ensure the project savings clause constraints are met, to minimize localized adverse ecological effects, and to identify additional opportunities

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	4R2. The fact that the scale used to depict the stage duration curves for the first set of comparisons is different from the scale used for these graphs in the second set of comparisons makes it very difficult to determine how the tentatively selected plan (Alternative 4R2 or TSP) compares with Alternatives 1 through 4. Presenting the full range of alternatives in one set of stage duration curves for each region in the final PIR/EIS would better document the decision for the finally selected plan.	to provide for other water related needs. Alternative 4 was initially refined with operational changes to avoid potential impacts to water supply levels of service in the LOSA and LEC, resulting in Alt 4R. Alt 4R was then refined further to determine if water supply cutbacks to the LOSA could be further reduced and to determine the quantity of additional LECSA 2 and LECSA 3 public water supply able to be provided while maintaining the natural system performance realized for Alt 4R. Alternatives 4R and 4R2 were compared to and evaluated against the FWO to describe changes to future conditions with implementation of each CEPP action alternative. The scales on the stage duration curves in section 5.1 and 5.2 are the same, but the direct comparison cannot be made due to the reasons described above.
FWC-13	Table 5.2-1 has to be interpreted carefully and can be unintentionally misleading. It would be easy to think that the changes in water levels described for Alternatives 4R and 4R2 are how they compare to existing conditions, but they are actually compared to the FWO condition. To understand what the alternatives mean in terms of how different they are from the existing condition, one must first compare FWO against the existing condition and then calculate how the alternatives compare against the existing condition. We recognize that EIS 's must compare alternatives to FWO conditions, but, in the interest of transparency, we recommend including how they compare against the existing conditions.	The differences between the future without project condition and the future with project condition are the effects of the project, as indicated in Section 2.1.Throughout Section 5 of the PIR (not only Table 5.2-1), all CEPP action alternatives were compared to and evaluated against the FWO to describe changed conditions with implementation of each Central Everglades Planning Project (CEPP) action alternative. Comparison between the existing conditions and the action alternatives will not be directly included in the PIR, as this comparison does not distinguish between the effects of the intervening projects included in the FWO and the effects of the CEPP action alternatives. Comparison between the existing and FWO condition is summarized in Table 2-1 and further detailed in Appendix C.1. Comparison of action alternatives versus the existing condition does require first comparing the FWO against the existing condition (Appendix C.1), and then comparing the action alternatives against the FWO (Section 5).
FWC-14	Throughout Section 5, WCA 3B is predicted to have increased hydroperiods that would be of benefit to snail kites, but from review of model output (stage duration curves), staff could not find any improvements for WCA 3B. The difference in hydroperiods as shown in Figure 6-8 does not appear to show any improvements. Figure 6-9 indicates only marginal improvements on the east side, and Figure 6-10 shows improvement to WCA 3B in that portion west of the Blue Shanty.	Snail kite analysis in Annex A shows that slight improvements to apple snail depth ranges occurred in 3B (3B-71 and 3BS1W1). As compared to the existing conditions and FWO, increased hydroperiods within WCA 3B and ENP would increase suitable habitat for apple snails, thereby increasing the spatial extent of suitable foraging opportunities for Everglade snail kites. Appendix A (Engineering), Appendix A-2 (Hydrologic Modeling), Reference 6 includes the RSM-GL stage output maps, RSM-GL hydroperiod output maps, stage difference maps for Alt4R2 compared to each baseline, and hydroperiod difference maps for Alt4R2 compared to each baseline; hydroperiod and hydroperiod difference maps are provided for wet (1995), dry (1989), average (1978), and average annual conditions

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		for the complete period of record (1965-2005). Complete RSM-BN and RSM-GL hydrologic model performance measure output are posted on the Everglades Plan public web site for the CERP, as indicated in Section 5.2 and Appendix A: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx Figure 6-7 and Figure 6-8 only illustrate hydroperiod differences for a representative dry year (1989) and wet year (1995), respectively; no hydroperiod difference would be expected for 1995, since WCA 3B experiences surface water ponding throughout the year in both the FWO and ALT4R2 conditions.
FWC-15	Sections 5.1.6.2 and 5.2.6.5 state that although deer may be impacted by the removal of levees and lower tree islands being inundated in WCA 3B, the remaining portions of CEPP will see no significant effects on mammals. However, this is not true since northern WCA 3A will likely experience increased depths. Increased depths for longer periods of time will likely reduce foraging areas and limit carrying capacity of deer and other mammals dependent on uplands.	Section 5.1.6.5 states that CEPP implementation may negatively affect some mammals dependent upon upland habitat. Due to increased water flow and changes in water distribution it is anticipated that overdrained areas northern WCA 3A will be rehydrated, triggering a vegetation transition from upland to wetland habitat. Although mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades, there is an increased potential for this vegetation transition to have a moderate adverse effect negatively affect mammals using upland habitat. Similar language about mammals that are dependent upon upland habitat is included in the third paragraph of Section 5.2.6.5.
FWC-16	Table 5.1-2 and 5.2-1 characterize a drop in water level by 0.05-0.75 feet as a major adverse impact and drop of 0.25-0.50 feet as a moderate impact, respectively. WCA 2B has consistently experienced high water levels for a number of years, so a decrease in water levels in this area should be a benefit for wildlife.	For many years WCA 2A has been too deep for too long. The attempt in the late 1960's to restore pre-drainage water levels did not consider the elevation loss associated with soil oxidation and subsidence due to drainage. When historic water levels were returned it was too deep for tree islands and southern WCA 2A sawgrass ridge communities, and these habitats were destroyed. To compensate, the WCA 2A regulation schedule was "improved" by creating a 4-month dry season where water depths were allowed to go negative for extended periods of time. In reality, WCA 2A often received very high inflows during the wet season and did not "dry out" during the dry season because outflow structures were managed for water supply. This type of water level management is not restorative for WCA-2A. CEPP is designed to increase sheetflow everywhere. This means that inflows into WCA 2A must supply WCA 2B for water supply and must keep northern WCA-3A hydrated during the dry season. This "extra" demand requires that current inflows be maintained, but managed better to 1) prevent extreme high water levels, 2) keep water in the sloughs for 10-11 months per year, almost every year, and 3) create sheetflow. Simply put; FWO average water levels provide the flexibility and hydraulic head needed to create sheetflow and a restorative hydroperiod across most of WCA 2A. Loss of this hydraulic head will degrade CEPP's ability to restore ridge-slough-tree island

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		landscapes, while meeting water supply obligations.
FWC-17	Table 5.1-8 states: "Hunting (deer, hog, rabbit, etc.) could have a major adverse effect in the short term by increased hydration in the very northern WCA 3A areas that have been dryer." The way that the sentence is written implies that hunting will have a major adverse effect on wildlife. We assume that what the DPIR/EIS means is that hunting will be negatively affected by increased hydrology. It also depends on what kind of hunting and what species of wildlife being referenced. Overall, hunting for deer, hog, and rabbit may be adversely impacted by increased depths in northern WCA 3A. This comment also applies to Table 5.2-6. We suggest this be clarified.	The sentence in Table 5.1-8 and 5.2-6 were rewritten to state "Improved hydrology in the northwestern portion of Water Conservation Area 3A that have been too dry could have a an adverse effect in the short term on hunting (deer, hog, and rabbit)."
FWC-18	In Section 5.1.15.3, Recreation: The first paragraph mentions the EWMA for the first time in the DPIR/EIS without mentioning where it is in relation to the CEPP footprint. We suggest mentioning it in the project area description and clarifying that it comprises WCAs 2 and 3 (excluding the Reservation of the Miccosukee Tribe of Indians of Florida).	The following sentence was added to Section 5.1.15.3 "Comprising Water Conservation Areas 2A, 2B, 3A, and 3B, the EWMA totals 671,831 acres, or 82% of the Water Conservation Areas in south Florida and roughly 30% of the remaining Everglades landscape south of the Everglades Agricultural Area."
FWC-19	Table 5.2-1 states that there will be moderate to major improvements for WCA 3B, but from the staff was unable to determine the source of this water for the TSP. We also noted that there is no improvement in outflows from WCA 3B. Balancing inflows to WCA 3B with outflows from WCA 3B will be critical for ensuring that deleterious effects from high water levels are not introduced into WCA 3B, which, for the most part, has escaped the fate of a substantial loss of tree islands as has occurred in WCA 3A and in WCA 2.	The improvements to WCA 3B are the result of a significant increase to the average annual combined structural inflows to WCA 3B from WCA 3A, from 327 kAF in the FWO to 544 kAF in Alt 4R2 (67 percent increase). A detailed description of the hydrologic effects of the CEPP TSP Alt 4R2 within WCA 3B is provided in Section C.2.2.7.7 of Appendix C of the CEPP draft PIR. A water budget map with surface water flow vectors for Alt 4R2, focusing primarily on the structure flows (kAF average annual) and locations (levee seepage flux along L-30 and L-29 is also indicated), is provided in Figure C.2.2 67. Alt 4R2, with the Blue Shanty flowway and L-29 Levee Gap, achieves significant north-to-south surface water flow directionality within WCA 3B only in the spatial footprint of the Blue Shanty flowway. Additional statements have been added throughout the previous text in Section C.2.2.7.7 for the CEPP Final PIR, to expand on the previous draft PIR description of

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		WCA 3B hydrologic benefits (continuing to distinguish between the Blue Shanty flowway and eastern WCA 3B) and to provide a more detailed summary of the water budget information shown on the WCA 3B water budget map. Within the Blue Shanty Flowway, approximately 97 percent of the increase in average annual structural inflows to this area of WCA 3B are discharged across the L-29 Levee degrade. By comparison, resultant from the outcomes of the CEPP plan formulation process, stages within eastern WCA 3B for Alt 4R2 were intentionally managed lower than within the Blue Shanty flowway, and increased structural inflows to this area of WCA 3B (S-345D) were targeted to achieve benefits of an extended hydroperiod without significantly increasing WCA-3B discharges through the existing S-355A and S-355 gravity spillway structures.
FWC-20	Figure 6-10: The difference in stages between the FWO and the TSP shows a 0.5- to >1.0 increase in water stage during 1995 in northwest WCA3A, which means water depths would have been three feet or greater near the L4 and L5. Although we recognize that the 1995 year is a model simulation as opposed to an actual condition at the time, the water levels in 1995 were much too high, and the TSP would have exacerbated the event.	**Figure 6-10** illustrates the difference in stage within WCA 3 and ENP between the FWO and Alt 4R2 for a representative wet year (1995). As the comment notes, stages within northwestern WCA 3A for a representative wet year are greater than 0.5 feet and greater than 1.0 feet in some locations. Over the period of record (1965-2005) stages (3A-NW) within northeast WCA 3A are generally increased by 0.5 to 0.8 feet relative to the FWO.
FWC-21	Table 6-1 addresses the indicators used to measure progress toward meeting interim goals. Item 3.12 refers to the measure for the snail kite as: "Increase the areal extent of suitable foraging for snail kites." What is the basis for the supposition that CEPP provides better habitat conditions for apple snail populations in "most of WCA 3A and in WCA 3B and Shark River Slough in ENP"? Was a performance measure employed that specifically addressed this question? Did model performance indicate dry downs every 3-5 years in extensive marsh areas (central and western WCA 3A, southern part of WCA 3A North, southern WCA 3B, and Shark River Slough) where wet prairie habitats are prevalent? Such dry downs are necessary to maintain the integrity of these communities and prevent a transition to slough environments (poor	Text in Table 6.1 is consistent with **Annex A** (**Fish and Wildlife Coordination Act & Endangered Species Act Compliance**). Evaluation of potential effects to Everglade snail kites within the CEPP project area included adaptations of ERTP PMs, including depth and recession rate requirements for Everglade snail kite and apple snails, along with the Apple Snail Population Model throughout a 41 year period of record from 1965-2005. There were a greater number of years across the 41 year period of record in which Alt 4R2 provided depths within the 2012 FWS MSTS recommended depth ranges for apple snails (ERTP PM-C) during 1 May to 1 June. Results of the Apple Snail Population Model indicated implementation of Alt 4R2 provided better conditions for apple snail populations as well. Suitable foraging habitat for the Everglade snail kite is typically a combination of low profile marsh and a mix of shallow open water. In order to analyze anticipated changes in vegetation that may affect nesting and foraging habitat for Everglades snail kites, the ELVeS was employed to predict vegetation community change over time in response to changes in environmental conditions. In general, these results show an expansion of sloughs and wet prairies and contraction of sawgrass prairies

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	habitat for apple snails). Was the occurrence of extreme high water (>1.3-foot depth) during the apple snail's reproductive season (March-May) less frequent in key wet prairie areas in the TSP compared to the FWO condition? Also, was potential snail kite nesting habitat taken into consideration? The woody species that provide the best nesting substrates for successful nesting are likely to continue to decline as long as the frequency of extreme high water events remain similar to the FWO.	which would provide increased foraging and nesting habitat for Everglade snail kite and apple snail. See **Section 6.2.6.4** (**Potential Effects of CEPP to Snail Kite**) of the Supplemental Technical analysis in **Annex A**.
FWC-22	Table 6-3 includes the comment: "Rehydration within previously dry areas ofWCA3A, 3B, and ENP would increase the spatial extent of suitable habitat." This statement should include a caveat as to what type of wildlife this increase in habitat would result. In particular, it would increase wildlife habitat for wading birds and snail kites, but will probably result in less habitat for terrestrial wildlife.	The following statement has been added to **Table 6-3**. Although mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades, there is an increased potential that mammals currently utilizing upland habitat may be negatively affected.
FWC-23	Annex G, Invasive and Nuisance Species Management Plan: There are other exotic species not identified in section 0.2.1.1 and which would be appropriate to include: the West Indian marsh grass (Hymenachne amplexicauli), climbing acacia (*Senna pendula*), wild taro (*Colocasia esculenta*), and Napier grass (*Pennisetum purpureum*).	These species with the exception of wild taro are listed in section G.2.1.8 Other Species of Concern. Wild taro was added to this section.
FWC-24	Section 0.2.1.1 states that the non-native plant inventory included Holey Land Wildlife Management Area, Rotenberger Wildlife Management Area, and Southern Glades Wildlife and Environmental Area (note that the last is not technically a wildlife management area). CEPP, however, is primarily focused on Everglades and Francis S. Taylor WMA (EWMA). Did this inventory include the EWMA?	A few areas were not identified in this section, these areas will be added/included.
FWC-25	The statement in paragraph 0.2.1.2: "In these	Information will be added to this section.

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	areas, Australian pine is present in remote mangrove swamps and sawgrass marshes where populations vary from dense stands to widely scattered patches" is technically incorrect. Australian pines do not grow in the marsh, but are typically found on dry locations and follow linear features (including levees and roads).	
FWC-26	Section 0.3.4 states: "Mechanical control refers to the use of machinery designed to cut, shear, shred, uproot, grind, transport and remove invasive species. Equipment used to complete mechanical control may include but is not limited to heavy equipment such as an excavator or front-end loader (with a root rake, grinding heads or other attachments), cutter boats, dredges and mechanical harvesters (Haller, 2009)." These techniques would not be feasible in the Central Everglades. Most initial efforts in the Central Everglades have focused on manual removal with chainsaw and removal by hand, followed by treatment of the remaining stumps.	This is a general section that describes the different control methods. Mechanical control is a method that will be utilized in select areas. Chemical control referred to as "manual removal" in comment FWC-26 will be used primarily. Information regarding mechanical and chemical control is discussed in **G.6.2. Control**. Specific text in this section: *Mechanical control will be implemented to remove non-native plant species when the construction of project features requires such removal. Heavy equipment such as bulldozers, front-end loaders and trackhoes (with or without grinding heads) will be utilized to uproot, grind and/or clear and grub. It is expected this type of control method will be utilized during levee degrades, canal backfilling and during construction of new project features such as water control structures. Chemical control will be utilized to treat aquatic and terrestrial invasive plants. Methods for treatment will include hack-n-squirt, basal bark, cut-stump, foliar and aerial application. EPA approved herbicides will be utilized to control invasive plants. Chemical control will be utilized to treat invasive plants in canals, along levees, in wetland/natural areas as well as WCA's, FEB's, etc.*
FWC-27	Section 0.6.9 states: "It is recommended the adjacent lands within 0.5 mile of the canal and levee be surveyed and treated to eliminate close proximity seed sources. This would assist in preventing spread of priority species such as Brazilian pepper." This statement is not very specific on how the area within 0.5 miles will be surveyed and how infestations will be treated. Also, it doesn't mention what the priority species for treatment will be other than Brazilian pepper. What are the other priority species to be targeted? Does it just include plants?	Additional text was added to this section regarding surveillance/monitoring. In addition, the section will be reviewed for consistency and updates made as required.
FWC-28	In paragraph F.3.6 and in figure F-3, recreational	There will be one shelter at each site as identified in Appendix F – Table F-1 Site A

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	features describe three shelters at three locations, but it is not clear if the plan intends to state that there will be three shelters at each site identified or one at each site.	Recreation Features.
FWC-29	Table F-5 proposes an earthen crossing near the S339 structure, but does not mention if the current bridge would remain. Please provide clarification on plans to retain or remove the historic bridge at S339. Staff would like to see a discussion on how CEPP would impact recreational access.	The bridge (aka the Buggy Bridge) at S339 is an existing structure that is anticipated to require structural maintenance activities or be decommissioned in advance of CEPPs 2029 implementation schedule and therefore is not included as a recreational component in the Central Everglades Planning Project. Appendix F - Recreation Site E includes an earthen crossing at this site to ensure the continued connection of existing buggy trails across the Miami Canal.
FWC-30	G.1.2 - Description of Project Performance Measures. In terms of this model's ability to measure ecosystem functions and benefits for CEPP, it is inherently flawed based on the biased subset of Greater Everglades Performance Measures (or parts thereof) selected for inclusion. The Everglades Ridge and Slough Conceptual Ecological Model is referred to as part of the scientific basis for this set of performance measures (PMs). This conceptual model states that, "The depth, distribution and duration of surface flooding in this environment largely determined the vegetation patterns, as well as the distribution, abundance and seasonal movements and reproductive dynamics of all of the aquatic and many of the terrestrial animals in the Everglades." (Ogden 2005). The Everglades Ridge and Slough Conceptual Ecological Model identifies tree islands as one of its key attributes to be used as an indicator of restoration success. Tree islands have proven to be very sensitive to water management practices and approximately half of the tree islands in WCA 3A have been lost or degraded, with	Each of the project performance measures used in the CEPP planning model were derived from those performance measures approved for use in CERP by RECOVER at the start of plan formulation for CEPP. This approach was taken to expedite required USACE reviews of the CEPP planning model by the ECO-PCX given the accelerated schedule. The review of the *Extreme High and Low Water Levels in the Greater Everglades Wetlands* performance measure has not been approved by RECOVER. An evaluation of high and low water levels (via stage duration curves) as well as an assessment on tree islands can be found throughout the report in **Section 5** (**Effects of the Alternatives**) with supporting information in **Appendix C** (**Environmental and Cultural Resources Information**) and **Appendix A** (**Engineering**). Performance measure metrics used in the CEPP planning model used as a surrogate to capture high and low water events include (Average Dry and Wet Season Depth – Slough Vegetation Performance Measure and Dry Event Severity – Soil Oxidation Performance Measure.

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	repeated high water events being a major contributor to this loss. Yet, every one of the PMs selected (page G-2) evaluate how alternatives perform either by avoiding low water conditions (nine target components) or by improving sheetflow (three target components). The high-water depth target portion ofthe Extreme High and Low Water Levels in the Greater Everglades Wetlands PM used for evaluating model performance in ridge and slough indicator regions in WCA 3A was omitted from the benefits analysis. Due to the high ecosystem values that we attribute to Everglades plant communities such as tree islands and wet prairies that have been degraded by extreme high water levels, we find the omission of such an important performance measures to be a major hindrance in being able to provide an acceptable analysis of CEPP performance.	
FWC-31	Page G-41- Table G-9. The raw performance scores for Percent Period of Record (PPOR) of Inundation do not include all of fthe indicator regions in WCA 3, making it difficult to judge performance in southern WCA 3A and WCA 3B. However, those scores presented suggest that inundation lengths may be getting too long in northern and central WCA 3A. All of these indicator regions (IRs) have inundations that exceed Natural System Model4.6.2 predictions by 2 to 5%, and range from 92 to 96% period of record. Only IR 118 had an inundation value that matched NSM 4.6.2 (91%), which likely reflects the diversion of greater quantities of flows into northern WCA 3A with concomitant decrease from WCA 2A through the S-11 structures into the area occupied by IR 118. Of particular concern is the increase in inundation lengths in central WCA 3A (IR 121) from 93% in	Suitable foraging habitat for the Everglade snail kite is typically a combination of low profile marsh and a mix of shallow open water. The ELVeS was employed to predict vegetation community change over time in response to changes in environmental conditions. See response to comment FWC-21 above. The largest change is in northwestern WCA 3A where increased water deliveries result in decreased wet scrubland community and subsequent increases in sawgrass. Effects of the Blue Shanty Flowway in WCA 3B and NESRS are evident in the replacement of sawgrass with floating emergent marsh and open marsh. Model results for Alt 4R2 reveal an expansion of open water habitat within southern WCA 3A where Everglade snail kites are currently known to nest and forage, potentially decreasing suitable habitat within this area. However, since the Everglade snail kite is a wide-ranging species, it is anticipated that these effects would be offset by increases in suitable nesting and foraging habitat throughout the CEPP project area. In general, ELVes results show an expansion of sloughs and wet prairies and contraction of sawgrass prairies which would provide increased foraging and nesting habitat for Everglade snail kite and apple snail.

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	FWO to 96% POR in the TSP. Such long periods of inundation suggest that there would likely be fewer of the dry downs that are necessary to maintain the wet prairie communities needed by snail kites for suitable foraging habitat.	
FWC-32	Page G-55- Normalized Duration Curves for Gage in Blue Shanty Flow-way for Alternatives 1-4. The footprint of the Blue Shanty flow-way would include the Twin Head tree islands located immediately south of the L-67C levee. These islands are swamp forest strands that possess elevations that are only about 1.0 feet or less higher than the adjacent marsh. The stage duration curve indicates that this area would have water depths> 1.0 foot about 60% of the time. However, the TSP proposes water depths> 1.0 foot for approximately 88% of the time. These much longer periods of inundation would very likely result in the loss of swamp hardwood species (dahoon holly, swamp bay, wax myrtle, etc.) from these islands. Their species diversity would be greatly diminished, and limited to only the most water tolerant tree species, such as Carolina willow.	The average elevation of the Twin Head tree islands is 1.97 feet with a maximum elevation of 2.3 feet. It is expected that tree islands within the Blue Shanty Flowway will experience significantly wetter conditions with implementation of Alt 4R2. The CEPP AM Plan (**Annex D**) for WCA 3B recognizes the sensitivity of tree islands, and as such recommends an incremental restoration of hydroperiods and water depths for WCA 3B based on the ability of these islands to accumulate peat. The Twin Heads is currently being monitored by the SFWMD and is expected to set the criteria for how fast tree islands grow and accumulate peat as a function of longer hydroperiods, high flow velocities (which carry more nutrients and help trees cope with stress) and a pulsing operational design. The response of the Twin Heads is expected to be compared to other tree islands in WCA 3B where the depths will be lower and the hydroperiods shorter. This information would then be used as a feed back to inform the operations of structures along the L-67A levee and is expected to influence future CERP designs. AM strategies and management options for the Greater Everglades with respect to restoring tree island hydrology can be found in **Section 1.4.2.3** of the **AM Plan** (**Annex D**).
FWC-33	Adaptive Management Option: Dig a shallow S-355 B Collector Canal Extension near the southern end ofWCA 3B, east of the proposed L-67D levee, to increase flows southward out of this part of WCA 3B. We note that this option would require significant impacts to wetlands and potential nesting and foraging sites for snail kites.	**The following text has been added (underlined here) to existing PIR text to recognize potential impacts that would need consideration before implementing the AM Option:** **AM Option: Dig shallow S-355B Collector Canal Extension near the southern end of WCA 3B, east of the proposed Blue Shanty levee, to increase flows southward out of this part of WCA 3B.** The shallow canal would connect to remnant agricultural ditches to allow them to act as collector canals in the portion of WCA 3B potentially most sensitive to transition of restoring longer hydroperiods. A different AM Option is proposed below for the western portion of WCA 3B, which is referred to as the Blue Shanty flowway. Environmental Considerations: USACE would need to perform an analysis in accordance with Section 404 (b)(1) guidelines for CEPP to perform this option;

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		potential wetland impacts would need to be considered as well as potential nesting and foraging sites for snail kites in the area.
FWC-34	Adaptive Management Option: Modify the agricultural canals in the WCA 3B flowway, west of the proposed L-67D levee, to maximize sheetflow and hydroperiod objectives. This option would impact potential nesting sites for wading birds and snail kites. The agricultural canals have been used extensively in the past by wading birds and snail kites as nesting substrate.	**The following text has been added (underlined here) to existing PIR text to recognize potential impacts that would need consideration before implementing the AM Option:** **AM Option: Modify agricultural canals in the WCA 3B flowway, west of the proposed Blue Shanty levee, to maximize sheetflow and hydroperiod objectives.** Remove spoil mounds and backfill the agricultural ditches (in order of priority) that run east-west and north-south in the portion of WCA 3B west of the Blue Shanty canal, a.k.a the Blue Shanty flowway. Environmental Considerations: USACE would need to perform an analysis in accordance with Section 404 (b)(1) guidelines for CEPP to perform this option; potential impacts to nesting and foraging sites for wading birds and snail kites would need to be considered.
STATE HISTORIC PRESERVATION OFFICE (SHPO)		
SHPO-1	Our office reviewed the draft PIR/EIS for the CEPP in accordance with the NEPA of 1969 and implementing regulations. We find the document to be consistent with federal regulation regarding the treatment of historic properties/cultural resources under NEPA. As noted in Appendix C.2. 1.7 of the document, Section 106 consultation regarding the potential effects of CEPP operations on historic properties is ongoing. We will continue to work with our federal, state, and tribal partners as the project progresses to ensure compliance with Section 106 and to minimize impacts to historic properties.	Thank you for your comment.
SOUTH FLORIDA REGIONAL PLANNING COUNCIL – NO COMMENTS RECEIVED		
LOCAL		
LEE COUNTY (LC)		
LC-1	First, Lee County applauds the efforts of the U.S. Army Corps ("Corps") leadership and its staff and the South Florida Water Management District	Thank you for your comment.

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	("SFWMD") in its effort to expedite the planning phase of CEPP under the Corps' national pilot program. Given the numerous agencies and stakeholders involved and the sheer magnitude of this project, to arrive at a PIR in less than two years is remarkable. Secondly, Lee County wishes to express its continued support of the goals and objectives of CEPP to provide treated water to the Everglades National Park ("ENP") by capturing and redirecting south approximately 210,000 acre-feet of water from of Lake Okeechobee. While these targets are long terms goals and only represent a fraction of the reductions necessary to alleviate the CRE, we can use the data and information produced from the PIR/EIS process in support of short term strategies to relieve the CRE from the devastating Lake Okeechobee releases that we felt this year.	
LC-2	Caloosahatchee River and Estuary Due to extensive historical modifications to its watershed, the CRE receives the lion's share of adversity in both dry times and wet times from the Corps' Lake Okeechobee Regulation Schedule ("LORS 08"). In wet times, as we are experiencing recently, the Caloosahatchee River is the largest and most utilized discharge route. During these times, the CRE and the near shore of the Gulf of Mexico are "blown out" with brown, nutrient laden water. Then, in dry times, when minimal base flows are needed for freshwater grasses, the CRE is often cutoff 100% – zero water releases. In fact, there are instances when the CRE is essentially severed at Ortona Lock so that all flows east return to Lake Okeechobee for water supply interests. Granted, estuaries are resilient to natural flood and drought conditions and often bounce back to	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions, such as C-43 and IRL-S are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	productivity. Yet, when subject to numerous "extreme" events for extensive durations, year to year, meaningful recovery is unlikely.	
LC-3	Caloosahatchee River and Estuary – Southwest Florida's Economic Engine Dozens of studies and plans have documented the harmful environmental damage to the CRE. However, the same level of scrutiny has not been applied to the corresponding economic damage to Southwest Florida, and its coastal communities. Now, local governments, business leaders, hotel associations, real estate groups and other stakeholders are partnering together in Southwest Florida to quantify the economic value and impact that is at stake. Here are a few facts that demonstrate the value of the natural resources in Southwest Florida (Collier/Lee Counties): · $4.3 billion in economic activity from tourism; Creating 85,000 jobs · $400 million in bed tax, sales tax, and local tax revenue · $147 billion in real estate value · $1.9 billion in property tax revenue Simply put, impacts to the CRE directly translate into compounding impacts to our economy and quality of life. Selection of alternatives must address economics of CRE. Although any reduction of harmful releases can demonstrate a net benefit, the on-going impacts will continue until they can be reduced to a meaningful level.	While selecting a plan is predicated on the degree and significance of environmental restoration efforts (including beneficial reductions in releases to the CRE), the USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that have a direct correlation to the economic and social well being of the CRE. A statement has been added to Section 4.5.1 recognizing the need for additional action and the importance of the environment regarding the economy of South Florida.
LC-4	Caloosahatchee River (C-43) West Basin Storage Reservoir Project The C-43 Project is critical to the overall goals of	Thank you for your comment. USACE appreciates the significance of the C-43 West Basin Storage Reservoir Project and Project Implementation Report and Chief of Engineers Report is ready for authorization in the next WRDA.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	CEPP and CERP. The C-43 Project is identified as one of the structural and operation assumptions in the future without comparisons. Flows less than 450 cubic feet per second (cfs) in the CRE are considered harmful since these flow levels allow salt water to intrude, raising salinity above the tolerance limits for communities of submerged aquatic plants in the upper estuary. The C-43 Reservoir will contribute to the restoration of ecosystem function in the CRE by maintaining a desirable minimum flow of freshwater to the estuary during the dry season. The importance of the C-43 Project is demonstrated by the Project Assurances Analysis below.	
LC-5	Project Assurances – Identification of Water for the Natural System The low flow criteria for the Caloosahatchee Estuary is an average monthly flow of less than 450 cfs. In the Caloosahatchee Estuary, the number of months the low flow criteria is not met is similar in the with-project and without-project conditions. The estuary low flow criteria are not met for 23 months out the 41-year period of simulation (492 total months) in the with-project and 27 months in the without-project. Comparisons to the existing condition baselines show significant improvement in low flow performance with the with-project. Both the 2012EC and ECB show 116 months when average monthly flows are less than 450 cfs, compared to 23 months in the with-project. Neither of the existing condition baselines benefit from the inclusion of the C-43 Project which is included in the future without assumptions.	The CERP C-43 Reservoir project is included in the future without project condition (FWO), not in the existing condition baselines (ECB or 2012EC), as described in Section 2 of the CEPP PIR. The benefits of the C-43 project are illustrated by the comparison between the ECB/2012EC (116 months < 450 cfs) and the FWO (27 months < 450 cfs).
LC-6	Lake Okeechobee Herbert Hoover Dike Repairs Current approved Herbert Hoover Dike (“HHD”)	To date, the Jacksonville District has received between 20 to 25% of the National Dam Safety Construction budget for the Corps for rehabilitation of HHD and has been steadily working on HHD rehabilitation. The Corps has completed over 22 miles of

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	remediation measures consist of cutoff wall in Reach 1: cutoff wall task orders 1 through 9 are scheduled for completion in 2013, and 32 culvert replacements or removal around the lake are scheduled for completion in 2018. The Planned remediation measures consist of cutoff wall and/or a seepage management system in Reaches 2 and 3. These actions are scheduled for completion in 2022. The comprehensive potential failure mode analysis and risk assessment is being performed and will be included in the ongoing Dam Safety Modification Report (DSMR). This report is scheduled for completion/approval in 2014. Following the conclusion of this report, there needs to be consideration of incremental increases in the Lake's operating levels. Increases in operational levels can give the Corps more storage in wet times and can lead to additional water made available for the CRE during dry times.	cut-off wall and currently have 16 of the 32 culverts under contract for replacement or removal. The Dam Safety Modification Report is scheduled for completion in 2015 which will detail the remainder of the work necessary to complete rehabilitation the HHD.
LC-7	Operations – Adaptive Management As the CEPP proceeds and data from individual project sequencing is continued to be gathered, this data is expected to feed back into the CEPP adaptive management plan. Integration of adaptive management/operations/monitoring into the CEPP will help provide reasonable assurance associated with water quality issues and uncertainties. Adaptive management must be applied iteratively throughout the sequence phasing of the CEPP to seek avenues for additional capacity to store, treat and move water south to the Everglades. Is the plan adaptive enough to incorporate future expansion or phases should lands become available?	Thank you for your comment. The comment shows a good understanding of how adaptive management and monitoring will be implemented iteratively and provide feedback for continual improvement of restoration. To answer the commenter's question: Per the CERP Programmatic Regulations (Pro Regs 1999) the knowledge gained from CEPP, CERP, and other monitoring will increase the knowledge of how to best implement Everglades restoration. This knowledge could be applied to additional lands, if lands become available. However, the CEPP adaptive management and monitoring does not focus on potential new lands nor does it provide authorization to incorporate new lands. It is not appropriate to include new lands as an adaptive management measure. Instead, if new lands were to become available, a new planning process would need to be initiated to determine how to incorporate the news lands into Everglades restoration.
LC-8	The Corps District Commander has the authority when requested by the non-Federal sponsor to	Any deviations from the approved Water Control Plans requires approval from the USACE South Atlantic Division. The gap in the old Tamiami Trail undertaken during

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	approve deviations from normal operating criteria. These are typically approved in emergency situations. Given the severe impacts from the Lake Okeechobee releases this summer, many believe emergency type actions were warranted to move more water south through the WCA 3 into ENP. Recently, the SFWMD took several steps to move more water south into ENP, including cutting a section of Tamiami Trail and clearing vegetation. Were these action granted under a similar deviation? The Corps must use the data and information gathered through the PIR/EIS in order to develop operational flexibility and contingency plans for moving more water south during extended wet times and during major storms. These events must be viewed in a "force majeure" type situation and the State must be held harmless from water quality violations. Is the volume of flows diverted from the estuaries south based on STA capabilities or hydraulic restriction? What will be the built hydraulic capacity south from Lake Okeechobee to ENP?	the high water circumstances in 2013 did not require an operational deviation from the Water Control Plan for WCA-3A. The actions taken by the SFWMD were coordinated with the USACE through the Corps Regulatory Division to obtain a permit. The Corps will utilize all available data in making water management decisions within its water control plan and in implementing any deviations it determines are appropriate. The Corps does not determine what constitutes "force majeure" for purposes of water quality compliance. Lake Okeechobee is the source of the 210,000 ac-ft (average annual) redirected south under the CEPP TSP. Releases from Lake Okeechobee to the Everglades and the Northern Estuaries are conducted according to the operational criteria contained in the Lake Okeechobee Regulation Schedule. The Lake Okeechobee stage criteria assumed for delivery of water from Lake Okeechobee to the STAs and/or the integrated A-1/A-2 FEB is illustrated in Figure 7-1 of Annex C (draft Project Operating Manual); when conveyance capacity, storage and treatment capacity is available and Lake Okeechobee stages are above the bottom of the 2008 LORS baseflow sub-band, a portion of Lake Okeechobee outflows are directed southward. During these operations, simultaneous regulatory releases are also made from Lake Okeechobee to the Northern Estuaries in accordance with Part D of the Regulation Schedule. Additional information and documentation of the CEPP TSP modeling assumptions for Lake Okeechobee operations, which included revisions to the 2008 LORS Class limits for Lake Okeechobee inflow and climate forecasts (outside of LORS 2008 operational flexibility), are found in the Appendix A (Engineering), Section A.8.3.2.3.3 of the CEPP PIR. CEPP deliveries from Lake Okeechobee to the FEB and STA-3/4 were constrained by the maximum in-bank conveyance capacity of the Miami Canal (1,550 cfs) and North New River Canal (1,350 cfs), as documented in Appendix A (Section A.5.3.3.2.3) and detailed in Annex A-1 of Appendix A. Based on the results of the initial optimization for the CEPP hydrologic modeling, the FEBs may be operated as described in Section 7.1.2 of the Annex C, including the FEB accepting of Lake Okeechobee water when the FEB depth is below 2.0 feet (maximum 3.8 depth for EAA runoff inflows to the FEB).
LC-9	Sequencing of CEPP and CERP The unconstrained timeline for the recommended plan is approximately 14 years. However,	The executive summary incorrectly identifies the implementation timeline presented in the Draft PIR/EIS as an unconstrained schedule taking approximately 14 years. The schedule presented was actually constrained at $100 million per year of funding, which clearly has impact on how long the project will take to achieve full benefits.

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	dependencies on other projects will affect recommended plan implementation. Considering the cost of the recommended plan ($1.8B), the need for Congressional authorization and appropriation of funding, it is likely that full implementation of the recommended plan will extend over two or more decades providing incremental hydrologic and environmental benefits. Many factors influence implementation of the CERP Program of projects. In addition to the kind of project dependency considerations, other factors that influence implementation include funding availability, cost-share balance between the Federal and Non-federal sponsor, as well as the integration of projects that are to be constructed by other agencies. The PIR states that Corps and the SFWMD will "undertake integration of the CEPP recommended plan and the other CERP projects awaiting authorization into the CERP programs' integrated delivery schedule through a robust public process once these projects have been authorized." When will this occur? Additionally, given the structural and operational assumptions in the modeling, project assurance and savings clause analysis, is it possible for CEPP to precede projects assumed complete and operational like the C-43 Project?	The actual unconstrained construction is expected to take 6 years. Accounting for the 2-3 year PED effort and authorization in 2014 leads to a 2022 base year as a best case scenario. The executive summary will be updated to include the "best case" unconstrained scenario and also include a more realistic "funding constrained" scenario example to demonstrate to the public that the actual timeline may be longer due to uncertainties and limitations. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget for administrative review and then for Congressional authorization. This will occur upon completion of the State and agency review of the Final PIR/EIS. The implementing agencies are committed to engaging in a public process after Congressional authorization and appropriations of CEPP to integrate CEPP into the CERP Master Implementation Sequencing Plan that defines the order in which CERP projects would be planned, designed, and constructed.
LC-10	Conclusion We realize this project along with the remaining phases of CERP (incl C43, C-111) and interim short LC-1term storage strategies may be the totality of efforts for the benefit of the CRE for decades. We are hopeful you will be able to address our concerns stated above.	Thank you for your comment.

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MARTIN COUNTY (MC)		
MC-1	The Martin County Board of County Commissioners has long advocated for the completion of the Indian River Lagoon-South Project (IRL-S), authorized by Congress in 2007. The first component of the project, the C-44 Reservoir and STA, is currently under construction. We are proud partners with the U.S. Army Corps of Engineers and the South Florida Water Management District in the completion of this vital restoration project. Our citizens voluntarily taxed themselves, generating $75 million dollars, towards the implementation of this project, acquiring 45,000 acres of land. This unique and substantial partnership reflects the importance of Everglades restoration to the people of Martin County.	Thank you for your comment.
MC-2	Martin County continues to voice our support of the Central Everglades Planning Project. We recognize and appreciate the 23% reduction in the highest volumes of freshwater flows from Lake Okeechobee into the St. Lucie Estuary. We also stress, as you noted in the Project Implementation Report (PIR), and in the numerous PIR team meetings that occurred throughout this process, that "additional actions are needed to further reduce harmful discharges of freshwater from Lake Okeechobee to the St. Lucie and Caloosahatchee estuaries." We support CEPP as a one of many efforts to reduce freshwater inflows to the St. Lucie. Moving forward, a critical component of the restoration discussion is the need to complete the remaining components of IRL-S beyond the C-44 Reservoir and STA, and to establish a minimum of 1 million acre-feet of new storage capacity north and south of Lake Okeechobee to meaningfully reduce the freshwater discharges to the St. Lucie from the Lake.	The USACE and the SFWMD will continue to work in partnership to construct the authorized IRL-S project in accordance with funding appropriated for the project and maintenance of the programs 50/50 cost share balance.

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MC-3	Specific to the PIR, Martin County would like to see improved descriptions, both in the narrative and graphically, of the project benefits to the estuary associated with various project efforts. Specifically, on your graph that shows the number of times the mean monthly flows are greater than 2000 cfs to the SLE, there is a 20 "high discharge" event improvement for *basin flows* with IRL-S in place, and a 4 event improvement for *Lake flows* with IRL-South in place.	**Section 2** (**Existing and Future Without Project Conditions**) provides a description of the FWO project condition. **Table 2-2** provides a summary of the status of non-CERP projects, CERP projects, and operational plans assumed to be implemented in the FWO project condition. **Section G.2.5** (**Northern Estuaries [Alternatives 4R and 4R2**]) summarizes benefits to the Northern Estuaries resulting from implementation of Alt 4R2. **Figure G-29** presents the number of times salinity criteria are not met within the St. Lucie Estuary. Benefits attributable to the Indian River Lagoon-South project can be understood by evaluating differences between the ECB and FWO project condition which assumes implementation of C-44 Reservoir and STA. The differences between the FWO project condition and the future with project condition (Alt 4R2) are the effects of the project. Text has been added to this section, as well as **Section 6.2** (**Environmental Benefits**) to further highlight benefits attributable to the Indian River Lagoon-South project. Additional comparisons of modeling results for the Northern Estuaries to the IORBL1 which was used for Savings Clause requirements and Project-Specific Assurances can be found in **Annex B** (**Analyses Required by WRDA 2000**).
MC-4	With CEPP in place, there is a 10 "high discharge" event improvement for *basin flows* (compared to 20 for IRL-S), and a 5 event improvement for *Lake flows* (compared to 4 for IRL-S). This information is straight from the generalized graphs in the PIR, however those graphs do not provide relevant detail regarding to which projects those benefits are attributed.	See response to comment MC-3 above.
MC-5	In order to make those benefits clear and transparent so we can better explain and advocate to our Congressional members the merits of both the IRL-S and CEPP, we ask that greater explanation be provided in the PIR. Specifically, Martin County respectfully requests that the ACOE edit the graphs to include the greater detail on benefits, as well as add language to the PIR, particularly in the Executive Summary, that details all of the projects that were assumed to be completed in order for the CEPP benefits to be fully realized (e.g. Modified Water Deliveries, Tamiami Trail Next Steps, C-11	See response to MC-3 above. Furthermore, **Table 6-10** in **Section 6.7** (**Plan Implementation**) documents a number of project dependencies including but not limited to the C-44 Reservoir (IRL-S Project) and connection to the C-23 Canal. Additional text has been added to the executive summary to highlight project dependencies.

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	Impoundment, Restoration Strategies, C-43 Reservoir, and the IRL-S projects), and how system-wide benefits are attributed to each of those projects in the context of the CEPP benefits. This type of detail will assist all of your stakeholders in understanding what CEPP entails, and the benefits that each of the related projects brings to the greater Everglades ecosystem, including the estuaries.	
MC-6	We appreciate and understand the benefits that CEPP brings in reducing harmful freshwater discharges from the Lake to the estuaries. We offer our assistance to your team now in addressing our comments to provide more information that can be readily understood by the public, elected officials, or anyone who is not immersed day-to-day in the federal project process, regarding what CEPP brings in the way of improved conditions compared with other relevant restoration efforts.	Thank you for your comment.
MIAMI-DADE COUNTY (MDC)		
MDC-1	However, the Draft Project Implementation Report (PIR) also states that insufficient engineering information is available to adequately evaluate or design key structural elements and operation of Alternative 4R2, particularly those associated with seepage management. The analysis and conclusions are also based upon compounded assumptions about which CERP and non-CERP projects may be in place in the future, but do not address sequenced or partial implementation of CEPP and other projects in South Florida.	The design of features such as the seepage barrier and its interface with existing and proposed infrastructure, including operations, will be investigated in detail during the PED phase. In PED, further analyses and design efforts based upon the accrual of site specific subsurface and topographic data may result in design refinements. Appendix A - Engineering has undergone technical reviews by the USACE reviews and is in compliance with USACE guidance for planning studies. **Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. **Section 6.7.1** discusses the major implementation phases that are expected to occur after congressional authorization and appropriation of funding for project construction. Project features are grouped into three separate PPAs based upon the spatial distribution of the project features and the locations within the CEPP study area where separable hydrologic and environmental benefits would accrue.
MDC-2	There has also been a difference of opinion about the selection of a baseline for comparison for Savings Clause analysis. Therefore, although	Consistent with the WRDA 2000 and the Programmatic Regulations, the savings clause analysis identifies the effects of the plan, not non-CERP actions (for example, ERTP). The baseline used for the savings clause analysis appropriately includes

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	Miami-Dade generally supports the objectives and general approach of CEPP, and the expected benefits it promises for water quality and deliveries to the central Everglades, we do not concur at this time with conclusions in the Draft PIR that Savings Clause requirements have been met.	comparison between the Future Without Project condition (IORBL1) and the CEPP TSP to determine the effects of the CEPP plan.
MDC-3	**Modeling of Water for Future Water Supply Demand** Annex B, Annex D and other sections of the report refer to late modeling efforts to optimize and identify potential additional water to help meet increased future water supply demand, in average annual withdrawals, in the LECSA. The report cites this modeling outcome as a demonstration that Savings Clause and Assurance requirements are met, Miami-Dade County advised during the planning process that it did not expect CEPP to provide additional water for future demand, since it was understood that CEPP will only partially fulfill total restoration goals envisioned by CERP. Although it is encouraging that benefits from CEPP and system operations may indeed provide more water for water supply without reducing benefits to natural systems, this theoretical water-made-available does not help to address specific Savings Clause concerns that Miami-Dade has repeatedly described. Miami-Dade's interest in water supply Savings Clause and Assurances has focused upon maintaining groundwater and surface flows in each wellfield area, particularly during dry season, drought periods, and in view of rising sea levels so that water quantity and quality remain equivalent to the condition at the time of adoption of WRDA 2000. The modest amount of average annual withdrawal identified by modeling for Miami-Dade is associated with only one wellfield area, and the	During CEPP formulation, to aid with PDT evaluation of performance of the CEPP alternatives under dry conditions, average monthly stage maps for the Lower East Coast Service Area were produced for April 1989 and April 2001 during extreme drought years; for reference comparison, average monthly stage maps were also produced for April 1978 (an average rainfall year), April 1995 (an extreme wet year), and mean April stage for the complete period-of-record. These maps cover the Lower East Service Area including public water supply wellfields, regional canals supplying surface water, and areas affected by saltwater intrusion. Additional CEPP model results evaluated for effects to agricultural or urban water supply are the frequency of water restrictions graphics for LECSA 2 and LECSA 3, seepage volumes across the East Coast Protective Levee (ECPL), regional water supply deliveries, and canal stages near public water supply wellfields. Collectively, these metrics are indicators of whether the water supply demand in the LECSAs can continue to be met by the regional system, including Lake Okeechobee, the WCAs, and the surficial aquifer system. All metrics were evaluated across the entire period of simulation (1965-2005), including consideration of specific dry years and/or dry hydrologic conditions. Each of these graphics was reviewed during development of the Savings Clause evaluation in **Annex B**, and all of these graphics are posted on the Everglades Plan public web site for the CERP, as indicated in **Section 5.2** and **Appendix A**: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx As described in Section B.3.1.3 of Annex B in the draft and final PIR, CEPP implementation will provide increased stages and extended hydroperiods within WCA 3B and NESRS, resulting in a net increase in average annual groundwater seepage flows from these natural areas to the adjacent LECSA 3. The increased seepage flows may slightly alter the water quality composition within the LECSA 3 surficial aquifer, through the relative increased contribution of groundwater seepage flows to the surficial aquifer recharge compared to the contribution from regional C&SF canal

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	analysis did not address water quality or availability during dry conditions, when Savings Clause considerations are of greatest concern.	flows. These changes should result in either no significant change or a potential minor improvement to the water quality of withdrawals from the proximate public water supply wellfields within LECSA 3. Additional maps have been added to Annex B to clarify all of the information utilized in the Savings Clause analysis that formed the basis of the conclusion that there are no impacts to existing legal sources for public water supply. The analysis for Project Assurances in **Annex B** identified the water made available by the project for the natural system as well other water related needs, which includes public water supply. In Miami-Dade County, the additional municipal public water supply pumping of 5 MGD identified with Alternative 4R2 was assumed for the west wellfield, 13-0017-W.
MDC-4	**Seepage Barrier Uncertainty** Flood risk in urban and agriculture lands is primarily a wet season/year concern, whereas wellfield recharge, downstream water quality, saltwater intrusion, and hypersalinity in Biscayne Bay are primarily dry season or drought concerns. Water management strategies must be integrated and flexible enough at regional and local scales to address the full range of extreme wet and dry conditions. Miami-Dade has generally advocated use of operable infrastructure such a pumps, detention areas, and step down-systems for water delivery and seepage management. An operable system, with performance that can be adjusted in extreme conditions, is more compatible with adaptive management goals of CERP. The seepage barrier wall that is part of CEPP Alt4R2 will not be operable. There are remaining uncertainties about its overall effectiveness in maintaining desired stages in marshes of ENP while maintaining flood protection and canal stages to the east without holding too much groundwater back during dry	The following text was added to CEPP PIR Section 6 TSP description for the 'yellowline' area to further highlight remaining uncertainties and need for more information before implementing a seepage barrier in CEPP: "There are remaining uncertainties about the effectiveness of the CEPP TSP seepage cutoff wall in maintaining desired stages in marshes of ENP while maintaining water supply, flood protection and water availability to Biscayne Bay. Therefore, additional analysis of the CEPP seepage cutoff wall will be conducted during the PED phase. See **Section 6.10.1.2**, the Engineering Appendix (**Appendix A**), the analyses required by WRDA 2000 (**Annex B**), and the CEPP Adaptive Management Plan (**Annex D Part 1**) for more detail about the remaining uncertainties and suggested analysis to be completed to determine the need for and extent of a CEPP seepage cutoff barrier wall." To address the commenter's concerns the following text was added to the introduction to the LEC section of the adaptive management plan: "There are remaining uncertainties about the effectiveness of the CEPP TSP seepage cutoff wall in maintaining desired stages in marshes of ENP while maintaining water supply, flood protection and water availability to Biscayne Bay. Therefore, additional analysis of the CEPP seepage cutoff wall will be conducted during the PED phase. See **Section 6.10.1.2**, the Engineering Appendix (**Appendix A**), the analyses required by WRDA 2000 (**Annex B**), and the CEPP Adaptive Management Plan (**Annex D Part 1**) for more detail about the remaining uncertainties and suggested analysis to be completed to determine the effectiveness of the CEPP seepage cutoff barrier wall."

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	conditions. "Appendix A – Engineering" states that existing hydrologic data is not adequate for assessing performance or design of the proposed barrier or its configuration, although this concern is not consistently reflected in other sections of the PIR. At this time, though a pilot barrier wall has been installed by rockmining interests in Miami-Dade, sufficient data has not been available To evaluate its specific effectiveness in relation to all CEPP objectives and constraints. "Section 6.10.2.1 – L-31 Seepage Barrier Demonstration Project" acknowledges uncertainty about this feature, largely from the perspective of preventing loss of water from the marsh, and does not address potential concerns for water supply or flows to Biscayne Bay or Savings Clause implications at all. The seepage barrier wall is one of the CEPP features with the greatest uncertainty regarding its performance, and also a feature that is associated with relatively great risk related to flood protection, water supply and ecological benefits within and outside of ENP. The dependence of CEPP seepage control on this feature makes Savings Clause conclusions inherently uncertain as well, regardless of what baseline condition is utilized in models. This uncertainty should be acknowledged clearly and consistently in all relevant sections of the draft PIR, and a more coordinated approach to refined modeling, design, assessment and adaptive response strategies for seepage control features must be emphasized in the AM plan.	
MDC-5	**Performance During Extreme Wet and Dry Conditions** As noted above, it is important to be able to evaluate how effectively CEPP compares to	The Savings Clause evaluation, which is included in Annex B of the PIR, does include assessment of the overall period-of-record (1965-2005) performance, extreme wet events, and extreme dry events. Design storm and/or Standard Project Flood Analysis were not specifically conducted as part of the hydrologic modeling developed to support the CEPP draft PIR, although comparable extreme events are included within

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	performance of the existing system during periods where risk of damaging high or low water levels and flows could occur. Performance metrics used in Savings Clause evaluation and assessment therefore should be based upon seasonal and extreme wet or drought conditions, whether related to flood, water supply for human uses, or water supply for fish and wildlife. Even though the probability of drought or extreme wet conditions may be relatively low, the ecological or human and economic costs of flood, saltwater intrusion, or hypersalinity of such an occurrence are significant, or even devastating, and should not be discounted. Comparisons of annual average flow or long-term temporal averages of flow or stage cannot adequately address water supply and flood considerations during the evaluation and design process, or during assessment when project components are being implemented. Additional graphic analysis of wet and dry years and regional analysis of flood-prone and wellfield areas should be included consistently in Annex B, D and other relevant sections of the report.	the historical period of record. During Hurricane Irene (13-17 October 1999), several monitoring sites in Broward, Miami-Dade, and Palm Beach counties, including Water Conservation Areas (WCAs) 1, 2, and 3, received the 24-hour, 48-hour, and 72-hour maximum rainfall amounts that would be expected to occur once in 100 years, with cumulative rainfall in excess of 9 inches (SFWMD Technical Publication EMA #386, May 2000). As documented within the CEPP RSM hydrographs (a link to this data is provided in the CEPP draft PIR main report, the Appendix A main Engineering Report, and Annex A-2 of Appendix A), peak stages within the simulation period of record for WCAs 1, 2, and 3 typically occur during 1994-1995 and peak stages for Lake Okeechobee occur during 1969-1970 (i.e. for these specific areas, these events may have lower frequency of occurrence than the 1999 event). During CEPP formulation, to aid with PDT evaluation of performance of the CEPP alternatives under dry conditions, average monthly stage maps for the LEC area were produced for April 1989 and April 2001 during extreme drought years; for reference comparison, average monthly stage maps were also produced for April 1978 (an average rainfall year), April 1995 (an extreme wet year), and mean April stage for the complete period-of-record. Similarly, to aid with PDT evaluation of performance of the CEPP alternatives under wet conditions, average monthly stage maps for the LEC area were produced for October 1995 during this extreme wet year; for reference comparison, average monthly stage maps were also produced for October 1978 (an average rainfall year), October 1989 (an extreme dry year), and mean October stage for the complete period-of-record. Each of these graphics was reviewed during development of the Savings Clause evaluation in Annex B, and all of these graphics are posted on the Everglades Plan public web site for the CERP, as indicated in Section 5.2 and Appendix A: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx Consistent with the WRDA 2000 and the Programmatic Regulations, the savings clause analysis identifies the effects of the plan, not non-CERP actions (including, for example, ERTP).The analysis therefore compares the Initial Operating Regime with the project (Alt 4R2) to the Initial Operating Regime baseline without the project (IORBL1). Although Annex B additionally includes comparison of Alternative 4R2 with the two existing baseline conditions (2012EC and ECB), to inform evaluators of the cumulative potential effects of both CEPP and other intervening CERP and non-CERP projects relative to conditions experienced previously, this information is not used to determine compliance with the requirements of the Savings Clause. Difference maps,

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		which are also posted with the model performance measure graphics, were used to facilitate comparison between the CEPP TSP and the IORBL1 baseline. Since the analysis summary provided with the draft PIR Annex B only included difference maps for April 1989 and October 1995, additional stage difference maps and evaluation discussion for April 2001, April 1978, period-of record mean April, and period-of-record mean October will be included in Annex B of the Final PIR. The difference maps include all of the LEC, including historically flood-prone areas and wellfield areas, as requested in the comment.
MDC-6	**Incremental Analysis of Savings Clause and Assurances** Evaluations of CEPP benefits and constraints are based upon assumptions of full project completion and systemwide operating plan that incorporated an array of CERP and non-CERP projects. It is noted in "Section 6.1.3 Project Operations" of the Main Report that the operating plan will evolve as components are constructed or begin operation. "Annex C – Project Operating Manual Section 21" states that "At this time, interim operations during construction cannot be determined." "Section 6.8.7 Incremental Analysis During Plan Implementation" states in a cursory fashion that Savings Clause and Project Assurances will also have to be repeated for each phase of CEPP. This is a highly critical issue, and should be moved to a higher level of emphasis, and included in the uncertainty section of the Main Report, as well as thoroughly acknowledged and addressed in Annex B and Annex C. Because it is not possible to determine how the CEPP project will be funded and over what timeline, or if it actually will be completed as assumed, this adds significant uncertainty to the Savings Clause analysis. Even if it is accepted that a systemwide evaluation	Thank you for your comment. Savings clause evaluations and the Draft Project Operating Manual have been provided for the entire project. To address any future uncertainties related to incremental implementation, it is recognized that prior to implementation of each phase, additional detailed analyses pertaining to that phase of implementation will be considered in development of the Project Operating Manual. These analyses will include demonstration that Savings Clause and Project Assurances requirements for the project phase will be met prior to PPA execution. This is discussed in **Section 6.7.1.7.**

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	supports a conclusion that Savings Clause requirements are met, regardless of what baseline is used for a comparison, this is a hypothetical modeling exercise that does not reflect the actual construction and operating sequence, extended timeline, possibility that some elements may not be completed as assumed, and effects on regional ecological, flood, and water supply benefits and risks. Regional water control plans and Savings Clause analyses must be revisited and integrated at each stage of project or component design and implementation. A plan for such re-evaluations of CEPP components and operations plans should be described in the Adaptive Management Plan as well.	
MDC-7	**Sequence of Project Components** Miami-Dade is pleased that proposed sequencing strategies generally recognizes the need to have seepage management features in place and operational prior to or concurrently with components that are expected to improve conveyance to Northeast Shark River Slough. However, we recommend that operation of the S-356 pump at its current capacity be actively pursued immediately. This ModWaters feature, together with the existing seepage barrier pilot project constructed by the rockmining industry, represents an opportunity to address seepage that currently exists, as well as incremental increases in seepage that could result from weather events or water management to address ponding in WCA3a. Some early ecological benefits for Northeast Shark River Slough, southern WCA3a, listed species, southern estuaries could be achieved by improved delivery and distribution of water already in the system, or more flexibility in water management	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Project features are grouped into three separate PPAs based upon the spatial distribution of the project features and the locations within the CEPP study area where separable hydrologic and environmental benefits would accrue. These groupings include a PPA of project features in northern WCA 3A (PPA North), a PPA of project features in southern WCA 3A, 3B, and ENP (PPA South), and a final PPA which provides the new water and required seepage management features that benefits the entirety of the study area (PPA New Water). The Final PIR/EIS presents two potential implementation sequencing scenarios that are possible with the three separate PPAs currently identified: 1) PPA North → PPA South → PPA New Water and 2) PPA South → PPA North →PPA New Water. With each scenario, non-CEPP project features and non-CERP project features identified as project dependencies in **Table 6-10** of the Draft PIR/EIS still apply. Other viable options for the implementation of project features and subsequent groupings into PPAs may be considered in the future and is acknowledged within the Final PIR/EIS. The implementing agencies are committed to engaging in a public process after Congressional authorization and appropriations of CEPP to integrate CEPP into the CERP Master Implementation Sequencing Plan that defines the order in which CERP projects would be planned, designed, and constructed.

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	options as Tamiami Trail improvements are completed. Operation of these seepage management features, that are already on the ground, make early benefits a reasonable expectation, and their integration into CEPP should not be deferred until new water is made available. The current S-356 and barrier should be utilized for assessment of performance and refinement of localized models, engineering design and operating plans.	CEPP infrastructure, and how it would interface with operations and existing infrastructure, will be considered in the future as adaptive management, Pre-Construction Engineering and Design (PED), and as site specific information becomes available.
MDC-8	**Annex D Adaptive Management Plan Approach to Seepage Barrier Issues** Miami-Dade is pleased that the Adaptive Management (AM) plan includes a specific uncertainty related to effectiveness of the proposed seepage barrier with respect to Savings Clause issues of flood protection and water supply. However, some of the proposed "management options" or metrics/triggers and monitoring approaches are of great concern. For example, the in Annex D Section 1-83, it is suggested that is seepage occurs around the "north end" of the proposed seepage barrier then it may be extended to the north into the "triangle". A wall extending to the north (which was part of Alt 2 and Alt 3) was not carried into Alt4 when Alt4 was identified as the preferred alternative. Further, it is not clear how this management option would integrate with management of the L-29, the existing or proposed S-356, or any other infrastructure and operations in that area, of how deep an extended wall would be. Other content (see Annex D Section 1-85), such as inclusion of "windows" in the wall, increased stages in the WCA3b in the dry season to force water under the wall, or pumping around the wall in the dry season are options that are not well	1. Thank you for your comment. In general, please note that options presented in the CEPP adaptive management plan are suggestions, which may be pursued to adjust the design, implementation, and effects of CEPP. They are not automatic actions. They are subject to agency coordination, permitting, and support, as described in the AM Plan. Also, they may be expanded if new possibilities become available, so that Everglades decision makers are not limited to the options currently described in the AM Plan. The options are suggestions that capture current understanding of potential future issues and solutions. An explanation of this has been added to the Annex D Introduction in order to help address the commenter's concern. Explanations already exist throughout the AM Plan, and have been left intact. 2. In several cases throughout CEPP's TSP the design of features such as the seepage barrier and its interface with existing and proposed infrastructure, including operations, will be investigated in detail during the PED phase. AM options such as northern extension of the seepage barrier would require a similar level of investigation, and would be subject to all applicable requirements for coordination, permitting, design, and implementation. It is true that extending the seepage barrier to the north was not included in Alt42. If this option were to be pursued, all necessary coordination and permitting would be completed before implementation of the option. To help address the reviewer's concerns a reminder has been added to the AM Plan section where the process is described for verifying whether a CEPP seepage barrier is needed. The reminder added is, "All applicable analysis, coordination, and permitting requirements will be met and/or updated where necessary before initiating construction of a CEPP seepage barrier." A similar reminder exists in several places in the PIR. 3. Several interagency meetings took place to develop the CEPP AM Plan, including its

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	substantiated or documented. There is a proposal of "two feet of drawdown" in a wellfield cone of influence as a trigger for a management action. It is not clear to us what this means, what baseline would be employed, or where and when it would be modeled, measured or implemented. We do not recall these options or triggers ever being discussed in interagency meetings. We recommend that these more detailed elements of the AM plan be revisited, and that any concept of such management options or triggers must be integrated with other features and operation metrics for the WCAs, ENP, L-29, L-30 and L-31. Miami-Dade also has questions and concerns about the descriptions of proposed monitoring for AM (or water quality and hydrology) and costs. Miami-Dade does have an existing network of surface and groundwater monitoring stations which help to define larger scale geographic and temporal conditions, but the spatial extent of these is not adequate to specifically address the effectiveness of the seepage barrier or other CEPP components. Additional surface water and groundwater monitoring stations would be required to assess potential affect of the seepage barrier, pumps and detention areas on water flows, stages and quality in the adjoining and downstream canals and wellfields.	LEC portion, but not all agencies could attend all meetings. Concur that more coordination would be useful and will occur during the PED phase of this TSP feature. Miami-Dade can and should participate in these discussions if possible. The introduction and each regional section of the AM Plan states that the contents of the AM Plan will be revisited and refined after CEPP authorization and as CEPP progresses through its design and implementation. This provision was included in the AM Plan because the time that may pass before CEPP is implemented is uncertain, and various sources of additional data may become available during that time. The AM Plan will be reviewed to include new information where appropriate, so that the AM Plan can remain timely and targeted on CEPP's needs. 4. In addition it is recognized by the CEPP team that the thresholds and triggers suggested in the AM Plan are estimates and should be improved. The CEPP team would like Miami Dade input in the improvements that will take place, via RECOVER, to identify triggers that signify needs for project adjustments. The following text exists in the paragraph describing the LEC triggers and thresholds, and now has been changed to bold-print to help address the reviewer's concern: "Refinements or additions to the listed triggers and thresholds may occur in the future as new and/or updated research, standards, permits, or rules and data are analyzed and incorporated by the PDT." 5. Regarding need to expand monitoring area, the following text exists in the 6-page LEC seepage barrier section of the AM Plan: "It is anticipated additional monitoring will be necessary for the Project and that the monitoring suggested here will be reviewed during CEPP Design to adjust to potential needs or changes in data availability that may occur after publication of this adaptive management plan. Costs for the proposed monitoring have been included in the Monitoring Cost Table."
MDC-9	**Savings Clause Baseline** Miami-Dade has clearly stated from the beginning of CEPP discussion that the Savings Clause modeling analysis should be based upon comparison to a baseline condition that describes the flood level of service and water supply characteristics that existed on the date of enactment of WRDA 2000. Despite clear and direct	Consistent with the WRDA 2000 and the Programmatic Regulations, the savings clause analysis identifies the effects of the plan, not non-CERP actions (including, for example, 2008 LORS and ERTP). The analysis therefore compares the Initial Operating Regime with the project (Alt 4R2) to the Initial Operating Regime baseline without the project (IORBL1). Although Annex B additionally includes comparison of Alternative 4R2 with the two existing baseline conditions (2012EC and ECB), to inform evaluators of the cumulative potential effects of both CEPP and other intervening CERP and non-CERP projects relative to conditions experienced previously, this information is not used to determine compliance with the requirements of the Savings Clause. The

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	language in WRDA, the Savings Clause analyses in the PIR were made by comparison of Alt4R2 to the assumed future without CEPP in place. Miami-Dade has reviewed and understands the arguments offered by the USACE in the PIR for this approach, but we respectfully cannot occur with this interpretation or conclusions regarding Savings Clause compliance that flow from it. For example, Miami-Dade understands that the operations plans in place in 2000 are no longer considered viable and have been replaced with a new transition plan, which focuses on protection of endangered species habitat. The Draft PIR Savings Clause analysis described the new transition plan as a non-CERP "intervening condition", which is not subject to Savings Clause considerations. However, the CEPP modeling evaluation also assumes that this plan will be used as the CEPP Alt4R2 operating plan, even though it does not include some existing Mod Water features, such as operation of the S-356 pump. "Annex C – Project Operating Manual" also includes ERTP operating criteria for new or existing components. It is our position that once an interim or transition operating plan, which was not approved as a permanent plan or with the benefit of the excellent modeling tools now available, becomes integrated as a CERP operating plan that it in fact is subject to Savings Clause, or at least the intent of the Savings Clause, to assure that ecological restoration will also maintain or improve flood protection and water supply compared to conditions at the time WRDA 2000 was enacted. Miami-Dade does not object to use of a "future without CEPP" scenario for comparison of the performance of various alternatives, determination of new water made available by the project or various benefit analyses.	IORBL1 condition maintains Zone A of the ERTP WCA 3A Regulation Schedule as the criteria to specify the need for maximum regulatory releases from WCA 3A, and maintains the seasonal closure regime for S-12A and S-12B consistent with the ERTP Biological Opinion. However, significantly different from any previous regional operational plans for WCA 3 and ENP, the operational plan for CEPP includes the use of spatially-variable ecological water depth targets with Rain-Driven Operations (additional details are included in the Section 7.1.7 of the DPOM, Annex C). The CEPP future without project used during formulation assumed continued operation of South Dade under the 2006 Interim Operational Plan, as described in Section 2 of the PIR. For the Saving Clause analysis, the assumptions were updated to include the ERTP water control plan as approved by the Corps in October 2012. The Record of Decision for ERTP was not approved when CEPP plan formulation efforts were initiated in late 2011. For the CEPP PIR, the analyses for CEPP associated with Section 601(h)(4) and 601 (h)(5) of WRDA 2000 and the Programmatic Regulations for the CERP (33 CFR Part 385) for Project-Specific Assurances and Savings Clause were conducted for the recommended plan. Should the recommended plan be implemented in multiple PPAs, the USACE District Engineer will ensure that Project-Specific Assurances and Savings Clause requirements are met per PPA, per applicable policies and laws. NEPA documentation will be updated, if applicable, as revisions are made to Water Control Plans and/or Project Operating Manuals associated with each PPA. Compliance with the requirements of the Savings Clause will be maintained throughout the entirety of the CEPP implementation period.

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MDC-10	**Sea Level Rise Considerations** Miami-Dade identified evaluation of projected sea level rise as an issue during CEPP scoping, particularly from the perspective of maintaining freshwater flows and stages so as to optimize strategies for protecting coastal water supply wells from saltwater intrusion, and also from the perspective of system structure operations for maintaining flood control. We are pleased that there is some consideration of this issue, but the discussion in the report largely addresses estimation of the effect of sea level rise on project ecological benefits in coastal wetlands. Miami-Dade recommends that sea level rise considerations also take into evaluation of CEPP operations for drainage and for saltwater intrusion in coastal wellfields.	The USACE sea level change guidance (EC 1162-2-212) requires an analysis of project performance as impacted by projected sea level change. The sea level change analysis performed for the CEPP project is focused on the primary benefits of the project which measure ecological restoration. Since water supply and coastal drainage conditions are not significantly altered by the CEPP project, per the guidance, they need not be included in the sea level change analysis.
PRIVATE		
ARTHUR R. MARSHALL FOUNDATION & FLORIDA ENVIRONMNETAL INSTITUTE (MARSHALL)		
MARSHALL-1	We are pleased to provide written comments and a notional CEPP Ecosystem Services Valuation (ESV) of Benefits and Costs, based on CEPP Habitat Unit Assessment (HUA) in two attachments: (CEPP Draft PIR Comments.docx and CEPP alt Benefit to Cost V2.xlsx) We support CEPP as the first step in CERP to restore sheet flow as envisioned in the 1981 Marshall Plan published as Friends of the Everglades News Letter and petition, by Marjory Stoneman Douglas: *Effect repair requires restoration of sheet flow to the greatest possible extent from the Kissimmee Lakes to Florida Bay… The purpose of this petition is to achieve environmental benefits accruing form repair of the Everglades.* As it was in the Marshall Plan, ***benefits*** is a powerful	Thank you for your comment in support of producing ecosystem services values to communicate the benefits of CEPP. The Jacksonville District of USACE intends to publish the CEPP ecosystem services report in a peer-reviewed science journal to further increase its communication influence. The team is aiming for publication before or near the date of the release of the final CEPP PIR. Regarding comparing alternative plans (i.e. comparing sheetflow to storage options), the CEPP ecosystem services report does not provide any comparisons of alternative plans. It provides only a comparison of the future without the TSP and the future with the TSP. The CEPP ecosystem services team was not tasked to (or able to) provide ecosystem services assessments of each alternative plan. Future ecosystem services efforts could take on such a task if feasible and appropriate.

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	word in the CEPP DRAFT PIR, with the word **benefits** appearing some 175 times in the CEPP main document. However the absence of a publishable ecosystem services valuations (ESV) to define benefits, relative cost, thus also leaving absent a clear measure of CEPP return on investment, is a deficiency that makes the CEPP PIR sticker shock price harder to sell; as noted by the National Research Council (NRC 2005) no publishable value has default of zero (0). A Total Economic Valuation of CEPP benefits, a synthesis format per NRC 2005 remains an unfulfilled challenge to what could be a major enhancing feature for better environmental decision-support. Based on CEPP ESV Calculations in the attached spread-sheet, and previous demonstrations we conclude that a TEV of benefits will always lead to a robust B:C calculation of an order of magnitude approximating 20:1. We also conclude that the ESV approach would demonstrate that the value of restoring sheet flow is much greater than the value of a massive reservoir system in an analysis of alternatives trade-off using the B:C ratio.	
MARSHALL-2	In the list of public comments received summarized in the WRAC update, we would emphasize the need for a flow through system and additional land acquisition in the EAA.	Alt 4R2 redirects an average of approximately 210,000 acre feet per year of clean freshwater into the central portion of the Everglades that would otherwise be undesirably discharged to the Northern Estuaries. The concept of a "flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Further information on the evaluation of this concept can be found in the C&SF Comprehensive Review Study (USACE 1999).
MARSHALL-3	The result is a demonstrated notional TEV of $53.353 Billion at an estimated cost of $2.024 million, for a benefit/cost of 26.36. The calculated B/C ratio of 26.36 fell just slightly higher than the	Thank you for your comment. The CEPP team used published and approved benefit transfer methods to monetize CEPP's ecosystem services values. In addition, the team's task was to focus specifically on the difference in value between the future with CEPP and the future without CEPP. The values reported for CEPP ecosystem

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	same range of values demonstrated by our ARM 2010 summer interns where B/C = B:C ranged from 5 to 24.	services are the net difference between the future with and without CEPP. These points may account for the difference in the values calculated by the CEPP team and by the Marshall Foundation. The CEPP team encourages the Marshall Foundation to publish their TEV results in a peer-reviewed economic journal so that the results may be accessed and used widely. The team believes it is not sound to use the monetized values to calculate a cost-benefit ratio and therefore does not provide a ratio in the report.
MARSHALL-4	Thus robust B:C ratios greater than 20:1 should be no surprise. In the case of the attached calculations giving a B:C of 26.36, a few comments: (1) The large B:C should be no surprise; (2) the ESV calculation based on HUA may be mildly optimistic, as a result of computer generated habit units based on performance measures. (3) For a conservative estimate of the value of wetlands, swamps (forested wetlands) and estuaries, for back of the envelop calculations: Think $10,000 per acre per year and multiply $10,000 by number of acres and years of life cycle (~40 years).	Thank you for the effort to provide results of ecosystem services calculations. Unfortunately it seems that the methodology does not follow benefit transfer rules that the CEPP team followed. However, the concept of calculating ecosystem services per habitat unit is potentially very useful to USACE and will be communicated to USACE employees who are dedicated to identifying the most practical ways for USACE teams to calculate ecosystem services. Thank you for suggesting to calculate ecosystem services per habitat unit.
MARSHALL-5	We support CEPP as an initial increment of the Marshall Plan, 1981, which had as its central element, what became Plan 6 in 1994. This was not accident. Art's vision expressed in the 1981 – 1984 Marshall Plan, published by Marjory Stoneman Douglas as a Friends of the Everglades News Letter, was to restore sheet flow from the Kissimmee Basin to Florida Bay.	Thank you for your support of CEPP.
MARSHALL-6	In context of a principle objective of CERP, read this as Full DECOMP, and restoring habitat and functional quality. We need to keep our eyes on the prize. Given the WRAC comments October 3, 2013, that is not happening. The devil remains in the details which impedes the total ecosystem approach, a tenet of the Task Force strategic plan.	The CEPP is composed of increments of project components that were identified in CERP. The term "increment" is used to underscore that the study formulated portions (scales) of individual CERP components. It is envisioned that later studies will formulate additional increments of CERP components to expand upon this initial "increment" to achieve the level of restoration envisioned for CERP.
MARSHALL-7	This immediately brought to mind the need to restore the pond apple forest in CERP/CEPP as previously suggested as the means to (1) increase	Thank you for your comment. Although CEPP increment 1 will not restore pond apple forest, the value of this forest type is recognized and should continue to be considered in future Everglades restoration planning efforts.

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	the spatial extent of natural area; (2) restore habitat and functional quality, and increase native species an abundance per CERP Table 5-1 goals and objectives. Connecting the dots to the previous presentation which mentioned the Okeechobee Gourd as an endangered species. The pond apple forest provides the habitat for the Okeechobee Gourd. Recognizing that actions on many of these comments must come in subsequent CEPP increments, we fully support CEPP increment 1 as a significant step to restore the Everglades and save the planet.	
AUDUBON OF FLORIDA/AUDUBON SOCIETY OF THE EVERGLADES/CLEAN WATER ACTION/DING DARLING WILDLIFE SOCIETY/EVERGLADES FOUNDATION/FLORIDA WILDIFE FEDERATION/FLORIDA OCEANOGRAPHIC SOCIETY/LEAGUE OF WOMEN VOTERS OF FLORIDA/NATIONAL PARKS CONSERVATION ASSOCIATION/NATURAL RESOURCES DEFENSE COUNCIL/SIERRA CLUB/SOUTH FLORIDA AUDUBON SOCIETY/TROPICAL AUDUBON SOCIETY (NGOs)		
NGO-1	On behalf of the above listed organizations, we would like to thank you for the opportunity to comment on the Central Everglades Planning Project (CEPP). Timing is of the essence to halt irreversible ecosystem degradation and avoid the high costs of delay. As a pilot project, CEPP embodies the sound planning and unprecedented public input that can be accomplished with modernized planning and provides a significant step to restoring America's Everglades. Thus, we implore you to highlight the success of this effort and eliminate any remaining procedural obstacles to deliver a Chief's Report on this historic project by December 31, 2013. The CEPP Tentatively Selected Plan (TSP) is a worthy investment that delivers significant benefits to reduce damaging discharges to the Caloosahatchee and St. Lucie estuaries; to restore	Thank you for your comment.

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	habitat in the central Everglades, focusing on the "River of Grass"; and to deliver an annual average of 210,000 acre-feet of water from Lake Okeechobee to the central Everglades, Everglades National Park (ENP) and Florida Bay.	
NGO-2	**Pilot Project Success** The bundling of project elements to produce a cost-effective TSP, which delivers broad benefits, provides a model for long-term success in advancing Everglades restoration. We are delighted with efforts to capture the value of ecosystem services postulated by this project and encourage this type of evaluation going forward. We applaud the utilization of existing data and tools developed in previous Decompartmentalization and Sheet Flow Enhancement Project (DECOMP) and other previous planning efforts. Moreover, the public engagement model used by the South Florida Ecosystem Restoration Task Force created an extraordinary platform for stakeholder participation in this truncated timeline that we hope to see replicated. We acknowledge that concerted efforts by the PDT have already reduced anticipated project costs by over $200 million dollars. We look forward to continuing to find cost control measure and taking advantage of the South Florida Water Management District's experience and proficiency in constructing restoration projects within this unique ecosystem. The significant leadership undertaken by the state and federal partners to overcome obstacles to advancing this project should be heralded. There are some uncertainties inherent to a project of this scope	Thank you for your comment supporting the team's evaluation of ecosystem services and implementation of the Civil Works Program Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.

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	that includes a considerable implementation period. These uncertainties should be acknowledged and addressed during the course of executing Everglades restoration but should not become justification to forestall the implementation of CEPP or delay the substantial ecosystem benefits provided by this project. CEPP's adaptive management plan provides needed flexibility and should be utilized.	
NGO-3	**Endangered Species Recovery** Everglades restoration is good for endangered species throughout the ecosystem. The CEPP TSP benefits more than 1.5 million acres of habitat across the Greater Everglades, from the northern estuaries, Water Conservation Area 3A (WCA-3A) and Water Conservation Area 3B (WCA-3B), ENP, and Florida Bay as well as a vast estuarine area along the SW coast of Florida from Whitewater Bay to Broad River. Overall, the TSP is best for the Everglades food web and endangered species such as the Everglade Snail Kite, Wood Stork, and American crocodile. Benefits to the Cape Sable Seaside Sparrow (CSSS) will be realized in the long run as we continue to shift the balance of flow from the S-12s through WCA-3B into Northeast Shark River Slough (NESRS). CEPP takes a first, significant step at doing that. We are encouraged by agency efforts to pro-actively manage habitat to ameliorate any short-term impacts to CSSS associated with construction of the TSP while we wait for CEPP to come online. These changes include, but are not limited to, revisiting operation	Thank you for your comment. The Final PIR/EIS will include the preliminary Biological Opinion that will outline the anticipated monitoring and mitigation measures to potentially offset adverse effects.

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	regimes including the Everglades Restoration Transition Plan which will be revisited in 2016. If potentially adverse effects are observed or predicted, longer-term impacts to CSSS associated with the operation of project features would be addressed through operational monitoring and adaptive management actions. We look forward to reviewing the Service's analysis of the modeling results for hydrologic impacts to the CSSS and its habitat. ESA consultation must address potential adverse effects to the CSSS, including by requiring robust monitoring of habitat conditions and breeding success and clear triggers for mitigation action in the event of adverse effects, with mitigation actions agreed to in advance. We urge the agencies to advance CEPP and Everglades restoration while continuing to ensure an adequate nesting window for all CSSS subpopulations and hydrologic regimes that support the bird's habitat – short-hydroperiod freshwater marl prairies in the southern Everglades.	
NGO-4	**Water Supply Benefits** The TSP results in meaningful restoration of the heart of Everglades and is consistent with CEPP's three initial project purposes to: reduce damaging discharges to east and west coast estuaries; restore habitat in the central Everglades focusing on the "River of Grass"; and deliver "new" sources of clean water to the central Everglades and ENP. This plan successfully increases water quantities delivered south to the natural system and municipal users without reducing the levels of service for agricultural or other existing legal users	Thank you for your comment and your attention to this important area in CEPP. In Annex D Section 1.4.4 the CEPP adaptive management plan recognizes the need to evaluate the design needs for seepage management in the Lower East Coast in order to provide project benefits while meeting water supply and flood risk management specifications. Baseline data will be collected before and during PED phase to inform final design of project features.

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	as provided for in the Water Resources Development Act (WRDA) 2000 Savings Clause. Seepage management features proposed are necessary to reduce the loss of water from the natural system and are key elements to avoid flooding in urban and agricultural communities. We support the adaptive management plan language for water quality monitoring, including salinity, in Biscayne Bay that result from seepage controls. We caution that underground seepage barrier walls are permanent structures and request that design need be continually evaluated prior to implementation of this feature. We should also continue to establish baseline data to better understand any canal and groundwater flow impacts. If potentially adverse effects are observed or predicted, longer-term impacts to Biscayne Bay associated with the operation of project features should be addressed through operational monitoring and adaptive management actions.	
NGO-5	**Recreational Opportunities** The CEPP TSP embraces innovative partial backfill and plugging opportunities in the L-67A, L-67C and Miami Canal that create continued fishing opportunities and restore sheetflow. CEPP will provide greatest recreational benefits in the dry season, when soils are currently at highest risk of oxidation leading to habitat (ridge-and-slough and tree island) loss—particularly in northern WCA-3A, NE SRS, and WCA-3B. As a result, the TSP will cut the number of fire closures for recreationalists by half, while reconnecting habitat and hydrology	Thank you for your support and comment.

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	needed to protect remaining and restore lost habitat. Restored ecological connectivity between WCA-3A, WCA-3B and Everglades National Park will also improve estuarine conditions and fisheries habitat in Florida Bay and along the southwest coast of Florida.	
NGO-6	**Restoring Sheet Flow** The Blue Shanty Flow-way (L-67D) feature provides a unique opportunity to restore sheet flow while utilizing an already impacted part of the landscape. We must remain focused that this feature is intended to allow for restoration of sheetflow, the creation of ridge-and-slough habitat and fishery improvement. The L-67D is a necessary prosthesis to orient flow in such an impacted system that has undergone significant soil oxidation/elevation loss and landscape pattern deterioration and should not be interpreted or designed as a flood control structure. We support the use of adaptive management to determine the true need for, best use of, placement for and design needs for this feature. Current criteria mandating a 6-ft high levee with a 14-ft wide crest and 3:1 sloping banks constitute an unnecessary level of flood control to an undeveloped natural wetlands area. Furthermore, adequate seepage control benefits for WCA-B can be achieved by utilizing a temporary berm to "train" the River of Grass flow from gated structures along L-67-A while providing <u>significant cost savings</u>. We remain committed to feature refinements throughout the design process that allow us to greatly increase ecological connectivity through the degradation of the L-29 and is	Thank you for your comment and attention to the L-67D feature. We concur that removal of obstructions to flow through the Everglades is fundamental to advancing restoration as envisioned in CERP. WRDA 2000 requires (Savings Clause) that CERP does not reduce the level of service for flood protection as of 2000 and in accordance with applicable law.. The function and integrity of the C&SF flood protection system provided by the L-67 A and L-67 C levee system must be maintained following CEPP implementation, and CEPP degradation of portions of the L-67 C and L-29 levees must be offset with additional infrastructure and operational constraints that maintain the pre-project level of flood protection and account for any potential increased design risk. The details of additional infrastructure, and how it would interface with operations and existing infrastructure, will be determined in the future as adaptive management, Pre-Construction Engineering and Design (PED), and as other information becomes available for this area. Consideration of a new L-67 D levee (currently included as a component of the CEPP recommended plan), including its footprint (width/height), costs, and permanency, will be cautiously considered and subject to applicable policies and permitting.

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	compatible with the 2.6-mile bridge provided for in the Tamiami Trail Next Steps project. The removal of existing levees and other obstructions to flow is fundamental to advancing restoration objectives envisioned in CERP.	
NGO-7	**Conclusion** We believe that the CEPP reflects a tremendous undertaking and the TSP achieves the highest ecosystem benefits possible within existing lands in public ownership. As plans to sequence interdependent projects are developed, concurrent construction of multiple projects should be prioritized to avoid implementation delays. We urge that all opportunities to begin construction of CEPP as soon as possible be explored. We commend the Project Delivery Team on this highly successful pilot planning effort and honor their tremendous efforts by remaining committed to ensure CEPP's expediting this process are not undermined by bureaucratic delays. A Chief's Report by December 2013 and inclusion of CEPP in a 2013 WRDA is essential to our ability to increase water flows to the central Everglades, provide relief to the northern estuaries and provide short term ecological benefits for restoring America's Everglades.	Thank you for your comment.
CLEAN WATER ACTION (CWA)		
CWA-1	Thank you for your leadership and the tremendous effort of the Army Corps in working to prepare the draft Project Implementation Report (PIR) for the Central Everglades Planning Project (CEPP). Clean Water Action looks forward to reviewing the PIR closely now that it has been made publically available as of this morning. We applaud the	Thank you for your comment.

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	dedicated effort of the Army Corps and the South Florida Water Management District teams that led to this decisive next step toward restoring much-needed flow to the southern Everglades ecosystem.	
CWA-2	The timing of CEPP approval is critical. With Congress considering the Water Resources Development Act (WRDA) of 2013, we have the opportunity to have this important project authorized this year. If this window of opportunity is missed, CEPP may be forced to wait in the queue for Congressional authorization for years while the ecosystem and surrounding communities – including those of the St. Lucie and Caloosahatchee estuaries – continue to decline and suffer. We simply cannot wait.	Thank you for your comment.
CWA-3	Given the narrow window of opportunity available with WRDA, Clean Water Action urges you to ensure that the public comment window be kept to the minimum requirement of 45 days and not be extended any further. Even pushing the comment period by an additional two weeks could mean missing the December 31st deadline for 2013 authorization. Given the tremendous effort already exerted by agency staff, stakeholders, and the public over the past 18 months, we hope you will use your leadership position to ensure that momentum will not let up as the deadline approaches.	Thank you for your comment.
SIERRA CLUB (SC)		
SC-1	On behalf of the Sierra Club Everglades restoration team we would like to thank you for your work on developing the Central Everglades Planning Project (CEEP) and on providing us with the opportunity to comment on this project. We applaud the Army Corps of Engineers efforts in developing and implementing this massive project in restoring	Thank you for your comment.

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	clean water flow throughout the Everglades. This letter is in addition to the comment letter we submitted with other environmental organizations	
SC-2	A major concern we have is in the timing of the components and whether they will achieve a reduction in harmful flows to the estuaries in time to prevent more serious harmful algal blooms. We believe that the discharges of polluted waters into the Caloosahatchee and St. Lucie estuaries should be addressed immediately through operational changes and through expediting those parts of the project that will permit water from Lake Okeechobee to be cleaned to the 10 parts per billion or less and transported south to the Park. If we wait till 2018 to address the discharge of these heavily polluted waters into the Caloosahatchee and St. Lucie estuaries the cumulative effect will continue to be devastating to our environment, and we believe it will produce a massive die off of coral reefs off of South East Florida. Many marine animals have a symbiotic relationship to these corals in Palm Beach and Broward counties. These reefs also play a protective role during severe storms by absorbing storm wave action. Nutrients and turbidity that blocks sunlight destroy reefs. Since tourism is the number one source of income for the state of Florida it is in Florida's best interest to make sure the environment that draws people from other states to ours is pristine and well preserved.	Section 6.7 outlines the other projects which CEPP, water quality constraints and other factors such as funding that will effect CEPP implementation. Implementation of the CERP, which CEPP is a part of, is a long-term and comprehensive endeavor that will take many years to implement.
SC-3	We encourage you to take the following actions: 1) Expedite the building of FEB and STA's that will clean the water from Lake Okee-chobee.	Storage and treatment of new water will be possible with the construction of the 14,000 acre FEB and associated distribution features on the A-2 footprint that is operationally integrated with the state funded and state constructed A-1 FEB and existing STAs. The A-2 FEB will accept EAA runoff and a portion of the Lake Okeechobee water currently discharged to the Northern Estuaries. To ensure that

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	2) Pursue the purchase of new lands that could facilitate a flow way south. 3) Set up operational changes that permit rain driven storm water in the WCA's when they are experiencing too much water to be transported into Everglades National Park when the water quality in these areas meets park standards. 4) Increase BMP requirements that reduce nutrient flows into the lake and we oppose back pumping of storm water into the lake. Additional distributed water storage will reduce these harmful discharges to the estuaries. 5) Take advantage of the Tamiami Trail bridging to send as much clean water as possible into the park. Adaptive management permits you to modify your plans as you proceed. Please take advantage of any opportunities to increase sheet flows that clean water and sends it south towards Everglades National Park rather than into the estuaries.	CEPP plan meets state water quality standards, discharge permits with associated effluent limits will govern discharges from the state facilities to WCA 3. The concept of a "flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Further information on the evaluation of this concept can be found in the C&SF Comprehensive Review Study (USACE 1999). The Florida Department of Environmental Protection (FDEP) is in the process of developing a Basin Management Action Plan (BMAP) for Lake Okeechobee pursuant to Section 403.067, Florida Statutes. This BMAP will be an iterative effort to address water quality issues in Lake Okeechobee. The DOI Tamiami Trail Next steps bridging and roadway modifications is recognized as a project dependency and is required to be completed prior to increasing the capacities of S-333 and S-356 along with implementation of WCA 3B inflow structures along the L-67 A levee, gaps in the L- 67 C levee and Blue Shanty flowway (L-67 C removal, L-29 removal).
SAVE THE MANATEE CLUB (SMC)		
SMC-1	Save the Manatee Club has reviewed the Project Implementation Report (PIR) for the Tentatively Selected Plan (TSP), Alternative 4R2, and recognizes the proposal for CEPP as one important component of a much larger plan of action to regulate discharges from Lake Okeechobee to the estuaries.	Thank you for your comment.
SMC-2	We support CEPP because it will promote conditions to help restore seagrasses important for manatee forage, and oyster beds important for	Thank you for your comment.

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	water quality and clarity, within the St. Lucie and Caloosahatchee estuaries, by reducing flows to each from Lake Okeechobee by 23% and 25%, respectively. Unfortunately, CEPP is only predicted to increase coverage of seagrass shoots by 8.5% in the Caloosahatchee and 6.6% in the St. Lucie (PDF p. 199). Florida Bay will also benefit from CEPP, because historic management of Lake Okeechobee has greatly reduced flows to the south and into the Bay, creating hypersaline conditions that have killed expansive beds of turtle grass (*Thalassia*). CEPP will increase southerly flows to Florida Bay. We offer the following comments and questions for consideration as the project plans are finalized.	
SMC-3	Climate Change We were pleased to see climate change scenarios considered in developing the recommended plan. If future adaptations to project construction and/or operation are necessary to respond to sea level rise, changes in rainfall, or other climate change-related scenarios, we request that plans to alter operations of CEPP components consider not only the impact on the land and water within the CEPP boundary, but also those areas outside the boundary that might be affected by such decisions. Stated simply, we don't wish to see the environment outside the project boundary degraded or compromised in the name of meeting project goals for CEPP.	To address any future uncertainties related to incremental implementation it is recognized that prior to implementation of each phase, additional detailed analyses pertaining to that phase of implementation will be considered in development of the Project Operating Manual. These analyses will include demonstration that Savings Clause and Project Assurances requirements for the project phase will be met prior to PPA execution. Adaptive management options are also a key tenant to reducing risk and addressing uncertainty as construction progresses. As the Project Operating Manual and Water Control Plans are developed conditions at that time will be used to ensure project benefits are realized without sustaining cumulative impacts outside the project footprint.
SMC-4	Nutrient Concerns Related to Increased Water Availability The report states that the TSP will increase water supply for municipal and agricultural users (PDF p.5) then says the project will increase water available for municipal and industrial users but maintain "existing water supply performance for agricultural users in the Lake Okeechobee Service Area" (PDF p.9). Clarification is needed as to whether additional water will be made available for agricultural uses as a result of this plan. If	The SFWMD existing BMP regulatory program and the Water Quality analysis included in Annex F of the document demonstrates that the existing and planned water quality treatment facilities in the EAA will be capable of sufficiently treating the CEPP flows prior to discharge to the Everglades Protection Area. The USACE and the SFWMD believe that the ongoing monitoring efforts and planned CEPP water quality monitoring will be sufficient to demonstrate compliance with water quality requirements. Section 6.8.6 and Annex B will clarify that the additional water made available in LECSA 2 and LECSA 3 will be available for municipal, industrial and agricultural users.

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	additional water is made available, then additional nutrient- rich runoff will be produced, and the SFWMD should adjust BMP requirements accordingly to ensure that the existing problems associated with runoff are not exacerbated. Additionally, producers of nutrient-enriched runoff in the Everglades Agricultural Area (EAA) should be financially responsible for the treatment of this polluted water. This component of CEPP is not a financial burden that should be carried by the public, but by the private industry creating the pollution. Additionally, it is not clear how the additional 12 million gallons per day for Broward County and 5 million gallons per day for Miami-Dade County will be utilized. Although the report states that the stormwater treatment areas (STAs) will reduce phosphorus concentrations in the water to meet required water quality standards, this should be closely monitored, particularly if flows through the STAs are increased. Given the high nutrient content of water moving through this system, it will be important to ensure that nutrient loads to coastal waters are not increased as a result of this water delivery. The same assurances are needed for water that will be routed south to Florida Bay.	

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SMC-5	Clarifying Explanation of Benefits It is stated that an average of 1.7 billion gallons of water per day is discharged to the Atlantic and Gulf (PDF p.16) and CEPP will redirect a portion of this. Unfortunately, the report does not provide the number of gallons per day by which discharges will be decreased, instead referring to the amount of water that will be redirected south through flow equalization basins and STAs. Even this amount is not characterized in gallons per day, but as "approximately 210,000 acre feet per year, annual average"- a figure not readily comparable with gallons per day. This point is further confused with the report states that CEPP will capture and annual average of ~79,000 acre feet of water from being lost to tide in the Caloosahatchee (an 18% increase compared to the future without project) and 60,000 acres from the St. Lucie (a 32% increase). Later (PDF p.191), the project is stated to beneficially affect more than 1.5 million acres in the Caloosahatchee and St. Lucie Estuaries, the Greater Everglades, and Florida Bay, and the increase in habitat units afforded by the project is provided. Standard units of measurement should be utilized throughout the report to facilitate understanding of project benefits in quantifiable terms. The report states that 160,000 acre feet per year will enter Florida Bay, but it is not clear what will become of the other 60,000 acre feet per year that will not travel to the northern estuaries. Will any of this go to aquifer recharge? If so, then this benefit should be stated. The conclusion of the report should introduce those CERP projects that are intended to address the remainder of the 1.7 billion gallons that will not be offset by CEPP. .	The recommended plan provides an average of approximately 210,000 acre feet per year of additional freshwater flowing into the central portion of the Everglades. This equates to approximately 187 million gallons per day. Acre feet are consistently used throughout the report to describe changes in the distribution or quantity of water throughout the project area. Acres are also consistently used to describe the spatial extent of the project area that is benefited. Additional water from Lake Okeechobee would be sent southward through canals of the EAA to the A-2 FEB and A-1 FEB. The FEBs would provide storage capacity, attenuation of high flows, and limited pre-treatment prior to delivery of the re-directed water to existing STAs, which would reduce phosphorous concentrations in the water to meet required water quality standards. The treated water would then be distributed through WCA 3A to WCA 3B and ENP and Florida Bay via structures and creation of the Blue Shanty Flowway. A seepage barrier wall and pump station will manage seepage to maintain levels of flood protection and water supply in the urban and agricultural areas east of the WCAs and ENP. Detailed water budget maps displaying differences in the quantity of water distributed to each region of the project area are found in Annex A-2 Reference 4 and Reference 5 of the **Engineering Appendix** (**Appendix A**). The recommended plan is not increasing undesirable discharges to the Northern Estuaries; it is decreasing undesirable discharges. The Draft PIR/EIS acknowledges that further actions are needed to achieve the restoration envisioned in CERP, to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
SMC-6	The TSP is intended to benefit both the St. Lucie	Page 133 (Section 5.1.9 Water Quality) of the PDF of the Draft PIR/EIS summarizes

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	and Caloosahatchee Estuaries by decreasing the number and intensity of high-volume releases from Lake Okeechobee, according to PDF page 19. Later (PDF p.133), it is explained that with the TSP, the number of low and high salinity events for the Caloosahatchee will be reduced, and that while the number of high flow events will be reduced in the St. Lucie, the number of low flow events in this estuary will increase. This fact should be pointed out explicitly within the executive summary	results from Alternatives 1-4. The primary focus of the executive summary is Alt 4R2. Alt 4R2 increased the number of times the low flow criteria was met for the St. Lucie Estuary relative to the FWO. Alternative 4R2 decreased the number of times the low flow criteria was not met from 92 in the FWO condition to 65 with Alternative 4R2. See **Figure G-29** of **Appendix G** (**Benefit Model**) for reference. Any errors within the report with regard to this performance measure will be corrected.
SMC-7	Manatee Considerations While the TSP will maximize benefits to Florida Bay (PDF p.129), it will reduce water flowing into another important manatee habitat: Biscayne Bay. Any changes in water flowing to Biscayne Bay should be monitored, and impacts to the Bay's ecology reported, since the TSP is estimated to have "negligible to minor adverse effects" on mangrove communities and seagrass beds in Biscayne Bay (PDF p.123). Annex 1 (PDF p.424) states that deep canals are believed to provide refuge to manatees during cold periods because these canals retain heat for longer periods of time. Will CEPP alter manatee access to any of these canals believed to provide refuge? And will the depth or flow of water in any of these canals change in a way that might decrease their utility by manatees during cold events? If so, contingency plans should be developed with FWC and FWS to rescue manatees observed with cold stress in this system, or otherwise in need of rescue. Safety features (i.e. grating of culverts) must be maintained not only in those canals known to accommodate manatees, but also those which are capable of providing access to manatees. All personnel who work in these areas should be trained on spotting manatees and assessing	In Biscayne Bay, Alt4R2 provided additional flows when compared to FWO. Alt4R2 provides additional dry season flows throughout the bay and is likely to provide a benefit to the seagrass beds and mangrove communities by providing additional flows to the coast, thereby lowering salinity levels and/or reducing the number of days salinities exceed 40 psu having a minor beneficial effect. Alt4R2 shows slightly increased flows patterns for both seasons compared to FWO. This information can be found in Section 5 of the main report with more details in Appendix C.2.2 in Section C.2.2.3.5.1 and C.2.2.3.5.2. Alternative 4R2 includes backfilling the portion of the Miami Canal north of Interstate 75 and although manatees can access portions of the Miami Canal, backfilling as described under CEPP is not likely to adversely affect manatees. Depths of these canals will not be altered with CEPP in a manner that will inhibit warm water refuge for manatees. All safety features will be maintained and all Standard Operating Procedures during construction and operations for Threatened and Endangered species will be followed. The CERP Interim Goal in Table 6-1 is to reestablish a diverse seagrass community with moderate plant densities and more natural seasonality, and increase the percentage of Florida Bay having suitable habitat for seagrass growth. With CEPP, improved salinity regimes in the North Bay result in a stable mixed Thalassia-Halodule-Ruppia SAV community. Compared to the future without condition, CEPP shows an increase in Ruppia so there is a more diverse mix of SAV, not just Thalassia. There is not a desire for Ruppia over Thalassia, just a diverse seagrass community.

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	possible health concerns such as cold stress. With regard to seagrass, the report states (PDF p.201) that the goal is to have a stable mixed community of Thalassia, Halodule, and Ruppia in North Florida Bay with decreased coverage of Thalassia and increased coverage of Ruppia. The reason for desiring Ruppia over Thalassia is not clear and should be explained.	
SMC-8	We will review the USFWS Biological Opinion (being prepared in response to the Corps' "may affect" determination) when it is released in December and provide comment if necessary.	Thank you for your comment and there will be a 30 day public review period of the Final PIR/EIS that will include the preliminary Biological Opinion.
NATIONAL WILDLIFE FEDERATION (NWF)		
NWF-1	On behalf of over four million members and supporters, restoration of America's Everglades is a top priority for the National Wildlife Federation (NWF). In that vein, NWF strongly supports the Central Everglades Planning Project (CEPP) and urges you to complete a final Report signed by the Chief of Engineers as soon as practicable.	Thank you for your comment.
NWF-2	Progress on this project would be timely. The longer water is shunted unnaturally to the east and west coasts of Florida, the more degraded the Indian River Lagoon and the Caloosahatchee estuary become. In addition, the historic Everglades ecosystem is starved of necessary freshwater inflows. CEPP was contemplated specifically to speed delivery of a project to fundamentally re- plumb the River of Grass. The urgency of authorization, funding, construction and implementation of this project cannot be understated. Even though the planning process for CEPP has been expedient, it has complied with all existing environmental review requirements while	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.

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	allowing for robust scientific inquiry and public participation. This serves as a model for other Corps ecosystem restoration projects.	
NWF-3	The Tentatively Selected Plan (TSP) would be a wise investment in an international treasure. The Everglades is both an environmental and an economic driver. By increasing southerly freshwater flows of over 200,000 acre feet, CEPP will restore the historic River of Grass for future generations. As such, NWF believes a signed Chief's Report for the CEPP Tentatively Selected Plan can and should be delivered to the Secretary of the Army for Civil Works by the end of this calendar year. Thank you in advance for your consideration and for your continued efforts on this important project.	Thank you for your comment.
SUGAR CANE GROWERS COOPERATIVE OF FLORIDA (SUGAR)		
SUGAR-1	The Cooperative's grower-members have a direct interest in CEPP. Our grower-members farm 70,000 acres of sugarcane and an additional 40,000 acres of winter vegetables in the Everglades Agricultural Area that is part of the lake Okeechobee Service Area {LOSA) for water supply from lake Okeechobee. This project has ramifications to our existing water supply and creates the potential for water quality violations that in turn could impact our growers. Some of our grower-members have legal standing in the USA vs. State of Florida {Moreno) federal litigation that enforces the conditions of the Consent Decree including the water quality limits outlined in Appendix A for Everglades National Park and Appendix B for loxahatchee National Wildlife Refuge.	All features of the State's Restoration Strategies must be completed and meet state water quality standards prior to initiating construction of most CEPP features. Construction of CEPP project features cannot proceed until it is determined that construction and operation of the feature: a) will not cause or contribute to a violation of the State water quality standards. B) will not cause or contribute to a violation of any applicable water quality permit discharge llimits or specific permit conditions; and c) reasonable assurances exist that demonstrate adverse impacts on flora and fauna in the area influenced by the Project features will occur. All parties are committed to implementing the State Restoration Strategies, joint restoration projects, and associated operational plans, in an adaptive manner that is consistent with the objectives of the underlying C&SF Project. The Corps and the state will use all available relevant data and supporting information to inform operational planning and decision making, document decisions made, and evaluate the resulting information from those decisions to avoid adverse impacts to water quality where practicable and consistent with the purposes of the C&SF Project. Based upon current and best available technical information, the federal parties believe at this time that the State Restoration Strategies, implemented in accordance

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		with the state issued Consent Order and other joint restoration projects, are sufficient and anticipated to achieve water quality requirements for existing flows to the Everglades. If there is an exceedance of the Appendix A compliance limits, which results from a change in operation of a Federal project, and it has been determined that an exceedance cannot be remedied without additional water quality measures, the federal and state partners agree to meet to determine the most appropriate course of action, including what joint measures should be undertaken as a matter of shared responsibility. These discussions will include whether it is appropriate to exercise any applicable cost share authority. If additional measures are required and mutually agreed upon, then they shall be implemented in accordance with an approved process, such as a GRR or LRR, and if necessary, supported through individual PPA's. Failure to develop mutually agreed upon measures and cost share for these measures may impact the State's ability to operate the Federal project features.
SUGAR-2	First, we applaud the efforts of the U.S. Army Corps of Engineers and the South Florida Water Management District in their efforts to streamline the planning process through vertical integration of decision making. CEPP represents the most complex set of features in the Comprehensive Everglades Restoration Plan {CERP) therefore proving to be a huge challenge to complete in the expedited schedule. We compliment the team for listening to concerns and attempting to address the concerns of stakeholders throughout plan development. Please accept the following specific comments.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
SUGAR-3	SAVINGS CLAUSE/PROJECT ASSURANCES As the Corps of Engineer's rightly points out in the draft PIR for CEPP, meeting the Savings Clause requirements of Section 601{h) of WRDA 2000 is a hard constraint. In Section 6.1.1 of the draft PIR, the Corps recognizes that while Lake Okeechobee remains the primary source of water for the LOSA,	Section 6.1.1 has been modified to incorporate LORS update triggers. CEPP benefits gained from sending new water south from Lake Okeechobee are derived in part from operational refinements that can take place within the existing, inherent flexibility of the 2008 LORS, and in part with refinements that are beyond the schedule's current flexibility. Modifications to 2008 LORS will be required to optimally utilize the added storage capacity of the A-2 FEB to send the full 210,000 ac-ft/yr of new water available in CEPP south to the Everglades, while maintaining

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	"the operational changes to the Indian River lagoon-South suite of projects (different than the approved operations contained in WRDA 2007) is considered a partial water supply source transfer. The transfer would not be implemented until the CERP C-44 Reservoir, the inflow canal to the C-23 Basin and Canal is completed." More important is the recognition of the dependency on the lake Okeechobee Regulation schedule modifications to enable CEPP to convey water south. This regulation schedule modification is necessary to maintain the level of service for water supply for existing legal users dependent on lake Okeechobee, specifically users in LOSA and the Seminole Tribe of Florida. Table 6-9 depicts the interdependencies among CEPP and non-CEPP features. Deviating from the interdependent non-CEPP features proposed sequencing will upset the requirement to meet Saving Clause provisions for water supply and flood protection and water quality under state law and as implemented by Federal court order. Since the audience for the PIR is much broader than the select group that has followed it closely, it is important to add some additional discussion on the importance of these interdependencies so future readers will be able to understand the significance. The narrative in the paragraph following Table 6-9, states, "the following outlines one potential scenario for integration of the CEPP features ..... " The interdependencies are much more than 'potential scenarios' and must be acknowledged as such in the final PIR rather than described as optional. Otherwise it is impossible to be sure	compliance with Savings Clause requirements for water supply and flood control performance levels. Most of the 2008 LORS refinements applied in the CEPP modeling lie within the bounds of the operational limits and flexibility available in the current 2008 LORS, with the exception of the adjustments made to the class limits for the Lake Okeechobee inflow and climate forecasts. Under some hydrologic conditions, the class limit adjustments made to the Lake Okeechobee inflow and climate forecasts reduced the magnitude of allowable discharges from the Lake, thereby resulting in storage of additional water in the Lake in order to optimize system-wide performance and ensure compliance with Savings Clause requirements. However, these class limit changes represent a change in the flow chart guidance that extends beyond the inherent flexibility in the current 2008 LORS. Additional information and documentation of the CEPP Recommended Plan modeling assumptions for Lake Okeechobee operations are found in the **Appendix A** (Engineering) of the CEPP PIR. Independent of CEPP implementation, there is an expectation that revisions to the 2008 LORS will be needed following the implementation of other CERP projects and Herbert Hoover Dike infrastructure remediation. The USACE expects to operate under the 2008 LORS until there is a need for revisions due to the earlier of either of the following actions: (1) system-wide operating plan updates to accommodate CERP "Band 1" projects, as described in **Section 6.1.3.2**, or (2) completion of sufficient HHD remediation for reaches 1, 2 and 3 and associated culvert improvements, as described in **Section 2.5.1.** When HHD remediation is completed and the HHD DSAC Level 1 rating is lowered, higher maximum lake stages and increased frequency and duration of high lake stages may be possible to provide the additional storage capacity assumed with the CEPP TSP . The future Lake Okeechobee Regulation Schedule which may be developed in response to actions (1) and/or (2) is unknown at this time. It is anticipated that the need for modifications to the 2008 LORS will be initially triggered by non-CEPP actions and that these actions will occur earlier than implementation of CEPP. Therefore, the CEPP PIR will not be the mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule. However, depending on the ultimate outcome of these future Lake Okeechobee Regulation Schedule revisions, including the level of inherent operational flexibility provided with these revisions, CEPP implementation may still require further Lake Okeechobee Regulation Schedule revisions to optimize system-wide performance and ensure compliance with Savings Clause requirements.

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	about what CEPP is and how all the benefits will be achieved assuming the project is authorized	The project dependencies included in Table 6.9 are not optional and is why the Table is included in the PIR as labeled as project dependencies. Section 6.7.1 has been modified to better clarify what options exist for sequencing construction of the CEPP project components.
SUGAR-4	WATER QUALITY Impacts to water quality parameters are expected to occur as a result of diverting an additional 200,000 AF of water from lake Okeechobee into the Everglades. This could trigger a violation of Appendix A of the Federal Consent Decree and result in more litigation by a party to the case or a third party litigant. The draft PIR recognizes this as an outstanding issue but does not offer up a resolution to Appendix A by way of a modification of the formula, relaxing the limits or dismissing the case as unnecessary in light of the state's program for meeting the strict requirements in the new Clean Water Act permits issued in 2012. In agreeing to release the draft PIR and act as local sponsor, the South Florida Water Management District Governing Board passed a resolution supporting the release of the CEPP draft PIR/EIS for agency and the publics' review. However, in Section 3 and 4 of the resolution, the Board acknowledged the water quality issues and asked that they be resolved prior to implementing CEPP projects. Issues include the need to revise the compliance methodology of Appendix A of the Consent Decree and also to reach agreement on joint measures which may be needed in the event of an exceedance of Appendix A resulting from a change in operation of a federal project. Failure to develop a mutually agreed upon revised compliance methodology or mutually agreed upon joint measures will preclude the state from	The CEPP PIR includes statements regarding the necessity to resolve the Appendix A compliance issue prior to implementing the project.

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	implementing, approving or operating CEPP projects. The final PIR should contain an explicit discussion of the Board's resolution and what it means for the implementation of CEPP features in the future. Further the Governing Board acknowledged that project elements cannot proceed unless/until it is determined that construction and/or operation of the feature: will not cause or contribute to a violation of the permit(s) discharge limits or specific conditions; and reasonable assurance exists that demonstrate adverse impacts on flora and fauna in the area influenced by project element will not occur. This means that the state must meet the terms and conditions of the NPDES permits and state-issued consent order under the Clean Water Act for operations of the Stormwater Treatment Areas for discharges into the Everglades Protection Area including the WQBEl effluent limit. The state and federal parties have mutually agreed to implement the 2012 Everglades Restoration Strategies (ERS) suite of projects with permits issued in September 2012. Further, the state legislature ratified these projects and dedicated long term funding to implement the suite of projects designed to come into compliance with the WQBEL The consent order requires the ERS projects to be complete and operational in 2029. The draft PIR should be clear that construction of CEPP features cannot move forward until this constraint is met.	
SUGAR-5	PROJECT ALTERNATIVE ANALYSIS PROCESS Clearly, due to the interdependencies of Alt4R2 with non-CEPP features and operational changes, CEPP does not have stand alone benefits that can	It was recognized in the Central and Southern Florida Project Comprehensive Review Study, Final Feasibility Report and PEIS 1999 (CERP) that implementation would require that the plan be divided into smaller implementable packages of components. It was further recognized that an adaptive assessment strategy requires incremental

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	be discerned in this PIR. The benefits to the estuaries can only be realized after the C-43 and C-44 reservoirs are built and operational. Then the CEPP plan provides an increment of benefit. Benefits to Everglades National Park in moving water south can only be realized by completing the Modified Water Delivery Project features and operations of the S-356 pump. Based on earlier studies by the Corps and District the Mod Waters Project can provide up to three quarters of the additional water flow into the Park expected with the CEPP. A better alternative analysis may have been realized by evaluating an operational alternative that stores more water in the lake and opening the southern end of the system. Only one alternative for north of the Redline was evaluated in the final array of alternatives since deep storage was rejected early in the process due to perceived cost.	implementation of the plan components and each increment would be planned and designed to carry the program one step closer to the ultimate goal of ecosystem restoration (Central and Southern Florida Project Comprehensive Review Study, Final Feasibility Report and PEIS, page 10-7). **Section 2** (**Existing and Future Without Project Conditions**) provides a description of the FWO project condition. **Table 2-2** provides a summary of the status of non-CERP projects, CERP projects, and operational plans assumed to be implemented in the FWO project condition. **Section G.2.5** (**Northern Estuaries [Alternatives 4R and 4R2**]) summarizes benefits to the Northern Estuaries resulting from implementation of Alt 4R2. **Figures G-28** and **G-29** presents the number of times salinity criteria are not met within the Caloosahatchee Estuary and St. Lucie Estuary respectively. Benefits attributable to the Indian River Lagoon-South and the C-43 projects can be understood by evaluating differences between the ECB and FWO project condition which assumes implementation of these projects. The differences between the FWO project condition and the future with project condition (Alt 4R2) are the effects of the project. Text has been added to this section, as well as **Section 6.2** (**Environmental Benefits**) to further highlight benefits attributable to these projects. Additional comparisons of modeling results for the Northern Estuaries to the IORBL1 which was used for Savings Clause requirements and Project-Specific Assurances can be found in **Annex B** (**Analyses Required by WRDA 2000**). The purpose of the MWD project is to improve water deliveries to ENP and to the extent practicable, take steps to restore the natural hydrological conditions within the park. The final operational plan for the project has not yet been developed. The Corps is re-initiating pursuit of operational testing (relaxation of G-3273 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Planning for the G-3273/S-356 field test has started but is not complete and necessary approvals (including FDEP) have not been attained. Information from the test will be used to develop the Final Water Control Plan for the MWD project which will allow for re-distribution of existing water flow from Western Shark River Slough to Northeastern Shark River Slough. A full array of reasonable alternatives was considered. Consideration of multiple options for providing additional storage in Lake Okeechobee was considered as documented in Appendix E, Section E.1.1.1 and Table E.1-1. The LOOPS model provided the opportunity to quickly batch process hundreds of iterations of Lake

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		Okeechobee Regulation Schedule modifications and evaluate the results against key CEPP performance measures to help identify feasible operating protocols for the Lake that represent reasonable and likely implementable future operating conditions under CEPP. A multitude of other storage and treatment options and combination of options north of the WCAs were also considered which included shallow reservoirs (4-ft), deep reservoirs (6-12 ft deep), STA's, flow-through marsh systems, and every combination thereof. A full description of the evaluation and screening are provided in Section 3 and Appendix E of the CEPP Draft PIR/EIS.
SUGAR-6	ENDANGERED SPECIES ACT REQUIREMENTS The draft PIR recognizes that CEPP will impact endangered species; however, the USFWS has not completed its Biological Opinion (BO). Therefore we reserve the right to supplement our comments regarding endangered species once the BO is available.	Thank you for your comment and there will be a 30 day public review period of the Final PIR/EIS that will include the preliminary Biological Opinion.
DADE COUNTY FARM BUREAU (DCFB)		
DCFB-1	We have worked with the Florida Department of Agriculture and Consumer Services and we fully endorse their extensively detailed comments on this plan.	Thank you for your comment.
DCFB-2	The CEPP seems to assume that Mod Waters will never be operational. We feel it would make much more sense to hold CEPP in abeyance until Mod Waters is fully operational, and until you had enough experience with it to clearly define its capabilities. You could then decide what additional work might be needed. To rush CEPP through Congress when you haven't even operated a very similar project that was approved 24 years ago, and which is already built, does not seem like the right thing to do.	The Corps is re-initiating pursuit of operational testing (relaxation of G-3273 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Information from the test will be used to develop the Final Water Control Plan for the Modified Water Deliveries project which will allow for re-distribution of water flows to NESRS. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation.
DCFB-3	Our other big concern is how the L-31 N and C-111 canals will be operated in the future. The CEPP model results show an increase in high canal stages in the critical reach of L-31N between Richmond Drive and the Frog Pond. This is clearly not acceptable. Apparently there is some language in	Relative comparisons between the RSM-GL base conditions and the RSM-GL with project condition (Alt 4R2) provide a meaningful comparison to quantify potential effects of the CEPP project. The CEPP modeling tools were selected at the beginning of the CEPP formulation process, and the same tools were used throughout the screening and alternative evaluations. Section B.3.2.5 of Annex B includes a detailed description of model performance within cell 4328, located between the C-103 and C-

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	the document that says this is due to a problem with the model. No plan should move forward based on a computer model that the agencies think is flawed in one of the most important areas. We suggest getting the model right and then moving forward with a plan you can be confident will work.	113 Canals, immediately east of the C-111 Canal. Since the model performs well for the existing condition (2012EC) but shows high canal stages in the upstream reaches for the IORBL1 and Alt 4R2, the calibrated roughness coefficient is likely too high and the resulting upstream canal stages (and adjacent groundwater levels) are predicted higher by the RSM-GL than would be truly expected for the future with project conditions. This artifact of the model can only be addressed during model calibration and, in this specific case, should not be evaluated as representative of the predicted project performance. The expedited schedule of the CEPP project did not afford the opportunity to revisit the RSM-GL model calibration, and incorporation of this change would not be anticipated to change the TSP selection.
DCFB-4	The C-111 system is another example where you need to slow down and learn more about what you have already built before you try to approve a complicated plan based on how you think something that is already in place will work. Since 2000 there have been *5* new pump stations and *5* separate impoundments built in the C-111 Basin. Two of these pumps have been operational for only a single year. There is also a new project in place in the 8.5 Square Mile Area that has not been fully utilized yet, and the final structural element to tie the two areas together is yet to be done. The CEPP plan will put a lot more stress on these features, and the CEPP model has a flaw in how it simulates this area. You need more experience operating this system once it is complete before you propose a major new plan that will place more demand on this untested system. Again, how can we have confidence in this plan when we're not sure how the one you have yet to complete will work?	Information has been added to Section 6.7.1 regarding the implementation of CEPP. In order to minimize uncertainties, the project will likely be implemented over a number of years with three separate project partnership agreements, and has a robust adaptive management plan built into the implementation of the plan. The multiple PPAs will provide the opportunity to ensure the current conditions at the time of construction are captured and provide assurance in the functionality of the plan. The adaptive management plan (annex D) will afford the opportunity to provide further insight into the operation of the plan and lend flexibility to the implementation and management of the plan.
DCFB-5	Please consider slowing this process down to allow time to finish the Mod Waters and C-**111** Projects and fully document and understand what they can do before you start a whole new round of changes.	The Corps is actively re-initiating pursuit of operational testing (relaxation of G-3273 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Information from the test will be used to develop the Final Water Control Plan for the Modified Water Deliveries project which will allow for re-distribution of water flows to NESRS. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation. There will be sufficient time to

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		evaluate system response to the implementation of the Modified Water Deliveries project prior to CEPP implementation.
FLORIDA POWER & LIGHT COMPANY (FPL)		
FPL-1	The Draft Integrated Project Implementation Report and Environmental Impact Statement for the Central Everglades Planning Project, Section 6.1.2.6, Plan Description, Facility /Utility Relocations, states that *"Florida Power and Light lines will have to be relocated or abandoned from the areas within the A -2 FEB. Florida Power and Light and Quest Communications lines will have to be relocated where the L-29 is being removed. The removal of Old Tamiami Trail will require relocation of the Florida Power and Light line."* FPL recommends that coordination with FPL begin as early in the design process as possible to avoid or minimize any impacts to existing FPL properties or infrastructure and to facilitate the implementation of any new infrastructure to deliver power to project facilities.	Concur. Upon authorization, appropriation and start of PED, early coordination will begin with FP&L for CEPP facility/utility relocations needs.
FLORIDA WILDIFE FEDERATION (FWF)		
FWF-1	The Central Everglades Planning Project (CEPP) is the first to address restoration within the Central Everglades by moving water from Lake Okeechobee into Everglades National Park (ENP). The fast-track process used in developing the Tentative Selected Plan (Alternative 4R2) was transparent, open and FWF members welcomed the opportunity to engage staff members of the Army Corps of Engineers and the South Florida Water Management District in discussing details. The process forced timely decisions. It remains our hope that, notwithstanding the government shutdown that began Oct. 1, 2013, a Chiefs Report can be readied and presented to Congress by Dec. 1, 2013, meeting a deadline set in the Senate-passed Water Resources Development Act for	Thank you for your comment.

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	obtaining authorization for CEPP and four pending projects stemming from the Comprehensive Everglades Restoration Plan adopted in 2000. Once authorized, the CEPP can proceed to the design stage, while construction of precedential projects is implemented.	
FWF-2	We consider the following projects to be precedential: • Beginning construction on the Flow Equalization Basins and expanded Stormwater Treatment facilities laid out in the South Florida Water Management District's (SFWMD's) Restoration Strategies Plan to meet water-quality standards required by two court orders, state and federal law; • Constructing an additional 2.6 mile, Tamiami Trail bridge as identified in the Department of Interior's Next Steps Project to increase the flow of water into Everglades National Park's Northeast Shark River Slough (NESRS); and raising the Tamiami Trail roadbed to 8.5 feet NGVD, which allows water levels to rise in the adjacent L-29 canal; • Removing an old Tamiami Trail road bed and clearing vegetation that currently impedes the flow of water into Everglades National Park (ENP) that is released through existing culvetis and/or new bridges; and • Completing the C-111 South Dade Project to connect the Frog Pond detention areas (Contract 8) and plugged L-31 W (Contract 9) with the C-111 Spreader Canal to restore water flows to Florida Bay via Taylor Slough. • Developing operational plans for integrating South Miami-Dade projects before or as they come "on line."	The projects mentioned in the provided comment (i.e. SFWMD Restoration Strategies, MWD 1-Mile Bridge and Road Raising, DOI's TTNS Bridging and Road Raising, and C-111 South Dade) are identified as CEPP project dependencies in **Table 6-10** of the Draft PIR/EIS. Removal of approximately 6 miles of Old Tamiami Trail between the ENP Tram Road and the L-67 Extension Levee is identified as a project feature and can be completed at any time during implementation, but must precede backfilling of the L-67 Extension. For the area south of eastern Tamiami Trail within NESRS, the Draft EIS for ENP Draft General Management Plan envisions the establishment of a maintenance zone to the south of the roadway. This zone would presumably allow a higher level of management intervention to help promote improved water flow (such as exotics removal, native vegetation thinning/clearing, and fire management).

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FWF-3	FWF acknowledges and recognizes the assurances that the "savings clause" of the Comprehensive Everglades Restoration Plan (CERP) adopted by the Florida Legislature and Congress in 2000. CEPP is a component of CERP and then-existing levels of flood protection and water supplies for utilities, agriculture, industry and commerce must be maintained. We will continue to work diligently with ACOE, SFWMD and other Federal and State natural agencies to sequence appropriately the implementation of CEPP and CERP projects so that the ecological restoration benefits, sought throughout the greater Everglades, are met. Adjustments in the design stages of CEPP projects may be warranted, and it is readily apparent that operating plans and regulatory schedules will need to be adjusted as new projects come on line. FWF agrees with our colleagues in other environmental o	The plan implementation section has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Project features are grouped into three separate PPAs based upon the spatial distribution of the project features and the locations within the CEPP study area where separable hydrologic and environmental benefits would accrue. These groupings include a PPA of project features in northern WCA 3A (PPA North), a PPA of project features in southern WCA 3A, 3B, and ENP (PPA South), and a final PPA which provides the new water and required seepage management features that benefits the entirety of the study area (PPA New Water). The Final PIR/EIS presents two potential implementation sequencing scenarios that are possible with the three separate PPAs currently identified: 1) PPA North → PPA South → PPA New Water and 2) PPA South → PPA North →PPA New Water. With each scenario, non-CEPP project features and non-CERP project features identified as project dependencies in **Table 6-10** of the Draft PIR/EIS still apply. Federal laws and regulations applicable to implementing the CERP require PIRs to address certain assurances as part of the project recommendation for approval and subsequent implementation. For the CEPP PIR, the analyses for CEPP associated with Section 601(h)(4) and 601 (h)(5) of WRDA 2000 and the Programmatic Regulations for the CERP (33 CFR Part 385) for Project-Specific Assurances and Savings Clause were conducted for the CEPP. Should the project be implemented in multiple PPAs, the USACE District Engineer will ensure that Project-Specific Assurances and Savings Clause requirements are met per PPA, per applicable policies and laws. NEPA Documentation will be updated if applicable as revisions are made to Water Control Plans and/or Project Operating Manuals associated with each PPA. Compliance with the requirements of the Savings Clause will be maintained throughout the entirety of the CEPP implementation period. This statement has been included in **Section 6.7** (**Plan Implementation**) of the Final PIR/EIS.
FWF-4	FWF agrees with our colleagues in other environmental organizations that the uncertainties inhe1·ent in projects with the scope of the CEPP and the years required to implement can be managed utilizing existing review processes. Uncertainties should be identified and acknowledged but should not become justification for stalling authorization or delaying substantial ecosystem benefits achievable within the next 10	Concur. Thank you for your comment. Language has been added to the Adaptive Management summary (Section 6.1.4) to make clear that the adaptive management options that are offered to address uncertainties are being requested for authorization as part of the TSP. Several will require additional coordination once more information is available on project footprints and performance, but this falls within existing review processes.

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	years. The following are comments specific to the Draft Integrated Project Implementation Report and Environmental Impact Statement, Central Everglades Planning Project (CEPP):	
FWF-5	Environmental Water Supply and Habitat: The Tentatively Selected Plan (TSP) proposes to convey, clean up, and release an additional210,000 acre feet of water from Lake Okeechobee into the Water Conservation Areas (WCA) allowing it to flow south in a shallow sheet. Such sheet-flow was a distinguishing characteristic of the historic Everglades. It was disrupted by the canals and impoundments of the Central and Southern Florida Flood Control Project. The Comprehensive Everglades Restoration Plan to reestablish sheet-flow is a modification of that 1948 project and the Central Everglades Planning Project is a component of CERP. Restoration of sheet-flow in WCA-3A is facilitated by redirecting water discharges from STA 2 into the L-6 and L-5 canals for release into WCA-3A through a series of gated culverts and spillways. Additionally, in the northwest corner ofWCA-3A, sheet flow will be encouraged by the removal of2.9 miles of the L-4levee. The Miami Canal will be filled from a point 1.5 miles south of the S-8 to Interstate-175 (Alligator Alley). Changing the flow of water, inevitably changes habitats and the mix of fish, birds and wildlife those habitats support. The Florida Wildlife Federation and the Florida Fish and Wildlife Conservation Commission (FWC), which manages the conservation areas, are concerned about current high-water levels and	The conditions in the system today were brought about by the drainage and impoundments created as a result of construction of the Central and Southern Florida Flood Control project. The Miami Canal has caused over-drainage of the upper reaches of WCA 3A and the levees have resulted in ponding of water in the southern reaches of WCA 3A. The objectives for CEPP and CERP are to restore more natural water levels and fluctuations that are beneficial to the ecosystem and is based upon the best peer reviewed scientific information available about the needs of the natural system. The CEPP plan components and operations of the system will provide for restoration of seasonal hydroperiods and includes appropriate recession of water levels in the dry season for ridges and sloughs. The objectives of CEPP to enhance ecological values include: to restore seasonal hydroperiods and distribution, to improve sheetflow patterns and surface water depths and durations, and to restore more natural water level responses to rainfall (for additional detail, reference Section 01 of the CEPP PIR). CEPP alternative configurations were developed to reduce the drainage effects from Miami Canal in the northern portions of WCA 3A and restore more sheetflow across the northwest portions of WCA 3A. The current WCA 3A inflow water budget and the drainage characteristics of the Miami Canal cause water levels in northern WCA 3A to recede well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation and muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3 ft in some areas. Alt 4R2 proposes to reverse the continued degradation of this area by backfilling a portion of the Miami canal north of I-75 to remove its drainage effects, re-distributing inflows through removal of approximately 2.9 miles of the south L-4 levee and increasing water flow into WCA 3A during the dry season. Water levels and durations within WCA 3A and 3B will vary across the landscape and from year-to-year if Alt4R2 were implemented, consistent with the variability in rainfall, hydrologic conditions, and operations within the upstream basins (Lake Okeechobee, EAA, WCA 1, WCA 2). Generally, water levels in northern WCA-3A will stay above ground surface for longer and the depth and duration of the wet-season water levels will

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	projections that extended high water stages will be detrimental.	increase. A summary of the anticipated hydrologic effects of the CEPP action alternatives, including WCA 3A, is provided in Table 5.1-2 for CEPP Alternatives 1 through 4 and in Table 5.2-1 for Alternative 4R and the TSP Alternative 4R2. Complete supporting documentation for the summary of anticipated hydrologic effects, including stage duration curves for the indicated monitoring gauge locations, is provided in CEPP PIR Appendices C.1 (ECB versus FWO); C.2.1 (Alternatives 1 through 4 versus FWO); and C.2.2 (Alternative 4R and Alternative 4R2 versus FWO). For localized hydrologic effects at other non-specified WCA locations or daily stage hydrograph information, this information is available for Alternative 4R and Alternative 4R2 as part of the complete set of RSM-BN and RSM-GL hydrologic model performance measure output that is posted on the Everglades Plan public web site for the CERP, as indicated in the CEPP PIR main report: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx The water level changes anticipated with implementation of Alt 4R2 are conducive to restoring a portion of the wetland hydrology that was lost as a result of the drainage effects from the construction of the Miami Canal through the marsh in northern WCA-3A. Details regarding the expected water level changes can be found in Section 5 and 6 and Appendix C.2.1 and C.2.2. In general, with implementation of Alt 4R2, water levels in Northwest and North Central WCA-3A are predicted by the period of record modeling results to remain above ground surface throughout the year to reduce continued soil oxidation and invasion of woody vegetation, significantly reduce the susceptibility of that area to risk of muck fire and beginning to restore the ridge and slough landscape that was evident in the western portion of this area in the 1940s. Water levels in the northeastern portion of WCA-3A are predicted by the POR modeling to remain conducive to maintaining the sawgrass plains in this area that were also evident in the 1940s Central WCA-3A will remain similar to today's condition, and water levels and durations in southern WCA 3A will be slightly reduced due to the increased outlet capacity (to WCA-3B and the expanded S-333) included in Alt 4R2.
FWF-6	The existing conservation areas are impoundments that lack adequate discharge capacities to prevent excessive ponding during wet periods. As shown in Table 5.2.1 "Environmental Effects of Alt 4R and	An analysis of the hydrologic benefits of CEPP indicates that key indicators of Everglades restoration will improve significantly with the TSP. It is predicted that with implementation of the TSP, that the largest percent gains in daily average fish density would occur within northern WCA 3A and NESRS due to rehydration. The fish

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	Alt4R2:Hydrology" in the CEPP Draft PIR and EIS, the tentatively selected plan decreases water stages by one to six inches in WCA-2A and -2B, but increases water levels in WCA-3A. In the northwest section ofWCA-3A water rises six to nine inches, in the northeast section by five to six inches. Rehydrating northern WCA 3-A is an explicit, desirable goal of CEPP in order to increase the accretion of peat in an area, which has seen substantial losses as a result of oxidation and fire. As Tables 5.2.7 and 5.2.8 show, increasing water levels significantly reduces the number of fire closures in WCA-3A but the number of high-water recreational closures increases significantly. That does not suggest a sufficient "flow-through system" of water management will be achieved. We believe FWC's recommendations regarding water stages and duration should be evaluated and appropriately applied. Driven by seasonal rainfall patterns, the historic Central Everglades thrived on the rise and fall of flowing water. That regime remains vital to restoring and maintaining the mosaic of landscapes typical of Central Everglades habitats. If the rate of recession is slowed and the length of the winter dry-out cut short, critical forage and breeding habitat for birds and wildlife are modified or lost. Prolonged inundation can be just as deadly to wildlife and lacks the velocity to rebuild tree islands or reestablish the characteristic ridge and slough landscape. FWC'S specific proposals for water depths and duration should be considered, analyzed and appropriately integrated into CEPP design and operational criteria.	tools used in CEPP showed that in these areas, fish densities often increased in excess of 20%, with extremes of over 50%, however decreases in fish density, or negligible changes (3%), were predicted in the area of WCA 3A along the L-67 A canal. An increase in density of small fishes will directly benefit higher trophic level predators such as wading birds. Therefore, it is predicted that the TSP will also provide a moderate beneficial effect for wading birds. Wood stork species distribution was modeled by Beerens (2013) and indicates that wood storks would more frequently use areas of northern WCA 3A, WCA 3B, and southern ENP under the TSP compared to the existing conditions and FWO. Wading bird use is predicted to increase for wood stork colonies previously and/or currently located within WCA 3B (3B Mud East), along Tamiami Trail (Tamiami Trail East 1, Tamiami Trail East 2, and Tamiami Trail West), and for several colonies located in ENP (Grossman West, Rookery Branch) for the TSP relative to existing conditions and FWO. Wading bird use is predicted to remain stable or decrease for several colonies located in southern WCA 3A adjacent to L-28 (Crossover, Jetport, Jetport South, Hidden) for the TSP relative to existing conditions and FWO; however there is potential for these wood stork colonies to utilize adjacent areas where foraging and habitat suitability are increasing. We agree with FWC that ascension rates should not exceed 0.25 feet per week. Unfortunately, the Everglades is a slow moving system and big rain events can cause rapid and extensive ascension rates. Current operations, CEPP and ECB are not effective in preventing water from accumulating in the Everglades during the wet season. Total number of days when ascension rates exceed this 0.25 ft limit is 487, 543 and 550 for FWO, TSP and ECB, respectively. The CEPP AM plan will examine both operational and physical options to increase flow velocities and sheetflow. High rainfall, landscape-scale sheetflow and high velocity water were critical elements of Everglades creation. CEPP goals, like DECOMP before it, have been focused on the need to increase flow and prevent ponding. We agree that the capacity of the current Everglades has been compromised. However, CEPP has added features that increase the outlet capacity of the WCA-3 such as the Blue-shanty flow-way, significant increased capacity of the S-333 and the Old Tamiami Trail degrade to keep the water flowing. CEPP planning followed the guidelines associated with the science of fish movement, wading bird foraging, snail kite feeding, and the ERTP performance measures that are based on the FWS MSTS. The TSP attempts to optimize recession rates during the

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		dry season between 0.05 ft/wk and 0.08 ft/wk.
FWF-7	To achieve the benefits sought by CEPP, water mustjlow through the conservation areas; the outflow capacity planned and designed into CEPP must be sufficient to keep pace with the inflow of water. Until outflow and inflow capacities can be balanced, the FWF suggests additional water be introduced incrementally, the impact on fish, bird and wildlife habitats continuously monitored, and timely adjustments be made as needed to maintain flow and reduce harmful ponding in the southern WCA 3A. We believe such an approach is in keeping with the principles of "adaptive management." Periodically it may be necessary to facilitate partial dry-outs to moist soil conditions with water levels at or slightly below soil levels. Accordingly, the adoption of new regulation schedules and operating protocols should take place before construction is completed.	The AM plan is designed to prevent unintended degradation of the ecosystem due to scientific uncertainty. The AM plan presents a variety of management options (e.g., short-term pulsing into the Blue-Shanty Flow-way rather than continuous flow) to evaluate and adjust CEPP operations.
FWF-8	Tree islands are a unique and vital Everglades habitat critical to the preservation of terrestrial wildlife. They occur as willow strands, tropical hardwood hammocks and bayheads of swamp forests with mixtures of other brushy species such as pond apple. Alligators build their nests on them. The islands and existing levees provide refugia during high-water period for deer, bobcats, marsh rabbits, raccoons. Gladesmen have vivid memories of the prolonged high-water events of 1957-58, 1966, and 1982 that resulted in massive deer kills. Not all of those high-water events are included in the "period of record" used in CEPP modeling. Nevertheless they attest to the importance of preserving natural tree islands and the construction and planting of "new" islands. Both provide refugia for wildlife and become oases for migrating and resident species of birds. FWF	Thank you for your comment. During the planning process we worked directly with FWC staff to ensure we preserved the highest priority spoil mounds along the Miami Canal while still meeting the need to backfill the Miami Canal and remove barriers to flow (spoil mounds) to restore sheetflow. The creation of tree islands in northern WCA-3A is expected to have the plant and animal diversity that meet the ecological goals of CEPP and the FWC. High water events are natural, but need not be catastrophic for deer and other terrestrial species. CEPP will work with the FWC on tree island construction and management. CEPP made a concerted effort to not increase EWMA closures. Despite the additional 200,000 acre-ft of new water to the Everglades, the TSP caused EWMA closures twice, in 1994 and 1995. According to the 2-gauge average north of Alligator Alley, the duration of the 1994 event when water depths were over 2 ft for more than 60 days, was 146 days for the TSP, 151 days for the FWO, and 159 days for the ECB. According to the 2-gauge average north of Alligator Alley, the duration of the 1995 event when water depths were over 2 ft for more than 60 days, was 67 days for the FWO, 68 days for the ECB and 85 days for the TSP .

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	supports retaining and preserving the 22 of these constructed tree islands adjacent to the Miami Canal as a needed conservation element.	
FWF-9	Blue Shanty Flow Way and Levee/Berm, new L67 D, will " train" water south into North East Shark River Slough (NESRS) of Everglades National Park but the size , and configuration of the levee will need to be adjusted to achieve maximum restoration benefits and done so that it benefits restoration objectives with Conservation Area 3B including preservation and enhancement of tree islands and ridge and slough habitats. The proposed 8 miles of the existing L67-C levee and 4.3 miles of the L-29 (Miami Canal) levee would also be removed to increase water flow into the NESRS. FWF remains committed to feature refinements during the design process to improve ecological connectivity and assure the successful implementation of CEPP. One refinement to the Blue Shanty feature that we think worthy of evaluating during the design stage is to construct a curving berm/levee reflecting actual flow patterns and preserving significant, natural tree islands to the north. Another is to substitute a weir or weirs for one or more of the gates proposed to funnel water from WCA-3A into the Blue Shanty and to ensure the detrimental ponding in southern WCA - 3A is reduced. If gates remain the preferred alternative to release water into the Blue Shanty flow way, FWF proposes they and the S-12 gates be telemetrically automated so they can quickly be adjusted to deal with real-time flows. Currently ACOE personnel drive from Clewiston to open, shut or adjust the S 12 gates. During hurricanes, tropical storms and even "normal" rainy seasons, this is inefficient and precludes quick action when water	Thank you for the comment. The alignment, design and dimensions of the levee will be further investigated as the project progresses in to Pre-construction Engineering and Design (PED).

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	levels in WCA-3A rise suddenly.	
FWF-10	Debate continues among environmental organizations, ACOE, and various natural resource agencies over the size, exact location, etc. of the proposed Blue Shanty levee/berm (L67-D). Environmental organizations argue that were the structure breached and water released, it would flow into the main body ofWCA3-B posing no danger to urban or other developed areas to the east. A discussion in Appendix A-Annex A at 3.2.2 - WCA-3B Design Considerations, appears to discount the risk of a breach and overtopping of the L-29 (Miami Canal) levee even with higher-water levels in WCA 3-B. Controlled gates moving water from WCA 3A, the Blue Shanty flow-way and the main body of WCA 3B are also cited as providing a measure of safety. Were a weir or weirs to be substituted for controlled gates, another assessment would be required. The FWF suggests that the sizing of the levee/berm be determined during the design stage when the L-67D levee/berm may be seen as serving multiple functions and the risk of failure is weighed against the potential damage. We believe any damage would be minimal.	Thank you for your comment and attention to the L-67 D feature. WRDA 2000 requires (Savings Clause) that CERP does not reduce the level of service for flood protection as of 2000 and in accordance with applicable law.. The function and integrity of the C&SF flood protection system provided by the L-67 A and L-67 C levee system must be maintained following CEPP implementation, and CEPP degradation of portions of the L-67 C and L-29 levees must be offset with additional infrastructure and operational constraints that maintain the pre-project level of flood protection and account for any potential increased design risk. The details of additional infrastructure, and how it would interface with operations and existing infrastructure, will be determined in the future as adaptive management, Pre-Construction Engineering and Design (PED), and as other information becomes available for this area. Consideration of a new L-67 D levee (currently included as a component of the CEPP recommended plan), including its footprint (width/height), costs, and permanency, will be cautiously considered and subject to applicable policies and permitting.
FWF-11	Endangered Species and Affected Resources: Despite deteriorating conditions in the water conservation areas during the last 40 years, the mosaic of habitats -sloughs, ponds, ridge and slough, upland tree islands, wet prairies, canals and levees --continues to support significant wading bird colonies, fish populations, migratory birds, terrestrial and semi-terrestrial wildlife and their prey. Some 24 federally listed endangered, threatened and candidate species exist within the CEPP project area and potentially could be affected.	Thank you for your comment. The Final PIR/EIS will include the preliminary Biological Opinion. During construction all contractors will be required to minimize adverse impacts in accordance with the FDEP CERPRA Permit and follow applicable species guidelines and conservation measures, developed and published by the U.S. Fish and Wildlife Service (FWS).

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	The Florida panther and indigo snake will be impacted by the modifications or loss of habitat as it transitions from upland to wetland habitats occur. For the Everglades snail kite, which eats only apple snails, more shallow water wetland suggests greater foraging opportunities. The Eastern indigo snake inhabits EAA agricultural fields, and despite the eventual construction of two flow-equalization basins, there will be a large area of agricultural fields and native uplands to sustain that population. During construction of CEPP projects, FWF supports ACOE recommendations in the CEPP Biological Assessment (Annex A, Sections 7 an 8) to require contractors to minimize adverse impacts by following applicable species guidelines and conservation measures, developed and published by the U.S. Fish and Wildlife Service (FWS).	
FWF-12	The Cape Sable Seaside Sparrow (CSSS) is the most likely species to be adversely affected by implementation of CEPP. The bird relies exclusively on short-hydroperiod freshwater marl prairies east and west of ENP's Shark River Slough and along the eastern edge of Taylor Slough, in the southeastern ENP. It feeds on soft-bodied insects from low lying vegetation and avoids open-water sites. Changes in water flows are deemed to have contributed to its precipitous decline. In evaluating CEPP impacts on the six resident-subpopulations of the sparrow, the ACOE is using a performance measure that calls for a nesting window of 60 consecutive dry days (ground water below 6 feet NGVD) beginning March 15 and two "ecological targets." The first, for CSSS subpopulations on the west edge of the Shark River Slough, drops water levels to less than	The Final PIR/EIS includes the preliminary Biological Opinion (**Annex A**) that outlines the terms and conditions required to potentially offset adverse effects. FWS and the Corps has used the Multi-Species Transition Strategy in the formulation of CEPP.

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	7 feet NGVD by December 31 to ensure nesting-season water levels reach 6 feet NVD by mid-March. That's a level below ground. The second establishes a three-to-seven month hydroperiod in sparrow habitats to maintain marl-prairie vegetation. Tested against 40 year period of record, the nesting windows were met only for two subpopulations and the dry-season targets were met only in 20 to 25 of those years. (Appendix C.2.1, figures C.2.1-19 and C.2.1-20) The tentative selected plan, Alternate 4R2 was not among the four alternatives tested. The ACOE has sought a "Section 7 consultation" with U.S. Fish and Wildlife Service. The FWF supports the ACOE's proposals to monitor sparrow nesting and foraging habits intensely to identify what correlations exist to changes in the water regime and to explore mitigation measures potentially offsetting adverse effects. (Annex A, CEPP Biological Assessment, Section 7). The hydrologic changes called for in TSP 4R2 have been designed to improve conditions and forging opportunities for wading birds in the conservation areas and Everglades National Park. It should not become necessary to sacrifice substantial benefits for wading birds, some of which are threatened or endangered, in order to protect another endangered species. Incorporation of multi species recovery objectives into CEPP and other CERP project's implementation through the USFWS consultation process is needed.	
FWF-13	Recreational Opportunities: South Floridians who camp fish, boat/ airboat, hunt in the conservation areas, often refer to them as "Florida's Everglades" or by the name used by the	Thank you for your support. The CEPP Recreational Plan maintains and improves existing access and provides additional access points for recreational and fishing opportunities. Please refer to Appendix F, Site F and Site G that identify existing, improved and new access points for recreational opportunities that include fishing.

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	Florida Fish and Wildlife Conservation Commission (FWC): the Everglades and Francis S. Taylor Wildlife Management Area. FWC has managed WCA-2A, -2B, -3A and -3B since 1952. Adjacent to the urban southeast coast, those areas and lands owned by the SFWMD and state of Florida bordering Everglades National Park are readily accessible and heavily used and enjoyed by the public for fishing, hunting, frogging, nature observation and a variety of other forms of outdoor recreation. The Florida Wildlife Federation thanks the CEPP Project Delivery Team for its concerted eff01i to maintain access and enhance recreational opportunities. The added parking, boat ramps, fishing platforms, shelters and toilets -all compliant with the Americans with Disabilities Act --planned are welcome. The L-67 Everglades canals separating WCA 3-A and WCA 3-B consistently record the state's highest catch-rates for largemouth bass. FWF and other recreational organizations active in the region are eager to expand that renownedjislte1y into the L-29 (Miami Canal) and WCA-3B and offset fishing opportunities that will be lost by the filling parts of the Miami Canal. Fishing access from Broward County's Holiday Park into WCA 3-B also ought to be provided. Construction of the Broward Water Preserves, currently awaiting congressional authorization, will dramatically improve the quality of water discharged from Broward into the conservation areas.	
FWF-14	Current recreational activities in the conservation areas and storm-water treatment areas include fishing, air-boating, boating, hunting, bird-watching, nature photography, cycling, hiking and	Thank you for your support. The bridge (aka the Buggy Bridge) at S339 is an existing structure that is anticipated to require structural maintenance activities or be decommissioned in advance of CEPPs 2029 implementation schedule and therefore is not included as a recreational component in the Central Everglades Planning Project.

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	star gazing. CEPP focuses on water flows and improving the ecological connectivity of the Everglades systems that sustain such outdoor recreation, so it's worth noting that recreation is now a major driver of South Florida's tourist economy. According to FWC studies, the Everglades Wildlife Management Area alone generates $31 million annually in spending and support some 700 local jobs. The continued use and enjoyment of the Central Everglades area for sustainable outdoor recreation including fishing and hunting is important to Florida Wildlife Federation and allied sp01iing conservationist's The rehydration ofWCA-3A will help maintain tree islands and rebuild the characteristic ridge-and-slough Everglades landscape. Tree islands are identified as a key attribute of a healthy Everglades landscape but half of those existing pre-drainage have since been destroyed by erratic water management allowing oxidation of the soil killing roots and leaving the trees vulnerable to toppling. Dry-season fires have also diminished the islands. Commendably the TSP preserves 22 of the FWC's constructed and planted tree islands along the Miami Canal in northern WCA-3A; efforts are underway to identify significant natural tree islands for preservation as well. Rehydration also cuts by half the number of fire closures in the conservation area, albeit the number of high-water closures increases, adversely affecting deer and other wildlife that require dry ground during their life cycle. Deer are indigenous to the mosaic of Everglades habitats. Alligators, turtles and snakes require dry nesting sites. Wading birds and other tree or shrub nesting birds	Appendix F - Recreation Site E includes an earthen crossing at this site to ensure the continued connection of existing buggy trails across the Miami Canal.

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	rely on tree or shrub dominated islands. To do well as the Everglades is restored, mammals and reptiles require refugia that is protected from flooding during high-water events. Wading birds require shallow water foraging habitat. We support programs to construct and plant additional tree islands and perimeter levees to provide habitat to benefit wildlife that require "Everglades uplands" in their lifecycles. FWF also supports retaining the buggy bridge at S339 over the Miami Canal, unless the fill to be put into the canal is sufficiently compacted to sustain the weight of crossing vehicles. This will allow continued traditional recreational access important to Glades hunters and anglers.	
FWF-15	Estuaries, Florida Bay and Biscayne Bay: Restoration of the northern estuaries will be aided by the diversion of210,000 acre feet of water from Lake Okeechobee as provided in the TSP and construction of the long-delayed C-43 (Caloosahatchee Reservoir, which awaits congressional authorization) and by completion of the C-44 (St. Lucie/South Indian River Lagoon watershed projects. Alt. 4R2, plus increased water-storage in the Kissimmee River Valley, reduces the risk of damaging wet-season releases to the Caloosahatchee by 14 percent and St. Lucie/ Indian River Lagoon by 34 percent.(CEPP Draft PIR and EIS, Table 5.2.1). These projects are beneficial but to fully address the question of large discharges of nutrient rich fresh waters into the northern estuaries from the Lake Okeechobee basin requires CEPP, C43, C44 completion, and additional future storage and treatment areas. Dry-season releases are also needed by the Caloosahatchee to retard equally damaging intrusion of salt water upstream.	Alt 4R2 addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. The implementing agencies are committed to engaging in a public process after Congressional authorization and appropriations of CEPP to integrate CEPP into the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed.

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	These projects do alleviate some of the damages to those estuaries. Important elements of restoration of the northern estuaries depends on constructing the long-delayed C-43 (Caloosahatchee Reservoir, which awaits congressional authorization) and completing the C-44 (St. Lucie/ South Indian River Lagoon) watershed projects).	
FWF-16	CEPP's features restoring ecological connectivity among WCA-3A, WCA-3B, Everglades National Park and Biscayne National Park ought to improve estuarine conditions and fisheries habitat in Biscayne Bay and Florida Bay. This should benefit salt-water fishing opportunities in the Everglades National Park and the Florida Keys. However the combined discharges to Central and Southern Biscayne Bay, while increasing by 15 percent are described as a "minor to moderate adverse effect" in the Draft PIR and EIS (Table 5.2.1). Average annual canal discharges to northern Biscayne Bay are reduced by II percent, and in Florida Bay there is only a "moderate improvement" of 9 percent. It is unclear why and should be further explained within 5.2.8-Hydrology section.	Table 5.2-1 of the Draft PIR/EIS provides a combined analysis for all of Biscayne Bay, including the northern, central, and southern areas (see Southern Estuaries Geographic Region). Alt 4R2 has been updated to explicitly state that combined net inflows to Biscayne Bay are reduced by an average annual volume of 29 kAF relative to the FWO (summation of the numbers stated in the table), which provides the basis for the “minor to moderate adverse effect” assessment. Alt 4R2 provides an increased combined net inflow to Biscayne Bay of an average annual volume of 26 kAF relative to the IORLB1.
FWF-17	While remaining attentive to flood protection in Miami-Dade County, equal attention must also be paid to sustaining freshwater flows to Biscayne Bay, the linkage between the CEPP and the Biscayne Bay Coastal Wetlands Project, and the vitality of Biscayne National Park, any one of which would be severely damaged by a decrease in the	Alt 4R2 provides additional flows to central and southern Biscayne Bay relative to the FWO and IORBL1. Combined total average annual canal discharges to central and southern Biscayne Bay (S-336, S-338, S-194, S-196, S-197) are increased by 17kAF and 15 kAF relative to the FWO and IORBL1, respectively. Average annual surface water canal discharges to northern Biscayne Bay (S-29, S-28, S-27) are reduced by 46kAF and 4kAF for Alt 4R2 compared to the FWO and IORBL1, respectively.

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	.flow of freshwater. Southern Biscayne Bay remains a productive fishery, supporting commercial and sports fishing. Organisms of the near-shore nursery, which include pink shrimp, require salinity ranges between 20-35 ppt to thrive. A decline of those organisms (the food web) would be a severely negative ecological impact with far ranging effects on grass beds, shell fish, fish and higher order species, possibly including manatees and American crocodiles as well as compromise popular salt water fishing areas.	Additional flows to central and southern Biscayne Bay are likely to provide a minor beneficial effect to the mangrove communities and fish and wildlife resources by lowering salinity levels and/or reducing the number of days salinities exceed 40 psu. Decreases in canal discharges with Alt 4R2 are most notable in north Biscayne Bay relative to the FWO. Northern Biscayne Bay is an urban dominated area and experiences strong ocean flushing, reducing the risk of hypersaline conditions from the lack of freshwater flow Guidance has been provided in the Adaptive Management Plan (**Section 1.4.4.2** of **Annex D**) to specifically address potential changes to freshwater flow brought about by the project and potential negative impacts to Biscayne Bay.
FWF-18	The SFWMD has established water reservations to protect the flow of canal water required by the Biscayne Bay Coastal Wetlands Project. The district this year also updated the Water Supply Plan for the region's public water utilities. The latter identifies usage, flow and facility needs. Implementation of CEPP and regional CERP projects are expected to enhance and protect the urban and agricultural water supply.	Savings clause analyses described in Section 601(h)(5) of WRDA 2000, is a means to protect users of legal sources of water supply and flood protection that were in place at the time of enactment. Section 385.36 of the Programmatic Regulations require PIRs to determine if existing legal sources of water are to be eliminated or transferred as a result of project implementation. Sources of water to meet agricultural and urban demand in the LOSA and LECSAs, including Biscayne Bay, will continue to be met by their current sources. Implementation of the project will also not reduce the levels of service for flood protection within the areas affected by the project. See **Section 6.8** (**Project Assurances Summary**) and **Annex B** (**Analyses Required by WRDA 2000 &State Law**).
FWF-19	Urban and Agricultural Water Supply Benefits Restoring the flow of water to the Central Everglades is wholly consistent with the CERP goals and proposed CERP projects. The geology underlying southern Miami-Dade is extremely porous and ground water flows are large enough to be deemed sufficient to protect Biscayne National Park, Biscayne Bay, and irrigate South Dade farmland. That does not allay the fear of users that supplies are inadequate and deliveries ill-timed. As water moves south along the eastern border of ENP seepage controls must be in place to prevent .flooding of farmlands and suburbs of Miami-Dade County. Because of the porous rock underlying those areas and the rapid flow of ground water, it	The following text was added to CEPP PIR Section 6 TSP description for the 'yellowline' area to further highlight remaining uncertainties and need for more information before implementing a seepage barrier in CEPP: "There are remaining uncertainties about the effectiveness of the CEPP TSP seepage cutoff wall in maintaining desired stages in marshes of ENP while maintaining water supply, flood protection and water availability to Biscayne Bay. Therefore, additional analysis of the CEPP seepage cutoff wall will be conducted during the PED phase. See **Section 6.10.1.2**, the Engineering Appendix (**Appendix A**), the analyses required by WRDA 2000 (**Annex B**), and the CEPP Adaptive Management Plan (**Annex D Part 1**) for more detail about the remaining uncertainties and suggested analysis to be completed to determine the need for and extent of a CEPP seepage cutoff barrier wall." To address the commenter's concerns the following text was added to the introduction to the LEC section of the CEPP adaptive management plan: "There are remaining uncertainties about the effectiveness of the CEPP TSP seepage cutoff wall in maintaining desired stages in marshes of ENP while maintaining water supply,

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	is important to recognize that "flooding" in this region, more often refers to rising ground water than to an above-ground overflow. The "South Miami-Dade Conveyance" system must operate efficiently to keep water in ENP and direct it through Taylor Slough into Florida Bay. FWF supports increasing the capacity of the S-356 pump station and installation of a seepage cut-off wall south of the Tamiami Trail. Seepage barriers have been used successfully for many years in southern Florida. FWF has followed the testing of the current pilot project. Although the first attempt to install a shallow wall failed, the latest wall is larger, deeper and employs a different slurry mix. Initial findings are good, and final results will be reported in December. The depth of a seepage wall is an important variable in determining its impact on surface and ground water flows. Ample time exists to redesign or install a sheet-metal wall. It is a misconception that seepage barriers cut off all water flows; the walls serve specific, limited purposes. In commenting on the need to complete the precedential projects, we also called attention to the necessity of connecting Frog Pond detention areas of the Modified Waters Delivery project to the current C-111 spreader canal.	flood protection and water availability to Biscayne Bay. Therefore, additional analysis of the CEPP seepage cutoff wall will be conducted during the PED phase. Completion of the C-111 South Dade project, including Contract 8 to connect to the MWD 8.5 SMA project, is identified as CEPP project dependency in **Section 6.7** (**Plan Implementation**) of the PIR/EIS.
FWF-20	Conclusion: CEPP planning, including public participation, modeling to assess proposed features, and publication of the draft PIR has been a tremendous undertaking. Implementation of the plan and projects will be no less daunting. The tentative selected plan (Alt 4R-2) represents a consensus of what should and can be done as well as today's	Thank you for your comment.

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	sense of what's achievable. At $1.7 48 billion the cost provokes sticker shock, but can be amortized over 30 or more years that implementation will take. The cost will be shared between the state and federal governments. It is consistent with other projects of similar scope. The value of the CEPP is that it provides direction for the next generation along with explanations of what decisions were made and why. There is general agreement that projects must be prioritized; there is less agreement about which to prioritize, other than recognition of the fact that CEPP successful implementation rests on the completion of precedential projects and the requirement to achieve a basic water-quality standard that has not changed in 25 years. The CEPP Draft PIR addresses and successfully balances many interests and hews to both the goals and performance measures outlined in CERP. The Florida Wildlife Federation believes steady progress has been made toward restoration, embraces and supports CEPP's focus on the importance of moving water through the Central Everglades. The Federation will continue its efforts to expedite Everglades Restoration knowing that its costs are not beyond America's means and can be managed long term.	
MARTIN COUNTY CHAPTER OF THE FLORIDA NATIVE PLANT SOCIETY (MCFNPS)		
MCFNPS-1	This is the next step needed to compliment the CERP-Indian River Lagoon-South plan that was authorized previously. As this summer's rains and the resulting blue green algae made clear, the river and lagoon need help ASAP. The pace of spending and construction needs to match the speed of the planning model you have set before us. It pains us	Thank you for your comment. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget (OMB) for administrative review. This will occur upon completion of the State and agency review of the Final Central Everglades Planning Project (CEPP) Final Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS).

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	to see that the CEPP building process might take TEN (10) years! The plan needs to be implemented faster. That is our main complaint.	
MCFNPS-2	We hope the potential for a flowway directly out of Lake Okeechobee will be next on your planning plate.	Alt 4R2 redirects an average of approximately 210,000 acre-feet per year of clean freshwater into the central portion of the Everglades that would otherwise be undesirably discharged to the Northern Estuaries. The concept of a "flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Further information on the evaluation of this concept can be found in the C&SF Comprehensive Review Study (USACE 1999).
FLORIDA CRYSTALS CORPORATION (CRYSTALS)		
CRYSTALS-1	I am writing to provide comments of Florida Crystals and its affiliates, including Okeelanta Corporation and New Hope Sugar Company, on the Draft Integrated Project Implementation Report and Environmental Impact Statement ("Draft PIR/EIS") for the Central Everglades Planning Project ("CEPP"). This is our fifth comment letter on the CEPP, and to save space, we hereby incorporate and reiterate our previous comments dated January 20, 2012, March 30, 2012, October 16, 2012, and January 4, 2013.	Thank you for your comments. All letters have been entered into the Administrative Record.
CRYSTALS-2	Florida Crystals remains committed to Everglades restoration. For two decades, Florida Crystals and other farmers in the Everglades Agricultural Area ("EAA") have worked to reduce phosphorus in farm runoff by implementing on-farm Best Management Practices, contributing hundreds of millions of dollars toward the construction and operation of Stormwater Treatment Areas ("STA's") by the South Florida Water Management District ("SFWMD"), and cooperating in land swaps with the SFWMD to facilitate restoration projects.	Thank you for your comment.
CRYSTALS-3	While we support the Corps' efforts to formulate long-term restoration plans such as the CEPP, there are important projects which the Corps can and should implement now. In particular, the Corps	The Corps is re-initiating pursuit of operational testing (relaxation of G-327 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Planning for the G-3273/S-356 field test has started but is not complete and necessary approvals (including FDEP) have not been attained.

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	should implement the Modified Water Deliveries Project by increasing water deliveries to Northeast Shark River Slough using newly-built water management features; speed efforts to rehabilitate the Herbert Hoover Dike around Lake Okeechobee to allow for more water storage in the lake; and implement projects designed to address the needs of the Northern Estuaries, specifically, the Indian River Lagoon and C-43 Reservoir Projects. The formulation of long-term plans such as the CEPP should not distract the Corps from completing projects already underway or approved by the Chief of Engineers.	Information from the test will be used to develop the Final Water Control Plan for the MWD project which will allow for re-distribution of existing water flow from Western Shark River Slough to Northeastern Shark River Slough. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation To date, the Jacksonville District has received between 20 to 25% of the National Dam Safety Construction budget for the Corps for rehabilitation of HHD and has been steadily working on HHD rehabilitation. The Corps has completed over 22 miles of cut-off wall and currently have 16 of the 32 culverts under contract for replacement or removal. The Dam Safety Modification Report is scheduled for completion in 2015 which will detail the remainder of the work necessary to complete rehabilitation the HHD. The USACE and the SFWMD will undertake integration of the CEPP recommended plan and the other CERP projects awaiting authorization into the CERP programs' Integrated Delivery Schedule (IDS), which contains the Master Implementation Sequencing Plan (MISP), through a robust public process.
CRYSTALS-4	Florida Crystals supports the concept behind the CEPP, which is to send excess, unneeded water from Lake Okeechobee south to the Water Conservation Areas ("WCAs") and Everglades National Park. It should be possible to do this without adversely affecting existing legal water users and by using land already owned by the government in the EAA. The Draft PIR/EIS makes clear that the CEPP remains a work-in-progress. There remain several critical substantive issues that the Corps and SFWMD must resolve before the CEPP is finalized. Those issues include:	The CEPP plan does not adversely affect existing legal water users as documented in Annex B of the PIR. The CEPP plan does not eliminate or transfer existing legal sources of water without identifying new sources consistent with WRDA 2000.
CRYSTALS-5	Water Quality: Based on information contained in the annual South Florida Environmental Reports published by the SFWMD and other Corps reports, EAA farmers and the SFWMD already have achieved 97% of the phosphorus concentration cleanup targets for EAA	The SFWMD is required to obtain approval from FDEP for reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed," § 373.1501(5)(c), F.S. A 1501 Compliance report is included in Annex B of the Final Project Implementation Report. The State and Federal parties are presently working to resolve issues associated with

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	runoff to the Central Everglades (WCA-2 and WCA-3), from approximately 184 ppb twenty years ago to approximately 18 ppb today. The State of Florida and EAA farmers are implementing a plan to achieve the final 3% of the cleanup goal. Nevertheless, the phosphorus concentration targets are set so low that the current CEPP proposal to send new Lake Okeechobee water to the WCA's will be severely constrained. In particular, it is certain that the additional flow into Everglades National Park will trigger a violation of the criteria contained in Appendix A to the Consent Decree in US v. SFWMD, Case No. 88-1886 (S.D. Fla.). This will prevent the delivery of additional water to the Central Everglades, and will limit the State's ability to approve the CEPP under Florida law. The Draft PIR/EIS does not resolve this problem related to Appendix A, but instead only identifies a process to discuss it. The Corps and SFWMD need to resolve this issue before finalizing the plan so that the CEPP can be approved and implemented without the prospect of additional court action by third parties.	Appendix A compliance. The USACE does not agree that the Appendix A timeline should affect the CEPP authorization timeline.
CRYSTALS-6	Water Supply: Existing legal users around Lake Okeechobee have far less water supply than they had when the Water Resources Development Act of 2000 ("WRDA 2000") was signed into law. The CEPP apparently will lock-in that reduction in water supply for the foreseeable future in violation of the WRDA 2000 Savings Clause. Even applying the Corps' approach to water supply accounting, the Draft PIR/EIS indicates that the current CEPP plan will not be able to replace water supply reserved for the existing legal users in the Lake Okeechobee Service Area that is being transferred due to water quality issues in the lake that likely will prevent the	Consistent with the WRDA 2000 and the Programmatic Regulations, the savings clause analysis identifies the effects of the plan, not non-CERP actions (including, for example, LORS). The CEPP future without project assumes continued operation of Lake Okeechobee under the 2008 Lake Okeechobee Regulation Schedule, as described in Section 2 of the PIR. The CEPP Savings Clause analysis for the LOSA, presented in Annex B Section B.3.1.1, concludes that Alternative 4R2 meets the requirements of the Savings Clause. The volume of demand not met for the LOSA during the eight years with the largest water shortage cutbacks in the period of simulation is the same or slightly improved when comparing the with-project condition, Alt 4R2, and the without project condition, IORBL1. In six of these years, the volume of demand not met is reduced (i.e. improved water supply performance) by approximately one to seven percent. In the two remaining years where the volume of demand not met increases compared

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	inter-basin transfer of runoff from the C-23 canal. The Corps and SFWMD need to address this issue before finalizing CEPP to avoid a violation of the Savings Clause.	to the without project condition (1981 and 1982), the increase is one percent or less. Over the entire period of simulation, the average annual volume of demand not met during water shortages declines by 6 kAF (1%) in the with-project condition compared to the without-project condition (Alt 4R2 and IORBL1 average 29 kAF and 35 kAF of cutbacks for EAA and Other LOSA combined, respectively). **Table 6-10** in **Section 6.7** (**Plan Implementation**) documents a number of project dependencies including but not limited to the C-44 Reservoir (IRL-S Project) and connection to the C-23 Canal. Savings clause evaluations and the Draft Project Operating Manual have only been provided for the entire project. To address any future uncertainties related to incremental implementation, it is recognized that prior to implementation of each phase, additional detailed analyses pertaining to that phase of implementation will be considered in development of the Project Operating Manual. These analyses will include demonstration that Savings Clause and Project Assurances requirements for the project phase will be met prior to PPA execution. This is discussed in **Section 6.7.1.7.** The FDEP is in the process of developing a Basin Management Action Plan (BMAP) for Lake Okeechobee pursuant to Section 403.067, Florida Statutes. This BMAP will be an iterative effort to address water quality issues in Lake Okeechobee. Potential water quality issues associated with S-308 loads will be addressed as part of the BMAP.
CRYSTALS-7	Lake Okeechobee Regulation Schedule: A critical element to improving performance of the Central and Southern Florida Project (~C&SF Project") is modifying the Lake Okeechobee Regulation Schedule. The Draft PIR/EIS admits that the regulation schedule must be revised to implement the CEPP, but it fails to develop those revisions. The Corps needs to provide more information on the necessary revisions to the Lake Okeechobee Regulation Schedule before approving and implementing the CEPP.	The discussion of the Lake Okeechobee Regulation schedule and its relation to the CEPP plan is described in Sections 6.1.1 and 6.1.3.2. Information and documentation of the CEPP TSP modeling assumptions for Lake Okeechobee operations are found in **Appendix A** (Engineering) of the CEPP PIR.
CRYSTALS-8	Modified Water Deliveries Project:	The Corps is re-initiating pursuit operational testing (relaxation of G-3273 and S-356

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	In WRDA 2000, Congress prohibited any appropriations for the decompartmentalization of the WCAs until the Modified Water Deliveries Project is completed. The agencies are close to finishing construction on Tamiami Trail improvements, but the Draft PIR/EIS indicates that they have no plans to complete the project by implementing an operational plan to deliver significant new flows into Northeast Shark Slough. The Modified Water Deliveries Project should be fully implemented, and soon, irrespective of CEPP. Nevertheless, since the Modified Water Deliveries Project will not be completed before the proposed initiation of the CEPP, there will be no federal appropriations for the CEPP features in WCA-3. The Corps needs to commit to completing the Modified Water Deliveries Project in the near future -in other words, put the newly-constructed features into operation to modify the deliveries of water into Everglades National Park -or the CEPP cannot be implemented.	test) to utilize the constructed Modified Delivery Project features. Planning for the G-3273/S-356 field test has started but is not complete and necessary approvals (including FDEP) have not been attained. Information from the test will be used to develop the Final Water Control Plan for the MWD project which will allow for re-distribution of existing water flow from Western Shark River Slough to Northeastern Shark River Slough. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation. Table 6-11 Project Dependencies has been updated to reflect that the MWD project will be complete and operational prior to implementation of appropriate CEPP features.
CRYSTALS-9	Flood Protection: The proposed A-2 Flow Equalization Basin risks worsening flood protection for adjacent areas in the EAA. The Corps needs to produce a final design for the FEB in the final PIR/EIS to demonstrate how the project will avoid violating the WRDA 2000 Savings Clause as it relates to flood protection for the adjacent farmland. These substantive problems	The level of detail, associated risks and cost details have been affirmed as sufficient for the CEPP expedited effort. The next phase of the Corps Civil Works process, PED, will involve refinement of design, risks and costs based on the detailed site specific data yet to be acquired. A more detailed flood routing using the seepage collection system (including the A-1 and A-2 seepage canals) will be conducted during PED to ensure there will be no additional adverse impacts to adjacent agricultural lands. During PED, the seepage system will be refined to ensure sufficient capacity to capture any additional discharges. It is anticipated that if necessary, water will be routed through the S-8 pump station for discharge into the Miami Canal, as it currently serves as a flood control structure today. The PED phase will be conducted following completion of the Final PIR and, most likely, following Congressional authorization of CEPP.
CRYSTALS-10	These substantive problems with the current CEPP plan are linked to the flaws in the process by which the plan was developed. In the agencies' rush to	A full array of reasonable alternatives was considered. The CEPP effort incorporated twelve years of updated science, new information, and improved hydrologic modeling tools. Utilization of the improved hydrologic models in the plan

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	develop a plan, they have cut too many corners on critically important issues. For example:	formulation effort allowed for a robust, sequential analytical screening process to develop alternative plans. The plan formulation effort capitalized on data and findings developed in previous planning efforts for CERP and other restoration initiatives. The sequential analytical process became increasingly more comprehensive and detailed as plan formulation progressed. CEPP alternative development began with an initial screening to identify feasible management measures (structural and non-structural or activities that address one or more planning objective). Retained measures underwent rigorous screening, analysis to evaluate, optimize, refine and group into components and options. The improved tools utilized in CEPP allowed for consideration of a wide-range and full array of options, components and alternatives in development of the proposed plan.
CRYSTALS-11	• The Corps has not acknowledged that it is making major changes to the Comprehensive Everglades Restoration Plan. The proposed CEPP plan abandons projects in the EAA identified in the 1999 Approved CERP Plan and abandons some of the goals of improving water supply for human users. Even if the Corps believes that such changes are appropriate, it should reveal and discuss those changes and engage all stakeholders in that decision. Instead, it is rushing through a Project Implementation Report which purports to just implement the 1999 Approved Plan when in fact it is changing that plan in important ways.	The Corps has not made major changes to the Comprehensive Everglades Restoration (CERP) Plan and has not abandoned CERP projects in the EAA. Section 6.9.8 “CERP Comparison to CEPP” has been added to the PIR and includes comparison of the CEPP plan to the relevant CERP Project components as presented in the Final Integrated Feasibility Report and Programmatic Environmental Impact Statement dated April 1, 1999 along with cost and scope changes. Implementation of CEPP would not preclude implementation of other components of the 1999 Plan that was intended to serve as a framework.
CRYSTALS-12	• The Corps has not considered any alternatives north of the WCAs. NEPA requires agencies to consider a range of alternatives to highlight the choices being made. We proposed several alternatives north of the "redline" which the Corps could have included in the Draft PIR/EIS, some of which could save hundreds of millions of dollars and allow the CEPP to be implemented more quickly. The Corps has refused to evaluate them. Even if the Corps does not prefer an alternative proposal, it must at least analyze and disclose such alternatives to members of Congress and the public so that they can make up their own minds.	A full array of reasonable alternatives was considered. The planning effort considered a multitude of options and combination of options north of the WCAs that included shallow reservoirs (4-ft), deep reservoirs (6-12 ft deep), STA’s, flow-through marsh systems, and every combination thereof. A full description of the evaluation and screening are provided in Section 3 and Appendix E of the CEPP Draft PIR/EIS.

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CRYSTALS-13	• The Corps is deferring analysis under NEPA and the WRDA 2000 Savings Clause of critical plan elements. Instead of analyzing all parts of the overall CEPP plan, the Corps is deferring analysis of critical plan elements. In particular, the Corps is deferring the development of operational plans, and is not tackling difficult water quality issues. This means that the agency has not worked through all of the issues yet, and risks encountering unexpected challenges after it commits to the plan.	The Corps has provided NEPA and Savings Clause analysis of the CEPP plan including the draft operating plan in Annex C and has also committed to confirm compliance with legal requirements upon implementation of each CEPP phase. The Corps has identified risks and uncertainties associated with CEPP implementation (Section 6.10).
CRYSTALS-14	It is more important to get the CEPP right than rush through an incomplete plan. The Corps has proposed its new "3-3-3 process" for civil works planning that establishes a framework for developing and approving projects within a three-year planning schedule. This concept offers great possibilities for adding efficiency and predictability to Corps planning. However with the CEPP, which seeks to combine several large and very complicated plans into a single process, the Corps sought to rush the project through in eighteen months. The goal was laudable, but unrealistic, and the process has not produced a plan that is ready for the necessary public review (much less Congressional action).	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
CRYSTALS-15	We offer our detailed comments below on the Draft PIR/EIS so that the Corps can correct the flaws in the CEPP and have a solid plan which can be approved by Congress, permitted and operated as proposed.	Thank you for your comments. All letters with comments have been entered into the Administrative Record.
CRYSTALS-16	The CERP Programmatic Regulations require that a "Project Implementation Report shall ... [b]e consistent with the Plan and applicable law, policy, regulation." 33 CFR 385.26(a)(3)(i). In particular, the regulations provide that "[p]rior to requesting approval or authorization for the implementation of a project, the Corps of Engineers and the non-	The CEPP Draft PIR/EIS meets all requirements of the Programmatic Regulations and all applicable laws, policies and regulations. Section 7 and Appendix C.4 of the Draft PIR/EIS address compliance of the proposed plan. The SFWMD is required to obtain approval from FDEP for reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed," § 373.1501(5)(c), F.S. A 1501 Compliance

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	Federal sponsor shall ... complete a Project Implementation Report addressing the project's justification [in accordance with WRDA 2000] ... [and] address the factors of relevant State laws, including sections 373.1501 and 373.470 of the Florida Statutes." 33 CFR § 385.26(a)(l); see also Programmatic Regulations Proposed Rule, 67 Fed. Reg. 50540, 50544 (Aug. 2, 2002) (PIRs must "provid[e] information required by the State of Florida for the participation of the non-Federal sponsor"). The Draft PIR/EIS does not sufficiently address the requirements of the Programmatic Regulations, and needs to be revised before the CEPP can be approved.	report is included in Annex B of the Final Project Implementation Report. Sponsor letter of support is included in the Final PIR.
CRYSTALS-17	1. Water Quality The Corps and other agencies need to ensure that the CEPP plan can be implemented consistent with water quality rules. The CERP Programmatic Regulations provide that a "Project Implementation Report shall ... [c]omply ... with applicable water quality standards and applicable water quality permitting requirements." 33 CFR § 385.26(a)(3)(vi). Florida law prohibits state agencies from approving a PIR unless they "determine with reasonable certainty that all project components ... can be permitted and operated as proposed." Florida Statutes§ 373.1501(5)(c). The Draft PIR/EIS does not provide those assurances. 1A. Water Quality Based Effluent Limitation ("WQBEL") for WCA's Discharges from the STAs generally must meet the WQBEL, which prohibits flow-weighted mean phosphorus concentrations from exceeding 13 ppb in more than three out of five years on a rolling basis. Today, EAA farmers and the SFWMD have substantially achieved the	The SFWMD is required to obtain approval from FDEP for reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed," § 373.1501(5)(c), F.S. A 1501 Compliance report is included in Annex B of the Final Project Implementation Report. Regarding source of CEPP Phosphorus Loads: Current Lake Okeechobee water column phosphorus concentrations are the result of present day sources which include nutrient loads from the Kissimmee Basin, EAA backpumping, and sediment load. Regarding STAs not designed for CEPP flows: CEPP flows are generally scheduled for the winter and spring seasons when STAs have historically not processed significant volumes of stormwater. CEPP flows during these periods are likely to result in a reduction in the frequency of detrimental STA dryout events which should improve overall STA performance. Due to the timing shift in flows CEPP takes advantage of unused treatment capacity. The SFWMD and the USACE have extensive experience planning, designing, and operating constructed wetland water quality treatment facilities such as STAs. Flow equalization basins are a new concept however, they are similar in many ways to STAs. The nutrient removal capability of the A-1 FEB was extensively evaluated by State and Federal agencies during the negotiation of the Restoration Strategies Plan. The modeling assumptions used for Restoration Strategies were also used for the CEPP A-2 FEB. Modeling results included in Annex F of the FEB/STA system indicates that these water treatment facilities will be capable

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	phosphorus reductions necessary to meet the WQBEL for discharges from the EAA into the Central Everglades. In particular, STA discharges are projected to achieve 13 ppb for STA-2 and 18 ppb for STA-3/4 with current facilities. A-1 Shallow Flow Equalization Basin, Final EIS, § 4.6.1.2, p. 4-66 (July 2013). The State Restoration Strategies plan, now being implemented, is designed to achieve the final few percentage points of phosphorus reductions. The Corps proposes in the CEPP to send an additional210,000 acre-feet of water from Lake Okeechobee to the Everglades. The EAA contributes almost none of the phosphorus in Lake Okeechobee, a point which the final PIR/EIS should acknowledge. This means that the CEPP is sending water to the STAs for which they were not designed with the hope that the additional A-2 Flow Equalization Basin will provide enough phosphorus removal to meet the WQBEL even though the Flow Equalization Basin concept is a new to the phosphorus removal process and how it will actually perform in this task is unknown. The Draft PIR/EIS indicates that the STA's should meet the WQBEL once the State's Restoration Strategies plan is implemented. § 5.1.9, Table 5.1-3, p. 5-14. Until that plan is implemented, and the role of the A-1 Flow Equalization Basin in phosphorus removal is clearly understood, there is no reasonable assurance that the CEPP can be operated to deliver the additional lake water as proposed. The Draft PIR/EIS acknowledges that fact, and states that "All features of the State's Restoration Strategies must be completed and meet state water quality standards prior to	of meeting the WQBEL.

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	initiating construction of most CEPP project features."§ 6.7.1, p. 6-38; § 8, p. 8-5 (District Engineer Recommendation v: "the binding agreement shall include terms and conditions of cooperation for implementing the Project as set forth ... below ... Restoration Strategies Compliance-Recognition that all features of the State's Restoration Strategies must be completed and meet State water quality standards prior to initiating construction of most CEPP project features."); Annex F, p. F-33. Florida Crystals agrees that such a condition is necessary to protect against potential violations of the WQBEL resulting from the delivery of new lake water. We support the recommendation of the District Engineer that this condition be made a legally-binding constraint on implementation of the CEPP. Also, the PIR would be more useful to policy makers and the public if it included the current construction schedule for the Restoration Strategies Project. That schedule indicates a 15-year construction period followed by at least three years to confirm that the WQBEL is being met.	
CRYSTALS-18	1B. Appendix A for Everglades National Park Independent of the WQBEL, the Consent Decree in United States v. SFWMD, Case No. 88-1886 (S.D. Fla.), requires even lower phosphorus levels in federal areas ofthe Everglades. Appendix A of the Consent Decree, which governs phosphorus levels in water entering Everglades National Park, sets the long-term limit on phosphorus concentrations at 8 ppb in the Shark River Slough in wet years. The methodology for the limit in Consent Decree Appendix A is sensitive to the amount of water released into the park by the Corps, i.e., the phosphorus concentration limit decreases as flow increases. Annex F, p. F-31.	The SFWMD is required to obtain approval from FDEP for reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed," § 373.1501(5)(c), F.S. A 1501 Compliance report is included in Annex B of the Final Project Implementation Report. Savings clause evaluations and the Draft Project Operating Manual have only been provided for the entire project. To address any future uncertainties related to incremental implementation, it is recognized that prior to implementation of each phase, additional detailed analyses pertaining to that phase of implementation will be considered in development of the Project Operating Manual. These analyses will include demonstration that Savings Clause and Project Assurances requirements for the project phase will be met prior to PPA execution. This is discussed in **Section 6.7.1.7.**

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	It appears likely that the CEPP will trigger a violation of Appendix A. Since 2007, phosphorus concentrations entering the park have been very close or equal to the Appendix A long-term limit. Annex F, p. F-31. The SFWMD currently is being accused of a violation because phosphorus levels are one-tenth of 1 ppb above the Appendix A limit. Increasing flows to the park as part of the CEPP will lower the phosphorus concentration limit even further. At the July 9, 2013 meeting of the South Florida Ecosystem Restoration Task Force, the Corps' project manager for the CEPP stated that there is an "[a]cknowledgement that there is a likelihood of an exceedance due to increased flows into ENP based upon the current Appendix A methodology." See also Draft PIR/EIS, p. ES-8 ("State and federal water managers expressed concerns that the recommended plan may increase the probability of exceeding the compliance limit [in Appendix A] ... ");§ 6.3.2, p. 6-24 ("The Corps and its federal and state partners recognize that to achieve long-term hydrologic improvement, water quality may be impacted, particularly as measured by the current Consent Decree Appendix A compliance methodology."). The Draft PIR/EIS is written in a way which obscures that problem: despite the fact that the Draft PIR/EIS contains a quantitative assessment of compliance with the WQBEL, the document contains only a "qualitative assessment of Appendix A compliance." Annex F, at F-34. Since the Corps did not actually calculate whether the CEPP would comply with Appendix A, the Draft PIR/EIS concludes that "[i]t is uncertain how changes in flow distributions proposed under CEPP will impact compliance with Appendix A of the 1991 Settlement Agreement." Annex F, p. F-34.	

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	This conclusion is not sufficient to demonstrate "reasonable certainty that all project components ... can be permitted and operated as proposed," Florida Statutes § 3 73.15 01 (5)(c), which is the standard which governs whether Florida agencies can approve the CEPP.	
CRYSTALS-19	Unlike the WQBEL issue, the Draft PIR/EIS offers no real solution for the problem of Appendix A compliance. The document acknowledges that the problem is the criteria in Appendix A, not the quality of the water that will be delivered to the park. § 6.3.2, p. 6-25 ("The Corps and the state partners agree that the monitoring locations/stations for inflows to ENP will require revision."). Despite this, no actual changes to Appendix A are proposed in relation to the CEPP. Instead, the agencies have only agreed to have meetings between federal and state staff to discuss how to proceed. § 6.3.2, p. 6-25 ("In an effort to ... determine updates to Appendix A ... , the parties to the Consent Decree have established a process and scope for evaluating and identifying necessary revisions to the Appendix A compliance methodology .... Ultimately, such evaluations and changes to the Appendix A compliance methodology would be recommended ... for potential agreement by all parties."). There is no deadline for these discussions to be completed, or for any revisions to Appendix A to be agreed upon. History shows that just because the agencies are talking does not mean that they will reach any agreement: the state and federal agencies have been discussing these issues literally for years, and they are yet to be resolved. Moreover, any modifications to the Consent Decree will need to be approved by the U.S. District Court, and third parties have vociferously opposed in the past any	The Corps planning process requires that project risk and uncertainty be identified. The draft PIR identifies the Appendix A Shark River Slough compliance criteria as a project risk and discusses the current plan to resolve the issue.

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	changes to the phosphorus limitations. Appendix A has also been incorporated into state water quality standards approved by EPA, Fla. Admin. Code§ 62-302.540(4)(c), and changes to Appendix A may necessitate a formal change to state water quality standards, another lengthy and possibly contentious process. The Draft PIR/EIS therefore identifies a serious obstacle to implementing the CEPP, but no real solution.	
CRYSTALS-20	The history of the Modified Water Deliveries Project proves out our concerns. That project calls for pumping water from the L-31N canal into Northeast Shark Slough to address increased groundwater seepage from additional water deliveries to that area of the park. The Corps completed construction of the S-356 pump station in 2003-10 years ago-to do this. However, the pump has never been permitted or used due to concerns that it would lead to a violation of Appendix A. § 2.5.7, p. 2-16 ("The following MWD features have been constructed or are in progress. . .. f. Pump Station S-356-complete (temporary pump station), no operational permit"). The federal agencies apparently do not expect to ever resolve this issue. In the Draft PIR/EIS, the Corps has refused to include operation of the Modified Water Deliveries Project in the "future without project condition." § 2.5, Table 2-2 ("Future Without Project Condition: ... Construction completed (no operational changes assumed for modeling): MWD ... ");Annex C, p. C-25. The Draft PIRIEIS explains that "[t]he FWO project condition describes what is assumed to be in place if none of the study's	Although implementation challenges remain, the federal agencies are planning for success on implementation of the MWD project and development of final Water Control Plan that includes use of the existing S-356 pump station to achieve the goals of the MWD project. Please refer to response to CRYSTALS-8 comment as to the on-going and planned activities to utilize the existing S-356 pump station for the MWD project. Furthermore, the significant amount of water resulting from CEPP is contemplated to significantly improve restoration of the Everglades. Both the federal and state parties recognize that water quantity and quality restoration should be pursued concurrently and have collaborated to develop and concur on a suite of restoration strategies being implemented by the state to improve water quality ("State Restoration Strategies"), as well as other state and federal restoration projects, both underway and planned, to best achieve Everglades hydrologic objectives. Specific examples of federally authorized projects include the Everglades Restoration Transition Plan, Modified Water Deliveries to Everglades National Park Project, and the Tamiami Trail Next Steps Project.[1] One of the goals of these projects and their associated operating plans, as well as certain components of the awaiting authorization or that are being planned as part of the Central Everglades Planning Project is to improve water quantity and quality in the Everglades through more natural water flow within the remnant Everglades which includes the water conservation areas and Everglades National Park ("ENP"). Variations in flows of the Central and South Florida ("C&SF") system may result from a variety of reasons. These reasons include natural phenomena (e.g. weather) and updates to the operating manuals to achieve the

[1] The next phase of bridging for Tamiami Trail roadway as authorized by Congress.

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	alternative plans are implemented." § 2.1, p.2-1; see also U.S. Water Resources Council, Principles and Guidelines§ 2.1 (FWO represents the "most likely future conditions ... without those plans in place"). Since all of the major construction features of the Modified Water Deliveries Project will be finished by spring 2014, this can only mean that the federal agencies are planning for failure on this project due to water quality issues. Instead of acknowledging this roadblock, the CEPP plan calls for increasing the size of the S-356 pump, without solving the problem which prevents the existing pump from being used.	purposes of the C&SF project such as flood control and water supply. One goal of the Consent Decree[2] is to restore and maintain water quality within ENP. The Consent Decree established, among other things, long-term water quality limits for water entering ENP to achieve this goal. The existing limits for ENP are flow dependent and, generally, increased volume of water results in a lower allowable concentration of phosphorus to maintain the overall load of phosphorus entering the ENP. There will be redistribution of flows and increased water volume above existing flows associated with system restoration efforts beyond the current State Restoration Strategies projects. The Corps and its federal and state partners recognize that to achieve long-term hydrologic improvement, water quality may be impacted, particularly as measured by the current Consent Decree Appendix A compliance methodology. The Corps and the state partners agree that the monitoring locations/stations for inflows to ENP will require revision. An evaluation of this and other aspects of the compliance methodology are currently being conducted by the Technical Oversight Committee ("TOC"). In an effort to address these potential impacts and determine updates to Appendix A to reflect increased inflows and new discharges into ENP since the Consent Decree was entered, the parties to the Consent Decree have established a process and scope for evaluating and identifying necessary revisions to the Appendix A compliance methodology utilizing the scientific expertise of the TOC. The TOC may consider all relevant data, including the 20 years of data collected since Appendix A was implemented. Ultimately, such evaluations and changes to the Appendix A compliance methodology would be recommended by the Consent Decree's TOC for potential agreement by all parties.
CRYSTALS-21	Florida law prohibits approval of the CEPP by state agencies until this Appendix A issue is resolved. The Draft PIR/EIS politely admits as much: "Failure to develop a ... revised [Appendix A] compliance methodology will impact the state's ability to implement or approve these projects." § 6.3.2, p.	The SFWMD is required to obtain approval from FDEP for reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed," § 373.1501(5)(c), F.S. A 1501 Compliance report is included in Annex B of the Final Project Implementation Report.

[2] *United States v. South Florida Water Management District, et al.*, Case No. 88-1886-CIV-Moreno (U.S.D.C., S.D. Fla.).

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	6-25. So that the state agencies can approve the CEPP PIR/EIS, we recommend that the Corps make it a priority and reach an agreement on revisions to Appendix A, and obtain court approval, prior to finalizing the PIR/EIS.	
CRYSTALS-22	1C. Lake Okeechobee TMDL The proposed CEPP plan calls for backflows of water from the C-44 basin (through S-308) into Lake Okeechobee, in an attempt to offset the loss of water supply for existing legal users in the Lake Okeechobee Service Area ("LOSA"). § 6.8.1, p. 6-46. Without those backflows, LOSA users will lose an important part of their water supply during droughts. This backflow of C-44 basin water is necessary for the A-2 Flow Equalization Basin to operate as planned. § 6.8.1, p. 6-46. The Draft PIR/EIS indicates that the proposed backflows will violate water quality rules for Lake Okeechobee, specifically, the Total Maximum Daily Load ("TMDL") limitations. § 5.1.9, Table 5.1-3, p. 5-14; § 5.2.9, Table 5.2-2, p. 5-40; § 7.4.2, p. 7-9 to 7-10. Experience indicates that this will prevent the delivery of the water: the Florida DEP rejected a similar proposal a decade ago in relation to the Indian River Lagoon planning process. IRL Final PIR/EIS, p. H-41 (March 2004) ("Issues regarding Lake water quality and TMDLs are currently precluding the delivery of new sources of water to the Lake.") **D.0** The Draft PIR/EIS offers no solution for this problem. The document only states that the issue "will be addressed holistically throughout the watershed via the [Florida DEP' s] Lake Okeechobee Basin Management Action Plan	The FDEP is in the process of developing a BMAP for Lake Okeechobee pursuant to Section 403.067, Florida Statutes. This BMAP will be an iterative effort to address water quality issues in Lake Okeechobee. Potential water quality issues associated with S-308 loads will be addressed as part of the BMAP. Savings clause evaluations and the Draft Project Operating Manual have only been provided for the entire project. To address any future uncertainties related to incremental implementation, it is recognized that prior to implementation of each phase, additional detailed analyses pertaining to that phase of implementation will be considered in development of the Project Operating Manual. These analyses will include demonstration that Savings Clause and Project Assurances requirements for the project phase will be met prior to PPA execution. This is discussed in **Section 6.7.1.7.** The SFWMD is required to obtain approval from FDEP for reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed," § 373.1501(5)(c), F.S. A 1501 Compliance report is included in Annex B of the Final Project Implementation Report.

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	(BMAP) process. The BMAP is currently under development via a public stakeholder driven process." § 5.1.9, Table 5.1-3, p. 5-12. In other words, the Corps is assuming that the water quality rules will change based on a "process" run by a different agency over which it has no control. This provides no "reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed." Fla. Stat. § 373.1501(5)(c). Moreover, if the backflows cannot be "permitted and operated as proposed," then the CEPP will violate the Savings Clause which provides that "the [Corps] and the non-Federal sponsor shall not eliminate or transfer existing legal sources of water" until "a new source of water supply of comparable quantity and quality ... is available." WRDA 2000, § 601(h)(5)(A). We recommend that the Corps obtain legal authorization for the C-44 basin backflows before finalizing the PIR/EIS, so that the SFWMD can approve the plan under Florida law. We also support the District Engineer's recommendation that there be a "binding agreement" that "[c]onstruction of CEPP project features cannot proceed until it is determined that construction and operation of the feature ... will not cause or contribute to a violation of State water quality standards; and ... will not cause or contribute to a violation of any applicable water quality permit discharge limits or specific permit conditions." Ch. 8,, w, pp. 8-5 to 8-6.	
CRYSTALS-23	2. Water Supply 2A. Savings Clause The WRDA 2000 Savings Clause provides that "[u]ntil a new source of water supply of comparable quantity and quality as that	Consistent with the WRDA 2000 and the Programmatic Regulations, the savings clause analysis identifies the effects of the plan, not non-CERP actions (including, for example, LORS). The CEPP future without project assumes continued operation of Lake Okeechobee under the 2008 Lake Okeechobee Regulation Schedule, as

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	available on the date of enactment of this Act is available to replace the water to be lost as a result of implementation of the Plan, the [Corps] and the non-Federal sponsor shall not eliminate or transfer existing legal sources of water, including those for - an agricultural or urban water supply." WRDA 2000, § 601(h)(5)(A). Based on that language, the CERP Programmatic Regulations provide that a "Project Implementation Report shall ... [d]etermine ... if existing legal sources of water are to be eliminated or transferred." 33 CFR § 385.26(a)(3)(x). If that will occur, "then the Project Implementation Report shall include an implementation plan that ensures that such elimination or transfer shall not occur until a new source of water of comparable quantity and quality is available to replace the water to be lost as result of the implementation of the Plan." !d. § 385.36(a). "Elimination of existing sources of water supply is barred until new sources of comparable quantity and quality of water are available." S. Rep. No. 106-362, quoted in Programmatic Regulations Proposed Rule, 67 Fed. Reg. 50540, 50546 (Aug. 2, 2002). The Draft PIR/EIS fails to contain a plan that ensures that existing legal users will not be harmed by the CEPP. In our previous comment letters, we pointed out how the CEPP proposal would severely reduce agricultural water supply for users in the LOSA, by locking in lowered Lake Okeechobee levels contained in the 2008 Lake Okeechobee Regulation Schedule ("LORS 2008") compared to water supplies available at the time WRDA 2000 was enacted. While we will not repeat all of our comments on this point, we note that the Corps appears to be selectively identifying its sources of authority with regard to the Lake Okeechobee	described in Section 2 of the PIR. The CEPP Savings Clause analysis for the LOSA, presented in Annex B Section B.3.1.1, concludes that Alternative 4R2 meets the requirements of the Savings Clause. The volume of demand not met for the LOSA during the eight years with the largest water shortage cutbacks in the period of simulation is the same or slightly improved when comparing the with-project condition, Alt 4R2, and the without project condition, IORBL1. In six of these years, the volume of demand not met is reduced (i.e. improved water supply performance) by approximately one to seven percent. In the two remaining years where the volume of demand not met increases compared to the without project condition (1981 and 1982), the increase is one percent or less. Over the entire period of simulation, the average annual volume of demand not met during water shortages declines by 6 kAF (1%) in the with-project condition compared to the without-project condition (Alt 4R2 and IORBL1 average 29 kAF and 35 kAF of cutbacks for EAA and Other LOSA combined, respectively). **Table 6-10** in **Section 6.7** (**Plan Implementation**) documents a number of project dependencies including but not limited to the C-44 Reservoir (IRL-S Project) and connection to the C-23 Canal. The FDEP is in the process of developing a Basin Management Action Plan (BMAP) for Lake Okeechobee pursuant to Section 403.067, Florida Statutes. This BMAP will be an iterative effort to address water quality issues in Lake Okeechobee. Potential water quality issues associated with S-308 loads, including backflows to Lake Okeechobee, will be addressed as part of the BMAP. The SFWMD is required to obtain approval from FDEP for reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed," § 373.1501(5)(c), F.S. A 1501 Compliance report is included in Annex B of the Final Project Implementation Report. Savings clause evaluations and the Draft Project Operating Manual have only been provided for the entire project. To address any future uncertainties related to incremental implementation, it is recognized that prior to implementation of each phase, additional detailed analyses pertaining to that phase of implementation will be considered in development of the Project Operating Manual. These analyses will include demonstration that Savings Clause and Project Assurances requirements for the project phase will be met prior to PPA execution. This is discussed in **Section**

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	Regulation Schedule to avoid protecting existing legal users as required by the WRDA 2000 Savings Clause. In the Draft PIRIEIS, the Corps asserts that this elimination of water supply is not subject to the Savings Clause because LORS 2008 was an "[i]ntervening non-CERP activit[y] ... wholly outside of CERP." Annex B, § B.2.2, p. B-9. This apparently is based on the LORS 2008 Supplemental EIS's reference to language contained in WRDA 1992 which authorized the review of the C&SF Project and which resulted in the CERP. Lake Okeechobee Regulation Schedule, Final Supplemental Environmental Impact Statement, p. 1 (Nov. 2007) (referencing "Section 310 of the 1990 Water Resources Development Act" as the source of authority for LORS 2008; Congress did not pass a WRDA 1990, but the quoted language was included in Section 309(1) of WRDA 1992). The reference to WRDA 1992 does not avoid the WRDA 2000 Savings Clause, because WRDA 2000 generally governs authorization for Corps' revisions to the C&SF Project after it was enacted in 2000; WRDA 1992 only authorized a "review" of the original C&SF Project, and the proposed revisions to the C&SF Project identified as a result of that review were set forth in the CERP approved in WRDA 2000. Congress also made clear in WRDA 2000 that it approved the CERP as "a framework for ... operational changes to the Central and Southern Florida Project," and the CERP included an operational feature entitled "Lake Okeechobee Regulation Schedule (F)." It is disturbing to see the Corps engage in legal gymnastics to avoid protecting the many existing legal users around Lake Okeechobee. Even if one just focuses on the operational changes	**6.7.1.7.**

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	discussed in the Draft PIR/EIS, the proposed CEPP plan is problematic under the Savings Clause and Programmatic Regulations. While the CEPP calls for storing a small amount of additional water in the lake, all of that water is being saved for environmental deliveries to the WCAs. The CEPP explicitly plans to transfer Lake Okeechobee water relied upon by LOSA users to the WCAs, and replace it with backflows from the C-44 basin. However, as discussed above, the Draft PIR/EIS acknowledges that this will violate the TMDL for the Lake, which will prevent the Corps from delivering the replacement water. The treatment of this issue is not sufficient under the Programmatic Regulations or Florida law. As discussed above, the Draft PIR/EIS simply assumes that the backflows will be allowed as a result of a future planning exercise which neither the Corps nor SFWMD control. This fails to "ensure" that the "transfer shall not occur until a new source of [replacement] water ... is available," as required by the Programmatic Regulations. 33 CFR § 385.36(a). In addition, Florida law only allows the SFWMD to act as local sponsor of the CEPP if it "[d]etermine[s] with reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed," Fla. Stat. § 373.1501(5)(c), and it is obvious that the project cannot be permitted and operated as currently proposed. To avoid a violation of the Savings Clause, we recommend changes to the Lake Okeechobee Regulation Schedule to replace water lost when LORS 2008 was implemented. We also recommend that the CEPP be modified to make clear that the C-	

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	44 basin backflows will not be used to replace existing legal water supply for the LOSA users, but instead will be used to send additional flows to the WCAs. Such a revision would mean that if the Corps is unable to deliver C-44 backflows to Lake Okeechobee, then LOSA water users would be held harmless and there would be no violation of the Savings Clause. This is in addition to the steps we recommend above related to resolution of the water supply issue.	
CRYSTALS-24	2B. Improvements to Agricultural and Urban Water Supplies One of the purposes ofthe 1999 Approved CERP Plan was to affirmatively increase agricultural and urban water supplies, not just prevent them from shrinking. The Florida Legislature, in approving the 1999 Approved CERP Plan, directed state agencies to " [e]nsure that project components will be implemented to achieve the purposes ... that include ... providing such features as are necessary to meet the other water-related needs to the region, including .. the enhancement of water supplies ... " Fla. Stat.§ 373.470(3)(b)(2). The Legislature also required the SFWMD to complete a PIR, which "shall identify the increase in water supplies resulting from the project component." Id. -(3)(c). Even though the CEPP is the grouping of projects which govern the central part of the state from Lake Okeechobee to Florida Bay, the Draft PIR/EIS indicates that it will not increase water supplies for people at all. § 6.8.6, p. 6-48 ("The CEPP components do not directly provide water to meet other water related needs in LOSA, LECSA 2 [Broward County], or LECSA 3 [Miami-Dade County]."); see also Annex B, § B.4.4, p. B-71. For	The planning effort included an extensive modeling effort to specifically consider improvements in water supply for the Lake Okeechobee Service Area and the Lower East Coast Service Area. The proposed CEPP Plan results in a 12 MGD and 5 MGD increase in water supply for the Lower East Coast Service Area (LECSA) -2 in Broward and LECSA-3 in Miami-Dade County, respectively, as described in Section 4.6.2. The CEPP Plan does not improve water supply for Agricultural users in the Lake Okeechobee Service Area (LOSA) as stated in Section 6.8.6. Section 6.8.6 and Annex B will clarify that the additional water made available in LECSA 2 and LECSA 3 will be available for municipal, industrial and agricultural users. As indicated in the CEPP Scoping Letter, the scope of the CEPP study from the onset was to develop an initial increment of the project features that provide for storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within WCA-3 and seepage management features to retain water within the natural system to provide an initial increment of restoration for the northern estuaries and the central Everglades ecosystem. The CERP components identified to consider increments of to accomplish this included the EAA Storage reservoirs, WCA-3 Decompartmentalization and Sheetflow Enhancement, ENP Seepage Management and Everglades Rain Driven Operation. The National Academy of Sciences (National Resource Council 2007) has recommended the implementation of CERP through an incremental adaptive restoration process. CEPP has adopted that recommendation and formulated a solution for an increment of overall restoration of the south Florida ecosystem. It has always been the intent of the study to identify the first increment of these CERP components and did not intend to develop the plan for complete build-out of these CERP features or their functions towards the goals of the CERP. The CEPP plan proposes to implement a shallow reservoir within the EAA as part of

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	agricultural water users, the CEPP contains no additional storage in Lake Okeechobee for agricultural supply, and significantly changes the EAA reservoir feature of the 1999 Approved Plan to eliminate agricultural water supply as one of its functions. Under the CEPP, agricultural users will have less water supply than when Congress approved the CERP in WRDA 2000, and less water supply than called-for in the 1999 Approved CERP Plan. For urban water users, the Draft PIR/EIS indicates that the CEPP might generate additional water, but only after "completion of all CEPP project features" and a series of steps which will not occur for many years, if ever. Annex B, § B.4.4, p. B-71. This is quite surprising, since the CEPP has been sold to the urban communities of Southeast Florida as a solution to their water supply concerns. The communities of people who live in South Florida are being put at the back of the line when it comes to water supply in this plan. We recommend that the PIR/EIS be revised to acknowledge the responsibility to increase water supplies for the people of South Florida and commit to providing that water supply at the time each CEPP component is constructed.	the function of the EAA Reservoirs contemplated in the CERP Plan. As initially authorized in WRDA 2000, the CERP EAA Storage Reservoir –Phase I included two conceptual 20,000-acre compartments capable of storing up to 120,000 ac-ft each. Compartment I was to be used to meet EAA agricultural irrigation demands by storing excess EAA runoff. Compartment II was envisioned to capture both Lake Okeechobee regulatory releases and Compartment I overflow and served to supply environmental water deliveries to the Water Conservation Areas. The CEPP PIR is recommending authorization of a portion of the Compartment 2 functions identified in the initially authorized CERP project. CEPP proposes to implement this component by constructing an approximately 14,000-acre FEB on the A-2 footprint with a maximum storage depth of 4 feet that would provide approximately 60,000 ac-ft of storage by capturing Lake Okeechobee regulatory releases. Operated in conjunction with the State Restoration Strategies' FEB on the A-1 footprint, an additional 210,000 acre-feet of water will be delivered to Water Conservation Area 3A on an average annual basis. The CEPP plan provides only a portion of the storage, treatment and additional water flow needed to meet the goals for ecosystem restoration and other water related needs envisioned in CERP. Section 6.9.2 has been updated to explicitly clarify that additional Improvements in water supply will need to be considered in future increments of CERP that provide additional storage for capturing water currently being sent to tide from Lake Okeechobee or other sources, thereby, increasing water made available in the regional system for other water related needs. The CEPP Recommended Plan A-2 FEB does not preclude future increments of CERP planning for additional storage in the EAA to provide additional water supply deliveries for either agricultural irrigation or the environment. Similarly, Section 6.9.1 acknowledges that additional actions are needed to achieve ecosystem restoration envisioned in CERP. Section 6.9.8 "CERP Comparison to CEPP" has been added to the PIR and includes discussion of changes in cost and scope of the relevant CERP Project components from that presented in the Final Integrated Feasibility Report and Programmatic Environmental Impact Statement dated April 1, 1999.
CRYSTALS-25	3. Revisions to the Lake Okeechobee Regulation Schedule The CERP Programmatic Regulations provide that a "Project Implementation Report shall ... [i]nclude ... a draft Project Operating Manual as an appendix."	The CEPP PIR includes a Draft Project Operating Manual in Annex C in accordance with the CERP Programmatic Regulations. The discussion of the Lake Okeechobee Regulation schedule and its relation to the CEPP plan is described in Sections 6.1.1 and 6.1.3.2. Information and documentation of the CEPP TSP modeling assumptions for Lake Okeechobee operations are found in **Appendix A** (Engineering) of the CEPP

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	33 CFR 385.26(a)(3)(xvi). Operating Manuals are the "operating plan for the operation of the projects of the Plan and other C&SF Project features," and must "[c]omply with NEP A" and "[d]escribe regulation schedules, water control, and operating criteria for a project, group of projects, or the entire system." 33 CFR § 385.28(a)(2), -(6)(ii)-(iii). The reason the Programmatic Regulations require inclusion of a draft Project Operating Manual is so that all stakeholders are aware of how new project features will be used before those features are built. Programmatic Regulations Final Rule, 68 Fed. Reg. 64200, 64212 (Nov. 12, 2003) (discussing changes to proposed regulations to limit Corps' ability to deviate from operational plans contained in PIR). We have major concerns about the absence of a revised Lake Okeechobee Regulation Schedule in the Draft PIR/EIS. On several previous occasions, we asked the Corps to consider revisions to LORS 2008 in the formulation of the CEPP. A revised regulation schedule is a necessary element of the grouping of projects that make up the CEPP, because the central concept of the CEPP is to divert excess water from the lake to the Central Everglades. In order to do that, not only do the operational rules need to be changed to allow for diversion of water south, but the Corps needs to store additional water in the lake to supply the A-2 Flow Equalization Basin. This provides the opportunity to not only provide more water for the Central Everglades, but also to improve water supply for existing legal users in LOSA and to improve conditions for the Northern Estuaries. In the Draft PIRIEIS, the Corps finally acknowledges	PIR. Implementation of the CERP plan envisioned the need to update the System Operating Manual (currently the Master Water Control Manual) to ensure that the operations of all projects, CERP and non-CERP, are integrated and consistent and that the system is operated to achieve the benefits of the CERP Plan. The CEPP plan also acknowledges that revision(s) to the current 2008 LORS, as well as Volume 3 of the System Operating Manual for Lake Okeechobee and the Everglades Agricultural Area (currently Volume 3 of the Master Water Control Manual – Lake Okeechobee and Everglades Agricultural Area) will be needed to effectively integrate the features of CEPP with the completed HHD remediation, the Kissimmee River Restoration, and other CERP projects which are connected or adjacent to Lake Okeechobee. As further described in Section 6.1.1, it is anticipated that the need for modifications to the 2008 LORS will be initially triggered by actions other than CEPP implementation. Independent of CEPP implementation, there is an expectation that revisions to the 2008 LORS will be needed following the implementation of other CERP projects and Herbert Hoover Dike infrastructure remediation. The USACE expects to operate under the 2008 LORS until there is a need for revisions due to the earlier of either of the following actions: (1) system-wide operating plan updates to accommodate CERP “Band 1” projects, as described in **Section 6.1.3.2**, or (2) completion of sufficient HHD remediation for reaches 1, 2 and 3 and associated culvert improvements, as described in **Section 2.5.1.** When HHD remediation is completed and the HHD DSAC Level 1 rating is lowered, higher maximum lake stages and increased frequency and duration of high lake stages may be possible to provide the additional storage capacity assumed with the CEPP TSP. The future Lake Okeechobee Regulation Schedule which may be developed in response to actions (1) and/or (2) is unknown at this time. It is anticipated that the need for modifications to the 2008 LORS will be initially triggered by non-CEPP actions and that these actions will occur earlier than implementation of CEPP. Therefore, the CEPP PIR will not be the mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule. However, depending on the ultimate outcome of these future Lake Okeechobee Regulation Schedule revisions, including the level of inherent operational flexibility provided with these revisions, CEPP implementation may still require further Lake Okeechobee Regulation Schedule revisions to optimize system-wide performance and ensure compliance with Savings Clause requirements.

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	that it must revise LORS 2008 in order to implement the CEPP. See, e.g., § 4.1.3, p. 4-5; § 4.6.2, p. 4-22; § 6.7.1, Table 6-10, p. 6-39. The Corps acknowledges that the triggers set forth in LORS 2008 for revisions to the regulation schedule -certain rehabilitations of the Herbert Hoover Dike and completion of certain restoration projects-will be completed by 2022. § 2.5.2. Indeed, the Draft PIR/EIS assumes that the lake would be managed in ways inconsistent with the LORS 2008. Specifically, LORS 2008 is designed to avoid lake levels over 17 feet NGVD in order to avoid the risk of a catastrophic dike failure. The Draft PIR/EIS indicates that the CEPP will double the number of days where lake levels will exceed 17 feet NGVD (from 34 to 68) and nearly double the number of days when lake levels will exceed 17.25 feet NGVD (from 18 to 29). Annex B, Figure B-32, p. B-48. In other words, the Corps must revise LORS 2008 to implement the CEPP, and must quickly move forward with repairs to the HHD so that more water can be stored in Lake Okeechobee. Nevertheless, the Corps is refusing to consider and analyze revisions to LORS 2008 in the Draft PIR/EIS. The Draft PIR/EIS does not look at options for revising the schedule or the impacts of different alternative revisions. Instead, the Draft PIR/EIS contains general language about how the lake would be operated for purposes of modeling, but no detailed operational rules. The document further indicates that the Corps will comply with NEP A regarding revisions to LORS 2008 at an undisclosed later date. § 6.1.1; § 6.7.1, p. 6-41; pp. B-48, Annex C, § 7.1.1, p. C-30 ("Based on the hydrologic modeling conducted for the CEPP recommended plan, it is anticipated that changes	CEPP benefits gained from sending new water south from Lake Okeechobee are derived in part from operational refinements that can take place within the existing, inherent flexibility of the 2008 LORS, and in part with refinements that are beyond the schedule's current flexibility. Modifications to 2008 LORS will be required to optimally utilize the added storage capacity of the A-2 FEB to send the full 210,000 ac-ft/yr of new water available in CEPP south to the Everglades, while maintaining compliance with Savings Clause requirements for water supply and flood control performance levels. Approximately 60% of the overall CEPP benefits are attributed to sending new water south from Lake Okeechobee, based on the implementation analysis in **Section 6.7.1**., and it is expected that most of these benefits can be achieved under the inherent flexibility of the 2008 LORS schedule. However, in a worst case scenario, up to 60% of the CEPP TSP's benefits may not be attained if no new water could be delivered without adjusting the 2008 LORS. The Corps contemplates changes to the Lake Okeechobee regulation schedule in the PIR and quantifies benefits that could be achieved with optimization of the CEPP features in conjunction with such changes but does not consider NEPA analysis of regulation schedule revisions to be a connected action for purposes of NEPA. The formulation objectives for CEPP and the CERP are broader than the objectives for previous USACE Lake Okeechobee regulation Schedule revision studies. The future without project assumptions for CEPP regarding the Herbert Hoover Dike (HHD) also reflects the completion of ongoing HHD remediation measures. Consistent with the approach identified in the 2007 LORS Final Supplemental EIS, USACE expects to operate under the 2008 LORS until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate CERP (Band 1 Projects) and the State of Florida's Acceler8 Projects, or (2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2, and 3, as determined necessary to lower the DSAC rating from Level 1. The occurrences of both events (1) and (2) are assumed for the CEPP future with project condition and are expected to allow for greater operational flexibility of Lake Okeechobee, potentially including higher lake levels for increased water storage. Additionally, the following correction is provided regarding the commenter's characterization of the LORS 2008 study objectives -- LORS 2008 was not designed to avoid any possibility for lake levels over 17 feet NGVD in order to avoid the risk of a catastrophic dike failure. As further explained in the November 2007 LORS Final

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	to the 2008 LORS will be needed... The CEPP PIR, including the POM [Project Operating Manual], will not be mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule, although the CEPP PIR may recommend that revisions to the 2008 LORS be conducted through a separate effort.").	Supplemental EIS (Section 2.2), "during the development of additional alternatives, this 17.25 feet constraint was removed and treated as a performance measure, meaning that it would be acceptable for the Preferred Alternative to have some occurrences above the 17.25 feet elevation... to allow the storage of additional water within Lake Okeechobee while simultaneously recognizing the need to provide for public health and safety under high lake level events…Alternative 1 bS2-A (the Recommended Plan) allowed Lake Okeechobee to exceed 17.25 feet for 12 days during the POR as modeled."
	The Corps' failure to set forth the proposed revisions to LORS 2008 in the Draft PIR/EIS violates the Programmatic Regulations, which require the Corps to "include ... a draft Project Operating Manual as an appendix." 33 CFR 385.26(a)(3)(xvi). The draft Project Operational Manual must have enough detail for the Corps to actually operate the completed project, 33 CFR § 385.28(c)(5), "[c]omply with NEPA," id. -(a)(6)(ii), and "[d]escribe regulation schedules, water control, and operating criteria for a project," id. -(a)(6)(iii). The draft Project Operating Manual attached as Annex C, provides no revised regulation schedule for the lake and expressly refuses to comply with NEPA.	
	The Draft PIR/EIS also violates NEPA. NEPA requires agencies to consider the environmental impacts of their proposals before they approve them, not after. In addition, NEPA regulations require agencies to consider in "the same impact statement" all connected actions, which include actions that "[a]re interdependent parts of a larger action and depend on the larger action for their justification." 40 CFR § 1508.25(a)(l)(iii). The Corps previously has indicated that it would conduct "one comprehensive NEPA analysis for each project in the Project Implementation Report, rather than having piecemeal analyses in each of the	

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	supporting documents." Programmatic Regulations Proposed Rule, 67 Fed. Reg. 50540, 50549 (Aug. 2, 2002). The Draft PIR/EIS does precisely what NEPA prohibits, and what the Corps said it would not do. We recommend that the Corps prepare a final PIR/EIS that complies with the Programmatic Regulations and NEP A, so that the CEPP can be approved. In particular, we ask (once again) that the Corps revise LORS 2008 as part of the CEPP formulation process, and include a complete NEPA analysis in the Final PIR/EIS.	
CRYSTALS-26	4. Relationship of CEPP to the Modified Water Deliveries Project The Draft PIRIEIS does not sufficiently address the interplay between the CEPP and the Modified Water Deliveries ("MWD") Project. When Congress authorized the Comprehensive Everglades Restoration Plan in 2000, it provided that "no appropriation shall be made to construct WCA 3 Compartmentalization and Sheetflow Enhancement Project [the heart of the CEPP] until the completion of the project to improve water deliveries to Everglades National Park authorized by section 104 of the Everglades National Park Protection and Expansion Act of 1989 (16 U.S.C. 410r-8)," otherwise known as the MWD Project. WRDA 2000, § 601(b)(2)(D)(iv). Without an appropriation by Congress for the central features of the CEPP- all of the work within WCA-3-the CEPP will not be implemented. The purpose ofthe MWD Project is to increase deliveries of water to Everglades National Park, and redirect most those deliveries to Northeast Shark River Slough. The project originally called for a series of construction features within the park,	Discussion of the Future Without Project condition assumptions is included in the PIR in Section 2.5, which includes a discussion of the Modified Water Deliveries (MWD) Project. It is expected that the MWD project will be complete and operational prior to CEPP implementation. The purpose of the MWD project is to improve water deliveries to ENP and to the extent practicable, take steps to restore the natural hydrological conditions within the park. The Corps is re-initiating pursuit of operational testing (relaxation of G-327 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Planning for the G-3273/S-356 field test has started but is not complete and necessary approvals (including FDEP) have not been attained. Information from the test will be used to develop the Final Water Control Plan for the MWD project which will allow for re-distribution of existing water flow from Western Shark River Slough to Northeastern Shark River Slough. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation The final operational plan for the project has not yet been developed. Therefore, the CEPP FWO project condition modeling effort includes ERTP as the operational plan. The ERTP contains an operational constraint at gage G-3273 of 6.8 ft NGVD and a maximum operational stage limit of 7.5 ft NGVD in the L-29 borrow canal. Merely including a maximum operational stage limit of 8.5 ft NGVD assumption for the L-29 canal in the model would result in a representation of the FWO condition that violates other project purpose constraints in the system and would not represent a likely FWO project condition. The detailed modeling evaluations of alternative operational scenarios necessary to determine the operational plan for the MWD

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	along Tamiami Trail, and in WCA-3. Since 1989, the Corps and the Department ofInterior have reduced the scope of the features considered to be part of the MWD Project, and now propose to include some of the original MWD Project features in the CEPP (e.g., the conveyance features in southern WCA-3A/3B). The construction features left in the redefined MWD Project now are almost entirely built. Integral to the MWD Project is an operational plan to modify water deliveries to Everglades National Park. § 2.5.7, p. 2-17. The MWD Project was built on the assumption that canal stages in the L-29 borrow canal could be increased to 8.5 ft NGVD, which would allow the delivery of significantly more water to Northeast Shark River Slough. !d. p. 2-16. The MWD Project is not complete until the Corps develops and implements a "new water control plan for the area that incorporates the constructed features of the project and higher water levels in the L-29 Canal afforded by the Tamiami Trail modifications." !d. p. 2-17. The Draft PIR/EIS assumes that the MWD Project will not be completed before the CEPP is implemented. In the "Future Without Project Condition," which represents the "most likely future conditions ... without those plans in place" through 2050, U.S. Water Resources Council, Principles and Guidelines § 2.1, the Corps assumes that the new water control plan will not be implemented. See, e.g., Draft PIR/EIS, § 2.5, Table 2-2 ("Future Without Project Condition: ... Construction completed (no operational changes assumed for modeling): MWD ... "); § 2.5 .11, p. 2-18 ("Since a final operational plan for the MWD Project has not been completed, for planning purposes, the CEPP FWO project	project are planned as part of the MWD Project planning efforts. The scope of the CEPP study included consideration of the CERP component AA which included three gated culvert conveyance structures along the southern portion of the L-67 A levee

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	condition will assume the 7.5 NGVD operational constraint in the L-29 borrow canal that is associated with ERTP [the current operational plan] will remain in place."); Annex C, p. C-25.	
CRYSTALS-27	We recommend that the Draft PIRIE IS be revised to better address the interaction between the MWD Project and the CEPP. First, the Final PIR/EIS should make completion of the MWD Project through an operational plan a precondition to initiation of the CEPP. Without such a precondition, the CEPP risks losing federal appropriations for some of its primary features, which will prevent them from being built. The Corps should make completion of the MWD Project its highest priority, because that project can yield immediate ecological benefits to Everglades National Park. Second, the Final PIR/EIS should include a MWD Project operational plan in its "future without project condition." Since the MWD Project must be completed before the CEPP can be implemented, it properly belongs in the FWO condition. Third, the analysis in the Final PIR/EIS should be revised to adjust for the inclusion of the MWD Project in the FWO condition. The Draft PIR/EIS assumes that all of the increased flows to the park that would come from the MWD Project are part of the CEPP. See, e.g., Annex B, § B.3.3.1, p. B-65 (identifying "total water made available by the CEPP project" by comparing the "with project condition" to the "future without base condition"). WRDA 2000 provides that "water made available by each project in the Plan" be reserved for environmental use only, but there is no similar provision in the authorization for the MWD Project. Compare WRDA 2000, § 601(b)(2)(h)(2) and 33 CFR	It is expected that the MWD project will be complete and operational prior to CEPP implementation. Table 6-11 Project Dependencies has been updated to reflect that the MWD project will be complete and operational prior to implementation of appropriate CEPP features. The final operational plan for the project has not yet been developed. Therefore, the CEPP FWO project condition modeling effort includes ERTP as the operational plan. The ERTP contains an operational constraint at gage G-3273 of 6.8 ft NGVD and a maximum operational stage limit of 7.5 ft NGVD in the L-29 borrow canal. Merely including a maximum operational stage limit of 8.5 ft NGVD assumption for the L-29 canal in the model would result in a representation of the FWO condition that violates other project purpose constraints in the system and would not represent a likely FWO project condition. The detailed modeling evaluations of alternative operational scenarios necessary to determine the operational plan for the MWD are currently planned. The SFWMD has protected the pre-project water for the natural system in the Holeyland and Rotenberger Wildlife Management Areas; WCA-1, WCA-2A, WCA-2B, WCA-3A, and WCA-3B; and ENP through the Restricted Allocation Area Rule for the Everglades and North Palm Beach/Loxahatchee River Watershed Waterbodies. The MWD project will re-distribute the existing water flow into ENP from western Shark River Slough to eastern Shark River Slough and, therefore, the SFWMD has already protected that water for the natural system. The modeling used as the basis for quantification of water to be reserved for the natural system for CEPP accurately represents the existing pre-project water flow (ERTP operations). This protection through State law will continue to be in effect and applicable after redistribution by MWD. Therefore the modeling conducted for CEPP is an appropriate representation and quantification of the water made available by the CEPP project. The combination of protecting the pre-project (i.e. pre-CEPP that includes the MWD re-distribution of existing flow into ENP) and protecting the water made available by the CEPP project features is required for the CEPP to achieve its intended benefits. As operational plans for CEPP implementation are developed, water to be protected

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	§ 385.35(b) with 16 U.S.C. § 410-r-S(a). As a result, the Draft PIR/EIS seeks to reserve those increased flows under WRDA 2000. Since the MWD Project was authorized in 1989, prior to the "Restudy" language in the 1992 WRDA, it would follow that the water reservation provisions of WRDA 2000 are not applicable to MWD Project, and the Corps should not seek to reserve the MWD Project flows as part of the CEPP.	by the State reservation or allocation authority for the natural system will be identified with each phase (and each PPA) of CEPP implementation will be identified, see Section 6.7.1.8
CRYSTALS-28	5. Flood Protection The Draft PIR/EIS does not sufficiently analyze flood protection issues related to the proposed A-2 Flow Equalization Basin. WRDA 2000 provides that "[i]mplementation of the Plan shall not reduce levels of service for flood protection that are -(i) in existence on the date of enactment of this Act; and (ii) in accordance with applicable law." WRDA 2000, § 601(h)(5)(B). Under certain high-water events (e.g., the 50% PMP storm event modeled for the Draft PIR/EIS), the A-2 Flow Equalization Basin could result in flooding of nearby agricultural lands. The Draft PIR/EIS does not provide the detailed design information necessary to determine whether such flooding will occur in violation of the WRDA 2000 provision protecting existing levels of flood protection. We recommend that the Final PIRIE IS include detailed design information necessary to confirm compliance with WRDA 2000, and include additional flood control features as necessary to avoid a reduction in existing levels of flood protection in the EAA.	Project features, like the emergency overflow spillway (S-627), will need to remain in accordance with WRDA 2000 requirements. To date, no detailed modeling has been performed to determine the extent or frequency of emergency discharges under extreme event outside of the 1965-2005 period of record that was analyzed for the CEPP PIR. The CEPP PIR Savings Clause analysis (Annex B) relied on comparison between the Future Without Project condition (IORBL1) and the CEPP TSP. Consistent with the July 2007 draft CERP Programmatic Regulations' Guidance Memoranda #3, the assessment for the level of service for flood protection shall be based on the performance of the flood control system when modeled against the period of record – it does not refer to specific design flood targets such as the 10-year or 100-yr flood event. Within the RSM-BN simulated period of record (1965-2005), the maximum simulated stage in the A-1/A-2 FEB is 13.54 feet NGVD for the CEPP TSP; based on the assumed ground surface elevation of 9.63 feet NGVD used in the RSM-BN model, the peak depth is 3.91 feet over the period of record. The FEB emergency overflow spillway (S-627) was designed with a crest elevation of 13.50 feet NGVD, based on the average assumed ground surface elevation of 9.00 feet NGVD used for the preliminary (pre-PED survey) hydraulic design; the FEB emergency overflow spillway would only discharge if the FEB depth exceeds 4.5 feet. Since the FEB stages over the simulated period of record do not overtop the FEB emergency spillway, the FEB emergency spillway design details, including discharge location, were not further considered during the CEPP Savings Clause evaluation of the TSP. However, a more detailed flood routing using the seepage collection system (including the A-1 and A-2 seepage canals) will be conducted during PED to ensure there will be no additional adverse impacts to adjacent agricultural lands. During PED, the seepage system will be refined to ensure sufficient capacity to capture any additional discharges. It is anticipated that if necessary, water will be routed through the S-8 pump station for discharge into the Miami Canal, as it currently serves as a

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		flood control structure today. The PED phase will be conducted following completion of the Final PIR and, most likely, following Congressional authorization of CEPP.
CRYSTALS-29	6. Changes to Overall Comprehensive Everglades Restoration Plan In previous letters, we have commented that the Corps is proposing significant changes to the Comprehensive Everglades Restoration Plan, and that it should prepare a Comprehensive Plan Modification Report instead of a PIR. The Programmatic Regulations also require PIR' s to "[i]nclude a discussion of any significant changes in cost or scope of the project from that presented in the 'Final Integrated Feasibility Report and Programmatic Environmental Impact Statement,' dated April I, 1999" ("1999 Approved CERP Plan"). 33 CFR § 385.26(a)(3)(xiii). The Draft PIR/EIS fails to do that, and should be revised to discuss the significant changes proposed for the CERP. The Corps has identified as being part of the CEPP six projects contained in the 1999 Approved CERP Plan, including the "Everglades Agricultural Storage Reservoir (G)." App. C.3 (response to Crystals-2). The 1999 Approved CERP Plan called for that reservoir to have three compartments, one of which "will be used to meet Everglades Agricultural Area irrigation demands only," one which would be "used to meet environmental demands," and the third to meet both environmental and irrigation demands. 1999 Approved CERP Plan, p. 9-9. This was one of the primary means by which the CERP proposed to improve water supply for agricultural users, which is one of the basic purposes of the CERP. Fla. Stat. § 373.470(3)(b)(2) (State approval of the CERP, which includes among the purposes "meet the other water-related needs of the region, including ... enhancement of water supplies").	Section 6.9.8 “CERP Comparison to CEPP” has been added to the PIR and includes comparison of the CEPP plan to the relevant CERP Project components as presented in the Final Integrated Feasibility Report and Programmatic Environmental Impact Statement dated April 1, 1999 along with cost and scope changes. Implementation of CEPP would not preclude implementation of other components of the 1999 Plan that was intended to serve as a framework. Section 6.9.2 has been updated to explicitly clarify that Improvements in water supply for LOSA will need to be considered in future increments of CERP that provide additional storage for capturing water currently being sent to tide from Lake Okeechobee or other sources, thereby, increasing water made available in the regional system for other water related needs. The CEPP Recommended Plan A-2 FEB does not preclude future increments of CERP planning for additional storage in the EAA to provide additional water supply deliveries for either agricultural irrigation or the environment. Section 6.8.6 and Annex B will clarify that the additional water made available in LECSA 2 and LECSA 3 will be available for municipal, industrial and agricultural users.

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	In the proposed CEPP plan, the agricultural water supply function of the EAA reservoir has been completely eliminated. However, we found no acknowledgement of this fact in the Draft PIR/EIS, much less "a discussion of any significant changes ... of the project from that presented in the [1999 Approved CERP Plan]." The PIR/EIS needs to be revised to explain why the Corps is eliminating improvements to agricultural water supply in the CEPP. This is especially important since the Corps has refused to modify the Lake Okeechobee Regulation Schedule to maintain more agricultural and urban water supply in Lake Okeechobee. The proposed CEPP plan also includes some, but not all, features for the Central Everglades which were identified in the 1999 Approved CERP Plan. In our previous comment letters, we pointed out how the CEPP leaves out some projects identified in the 1999 Approved CERP Plan, which suggests that the Corps no longer intends to implement them. See, e.g, App. C.3, p. 723. The history of the C&SF Project is littered with examples of projects authorized by Congress which the Corps never fully implemented. The assertion in the Draft PIR/EIS that the Corps is engaging in an "adaptive assessment strategy require[ing] incremental implementation of the plan components," id. p. 685, does not relieve the Corps from explaining whether these project elements of the 1999 Approved CERP Plan remain viable or not. The Final PIR/EIS should explain fully what the overall CERP Plan looks like after the CEPP is implemented.	
CRYSTALS-30	7. Lack of Consideration of Alternatives Federal law requires the Corps to consider a range of alternative plans in evaluating a proposed	A full array of reasonable alternatives was considered The CEPP planning effort did consider the relevant projects as described in the 1999 Approved Plan (CERP) as discussed in Section 3.4 and Section 6.10

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	project. NEP A requires federal agencies to consider reasonable alternatives to a proposed action, so that agency officials and the public can clearly understand the choices being made. 40 CFR §§ 1500.2(e), 1502.14. The Programmatic Regulations also require the Corps and SFWMD to "formulate and evaluate alternative plans" in a PIR, and for CERP projects being considered in a PIR, "the project as described in the [1999 Approved CERP Plan] shall be included as one of the alternative plans that is evaluated." 33 CFR § 385.26(b)(2). The Draft PIRIEIS does not consider any alternatives north of the "redline," which is the boundary between the EAA and WCA-2 and WCA-3. In our previous comment letters, we suggested several alternatives that could be considered, including modifications to the Lake Okeechobee Regulation Schedule; routing of the "new" lake water through the Holey Land and Rotenberger Wildlife Management Areas on the way to the WCAs; and use of the Flow Equalization Basin sites as a deep reservoir or ST A. We also expressed concerns that the Corps is building an inappropriate bias into the CEPP study related to water levels in Lake Okeechobee, that the Corps is only considering alternatives that it prefers, and that it is refusing to highlight the tradeoffs between different environmental and economic interests inherent in the Corps' formulation of alternatives. The Corps has completely ignored these comments. The Draft PIR/EIS only considers a single alternative in the EAA-a Flow Equalization Basin-which the document admits will "represent an irreversible and irretrievable commitment of resources." § 6.3.6, p. 6-30. The Draft PIR/EIS also	Consistent with the other planning efforts conducted to date on CERP components, the CEPP effort was purposefully focused on the components of CERP that would provide an initial increment of restoration for the central everglades ecosystem. It was recognized in the 1999 Approved Plan (CERP) that implementation would require that the plan be divided into smaller implementable packages of components. It was further recognized that an adaptive assessment strategy requires incremental implementation of the plan components and each increment would be planned and designed to carry the program one step closer to the ultimate goal of ecosystem restoration (Central and Southern Florida Project Comprehensive Review Study, Final Feasibility Report and PEIS, page 10-7). As initially authorized in WRDA 2000, the CERP EAA Storage Reservoir –Phase I included two conceptual 20,000-acre compartments capable of storing up to 120,000 ac-ft each. Compartment I was to be used to meet EAA agricultural irrigation demands by storing excess EAA runoff. Compartment II was envisioned to capture both Lake Okeechobee regulatory releases and Compartment I overflow and served to supply environmental water deliveries to the Water Conservation Areas. The CEPP PIR is recommending authorization of a portion of the Compartment 2 functions identified in the initially authorized CERP project. CEPP proposes to implement this component by constructing an approximately 14,000-acre FEB on the A-2 footprint with a maximum storage depth of 4 feet that would provide approximately 60,000 ac-ft of storage by capturing Lake Okeechobee regulatory releases. Operated in conjunction with the State Restoration Strategies' FEB on the A-1 footprint, an additional 210,000 acre-feet of water will be delivered to Water Conservation Area 3A on an average annual basis. During CEPP plan formulation and screening, multiple configurations of storage and treatment options were examined, ranging from STAs to 12-foot deep reservoirs. The amount of effective storage in a reservoir is dependent upon its release capabilities, and the release capabilities of reservoirs in the EAA are directly related to the requirement to meet state water quality standards for water delivered to the Water Conservation Areas. The screening evaluations led to the conclusion that deeper reservoirs are initially able to capture more water but do not offer the limited water quality treatment capabilities of an FEB, thereby reducing their amount of effective storage. FEBs supplement the treatment efficiency of STAs by reducing the Phosphorus concentrations of inflows; consequently, given consideration of water

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	explicitly states that it is will not comply with NEPA regarding revisions to LORS 2008 until some undisclosed later date. Annex C, § 7.1.1, p. C-30. This violates both NEPA and the Programmatic Regulations. The Corps also has refused to evaluate as an alternative the relevant projects of the 1999 Approved CERP Plan itself. In particular, the Draft PIRIEIS does not consider as an alternative the "Everglades Agricultural Storage Reservoir (G)" project from the 1999 Approved CERP Plan. This clearly violates the Programmatic Regulations, which the Corps itself has stated "make clear that the project described in the April1999 'Final Integrated Feasibility Report and Programmatic Environmental Impact Statement,' will be one of the alternative plans that will be evaluated." Programmatic Regulations Final Rule, 68 Fed. Reg. 64200, 64218 (Nov. 12, 2003). We recommend that the Corps revise the PIRIE IS to consider a range of reasonable alternatives north of the "redline" as required by NEP A and the Programmatic Regulations. We continue to believe that the Corps can achieve the goals of the CEPP more quickly and much more cheaply through some of the alternatives we suggested.	quality treatment requirements, FEBs were able to provide downstream water deliveries more efficiently and at substantially less cost than deeper reservoirs. Therefore, FEB storage components on the A-1 (CEPP) and A-2 footprints (State Restoration Strategies) were recommended as a component of all CEPP final array alternatives. The CEPP Recommended Plan A-2 FEB does not preclude future increments of CERP planning for additional storage in the EAA to provide additional water supply deliveries for either agricultural irrigation or the environmental. For example, the A-2 FEB could be converted to an STA and/or deeper reservoir that works in conjunction with the State's existing STA system to accommodate any future upstream storage to further increase water deliveries to the Water Conservation Areas, and/or the CERP EAA – Phase I Component I storage functions could be implemented. CEPP is not seeking the deauthorization of the CERP EAA Reservoir Phase – I, recognizing that improvements in water supply for the LOSA will need to be considered in future increments of CERP that provide additional storage for capturing water currently being sent to tide from Lake Okeechobee or other sources. Future CERP increments that provide this additional storage will increase water made available in the regional system for other water related needs. Inclusion of structural and operational modifications to existing infrastructure and/or construction of new features in Holeyland and Rotenberger WMA was considered during initial plan formulation efforts for the CEPP (refer to Appendix E for details). Features within the WMA were not further pursued given water quality concerns expressed by many stakeholders.
PRIVATE CITIZENS		
Jack Moller(JM) Letter dated September 13, 2013		
JM 1	The following pictures are of a levee in Katy TX that is about 24 feet high, creates a catchment pond for urban run off before the water goes into the Buffalo Bayou. The grates on this weir are required for this area but would not be required in the L67-A.. By leaving out the grates fish, gators and other wildlife could freely swim between units. The	Thank you for the information. The proposed weir features (passive structures) would be a significant project change requiring reformulation, revised modeling, and a revised assessment of effects under NEPA, and the inclusion of passive weirs on L-67A would increase the L-67D (Blue Shanty Levee) project footprint and associated cost. Passive control features were screened out during the CEPP plan formulation process and will not be further considered during future CEPP implementation. Active control structures, such as the gated culverts along L-67A included in the CEPP

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	SFWMD folks raised concerns about heavy equipment crossing weirs. As one can see, heavy equipment crosses the photographed weir. This weir is designed to hold back about 18 inches of water before it freely flows into the Buffalo Bayou.	Recommended Plan, are required to most effectively address: adaptive management flexibility and system uncertainties (the WCA-3A regulation schedule varies seasonally, whereas passive weir elevations are most likely predetermined and static); water quality considerations and constraints; T&E species considerations within WCA-3A and ENP, including flexibility for management of recession/ascension rate targets; and surface water velocity considerations within the flowway. Further, the CEPP modeling and preliminary DPOM recognize that the only anticipated operational constraint for the proposed controllable L-67A structures within the Blue Shanty Flowway (S-632 and S-633) would be the 9.7 feet NGVD maximum stage elevation for the L-29 Canal based on the planned DOI TTNS Tamiami Trail roadway modifications, and this same constraint would equally apply under a passive weir scenario. The CEPP Recommended Plan does not preclude future increments of CERP planning for increased hydrological connectivity between WCA 3A and WCA 3B, including potential consideration of passive weir components and other associated additional infrastructure, consistent with features included in the original CERP Recommended Plan. Final design details of CEPP infrastructure, and how it would interface with operations and existing infrastructure, will be determined in the future as adaptive management, Pre-Construction Engineering and Design (PED), and other information becomes available for this area.
JM 2	The design criteria for the project would follow the performance criteria established by the Sustainable Commission: 1) the uplands and hardwoods in the Everglades, which includes the Water Conservation Areas as well as ENP, would not be harmed, 2) over draining of the Water Conservation Areas would not happen, 3) as much water as possible would freely flow into ENP.	See response to JM 1.
JM 3	These weirs could be placed for the entire length of that part of L 67-A which is on the northern boundary of the Blue Shanty Flow Way and would allow water to flow through the removed portion of the L-29 into the C-29 unimpeded and into ENP through the new bridges.	See response to JM 1.
JM 4	The topography from L-5 to L 67-A is known, the	See response to JM 1.

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	east-west topography of WCA3A is known, the number of acre-feet of water being pushed into WCA3A is known, the average ET is known, the high and low average rain fall factors are known, therefore the engineers can design the L67-A with as many weirs, as big or little and with their flow set at the appropriate height from the ground level of WCA3 so that the out come would meet the design criteria stated above.	
JM 4 evaluation of *Landscapes and Hydrology of the Predrainage Everglades* in 13-Sep-2013 comment letter submitted to COL Dodd.	The commenter provided several pages of concerns with descriptions to support the concerns. The paraphrased points below are intended to summarize the concerns. Details of species, locations, water depths, and historic references can be found in the original comment letter. • The CEPP plan does not give enough consideration to species in the Everglades that require dry ground, or recognize that these species were part of the historic ecosystem. He explains that if historic volumes of water are sent to today's Everglades then water levels will be detrimentally high because the area of today's Everglades is much less than its historic expanse, and that this will be very harmful to the species that need dry ground. • The CEPP plan does not have enough consideration of the undulating landscape of the Everglades, and the fact that some of the undulation has been lost since drainage. Given elevation losses, water added to the landscape by CEPP could cover land that is currently higher ground that is not as high as it was historically and therefore cannot stay dry when water volumes are increased. • The commenter suggests that a 3-foot water	Overall, the topics and concerns described by the commenter were extensively considered during CEPP planning. Consideration of these factors were undertaken extensively during planning. The planning considerations included the following, and relevant PIR sections are listed: • CEPP will not send historic water volumes to the Everglades. CEPP will send less than the water volume envisioned in CERP. This is described in Section 1, pgs 1-2. • For over ten years the CERP interagency science group, RECOVER, has developed modeling tools to forecast restoration performance. These tools, called performance measures, were developed, reviewed, and approved by the 10 agencies and both Tribes of CERP and underwent public review. They were used significantly as guiding tools in CEPP planning to inform the CEPP team which alternate plans would best restore and protect the natural features of the Everglades. The features of key interest in the greater Everglades were ridges and sloughs, tree islands, soil (and therefore topography), vegetation, and water distribution and timing. The use of these tools, and their wide acceptance among CERP the science community engaged in CERP, shows that the features of concern to the commenter were very significant factors that influenced and guided CEPP planning. The performance measures are listed in PIR Section 4.2.2 and described in more detail in Appendix G. • The CEPP plan recognizes that regions of the Everglades have changed in response to drainage. Therefore the CEPP plan will add restoration water to the Everglades incrementally. The water volumes will be increased slowly, over approximately two decades, giving the ecosystem time to adjust to the partially restored water volumes. As water is added monitoring will repeatedly check health of ecosystem features including tree islands, mammals, sawgrass, reptiles, and other indicators of ecological diversity and health in the Everglades. The

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	depth is a goal of CEPP, and discusses the issues that this depth may cause.	incremental addition of water is described in Section 6.7 pgs 37-42. The monitoring is summarized in the same paragraphs and in more detail in the Adaptive Management Plan (Annex D Part 1) and the Ecological Monitoring Plan (Annex D Part 4). The Adaptive Management Plan contains a section on Implementation of Adaptive Management that describes how the monitoring data will be provided as feedback to decision makers as CEPP proceeds toward completion (Annex D Part 1.4). The feedback will give decision makers opportunities to make adjustments, should CEPP start to have unintended consequences such as those described. • The water sent to the Everglades is not intended to be *held* in the Everglades, which would cause water levels to rise. Rather, the CEPP TSP includes significant features to move water *through* the Everglades. Water moving through the ecosystem, or flow, is essential for restoration of the historic undulated topography and for remaining within the desired water levels. This is described in Section 1.2.1.2 pgs 6-9 on problems and opportunities in WCA 3A and Section 1.2.1.3 pgs 9-10 on problems and opportunities in Everglades National Park. • The importance of flow *through* the Everglades is captured in the CEPP Project Objective, "Restore more natural water level responses to rainfall to promote plant and animal diversity and habitat function" (Section 1.3, Table 1-2, pg 11). The intent of this Objective is to restore and protect the diverse elevations and habitats of the Everglades. • The commenter noted that in Section 1.2, page 5, the historic ecosystem was described in error as "uniform". This error has been removed. The planning team recognizes that the historic system topography undulated and was diverse, with higher and lower areas. Description of the loss of historic elevation is provided in Section 1.2.1.2 on problems and opportunities in Water Conservation Area 3A, in Figure 1-4, and in Figure 1-6. • It is important to recognize that ridges, sloughs, and tree islands still exist in the Everglades despite elevation losses. The water depth targets are targeted for the deepest sloughs; these are not targets for high ground such as tree islands. The planning team understands that historically tree islands, ridges, and sloughs co-existed in the landscape. CEPP will provide an increment of hydrologic restoration to restore this topographical diversity.
Greg Braun (GB) Letter dated October 25, 2013		
GB-1	The above-average discharges from Lake	The Recommended Plan addresses the need to restore ecosystem function in the

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	Okeechobee into the St. Lucie River Estuary and Caloosahatchee River that have occurred during 2013 have opened the eyes of many people who were previously unaware of the re-occurring impacts that result from the input of poor-quality water that originates far outside the natural boundary of our watersheds. The ecological impacts of the imbalance of water quality, water quantity and timing that had formerly been known primary by environmental activists has now spread to a much broader segment of the population due to the ensuing impacts on our economy. Along with many other residents of the communities that surround the St. Lucie and Caloosahatchee Rivers, I recognize that full authorization, funding, implementation and completion of CEPP will address less than 20% of the Lake Okeechobee discharges and that we won't see much positive effect from CEPP for at least ten years. Anything that the Corps can do to move more water toward the south and in a quicker time frame would be much appreciated, particularly by those of us who have voluntarily taxed ourselves to move forward expeditiously with the IRL-South and other projects. I have reviewed the Draft PIR and its appendices and offer the following comments for consideration by the CEPP team:	Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
GB-2	1) Johnson's Seagrass . I do not agree that the Corps has fully described the adverse impacts on *Halophila johnsonii* and its designated Critical Habitat that result from the existing system. As an ecologist who has conducted seagrass surveys	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	in the Indian River Lagoon and Lake Worth Lagoon for more than ten years, I have seen first-hand the impacts that elevated Lake Okeechobee discharges have had on the presence, distribution and vitality of Johnson's seagrass, both within designated Critical Habitat areas and outside the Critical Habitat boundaries. Discharges have resulted in quantifiable reductions of this species. The PIR should more directly attribute these re-occurring losses of endangered species and Essential Fish Habitat to the discharges that result from the existing federally-constructed plumbing system, rather than indicate that they are the result "of hurricanes". Implementation of the preferred CEPP alternative may reduce adverse impacts to Johnson's seagrass, but re-design of the system to further reduce the discharges through the C-44, C-51 would further reduce the adverse impacts.	unnatural changes in salinity that are extremely detrimental to estuarine communities. A no effect determination was made in the Biological Assessment for Johnson's Seagrass. Comparing Alt 4R2 to FWO shows improvements to Johnson's seagrass due to CEPP. The Biological Opinion from the National Marine Fisheries Service (NMFS) will be included in the Final PIR/EIS. The FWO includes C-43 and IRL-S which will reduce the high discharge events to the Northern Estuaries. The project dependencies are included in the Implementation Plan in Section 6 of the Draft PIR/EIS.
GB-3	2) Wood Storks and other state-listed and federally-listed wading birds. Having conducted avian monitoring at various locations within the Greater Everglades Ecosystem boundary, I must also disagree with the assumptions of impacts to this species and several other state- listed species of wading birds (e.g., herons, egrets …). It is the cumulative loss of varying-hydroperiod wetlands within the Greater Everglades Ecosystem that has led to the abandonment of historic nesting colonies and their movement to more coastal colonies. Undertaking hydrologic restoration projects north of Lake Okeechobee and creation of more sparsely-vegetated shallow-water wetlands in areas of	Hydrologic changes associated with implementation of Alt 4R2 are expected to alter and provide an overall net benefit for wood stork foraging suitability throughout WCA 3 and ENP. Although wood stork colonies are not currently in all of the areas where foraging and habitat suitability are increasing, the potential for wood storks to colonize these areas highly increases due to the increase in foraging and habitat suitability. Declines in foraging suitability do occur in northern ENP due to increased flow deliveries through the Blue Shanty flowway. Declines in foraging suitability were also observed in southern WCA 3A. Wood stork colonies have been identified to occur within these areas and may be affected by decreased foraging opportunities and habitat suitability within these locations. Metrics would need to be developed prior to CEPP implementation to account for any changes in the system due to construction and operation of other features, such as Modified Water Deliveries to ENP. Based upon the current information, the Corps' determination is that CEPP may affect wood stork and is thus requesting early consultation under ESA for this species.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	south of the Lake, including within areas of the existing Everglades Agricultural Area would benefit this species. Intermittently heavy Lake Okeechobee discharges through the C-44 have resulted in adverse impacts to wading birds and their nesting colonies, a situation that is exacerbated when fresh water discharges result in losses of seagrass and submerged aquatic vegetation around wood stork nest colonies (e.g., at Martin County's Bird Island (aka MC-2).	
GB-4	The PIR may accurately consider and address the potential impacts and benefits of the various CEPP alternatives when compared to one another, but it appears to lack acknowledgment of the adverse ecological and economic impacts that the existing system is having on the coastal estuaries. Although I do not wish to in any way slow down the continuation of the CEPP process, acknowledgment of these additional impacts may be helpful in substantiating the need to allow more water to flow south.	The existing conditions and the current impacts to the coastal estuaries are documented in Section 2 and Appendix C.1 of the Draft PIR/EIS. The comparisons of the alternatives in Section 5 and Appendix C.2 show the impacts of the existing system compared to the future without CEPP.
John Rosier (JR) Letter dated October 15, 2013		
JR 1	Hopefully these comments get through in time. My name is John Rosier and am currently the President of the Everglades Coordinating Council and The Fulltrack Conservation Club of Dade County. I represent a large number of sportsmen who regularly use the area that CEPP will affect. First I would like to say that the expedited process that was used for this project was excellent. The public input and interaction with project managers and planners was fruitful and I can say that my fellow sportsmen feel that our input was taken seriously and with productive results. I would hope	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	that this is a model for future projects.	
JR 2	On to the plan. We sportsmen have endorsed the plan because we see first hand the destruction that high water and dry outs that occur in the area have done. The only problem that we have is with the modeling results that show higher water in the area throughout the year. Depth and duration of water is the most important issue to us since we have tried to show that these factors will cause further destruction of habitat in Area 3. We feel that these problems can be controlled during the operation stage with a water regulation schedule that factors in the appropriate water depth and duration. If you want a prime example of high water destruction, look at Area 2B. The water and depth issue also affects the population of fur bearing animals in the area. If the water is too high, habitat will be lost and their food source will gone. Also affected will be the wading bird population. If the water is too high, there will be no wading birds.	In general, with implementation of Alt 4R2, water levels in Northwest and North Central WCA-3A are predicted by the period of record modeling results to remain above ground surface throughout the year to reduce continued soil oxidation and invasion of woody vegetation, significantly reduce the susceptibility of that area to risk of muck fire and beginning to restore the ridge and slough landscape that was evident in the western portion of this area in the 1940s. Water levels in the northeastern portion of WCA-3A are predicted by the POR modeling to remain conducive to maintaining the sawgrass plains in this area that were also evident in the 1940s Central WCA-3A will remain similar to today's condition, and water levels and durations in southern WCA 3A will be slightly reduced due to the increased outlet capacity (to WCA-3B and the expanded S-333) included in Alt 4R2. An analysis of the hydrologic benefits of CEPP indicates that key indicators of Everglades restoration will improve significantly with the TSP. It is predicted that with implementation of the TSP, that the largest percent gains in daily average fish density would occur within northern WCA 3A and NESRS due to rehydration. The fish tools used in CEPP showed that in these areas, fish densities often increased in excess of 20%, with extremes of over 50%, however decreases in fish density, or negligible changes (3%), were predicted in the area of WCA 3A along the L-67 A canal. An increase in density of small fishes will directly benefit higher trophic level predators such as wading birds. Therefore, it is predicted that the TSP will also provide a moderate beneficial effect for wading birds. Wood stork species distribution was modeled by Beerens (2013) and indicates that wood storks would more frequently use areas of northern WCA 3A, WCA 3B, and southern ENP under the TSP compared to the existing conditions and FWO. Wading bird use is predicted to increase for wood stork colonies previously and/or currently located within WCA 3B (3B Mud East), along Tamiami Trail (Tamiami Trail East 1, Tamiami Trail East 2, and Tamiami Trail West), and for several colonies located in ENP (Grossman West, Rookery Branch) for the TSP relative to existing conditions and FWO. Wading bird use is predicted to remain stable or decrease for several colonies located in southern WCA 3A adjacent to L-28 (Crossover, Jetport, Jetport South, Hidden) for the TSP relative to existing conditions and FWO; however there is potential for these wood stork colonies to utilize adjacent areas where foraging and habitat suitability are increasing.
JR 3	Next is the implementation schedule. We feel that construction should start on the south end since	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013.

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	we currently are in a high water situation for the second year in a row. Immediate results would be realized and we would get a good idea how the water would flow into ENP. We currently can put a lot of water into Area 3 with the infrastructure that's in place now. ENP is in need of water now to stop further destruction of the eastern end.	Project features are grouped into three separate PPAs based upon the spatial distribution of the project features and the locations within the CEPP study area where separable hydrologic and environmental benefits would accrue. These groupings include a PPA of project features in northern WCA 3A (PPA North), a PPA of project features in southern WCA 3A, 3B, and ENP (PPA South), and a final PPA which provides the new water and required seepage management features that benefits the entirety of the study area (PPA New Water). The Final PIR/EIS presents two potential implementation sequencing scenarios that are possible with the three separate PPAs currently identified: 1) PPA North → PPA South → PPA New Water and 2) PPA South → PPA North →PPA New Water. With each scenario, non-CEPP project features and non-CERP project features identified as project dependencies in **Table 6-10** of the Draft PIR/EIS still apply. The features mentioned in the provided comment have been included in PPA South. Other viable options for the implementation of project features and subsequent groupings into PPAs may be considered in the future and is acknowledged within the Final PIR/EIS. The implementing agencies are committed to engaging in a public process after Congressional authorization and appropriations of CEPP to integrate CEPP into the CERP Master Implementation Sequencing Plan that defines the order in which CERP projects would be planned, designed, and constructed.
JR 4	Water quality issues also need to be addressed. The park has stringent standards which may need to modified to ensure a sheetflow process to occur. We don't need the continued ponding of water in Area 3 due to the park refusing water, although in all the meetings they say want all the water they can get.	Thank you for your comment. The CEPP plan is intended to address the sheet flow and ponding issues mentioned in this comment.
JR 5	And finally, We sportsmen consider Area3 more everglades-like than the area that this project wants to improve. I say improve because the restoration moniker has been put on this project. Restore means putting back to original, and we know that the Everglades as we knew back in the 1800's will never be attainable. Let's take the habitat we have created and improve it. Let's not destroy one habitat to try and bring back another	Thank you for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	one that will never be like the original.	
Eric Kimmel (EK) Letter dated October 15, 2013		
EK-1	I would like to enter the booklet with some of Tom Shirley's information and viewpoints regarding our Everglades Eco-System into the comments for CEPP as we11 as my concerns that from the way I understand the alternatives to choose from I do not see anything in them that would protect the system from extended natural hydro- periods or the increased depth of waters held.	The booklet has been included in the public record. The water level changes anticipated with implementation of Alt 4R2 are conducive to restoring a portion of the wetland hydrology that was lost as a result of the drainage effects from the construction of the Miami Canal through the marsh in northern WCA-3A. Details regarding the expected water level changes can be found in Section 5 and 6 and Appendix C.2.1 and C.2.2.
EK-2	We want everyone to understand that putting more water into the WCAs, 15,000 acre feet more, causing more ponding and flooding of the Everglades north of 41 is unacceptable. The explanation to Martha about why ALT4Rl was considered an ecological improvement while doing more harm to the WCAs is not supportable. I agree having witnessed first hand the harm done by the previous and existing water management practices by the principle agencies.	The objectives of CEPP to enhance ecological values include to restore seasonal hydroperiods and distribution, to improve sheetflow patterns and surface water depths and durations, and to restore more natural water level responses to rainfall (for additional detail, reference Section 01 of the CEPP PIR). CEPP alternative configurations were developed to reduce the drainage effects from Miami Canal in the northern portions of WCA 3A and restore more sheetflow across the northwest portions of WCA 3A. The Miami Canal causes water levels in northern WCA 3A to recede well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation and muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas. Alt 4R2 proposes to reverse the continued degradation of this area by backfilling a portion of the Miami canal north of I-75 to remove its drainage effects, re-distributing inflows through removal of approximately 2.9 miles of the south L-4 levee and increasing water flow into WCA 3A during the dry season. Water levels and durations within WCA 3A and 3B will vary across the landscape and from year-to-year if Alt4R2 were implemented, consistent with the variability in rainfall, hydrologic conditions, and operations within the upstream basins (Lake Okeechobee, EAA, WCA 1, WCA 2). Generally, water levels in northern WCA-3A will stay above ground surface for longer and the depth and duration of the wet-season water levels will increase. The water level changes anticipated with implementation of Alt 4R2 are conducive to restoring a portion of the wetland hydrology that was lost as a result of the drainage effects from the construction of the Miami Canal through the marsh in northern WCA-3A. Details regarding the expected water level changes can be found in Section 5 and 6 and Appendix C.2.1 and C.2.2.
Herman Granek (HG) Letter dated October 9, 2013		

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
HG-1	The Obama administration is inadvertently allowing federal funding in the Central Everglades Planning Project to be manipulated and used for mitigation by SFWMD that will result in destruction of the beautiful and treasured coastline of Miami-Dade County's Biscayne Bay and its endangered and almost extinct species, as a price for and in favor of restoring with minor impact on the Florida Everglades .	These issues are not related to the actions under consideration for CEPP.
Larry Fink (LF) Letter dated November 1, 2013		
LF-1	In summary, the TSP/PA and the project-specific PIR/EIS for the TSP/PA are critically deficient, because the process used to develop, screen, and select Everglades restoration project alternatives is administratively, legally, and technically fatally flawed.	The process used to identify management measures, screen these measures and identify alternatives, and subsequently analyze alternatives has gone through extensive technical review through both internal and external to the USACE and Non-Federal sponsor review processes. The PIR documents the screening process in Section 3, 4 and in appendix E. The models used were certified for use on the study, and the performance measures used were approved through the RECOVER process.
LF-2	(1) It is administratively fatally flawed, because the project-specific PIR/EIS should have been preceded by a revised Programmatic EIS (PEIS) for CERP that considers the broader implications of the changes in the approach to and environmental impacts of CERP as a result of CEPP, including changes to the assumptions, approximations, interpolations, and extrapolations upon which the environmental impact assessment in previous PEISs and project-specific PIRs/EISs were based.	The Corps CEPP PIR/EIS properly tiers off the CERP programmatic EIS and specifically identifies changes in circumstances and assumptions relevant to its analysis of CEPP. The Corps PIR complies with NEPA.
LF-3	(2) It is legally fatally flawed, because it is a violation of the following laws, regulations, standards, or practices: (a) Clean Water Act (CWA), because it makes a Water Quality Standards compliance distinction between impacted and unimpacted areas in the same water body, thereby implicitly granting a permanent variance from WQS in already impacted areas, neither of which is provided for in the CWA.	References to water quality impacts to “un-impacted” areas have been removed from the document per the recommendation of the USEPA.
LF-4	(b) Endangered Species Act, because the excess methylmercury production, bioaccumulation, and	The United States Environmental Protection Agency (USEPA) has established that a concentration of Hg in fish tissue in excess of 0.3 mg/Kg is an impairment of water

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	risk caused by routing inadequately treated high-sulfate EAA runoff to the Everglades represents a toxicological barrier to access and use by fish-eating wildlife and their predators, including the endangered wood stork, bald eagle, Everglades mink, and Florida panther, and, thus, constitutes an unlawful taking.	quality. The regional THg trends in bass do reveal frequent exceedances of USEPA guidance levels in the Everglades and elevated concentrations in wildlife, some of which includes state and federally listed endangered species. In response, Florida adopted a statewide Total Maximum Daily Load (TMDL) for Hg in 2013 to protect public health based on fish consumption. This state program proposes achieving Hg target levels in fish tissue by reducing atmospheric Hg emissions by 86%, which may include reduction in emissions from sources in south Florida, statewide, other U.S. states, and even other countries. While sulfate does play a role in methylmercury production, its role in the Everglades mercury problem is highly variable and other factors such as dissolved organic matter, available mercury and food web interactions also play important roles.
LF-5	(c) creates an attractive nuisance, because it encourages growth and development in zones where the risk of loss of life, limb, and property is high a result of the rapidly failing Herbert Hoover Dike (HHD).	The CEPP plan does not encourage growth and development and rather maintains the existing level of service of the C&SF project to provide flood protection.
LF-6	(3) It is technically fatally flawed, because: (a) It omits critical selection criteria/performance measures, i.e., non-nutrient water quality constraints, light limitation and time-to-recovery.	The CEPP PIR used the latest peer reviewed, RECOVER approved performance measures in the evaluation of project alternatives.
LF-7	(b) It omits viable alternatives to the TSP, i.e.., those that accelerate the time-to-recovery of nutrient-impacted areas by removing or stabilizing contaminated sediments or mechanical harvesting of rooted macrophytes growing in the contaminated sediments in Lake Okeechobee or the impacted Everglades.	The PIR/EIS analyzes a large array of management measures as can be noted in Appendix E. Management measures were selected that ensured both the objectives and constraints of the project were realized.
LF-8	(c) It omits known or reasonably anticipated significant adverse environmental impacts, including causing or contributing to: (i) the presence of toxic substances in toxic amounts, e.g., hydrogen sulfide and methylmercury, caused by routing high-sulfate EAA runoff to the Everglades; and/or (ii) the irretrievable commitment of resources, e.g., EAA peat soil oxidation, as a result of CEPP	The PIR addresses the methylmercury and sulfate issue in Appendix C.1,

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	facilitating the continuation of the consumptive uses of water quantity and quality to grow EAA crops requiring predominantly drained conditions.	
LF-9	(d) It evaluates stage-duration-frequency contours using a water quantity model that is deficient in representation of resistance to flow and quantification of evapotranspiration, based on presentations made and papers published by the U.S. Geological Survey and the comments of various peer review panels, each of which are incorporated here by reference.	The RSM-BN and RSM-GL hydrologic models were reviewed through the USACE Hydrology, Hydraulics, and Coastal Community of Practice (HH&C CoP) validation process for engineering software, as part of the CEPP project. The RSM (including RSM-BN and RSM-GL) models were both classified by the USACE HH&C CoP as "allowed for use" for South Florida applications in August 2012. As documented in section 6.10.1.1 of the CEPP PIR (Hydrologic Simulation Tools), the validation reviews were conducted by qualified senior USACE engineers with support from technical experts, and USACE approval indicates that that software is technically/theoretically sound and approved for use by knowledgeable and trained staff for purposes consistent with the software's purposes and limitations. Additional details regarding the USACE software review process is provided in Section A.8.1.1 of Appendix A.
LF-10	(e) It evaluates compliance with the phosphorus WQS using a water quality model that is deficient in representation, parameterization, calibration, and validation and that cannot model non-nutrient water quality compliance or impacts for non-conservative toxic substances, e.g., mercury.	The CEPP PIR addresses phosphorus because it is the central water quality concern within the everglades protection area. The CEPP PIR includes a discussion of toxic contaminants such as mercury; however, the presence of fish tissue mercury in toxic amounts is the unfortunate byproduct of natural and anthropogenic atmospheric deposits that are not within the control of the USACE or SFWMD. The project addresses mercury and other toxics through monitoring.
LF-11	(f) It did not include a rigorous quantitative uncertainty analysis regarding the probabilities of achieving and not achieving the water quantity, quality, routing, and timing criteria and the probabilities of causing or not causing various adverse impacts, including but not limited to excess methylmercury production, bioaccumulation, and risks to exposed humans and fish-eating threatened or endangered wildlife. The results of the qualitative and semi-quantitative approximations to a rigorous quantitative uncertainty analysis used by the modelers that were appended to the draft PIR/EIS are not sufficient in this regard.	The USACE and SFWMD used the most appropriate and currently available evaluation tools to analyze the project effects on nutrients and toxics. While the development of new tools and monitoring datasets might reduce project uncertainties to some extent, it would result in a multi-year project delay. The SFWMD and USACE determined that the existing modeling and analysis plan was sufficient for planning the CEPP project and that delaying the project to develop new analytical tools presented a greater risk to the environment than proceeding with the available tools.
LF-12	(g) It did not include an adequate margin of safety in the engineering design and adequate	The USACE and SFWMD used the best available simulation tools to plan the CEPP. The CEPP evaluations do include assessment of the overall period-of-record (1965-

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	operational flexibility sufficient to compensate for the propagated uncertainties in the quantity, quality, timing, and routing of water under routine, extreme weather, and various failure modes, including a catastrophic failure of the Herbert Hoover Dike.	2005) performance which include extreme wet events, and extreme dry events. Modeling uncertainty and its implications to plan selection are addressed per USACE guidance in Section 6.10. The design detail of recommended plan components is adequate to determine feasibility and costs of the plan and appropriate cost contingencies have been applied. Such modifications to the existing C&SF Project provide added operational flexibility to the comprehensive and integrated water management system in south Florida. Further design of the recommended plan features will occur after authorization during the Planning, Engineering and Design phase. To date, the Jacksonville District has received between 20 to 25% of the National Dam Safety Construction budget for the Corps for rehabilitation of HHD and has been steadily working on HHD rehabilitation. The Corps has completed over 22 miles of cut-off wall and currently have 16 of the 32 culverts under contract for replacement or removal. The Dam Safety Modification Report is scheduled for completion in 2015 which will detail the remainder of the work necessary to complete rehabilitation the HHD. It would not be appropriate to consider a catastrophic failure of the HHD as part of this planning effort.
LF-13	As a consequence of these fatal administrative, legal, and technical flaws, individually and collectively, the work products deriving from this process, including the TSP/PA and the PIR/EIS for the TSP/PA, are themselves administratively, legally, and technically fatally flawed. To correct these serious errors of omission and commission and the consequences thereof, I recommend issuing a revised PEIS for CERP and a revised project-specific PIR/EIS for a new TSP/PA using water quantity and quality models developed by or for USACE, USGS, and/or USEPA evaluating the benefits and detriments associated with a modification of Alternative 6 which proposes a breaching the Herbert Hoover Dike (HHD) surrounding Lake Okeechobee and a spillway/flow-way to spread and route that flow into the upper portions of Remnant Impounded Everglades. This	The USACE respectfully disagrees with your assessment of analyses conducted during this planning effort and the resultant work products. The modeling tools and other technical and scientific information utilized are the best available and have undergone peer review within the USACE and certified for use and have also undergone independent external peer review. The RSM-BN and RSM-GL hydrologic models and the DMSTA water quality model were reviewed through the USACE Hydrology, Hydraulics, and Coastal Community of Practice (HH&C CoP) validation process for engineering software, as part of the CEPP project. The RSM (including RSM-BN and RSM-GL) and DMSTA models were both classified by the USACE HH&C CoP as “allowed for use” for South Florida applications in August 2012 and January 2013, respectively. As documented in section 6.10.1.1 of the CEPP PIR (Hydrologic Simulation Tools), the validation reviews were conducted by qualified senior USACE engineers with support from technical experts, and USACE approval indicates that that software is technically/theoretically sound and approved for use by knowledgeable and trained staff for purposes consistent with the software’s purposes and limitations. Additional details regarding the USACE software review process is provided in Section A.8.1.1 of Appendix A.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	will allow a more natural quantity, quality, timing, and routing of flow than the present TSP/PA, while reducing the flood risk from dike collapse and the damages to the Indian River Lagoon and Caloosahatchee River estuary from excessive freshwater releases required to relieve pressure on the dangerously failing HHD.	The concept of a "flowway" or broad shallow marsh area that is used to flow water freely through a spillway from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Further information on the evaluation of this concept can be found in the C&SF Comprehensive Review Study (USACE 1999).
LF-14	The water quantity and quality modeling tools used to implement the CEPP process cannot be demonstrated to be accurate and precise with levels of confidence sufficient to discriminate reliably between alternatives in a quantitatively rigorous way. The qualitative and semi-quantitative assertions that the CEPP can reliably discriminate between alternatives despite the propagated uncertainties in the assumptions, approximations, interpolations, and extrapolations are unconvincing in this regard.	The USACE and SFWMD used the best available simulation tools to plan the CEPP. Modeling uncertainty and its implications to plan selection are addressed per USACE guidance in Section 6.10. The RSM-BN and RSM-GL hydrologic models and the DMSTA water quality model were reviewed through the USACE Hydrology, Hydraulics, and Coastal Community of Practice (HH&C CoP) validation process for engineering software, as part of the CEPP project. The RSM (including RSM-BN and RSM-GL) and DMSTA models were both classified by the USACE HH&C CoP as “allowed for use” for South Florida applications in August 2012 and January 2013, respectively. As documented in section 6.10.1.1 of the CEPP PIR (Hydrologic Simulation Tools), the validation reviews were conducted by qualified senior USACE engineers with support from technical experts, and USACE approval indicates that that software is technically/theoretically sound and approved for use by knowledgeable and trained staff for purposes consistent with the software’s purposes and limitations. Additional details regarding the USACE software review process is provided in Section A.8.1.1 of Appendix A.
LF-15	The water quality modeling tool used is only applicable to non-nutrients, so the decision-making process was oblivious to adverse environmental impacts from toxic substances in toxic amounts, including but not limited the extremely toxic and bioaccumulative methylmercury (MeHg). As a consequence, the work products that were produced by that fatally flawed process, using these deficient modeling tools, including the TSP/PA, are also fatally flawed.	Clarification: The water quality modeling tool used to evaluate CEPP includes phosphorus which is a nutrient. See response for comment LF-10.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
LF-16	A revised Programmatic Environmental Impact Statement (PEIS) is required for this precedent-setting administrative action, because the previous applicable PEISs incorrectly assume that the water supply for rehydrating the Everglades, Biscayne Bay, and Florida Bay will comply with all applicable nutrient and non-nutrient WQS, which is not now the case, but the project-specific PIR does not meet the requirements of a revised PEIS.	The Corps CEPP PIR/EIS properly tiers off the CERP programmatic EIS and specifically identifies changes in circumstances and assumptions relevant to its analysis of CEPP. The Corps PIR complies with NEPA.

Table C.3.3-3. CEPP NEPA Draft PIR/EIS Email Comment Response Matrix

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
Sierra Club	Overall, I support this project as a good first step in Everglades Restoration and recommend that the Army Corp move ahead with its implementation.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
PRIVATE CITIZENS		
CITIZEN-1 (JC); Comment 1	Compartment WCA3b Is so hopelessly choked with 20 foot tall sawgrass and brush it will take 200 years for it to change even with the planned water. I suggest they do a burn—and burn that mess to ground level.	Thank you for your comment.
CITIZEN-1; Comment 2	Also in the report in that same compartment in which gates are now being installed and backfilling and damming of the smaller levee I noticed it shows a levee going from tamiami trail north about 15 miles—but in other views it does not show it. there is no levee there—will one be placed to help channeling of the water stay more west so that it trends more towards shark river slough as compared to letting the new water planned end up going to far east? That levee is left of center of the attached screencapture	A new Blue Shanty levee extending from Tamiami Trail northward to the L-67A levee will be constructed. This Blue Shanty levee will divide WCA 3B into two subunits, a large eastern unit (3B-E) and a smaller western unit, the Blue Shanty Flowway (3B-W). A new levee is the most efficient means to restore continuous southerly sheetflow through a practicable section of WCA 3B and alleviates concerns over effects on tree islands by maintaining lower water depths and stages in WCA 3B-E. The width of the 3B-W flow-way is aligned to the width of the downstream 2.6-Mile Tamiami Trail Next Steps bridge, optimizing the effectiveness of both the flow-way and bridge. The location of the levee is described in Sections 6.1.1 and 6.10.2.2 of the main report.
CITIZEN-1; Comment 3	Another question—it shows the shark valley hiking—bicycle road as scheduled for removal—will there be any access as there is now such as biking or hiking—or with those 2 roads simply be removed? We like the road but will be glad to see it go as part of the restoration—we can't have our cake and eat it too.. Can you direct me to the page of the report that explains it?—the report is VERY long—im sure its in there but cannot find it thanks	The Shark Valley Tram Road will not be removed by this project and will remain as a place to hike and bicycle. Portions of the L-67C and the L-67 Extension will be removed by this project, however there will still be hiking access and there will be additional trail access provided on the Blue Shanty Levee. There should be no net loss of hiking trails with this project. The description of the L-67 removal is described in Section 6.1.1 of the main report and the recreation features are described in Appendix F - Recreation Resources.
CITIZEN-2 (JM)	Emailed comments also mailed in as formal letter. Comments are addressed in the Formal Letter matrix.	Please see the Formal Letter Comment Response Matrix.
CITIZEN-3 (RB)	I completely support CEPP and encourage everyone out there to get a better understanding of it and spread the word. If not passed, we are looking at a long hard road to a better river.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-4 (JK)	CEPP can help our environment in many many ways and must be	Thank you for your comment.

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	passed! We cannot let this situation get any worse! The everglades must be restored.	
CITIZEN-5 (KW); Comment 1	In looking at the estimated future discharge quantities under CEPP, I don't see the est. reduction figure in billions of gallons for the St. Lucie. I do see the number 143.4 billion gallons for the past period of record, as well as the west coast number of 326 billion. But not the projected quantity for the SLE. In other words how does the 65.2 billion break down by the two estuaries?	The RSM-BN water budget maps provide average annual flow volumes to the northern estuaries for the 1965-2005 period of simulation; these maps are provided with the Engineering Appendix -- Appendix A, Annex A-2, Reference 4 (pp.# 274-293), as well as with the RSM modeling information posted on the public website. RSM-BN simulated discharges to the St. Lucie estuary are summarized below (average annual kAF for 1965-2005): ECB/2012EC IORBL1 ALT4R2 From Lake Okeechobee: 163.7 83.8 126.4 C-44 Basin runoff : 101.0 108.3 71.6 Other Basin runoff: 557.0 541.7 536.5 C-44 reservoir: 0.0 4.5 0.0 --- Total in average annual kAF: ECB/2012EC IORBL1 ALT4R2 821.7 838.3 734.5 Total in average annual billions of gallons: ECB/2012EC IORBL1 ALT4R2 268 273 239
CITIZEN-6 (DG); Comment 1	The Pensacola area is in a state of emergency because they don't have enough water. Too much water is flowing into Lake Okeechobee from north of the Lake. Can't any of it be pumped to the Pensacola area instead? We waste too much water.	The CEPP is encompassed in the CERP, which was approved by Congress as a framework for the restoration of the natural system under Section 601 of the WRDA of 2000. The purpose of the Restudy was to reexamine the C&SF Project to determine the feasibility of structural or operational modifications to the project essential to the restoration of the Everglades and south Florida ecosystem, while providing for other water-related needs such as urban and agricultural water supply and flood control in those areas served by the project. The CEPP is composed of increments of project

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		components that were identified in CERP. Water supply within the referenced area is not within the scope of CERP.
CITIZEN-6; Comment 2	As 'Best Management Practices' for farms & ranches, can't we require them to reuse their runoff or charge them a per acre fee for us to cleanup & store their water for them instead of trying to give them an incentive to reuse their water? The special incentives the government gives sugar & other farmers could be stipulated that it is for the purpose of setting up & maintaining their own on site reservoirs. Since many of them have land to sell, then they have land to use for these purposes. We shouldn't have to pay them to use their land to do this for them.	Farm operators within the Everglades Protection Area currently pay a water quality pollution fee on a per acre basis.
CITIZEN-6; Comment 3	Residents & businesses get charged a fee for wastewater per 1000 gallons of water used. Do they?	Many residents and businesses that are connected to central wastewater collection and treatment systems do pay a user fee that is typically assessed on a volume basis. Residents and businesses that are not collected to central treatment works may not pay this fee but are still responsible for treating their wastewater.
CITIZEN-6; Comment 4	All water being sent to Lake Okeechobee should be required to be cleaned first. All fresh water going to estuaries is a problem, but dirty water is worst & you can't send the dirty water to the Everglades either. It has to be cleaned up first.	Please see **Section 5** and **Appendix C.2** for an assessment of environmental effects of the alternative actions and the Recommended Plan. The Recommended Plan is not expected to significantly affect the water quality of Lake Okeechobee or the Northern Estuaries. The Northern Estuaries should see slight improvements to water quality that result from reduced high flow events associated with operations of Lake Okeechobee. The Recommended Plan depends on SFWMD owned and operated water quality treatment facilities (STAs 2 and 3/4) and is integrated with the yet to be constructed A-1 FEB included in the SFWMD's Restoration Strategies Project (SFWMD 2012). All features of the Restoration Strategies Project must be completed and meet State water quality standards prior to initiating construction of most CEPP project features. To ensure that the Recommended Plan meets state water quality standards, discharge permits with associated effluent limits will govern discharges from the State facilities to WCA 3. Appendix A water quality compliance must be addressed for new project water entering ENP. For additional clarification please refer to **Section 6.3.1** and **6.3.2**.
CITIZEN-7	We support the CEPP report. Don't let it be delayed. This is a critical	Thank you for your comment. The significant amount of water

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	step. It needs to happen NOW"	resulting from CEPP will beneficially affect more than 1.5 million acres in the St. Lucie and Caloosahatchee Estuaries, Water Conservation Area (WCA) 3A, WCA 3B, Everglades National Park (ENP), and Florida Bay. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget (OMB) for administrative review. This will occur upon completion of the State and agency review of the Final Central Everglades Planning Project (CEPP) Final Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS). Construction will be dependent upon Congressional authorization and funding.
CITIZEN-8	I'm writing to urge the support of CEPP. The importance of this step to an overall solution to the water management crisis in South Florida is extremely critical. Please consider this important action.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-9	Please finalize CEPP now. I support it. It is dragging out way too long. Please don't let there be any more delay!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-10	Finalize CEPP now.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-11	Please do your best to get quick approval for CEPP in order to help alleviate the continued degradation of the Indian River Lagoon, St. Lucie River and Caloosahatchee River.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-12	Finalize CEPP NOW! Please! The river is toxic. Federal laws are being ignored. The wildlife is unprotected. CEPP will help!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-13	Finalize CEPP now. We support it. Don't let it be delayed. It is time to speak up for what cannot speak for itself.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-14	Please finalize CEPP don't let it be delayed. We need this done. Our estuary is dying. Why must it die!!!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZENS-15-28	Finalize CEPP now!- We support it!- Don't let it be delayed!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-29	please finalize this!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-30	We strongly urge you to finalize the Central Everglades plan to send more water south from Lake Okeechobee. This action along with a comprehensive Water Resource Bill in congress is the best way forward to speed up Everglades restoration and minimize the	Thank you for your comment. Please see response to comment CITIZEN-7 above.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	danger of failure of the dike around the lake. We thank you in advance for putting forth the effort to do this important work. Please don't let this be delayed.	
CITIZEN-31	Please finalize CEPP now! We support and need it!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-32	Dear USACE, Please enact CEPP, to save the Saint Lucie River and estuary. Thank you	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-33	Our river is dying. Do something now!!! We support the CEPP report. Don't let it be delayed. This is a critical step. It needs to happen NOW. Concerned citizen and property owner.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-34	CEPP, the Central Everglades Plan to send more water south from the Lake, must be included in the Water Resources Bill that Congress is considering. Finalize CEPP now. Don't let it be delayed. This is so important for the future of Florida's natural eco-system!!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-35	Finalize CEPP now. I support it. Don't let it be delayed please! Make sure that it gets put in the Water Resources Bill!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-36	I am writing to emphasize that it is time to adopt and finalize the CEPP program. As an Everglades Biologist, I support the plan despite its shortcomings. There is no time for delays in restoring the remaining Everglades ecosystem and I urge you to implement this Plan quickly.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-37	Finalize CEPP now. Florida's citizens support it. Don't let it be delayed.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-38	Finalize CEPP now. We support it. The People have spoken. Don't let it be delayed.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-39	Finalize CEPP now! We support it! Don't let it be delayed! You owe it to the businesses AND residents of Florida!!!!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-40	finalize CEPP NOW !!!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-41	We support the CEPP report. Don't let it be delayed. This is a critical	Thank you for your comment. Please see response to comment

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	step. It needs to happen NOW.	CITIZEN-7 above.
CITIZEN-42	Please finalize CEPP now. We support it. Don't let it be delayed!! We need to fix the pollution to the Indian River Lagoon.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-43	I work for FWC and an NGO doing research and rescue of sea turtles and many other marine animals including dolphins and manatees and strongly urge you to put your FULL SUPPORT behind CEPP. Finalize CEPP now!! We all support it. Don't let it be delayed this must happen asap the lagoon is so toxic as it is we must reverse this devastating effect it's having on our manatees, dolphins and pelicans not to mention the ecosystem in general. The plan to send more water south from the Lake is a start. It won't solve the problem, but it is a very important step. Don't cower to political maneuvering and sneaky attempts to stall and derail it. You know the lagoon is a mess it's time to fix it no more BS and excuses. We are all watching what you guys do and don't do.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. Please see response to comment CITIZEN-7 above regarding the project schedule.
CITIZEN-44	Please send the water south with plan 6. The waterways are toxic and our lives depend on Clean Water.	Alt 4R2 redirects an average of approximately 210,000 acre feet per year of clean freshwater into the central portion of the Everglades that would otherwise be undesirably discharged to the Northern Estuaries. The concept of a "flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Further information on the evaluation of this concept can be found in the C&SF Comprehensive Review Study (USACE 1999).
CITIZEN-45	Please finalize the CEPP now -- essential for a first step to preserve environmental/ecological integrity of the affected region.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-46	FINALIZE CEEP NOW! SEND MORE WATER TO THE LAKE!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-47	Finalize CEPP now. We support it. Don't let it be delayed!!!! The health of so many depend on it!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-48	Greetings and thank you for this opportunity to share my feelings on this problem. I live in Palm City, FL. I started coming here 3 years ago. In just this short amount of time, I have seen such great destruction in the water quality and eco system here in our estuary. It makes me very sad and frustrated! One of the main factors is the release of water from Lake Okeechobee. I know this is not a new	Alt 4R2 redirects an average of approximately 210,000 acre feet per year of clean freshwater into the central portion of the Everglades that would otherwise be undesirably discharged to the northern estuaries. The concept of a "flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	problem; there are many contributing factors, and the whole flood control issue it is very complicated. But ONE long term fix for this is to let the water go back south to the everglades through "The River of Grass" as it was intended to do naturally before we made the dike, before we straightened the river that feeds the Lake O from the north, before we sent the water east & west, before Big Sugar Cane had such a stronghold on our politicians. I believe and hope that most of these projects were done with good intentions as a solution to other problems, but the repercussions are tragic and we must stop the insanity and restore what we can NOW. I understand the Sugarcane industry is very powerful in our political system but The People need to be served. We are doing more and more everyday to stop bullying in our schools...we need to stop the bullying in our politics. Do the right thing and the PEOPLE will support you: D.	of the CERP. Further information on the evaluation of this concept can be found in the C&SF Comprehensive Review Study (USACE 1999).
CITIZEN-49	I'm wondering how much of the 65.2 billion estimate for reduction of the estuary discharges is estimated for the St. Lucie?	The Recommended Plan will result in a 23% reduction in average annual discharges (thousand acre-feet) from Lake Okeechobee to the St. Lucie Estuary. Please see response to comment CITIZEN-5 above for more detail.
CITIZEN-50	I am a 3rd generation Floridian. In the mid 1800s my grandfather, Thomas J. Peters farmed citrus in the area of Lake Okeechobee. In 1895 his family came south and farmed in the Homestead area. It is CRUCIAL that the few remaining natural water resources within this state are preserved and protected for future generations. PLEASE respond to the long-time residents of this state who are committed to conservation and protection. PLEASE finalize the Everglades plan NOW!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-51	I have lived at the St. Lucie locks for 25 years. I spent a lot of time away in college, but every time I came back to visit, I timed the Lake Okeechobee discharges perfectly, unfortunately, to see the estuary again decline. I have seen this ecosystem thrive, and I want to see it thrive again. I am now 35, and I have invested in 6 boats to be built for a strictly inshore charter operation. I fear this ecosystem will be dead before I get a chance to capture my right to happiness. I am also a local Sea Tow Captain. My area of responsibility is from the Merrill Barber Bridge in Vero Beach, south to Hobe Sound Bridge just south of Tequesta, by ICW. I also cover all headings up to 60	The concept of a "flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Further information on the evaluation of the concept can be found in the C&SF Comprehensive Review Study (USACE 1999). Alt 4R2 does address the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that the CEPP is a great first step in reducing undesirable discharges to the

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	miles offshore, and the Eastern half of Lake Okeechobee. I have witnessed the death and destruction and resulting economic impact from every heading on the compass rose. I am writing to voice my concern, and to ask for your help by finalizing CEPP without delay. A finalized and appropriated CEPP would decrease damaging discharges to two ecologically fragile estuaries, and ease the economic loss that hard-working, tax-paying Floridians, in a wide range of industries, are now experiencing. If you fail to prevent this repeated, ecological onslaught now, what will it look like by 2020, when the plan might be addressed again for inclusion to WRDA? The Army Corps' primary focus, the Herbert Hoover Dike, is indeed a threat to Lakeside residents, and the ecosystems, south of Lake Okeechobee. We know how it was built, and that the water threatens to go under the dike, not through or over it. We also know that the lake was recently at 16 feet, and still rising, despite massive releases at the St Lucie lock and Caloosahatchee River headwaters. Passage of CEPP and a fortified dike are both within reach. The result would be safety for residents, healthier estuaries and economies, and a real step toward Everglades' restoration. Please do the right thing this week and sponsor CEPP, and support ongoing efforts for CERP, and encourage negotiations to institute Plan 6.	Northern Estuaries and that additional actions will be needed resolve all of the undesirable conditions the estuarine communities experience.
CITIZEN-52	Please get to work.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-53	JUST DO IT.....	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-54 (LO)	CEPP is needed urgently! Please don't hold it up!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-55 (SC)	Someone has made a huge mistake in releasing polluted Lake Okeechobee water so that fish and manatees are dying in our rivers. The rivers stink. You are supposed to be our environmental watch dogs. What happened? Please correct this at once.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-56 (R)	Finalize Capp now	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-57 (GA)	As a Martin County resident I ask that you please finalize CEPP now. No more delays. The Everglades are unique and we need to restore	Thank you for your comment. Please see response to comment CITIZEN-7 above.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	a clean flow.	
CITIZEN-58 (KT)	Please finalize CEPP now!!!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-59 (LP)	Please finalize CEPP without delay. We support this effort to save our waterways and the Everglades	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-60 (GB)	CEPP is needed now. Don't hold it up!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-61 (JJ)	We live on the river in Palm City and are distressed at the destruction of our river...dead oysters, grass, dolphins, manatees and the list goes on. The algae blooms and bacteria have made our river toxic....how can this happen in this age of conservation... and trying to protect the environment? Please allow the water to take it's natural course SOUTH!	The Recommended Plan will result in a 23% reduction in average annual discharges (thousand acre-feet) from Lake Okeechobee to the St. Lucie Estuary and a 25% reduction to the Caloosahatchee. The Recommended Plan will also result in a 25% and 41% reduction in high flows to the St. Lucie and Caloosahatchee Estuaries relative to existing conditions, respectively. Reductions in the number and severity of high volume discharge events to the Northern Estuaries will be beneficial to estuarine communities.
CITIZEN-62 (AO)	Martin County residents, including myself, ask that you finalize and proceed with CEPP now, without any further delays. There will always be challenges to every idea considered to correct and relieve this huge man made problem, but common sense should prevail and CEPP will be one important step to solving our South Florida water problems.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-63 (TC)	It is disgraceful what has been allowed to happen tour beautiful, natural St. Lucie inlet area! Absolutely awful. Please finalize the CEPP as a first step to help save us. Please.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-64 (RA)	Please finalize CEPP Now, Don't let it be delayed, The lagoon needs help now!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-65 (EJR)	Please support this plan the waterways you guys are currently destroying through mismanagement support the entire aquatic food chain in south fl. We need to start moving some of the polluted death water you call fresh somewhere other than the st lucie and calloosahatchee rivers. You have killed our fish and grass as well as dolphins manatees sea turtles and other aquatic animals long enough. I only hope the damage you've caused is reversible with time. There is no excuse for the continued dumping it is despicable.	Please see response to comment CITIZEN-61 above. The Recommended Plan will result in reductions in the number and severity of high volume discharge events to the Northern Estuaries, beneficially affecting estuarine communities.
CITIZEN-66	Please finalize CEPP now. Our whole way of life, our economy, our	Thank you for your comment. Please see response to comment

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
(WW)	property values, everyday existence depends on CEPP NOW. Don't let it be delayed. It won't solve the problem, but it is a very important step. The deadlines are very tight to get it approved and then included in the Water Resources Bill that Congress is considering. Please don't allow it to be delayed. We have no more TIME.	CITIZEN-7 above.
CITIZEN-67 (PI)	WOW! The devastation that has been wrought by the dumping of polluted fresh water from Lake Okeechobee into the St Lucie Estuary has been inconceivable! This water was never intended by nature to come into the St Lucie River. On the flip side the everglades have been suffering for years from lack of NATURAL fresh water flow from the lake. Is Big Sugar that Big! Stop trying to change what nature has intended and start listening to the people that are affected by this pollution. Finalize the CEPP and let's start saving one of the greatest natural resources here in Florida.	Thank you for your support of CEPP. Alt 4R2 does address the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries; however the USACE acknowledges that additional actions are needed to improve all conditions for the estuarine communities.
CITIZEN-68 (MB)	PLEASE APPROVE CEPP, THE RIVER IS A MESS. THIS PROJECT HAS BEEN ON THE DRAWING BOARDS FOR YEARS, A TURTLE MOVES FASTER THAN OUR GOVERNMENT. THIS IS NOT ONLY CRITICAL TO OUR ENVIRONMENT BUT IS A ECONOMIC FACTOR TOO. BETWEEN THE FISHING, BOATING, TOURISM ETC. IT IS A HUGE FACTOR IN FLORID'S ECONOMY AND QUALITY OF LIFE. PLEASE TAKE THIS IMPORTANT STEP. WE UNDERSTAND THAT IT IS ONLY THE BEGINNING BUT LETS GET STARTED.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-69 (JD)	Please finalize CEPP now. I support it. Don't let it be delayed. It's a very important step for sending more water from Lake Okeechobee south.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-70 (CS)	Why is something so important getting resistance for not passing it? We in Martin County have had enough of this intrusion. Something so simple has become so political. WHY? Send more Lake O south where it rightfully belongs. My kids can't go in this putrid water anymore.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-71 (AP)	Please finalize the CEEP now. We cannot be delayed.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-72 (DF)	It has been over 30 years that you have been stalling on this project. Now we have a situation where an important part of our	Thank you for your comment. Please see response to comment CITIZEN-7 above.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	eco system has been damaged and many of our fish and manatees will be lost. Start the flow South to the everglades before you make the entire estuary unlivable. We will soon be seeing fish kill washing up in Palm Beach, maybe the big spenders down there can light a fire under some politician. This has to stop, I've noticed that you time these releases until after the "season", really great thinking any more brilliant ideas to get away from doing your jobs?	
CITIZEN-73 (MC)	Please Finalize CEPP Amendments NOW	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-74 (CG)	Please finalize CEPP now. I support it and Florida needs it. Don't let it be delayed or derailed. Send the water south. Help save the Everglades.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-75 (HO)	Please FINALIZE CEPP NOW! We strongly support it. It is so important, don't let it be delayed!!!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-76 (EF)	Please Finalize CEPP now. I support it. Don't let it be delayed to send more water south from the Lake. It won't solve the problem, but it is a very important step. The deadlines are very tight to get it approved and then included in the Water Resources Bill that Congress is considering.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-77 (CM)	Please finalize CEPP for Martin Co. Our estuary is dying and we are receiving no help.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-78 (JK)	PLEASE Finalize CEPP now. We support it. Don't let it be delayed. The deadlines are very tight to get it approved and then included in the Water Resources Bill that Congress is considering.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-79 (LRH)	You, being the Army Corp of Engineers have not, for many years, enjoyed the respect of the citizens of the Estuary Counties. You now have a wonderful opportunity to gain that respect with one simple (difficult???) action. Simply by initiating the Central Everglades Plan Projects and sending much of that ”Dirty” water South, you will earn the respect you deserve for having to deal with a very difficult and stressful job for these many years. Not only have our Estuary’s suffered but our economy, which is very fragile, (partly due to our desire for a rural environment), has also suffered over the years. Please do your VERY BEST to initiate this program ASAP.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-80 (JC)	Hi I went to the meeting in plantation last night but there is the	/

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	cerp webpage and a couple of things didn't match. At the meeting they said the price was almost 2 billion but the webpage clearly says that its almost ten billion. I asked one of the ladies during the open house chat session "lets take going back 10 years as a reference--in the past years or even a year from now has there been any addition or even a cupful of water or change to the waterflow?" im 60 so my reason for asking is about any improvement in the past years or my lifetime. She said no unless I misunderstood her—however the cerp page says that some improvement is already being seen in certain areas over the years" So im curious about those 2 things--why dosent the price match not even close? The past few years lets say 10-20 are the everglades lets say south of tamiami trail any wetter in the slightest? Or will there literally be no change for possibly decades? You guys are doing great and I realize its about funding. The reason I ask the questions is curiosity and has nothing to do with why aren't things happening faster. Im mostly curious in my lifetime and the past years—are the glades slightly improved?--or still just sitting the same lets say as they were in 1960?? I relocated here about 14 years ago--are the glades now identical to how they were then? (ignoring changes such as heavy flood or drought years etc)Thanks.. As I say my questions are only out of curiosity--I have no complaints.	Thank you for your comment and your attention to Everglades restoration. The answer to your questions includes a clarification of two related Everglades restoration efforts: CERP and CEPP. CERP is the Comprehensive Everglades Restoration Plan that includes over 60 restoration projects throughout the Everglades and associated estuaries, which were envisioned to be constructed over ~30 years. CERP was approved by Congress in 2000. The expected cost of CERP is ~$10 billion as said on the CERP website. Several of the restoration projects that are part of CERP are under construction and are improving the hydrology of the south Florida ecosystem, including Picayune Strand restoration, southern Indian River Lagoon restoration, and the Site 1 Impoundment. Several others are ready to be constructed but are waiting for final approval and budgeting from Congress. These include the C-43 Reservoir, the Broward County Water Protection Area, the C-111 Spreader Canal, and the Biscayne Bay Coastal Wetlands projects. In addition, other important restoration work in the region is contributing to restoration progress in addition to CERP, including Kissimmee River restoration and the C-111 South Dade project. These are approaching completion. The Central Everglades Planning Project, or CEPP, is a part of CERP. The public meeting in Plantation that is referenced in the comment focused on CEPP. CEPP will accomplish several more of the components that were described in CERP. The cost of CEPP is estimated at ~$2 billion, since it is a large portion of CERP. CEPP needs final approval from Congress before construction can begin. Sections 1 and 6.9 of the CEPP Project Implementation Report (PIR) describe the relationship between CERP and CEPP. This document is located online at http://www.evergladesplan.org/pm/projects/docs_51_cepp_draft_pir.aspx
CITIZEN-81 (AR)	Please finalize the plan to move more water south. I am a native Floridian and my grandfather was President of the Soil and Water Conservation in the 60's for many years. As active supporters of saving our natural resources, as best we can, I'm hoping this will be a positive move.	Thank you for your support of CEPP.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-82 (JP)	As a Florida native who now resides in Jensen Beach, FL I am sickened and disgusted about the condition of the river and estuaries here, I am pleading with you to finalize plans for CEPP now before it is too late. This won't solve the entire problem, but it's a good start and long overdue. Thank you for your help in this matter which affects all of us who live in Florida.	Thank you for your comment. Please see response to comment CITIZEN-7 above. The Recommended Plan does address the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries; however the USACE acknowledges that additional actions are needed to improve conditions for estuarine communities within the Northern Estuaries.
CITIZEN-83 (EH)	I believe that CEPP needs to be passed because it will return Florida to a semi natural state. The proposed Alt4R will provide a cheaper way to move more water south which will positively impact both the Indian River Lagoon and the Caloosahatchee.	Please note the following correction: the Recommended Plan is termed Alternative 4R2.
CITIZEN-84 (CK)	We support the CEPP report. Please don't let it be delayed. It is a critical step that needs to happen NOW !!!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-85 (BM)	My wife and I have lived in Hobe Sound for 14 years, and I'm very much aware of the damage from water moving south from the lake. I'm a fisherman, I respect the environment, and I ask you to consider the importance of resolving the problem, hopefully by stopping this dumping.	Thank you for your comment. Please see response to comment CITIZEN-7 above. The Recommended Plan does address the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries; however the USACE acknowledges that additional actions are needed to improve conditions for estuarine communities within the Northern Estuaries.
CITIZEN-86 (TC)	Finalize CEPP now. We support it. Don't let it be delayed. This blatant environmental destruction has led to me losing 2 months worth of income which is directly tied to the recreational activities on the Indian River Lagoon.	Thank you for your comment. Please see response to comment CITIZEN-7 above. The Recommended Plan does address the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries; however the USACE acknowledges that additional actions are needed to improve conditions for estuarine communities within the Northern Estuaries.
CITIZEN-87 (DP)	I agree with CERP's motive. It will improve water quality and water flow which are the two important features that are the backbone of restoration. These two features alone will do a significant helping in saving the Everglades and our Florida estuaries.	Thank you for your comment.
CITIZEN-88 (JT)	Finalize CEPP NOW...and stop holding meetings in the afternoons on work days, people cannot afford in this economy to take days off	Alt 4R2 redirects an average of approximately 210,000 acre feet per year of clean freshwater into the central portion of the Everglades

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	to tell you what you already KNOW is the right thing to do. Our economy is suffering due to the river and lagoon destruction and we need NO STALLING from you people. You know that the only solution to our problems is Plan Six and sending water South. You have until October 15th, we want action NOW.	that would otherwise be undesirably discharged to the northern estuaries. The concept of a "flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Further information on the evaluation of this concept can be found in the C&SF Comprehensive Review Study (USACE 1999).
CITIZEN-89 (LC)	I urge you to finalize the Central Everglades Plan Projects immediately before the deadline to be included in the Water Resources Bill that Congress is considering. We must send more water south from the Lake. It is our primary and most effective solution and needs to begin NOW. I live on the St. Lucie River and it is a mess due to pollution from Lake O. Help now!!!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-90 (FD)	I support CEPP and would like you to finalize it now. Do to other obligations, I am unable to attend you open houses, but I support CEPP and would really appreciate it if you would finalize it. I know this is just one of many way to move the water out of Lake O, but we need it.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-91 (LJ)	Please make the effort to finalize CEPP. So much depends on this. CEPP is the catalyst for restoring The Everglades, Lake Okeechobee, the St.Lucie and Caloosahatchee Rivers as well as all related waterways. Please don't just let this slide. There will come a point where the damage to the environment will be irreversible. It is very soon. Not finalizing CEPP shouldn't even be a consideration! Moving CEPP forward is vital to ALL of South Florida. The time to act is NOW. It should have been sooner, but NOW is good. Just do it!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-92 (RB)	Finalize CEPP now. We support it. Don't let it be delayed. CEPP is "Central Everglades Plan Projects" to send more water south from the Lake. It won't solve the problem, but it is a very important step. The deadlines are very tight to get it approved and then included in the Water Resources Bill that Congress is considering. Send water south --	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-93 (CE)	Please finalize assistance to the natural flow of water to the South.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-94	Sirs, We support moving forward with the CEPP. Our estuary can't	Thank you for your comment. Please see response to comment

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
(KW)	withstand anymore discharges from the Locks.	CITIZEN-7 above.
CITIZEN-95 (DW)	Cannot be at the mtg. so please hear my plea to save our Lagoon	Thank you for your comment.
CITIZEN-96 (KD)	My wife and I live in Rocky Point, Stuart. We are very disappointed with the lack of progress in letting us use the St. Lucie River. Every year, the same filth exposes us to unhealthy nasty conditions and we would like the water to go south to the Everglades as nature intended. The town of Stuart is getting famous for unhealthy conditions. As an avid boater, we have not been able to use the our boats safely for months. Commercial divers refuse to remove the barnacles on our propellers and shafts until the water is safe. Just yesterday, I had my boat removed from the water to clean the running gear. The Manatee Pocket is so dirty that the bottom was nearly clean. Even the barnacles can not live in that water. Take a look at the number of boats in the River on a Saturday morning. Very few people want to enjoy their hobby in a sewer! If you catch a fish, it is inedible! Real estate values must be taking a hit. Local marine related businesses have been impacted. Please do the right thing!	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-97 (P)	PLEASE, Finalize CEPP now! More water from Okeechobee MUST be sent south instead of down the St Lucie River! Martin county needs permanent relief from the discharges lf heavily contaminated lake " O" water. By copy to my neighbors, please send your message to "USACE.ARMY.MIL" to urge them to take action now to send more water from lake " O" south into the Everglades. They can take a small step in that direction now with the approval of CEPP. CEPP is "Central Everglades Plan Projects" to send more water	Thank you for your comment. Please see response to comment CITIZEN-7 above.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	south from the Lake. It won't solve the problem, but it is a very important step. The deadlines are very tight to get it approved and then included in the Water Resources Bill that Congress is considering. There are expected to be attempts to stall/derail it.	
CITIZEN-98 (HR)	Please finalize CEPP now. The people of Martin County and in the area support this important step to help solve some of the lake problems. Please do not delay this.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-99 (TR)	I am writing to express my support for finalizing CEPP now. As a resident of Martin county, my family and community has been severely impacted by the ongoing discharges into the St Lucie River. For us this has been a lost summer, but more importantly it has been a severe blow to the health of the Indian River Lagoon. Each year that water from the lake is discharged into the lagoon does further destruction to the whole ecosystem. Each year makes any chance of restoring this natural treasure get slimmer and slimmer. The first step in restoration is to have the lake flow returned to its natural path south through the everglades. My family and I implore you to think long term for the future of generations to come and to finalize CEPP now. Every day we wait, every gallon we send in this perverse discharge, brings the impacted rivers and lagoons closer to irreparable harm. Time is of the essence; please act now.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-100 (TC)	Finalize CEPP now. The discharges are killing the economy of the Treasure Coast.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-101 (RH)	Please move swiftly forward with the purchase of lands as provided in the CEPP Project. This should have been taken care of years ago. The time to act was many yesterdays ago! I am really unclear what you are waiting for. The River & Estuaries are dying, wildlife is dying, livelihoods are dying. I cant even take my visiting Grandaughter to the beach or for a ride in our boat, or fishing off the dock. Its stupid. We have to take care of our World, our Earth. Please, Stop messing around and take care of this situation NOW!	Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and OMB for administrative review. This will occur upon completion of the State and agency review of the Final CEPP PIR/EIS. Construction of project features will be dependent upon Congressional authorization and funding.
CITIZEN-102 (KM)	Finalize CEPP now. We support it. Don't let it be delayed. CEPP is "Central Everglades Plan Projects" to send more water south from the Lake. It is a very important step. Approval is needed NOW to be included in the Water Resources Bill that Congress is considering.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-103 (BM)	STOP CATTERING TO BIG CORPORATE DONORS. Finish the CEPP. Clean up c-24 and c-23, clean up the lake, stop the backpumping. Stop polluting our water. What good is profit if we have no environment and no standard of living and live in a crap hole? Stop kicking the can down the road.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions, such as C-43 and IRL-S are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the ASA (CW) and OMB for administrative review. This will occur upon completion of the State and agency review of the Final CEPP PIR/EIS. Construction of project features will be dependent upon Congressional authorization and funding. The implementing agencies are committed to engaging in a public process after Congressional authorization and appropriations of CEPP to integrate CEPP into the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed. The FDEP is in the process of developing a Basin Management Action Plan (BMAP) for Lake Okeechobee pursuant to Section 403.067, Florida Statutes. This BMAP will be an iterative effort to address water quality issues in Lake Okeechobee.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-104 (KCT)	Because of previous obligations, I am not sure I will be able to attend tonight's meeting so I would like to be sure to urge the approval of CEPP and get it back to SFWMD in short order.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-105 (JW)	Finalize it NOW. We are in favor.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-106 (MB)	Dear sirs, You are surely aware that the more of Lake O's water that goes south instead of east or west, the better for the St.Lucie River. 40 Yrs, we've been asking. Now's the time.	The existing C&SF Project is designed to discharge the majority of Lake Okeechobee's flood control releases to the Northern Estuaries. The ability to move water south from Lake Okeechobee is limited due to the current design and capacity of the regional water management system. Alt 4R2 project components of the CEPP will reduce the magnitude and duration of regulatory flood control releases sent to the Northern Estuaries from Lake Okeechobee by re-directing an average annual 210,000 acre feet of water through the central Everglades system. The USACE acknowledges that the CEPP is a great first step in reducing undesirable discharges to the Northern Estuaries and that additional actions will be needed to resolve all of the undesirable conditions the estuarine communities experience. Thank you for your support of CEPP.
CITIZEN-107 (CM)	We support CEPP for the Indian River Lagoon estuary. Please do it now. Do not delay.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-108 (JS)	The actions of the Army Corps of Engineers, at the direction of the United States Government, over many years, has created a unacceptable situation. By not allowing the water to flow South through the Everglades has resulted in a level of pollution which is destroying the rivers and estuary. You as engineers should be able to see what the results are and should be more forceful in recommending changes to the way Big Sugar and developers have joined forces to destroy our Planet, Earth. My plea is that the Army Corps of Engineers make every effort to implement the Central Everglades Plan Project as soon as possible and not allow this abomination continue. Now is the time to act! Please make every effort to help correct this ongoing problem which is destroying our environment and our ecosystem.	The existing C&SF Project is designed to discharge the majority of Lake Okeechobee's flood control releases to the northern estuaries. The ability to move water south from Lake Okeechobee is limited due to the current design and capacity of the regional water management system. Alt 4R2 project components of the CEPP will reduce the magnitude and duration of regulatory flood control releases sent to the Northern Estuaries from Lake Okeechobee by re-directing an average annual 210,000 acre feet of water through the central Everglades system. The USACE acknowledges that the CEPP is a great first step in reducing undesirable discharges to the Northern Estuaries and that additional actions will be needed resolve all of the undesirable conditions the estuarine communities experience. Thank you for your support of CEPP.
CITIZEN-109 (L)	Finalize CEPP now! The future of the St Lucie Estuary, Caloosahatchee Estuary and the Everglades is in jeopardy! I	Thank you for your comment. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	support CEPP. Don't let it be delayed. Send the water where it belongs via sheet flow and cleansing areas south from the Lake. It won't solve the problem, but it is a very important step. Do this now. Include CEPP in the Water Resources Bill that Congress is considering.	the Assistant Secretary of the Army for Civil Works and OMB for administrative review. This will occur upon completion of the State and agency review of the Final CEPP PIR/EIS.
CITIZEN-110 (NT)	Finalize CEPP now !!!!!!	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-111 (CC)	I believe CEPP and CERP are both well intentioned but the big problem will be paying for it. Our nation's debt is nearing 17 trillion dollars. As much as I'd love to see the Everglades restored the price tag is way too much right now. I know that sounds very negative of me but it's true.	Thank you for your comment.
CITIZEN-112 (KW)	Finalize CEPP NOW...Our lagoons and waterways are dying for your protection. So is our economy. So is our health. We cannot put this on the back burner any longer. Do the right thing after so many years of doing the wrong thing. The clock is ticking on this and the citizens demand action. All hands on deck, roll out for Florida.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. Please see response to comment CITIZEN-7 above regarding the project schedule.
CITIZEN-113 (TFC)	Why is it so difficult for our government to do the right thing? Our politicians and agencies inundate us with meetings and deadlines and acronyms to convince us that progress is being made. Yes, we all should attend those meetings, but most of us have jobs or small businesses, kids and parents that we must attended to first. It is not that we don't care, we do desperately. How many meetings and rallies are enough before action is taken. We are not lobbyists or lawyers who show up at every one of these "dog and pony" shows. We are not paid by those looking to keep the status quo. We are looking to our government to protect the people's interest over those who would further denigrate our environment for one more dollar earned in greed. It is now time to stop meeting and having arbitrary deadlines and creating one more program that will be known by one more acronym. Our government now needs to	The USACE is committed to completing an expedited planning study to meet the objective and constraints of the CEPP. The planning process for CEPP has involved multiple state and federal agencies as well as substantive public participation via public meetings in order to ensure consideration has been provided to all beneficial and adverse effects of the project. After receiving Congressional authorization and appropriations, USACE will commence construction.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	enact relief for our sickened environment. Instead of spending money on bombing Syria or Iran how about we fund the restoration of our Everglades. We need the Central Everglades Plan Project funded now.	
CITIZEN-114 (CC)	Please do everything you can as quickly as you can to fix this Lake Okeechobee majority overflow from heading East and West thru St Lucie River and the Caloosahatchee. Make the land owners up stream (Orlando and around Lake Okeechobee) use their own property to hold their run off until it percolates into the ground water. I know SFWMD. NO more polluted water into Lake O. I know SFWMD. Finish the Lake O dike re-inforcement quickly -- so it can hold more ft of water. This you guys! But that land from US Sugar and start building STA's I know SFWMD. Finish the pump stations on south end of the Lake to let water move south. I know SFWMD. Be more flexible with the water release schedule. please help!!!	Thank you for your suggestions. While CEPP makes great strides in providing benefits to the Greater Everglades ecosystem and helps redirect some Lake Okeechobee regulatory releases south, the USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-115 (JM)	PLEASE put a stop to contaminating the Rivers and the Lagoon. Enough is enough. We need action NOW!	Thank you for your comment. Please see response to comment CITIZEN-7 above. The Recommended Plan does address the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries; however the USACE acknowledges that additional actions are needed to improve conditions for estuarine communities within the Northern Estuaries.
CITIZEN-116 (LB)	We strongly support fast-tracking CEPP to send water south from Lake Okeechobee!	Thank you for your comment. Please see response to comment CITIZEN-7 above.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZENS-117-121 (NP, KL, IG, SE, KT, MG, ED, LH, CS, HM, DP, DV, MR, MS, EA, SP, MG, IG, DC	The Central Everglades Planning Project (CEPP) is of utmost importance to Floridians. It must be finalized in time to be included in the Water Resources Development Act. We cannot stand by and let the troubles that have plagued Florida's estuaries continue. Our livelihoods, and very health, depend on fixing the flow of water in the state of Florida. Funding and completing CEPP so that water can be moved south is a major component of the solution to our water woes. I implore you, finalize CEPP and make the October deadline. We are counting on you to do so.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-122 (AL)	I urge you to keep progressing with CEPP. Our rivers, lagoon and estuary cannot take another season of filth from Lake O. The wildlife that lives there are dying, but you know this already so please help our rivers.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-123 (AO)	As a resident and property owner in Martin County, and as an advocate for protecting and preserving in the best way possible our natural environment, I ask that you confirm and proceed with CEPP now. Delaying and further studies only serve to make a bad situation worse, and the present situation with Lake Okeechobee, the rivers and estuaries, and The Everglades needs your decisive action now, not later.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-124 (SW)	To all ACOE personnel entrusted with the power and responsibility to enforce mandated projects, As humans, we can live 30 days without food, 3 days without water and 3 minutes without air. This should determine our values! Polluted water damages our ecosystem and our economy and threatens the survival of life in the form of plants, animals and humans. It doesn't get any more simple or real than this. The mathematical fact that growth (eg: toxic algae) occurs at an exponential rate, which also means so does destruction or decay. Delaying action on this already-mandated course of action will result in exponentially-increasing costs and further complications as	Thank you for your comment. Please see response to comment CITIZEN-7 above.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	well. We have created this situation from 30 years of unenlightened engineering, political paralysis and corporate corruption. This must end now, and you have the duty to draw the line. The Central Everglades Planning Project (CEPP) must be finalized in time to be included in the Water Resources Development Act. As stewards of our land and resources, we cannot watch our estuaries die. Water must flow to support our livelihoods, health and home. Funding and completing CEPP is part of a broader solution that allows the natural southern movement of water to be restored. Resonant vortex action and plant filtration allows water to be self-cleaning, it is a beautifully-designed natural process from which we could learn and which we should support. On behalf of my family, other residents, tourists, fish, fauna and fowl I respectfully demand that you finalize CEPP and make the October deadline. We are counting on you to do so.	
CITIZEN-125 (LL)	CEPP is "Central Everglades Plan Projects" to send more water south from the Lake. It won't solve the problem, but it is a very important step. The deadlines are very tight to get it approved and then included in the Water Resources Bill that Congress is considering. There are expected to be attempts to stall/derail it. Thank you for your work in being a part of the solution.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-126 (CB)	Finalize CEPP now. We fully support it. PLEASE ~ Don't let it be delayed ! CEPP is to send more water south from the Lake and it won't solve this huge problem, but it is a very important step. The deadlines are getting very tight to get it approved and then to have it included in the Water Resources Bill that Congress is considering. Of course, there will be expected attempts to derail this, but we sincerely hope you listen to the people of this wonderful State and follow through to save our rivers.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-127(AH)	CEPP is a very effective plan that will help a lot of people and the environment, I'm behind the movement 100%	Thank you for your comment.
CITIZEN-128(TB)	the everglades are very important and must be saved CEPP is the best chance they've got at the moment	Thank you for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-129 (BS)	I want you to know that I fully support your finalizing the CEPP now. Getting these projects approved, funded, and underway is vital to sending more water south from Lake O thereby reducing the stress on the St. Lucie and the Caloosahatchee Rivers. Approval of the CEPP and then getting it included in the Water Resources Bill is one of the important steps that must be taken for protecting and revitalizing our rivers and their natural habitat. I personally wade fish the lower reaches of the Saint Lucie and Indian Rivers and have been dismayed by the damage done to the rivers and the ecosystem by the fresh water discharges this year.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. Please see response to comment CITIZEN-7 above regarding the project schedule.
CITIZEN-130 (SM)	Please finalize this program now. It is very much needed to alleviate the water quality problems being experienced on the Treasure Coast and elsewhere.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. Please see response to comment CITIZEN-7 above regarding the project schedule.
CITIZEN-131 (PG)	The current policy of using the St.Lucie River as the sewer system for Lake Okeechobee is destroying our community and our businesses. We can not wait another 10 years for a mere 25% reduction of these discharges. I think that a better plan would be to deepen and widen the Palm Beach Canal to equal the current volume going east and west. A tunnel could be constructed from the end of the canal under Lake Worth and the barrier island out to the continental shelf about 5 miles offshore. With the aid of a pumping station the water could be dispersed into the Gulf Stream current and away from the Florida shoreline. This is the only location in Florida that has deep water and the Gulf Stream current within a few miles of land. I believe that the environmental impact would be less than the current discharge policy. Please consider this idea. Thank you.	Thank you for your suggestions. While CEPP makes great strides in providing benefits to the Greater Everglades ecosystem and helps redirect some Lake Okeechobee regulatory releases south, the USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-132 (LR)	I believe that CERP is a great plan and hope it gets passed. I especially like how balanced it all is in concerns with flood management and sending water south, since balance is the key to	Thank you for your comment. Please see response to comment CITIZEN-7 above.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	restoring Florida back to a somewhat natural state. I hope that CERP is implemented soon, and our environment can start improving.	
CITIZEN-133 (RB)	Please keep us at your utmost highest when speaking to the politicians - the river has always been at bottom of totem pole...(that's baffling- allowing a river to die)- please we should be at the top. Thank you.	Thank you for your comment.
CITIZEN-134 (RLP)	The news is that the Corps is willing to implement the plan to send water from Lake O to the south. Please get CEEP approved and passed. You may not hear from many residents because they don't have this email address or they don't know about your hearings but you can read editions of the News, especially today's (Sept. 20) when the editor chose to print many of their letters. Residents of Martin County need healthier waters, estuaries and marine life.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-135 (JL)	Please don't delay, it is too important to the Saint Lucie River and the Indian River Lagoon, its wildlife and the businesses that depend on its health. ACT NOW	Thank you for your comment. Please see response to comment CITIZEN-7 above regarding the project schedule.
CITIZEN-136(GK)	It is imperative that the destruction of the Lagoon be stopped AT ONCE! Stop dumping POISON into the St. Lucie River, the horrific results of this systemic poisoning will be felt for generations.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-137 (KCT) Comment 1	I have several concerns and questions regarding CEPP. I would greatly appreciate an answer to these. 1) What will you do to help clean the water to 10 ppb phosphorus? If this is not attained, will this halt any CEPP project flowing water in to the Everglades?	The Recommended Plan depends on SFWMD owned and operated water quality treatment facilities (STAs 2 and 3/4) and is integrated with the yet to be constructed A-1 FEB included in the SFWMD's Restoration Strategies Project (SFWMD 2012). All features of the Restoration Strategies Project must be completed and meet State water quality standards prior to initiating construction of most CEPP project features. To ensure that the Recommended Plan meets state water quality standards, discharge permits with associated effluent limits will govern discharges from the State facilities to WCA 3. Construction of CEPP project features cannot proceed until it is determined that construction and operation of the feature: 1) will not cause or contribute to a violation of State water quality

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		standards 2) will not cause or contribute to a violation of any applicable water quality permit discharge limits or specific permit conditions, and 3) reasonable assurances exist that demonstrate adverse impacts to flora and fauna in the area influenced by the project features will not occur. Appendix A water quality compliance must be addressed for new project water entering ENP. For additional clarification please refer to **Section 6.3.1** and **6.3.2**.
CITIZEN-138(KCT); Comment 2	2) Can you guarantee the water will attain 10 ppb level of phosphorus? I understand my tap water has 70 ppb phosphorous and rain water is 17 ppb phosphorous. I am extremely concerned this extremely stringent level will stop any chance of us being able to flow water south in to the Everglades. How do you clean water cleaner than rain? Will this strip other necessary nutrients from the water for other life in the Everglades? Duke University had a study that showed 20 ppb was actually quite beneficial to the Everglades. Perhaps this requirement level needs to be re-visited. http://www.law.miami.edu/library/everglades/lawarticles/fsu_landuse_vol17_1_rizzardi%20(86kb).pdf I can see that 10 ppb might be able to be obtained in dry seasons, but in rain events, when we really need to discharge the water into the Everglades, how do you clean the water cleaner than the rain???	Please see response to comment CITIZEN 137 above.
CITIZEN-139 (KCT); Comment 3	3) With over $60 billion in back logged projects, how will CEPP possibly get done by 2029? It is not even authorized yet. You stated at the meeting in Stuart that newly authorized projects will not catapult over these other projects. With that being the case, you have to fund and complete these other $64 billion in projects first, correct? Again, how will CEPP be completed by 2029?	Thank you for your comment. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget for administrative review. This will occur upon completion of the State and agency review of the Final CEPP Integrated PIR and EIS. Construction will be dependent upon Congressional authorization and funding.
CITIZEN-140-152 (GL), (MP), (KC), (PMB), (CW), (AZ), (KM), (SC),	" Moving clean water south from Lake Okeechobee is the key to solving problems for both the National Park and the coastal estuaries. I urge you to go forward with CEPP as soon as possible"	Thank you for your comment. Please see response to comment CITIZEN-7 above.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
(MS), (PB), (JS), (KM)		
CITIZEN-153 (T)	Please move the water in the only direction it can possibly flow to ...	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-154(KP)	The damage to the St. Lucie River is a national disgrace! Moving clean water south from Lake Okeechobee is the key to solving problems for both the National Park and the coastal estuaries. I urge you to go forward with CEPP as soon as possible.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-155(DLK)	Please finish the report and send to Congress timely in order to be placed in the WRDA (Water Resources Development Act). We realize that this will be part of the solution to reduce discharges going to the St. Lucie, Indian River Lagoon and Caloosahatchee Rivers that are causing extensive damage, but as one who commented put it: "This is the only game in town.' We need to start. Thank you for your work. We will also be contacting our legislators and the governor so they know how critical this is.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-156(LB)	My grandchildren and I enjoy the waterways on our state, as well as hiking and working on the Florida National Scenic Trail. We are pleased to see some of the cattle being removed from the river basin North of the Lake. Now, we need some water to flow south, not be channelized, but flow. Cleaner water going into the lake is necessary, but even clean water flowing into the Indian River Lagoon is killing it. Please help out Lagoon by pushing for the approval of CEPP in time for it to be included in the Water Resources Bill. I am NOT clamoring for lower taxes...I want my	The FDEP is in the process of developing a Basin Management Action Plan (BMAP) for Lake Okeechobee pursuant to Section 403.067, Florida Statutes. This BMAP will be an iterative effort to address water quality issues in Lake Okeechobee. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the ASA (CW) and OMB for administrative review. This will occur upon completion of the State and agency review of the Final CEPP PIR/EIS. Construction of project

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	taxes to help clean up our environment, which helps us all..and I VOTE!	features will be dependent upon Congressional authorization and funding.
CITIZEN-157(DS)	Moving water south from Lake Okeechobee is key to improving the estuaries. Please make this happen.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-158(K&D)	We need to get this moving. CEPP must be passed immediately and start the years it will take to correct the horrible damage done.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-159(PHS)	I urge you to finalize the Central Everglades projects and send more water south from the Lake in order to relieve the ongoing damage to our river ecosystems.	Thank you for your comment.
CITIZEN-160(MTS)	Thank you for the wonderful information that was given at the Sept. 17th Public Meeting. I am very much in favor of the CEPP, and while I, like many others here in Fort Myers wish for more improvement in the Caloosahatchee River issues, I do support this work and hope that it will eventually help restore the Everglades region to its proper condition.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-161 (MR)	Please stop polluting the St Lucie River and Indian River Estuary. Please start sending Lake O releases south.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-162(MH)	I served on the Governor's Commission that helped create CERP and the team that created the IRL –South Plan. I am an enthusiastic supporter of CEPP. I would not like to see it held up. I think the most important issue is meeting WRDA deadlines. I do have a specific concern that I would like to see addressed or at least explained.	The Executive Summary, Section 6.8 and Annex B has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. The basic premise behind the CERP IRL-S Project is to redistribute the water released to tide to more desirable locations in the St Lucie Estuary. Specifically, flows are redistributed away from the S-97 and S-48 structures on the C-23 Canal and either directed north towards the Ten Mile Creek upstream of the North Fork of the St Lucie River or south towards the C-44 Canal. Up to 900 cfs of the flood releases to tide (excess water) are directed away from C-23 control structures to the C-23/24 reservoirs. Water is then released

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	"B.3.1.2 Transfer of Existing Legal Users Water Supply Source Included in the future without (IORBL1) and CEPP Alt 4R2 operations is utilization of the IRL-S project C-44 Reservoir to backflow water to Lake Okeechobee when stages in the C-44 Canal permit. Typically water is backflowed when stages in Lake Okeechobee fall below the Baseflow sub-band as identified in LORS 2008. The operations of the CEPP Alt 4R2 expand on this concept to backflow water captured in the C-44 Reservoir including water conveyed from the C-23 Canal and Basin. The additional volume of water backflowed from the C-44 Reservoir averages 21.3 kAF on an annual basis, the difference between Alt 4R2 and IORBL1 (37.6 kAF and 16.3 kAF, respectively). Although Lake Okeechobee would continue to be the source of water for agricultural users within LOSA, this operational change is considered a partial water supply source transfer since the C-44 Reservoir does not contribute to Lake inflows in the IORBL1." There are no concerns about backflowing water from C44 and the C44 reservoir. My concern is that here and in other sections of the Plan it references transferring water from the C23 Canal and Basin to Lake Okeechobee. I assume the transfer is from the small canal that is shown in the IRL Plan as connecting C23 and C24 with one way pumps to the south. Inclusion of this canal in IRL –South was controversial since its original purpose was to move water north to C23 in drought times. The C23 basin is overcommitted and has no backup water supply in drought years. They would like a connection to Lake Okeechobee. No such connection is possible for water supply since LOSA is fully committed. Modeling showed that drought in C23 corresponded with low levels in Lake Okeechobee. The idea of connecting the two basins for water use was dropped. A small canal with (if I remember right) 50cfs pumps was kept in the	from the reservoirs through the STA towards the North Fork at a rate of 200 cfs or less to limit potential flooding and to help meet the needs of fish and wildlife. Water redirected south is stored in the C-44 Reservoir/STA and released to the South Fork via S-80 to tide at off-peak times to make room for additional C-23 and C-44 basin runoff. With the CEPP TSP, these basic premises of redistribution are also followed. Flood releases through the C-23 control structures are still sent north to the North Fork, however, releases are consistent with the updated target and water reservation - 130 cfs at the Gordy Road structure on Ten Mile Creek. Under CEPP the North Fork reservation target is met approximately 100% of the time, which then allows excess C-23 Basin water to be sent south to the C-44 Reservoir/STA until it is filled. The transfer from the C-23 Basin to the C-44 Reservoir/STA is approximately 6 k ac-ft/yr. However, instead of discharging all water stored in the reservoir to tide via the S-80, a portion of the water stored in the C-44 Reservoir/STA is retained in the regional system and back flowed to Lake Okeechobee via C-44 Canal. Retaining this water does benefit existing legal uses of water permitted to withdraw surface water from Lake Okeechobee. It does not benefit agricultural users in the C-23 Basin. Backflowing water from the C-44 Canal to Lake Okeechobee is consistent with today's operations of the lake (LORS 2008) and SFWMD water shortage operations (LOWSM) and does not affect permitted allocations. It only improves the ability to meet existing permitted demands by retaining more water in the regional system that is available to agricultural users. The improvement to permitted users is an additional 21 kac-ft/yr on average being back flowed from C-44 Canal to Lake Okeechobee with CEPP in place. This represents about 4 % of the average annual demand in LOSA (550+ kac-ft/yr). Ideas evaluated during the development of the Loxahatchee River PIR included a Flowway 4, which takes water from the C-44 via a 50 cfs pump and a series of existing agricultural canals to a STA on the Gulfstream property. It is discharged to either Cypress Creek or the

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	IRL Plan under the theory that it could divert high nutrient loads from entering the middle estuary at C23. Modeling showed that when the IRL Plan was fully implemented, there would be minimal use of the canal. It was never modeled for water quantity transfers. You might check with Patti Gorham of SFWMD who was on the IRL team and might have a better memory than I do. Dan Haunert, who was with the District at the time, is also familiar with the issue. Inclusion of the words "including water conveyed from the C23 basin" suggests a known water quantity benefit that has been modeled as part of the CEPP planning process. I don't believe that is true and I would ask you to revise those sections of the Plan.	remnant Moonshine Creek, which connects to the North Fork of the Loxahatchee River. The component was screened out during evaluation since it was not cost effective. The diversion of water from the C23 Canal and Basin to the C-44 Reservoir/STA is only in one direction to the south.
CITIZEN-163 (GB)	I have been an advocate for Florida wildlife for the past 30 years, having lived here since the 1980's. I used to visit Everglades National Park regularly, and I know it has deteriorated every year. Now our Indian River Lagoon and estuary is in serious peril. I live in Martin County, and this breaks my heart. Please support the effort to restore the Park and coastal estuaries on both coasts by moving clean water toward the south from Lake Okeechobee, and discontinue the discharges that are killing our rivers. Go forward with CEPP as soon as possible and get this very serious situation on the path to resolution. Please keep me informed.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-164 (LY)	WE HERE ON THE NORTH FORK OF THE ST LUCIE RIVER ARE DEVESTATED BY THE MESS YOU HAVE MADE OF OUR BEAUTIFUL ST LUCIE RIVER. EVERYTHING IS DYING. PLEASE FIX IT AS SOON AS YOU CAN.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. Please see response to comment CITIZEN-7 above regarding the project schedule.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-165 (PG)	Please send clean water south, as nature would have it, and stop polluting the St. Lucie and other east/west waterways.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-166 (LRH)	PLEASE, PLEASE, PLEASE, Finalize the Central Everglades Plan Projects as soon as possible. The Corps of Engineers has a wonderful opportunity to become HEROS in the hearts of the citizens effected by the water released from the lake.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-167 (GD)	Please PLEASE PLEASE PLEASE try REAL HARD to get CEPP approved so you can get start making progress on Everglades restoration which will benefit those who love and play on the St Lucie River.	Thank you for your comment. Please see response to comment CITIZEN-7 above.
CITIZEN-168 (TH)	I am a homeowner and boating/fishing enthusiast living on the River. I have read that the dumping of dirty water from Lake Okeechobee into the St Lucie and IRL continues and because of the heavy rains, at a high pace. As you know this is destructive to the natural habitat of grasses and has greatly damaged the shrimp population. Once again I would urge you to move forward with the CEPP/ moving the water south as it was always intended to do to save the great natural estuaries of the St Lucie and IRL.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-169 (SM)	I am a resident of Palm City and live along the St. Lucie River. Runoff from Lake Okeechobee has now killed all the fish in the St Lucie with the resultant effect that the ospreys are gone due to lack of fish as are many if not all of the wading birds. This is an environmental disaster as far as I am concerned. We are reading every day of water borne disease due to polluted streams, rivers and lakes. Polluted water and evaporation leads to polluted air. The United States is too progressive a country to allow this to continue. Elimination of our wildlife degrades the environment for all generations and diminishes the world for our children. Please do what you can to stop the pollution of the St. Lucie and return this important estuary to its former health.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-170 (M)	Has the Corp of Engineers considered using Green Earth Technologies to help clean the Everglades? They make products to clean environment from oil spills and other harmful pollutants. Which might be helpful for your CERP project. All their products are non-petro based and made in USA from USA sources.	**Section E.1.1.2** (**Storage and Treatment Management Measures**) contains a list and description of management measures considered for purposes of water quality treatment within the project area including STAs, chemical precipitation, dredging of Lake Okeechobee near primary canal intakes, and hybrid wetland treatment technologies. A FEB was also considered for purposes of limited

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	Personally, I use their motor oil - G-OIL a bio-friendly alternative to the petroleum based motor oil, bar/chain oil and cleaning products. All work good. I am not affiliated with Green Earth Technologies.	water quality treatement. Storage and treatment of new water will be possible with the construction of a 14,000 acre FEB and associated distribution features on the A-2 footprint within the EAA. Operation of the A-2 FEB would be integrated with the future operation of the State's Restoration Strategies features, including the A-1 FEB and the States existing STA 2 and STA 3/4 facilities.
CITIZEN-171 (SL) Comment 1	I am a member of the Broward County Airboat, Halftrack, and Conservation Club, though I am speaking for myself and not the club. I would like to add some public commentary about the CEPP plan and what I have seen at the CEPP meetings. All in all, I believe the plan is good and a lot of positive work has gone into it. My biggest concerns about the plan are as follows: 1) The depth and duration of water in the WCAs. We need to know what the water levels will be throughout the year and how long they will be held at that level.	A summary of the anticipated hydrologic effects of the CEPP action alternatives is provided in Table 5.1-2 for CEPP Alternatives 1 through 4 and in Table 5.2-1 for Alternative 4R and the TSP Alternative 4R2. The summary of regional hydrologic differences includes quantitative comparisons between the ECB and FWO and between the FWO and each action alternative based on the Regional Simulation Model (RSM)-BN and RSM-GL CEPP modeling representations of these baselines and alternatives. The determination of the directionality of hydrologic change (improvements and/or adverse hydrologic change) within each specified geographic region is principally based on the results of the ecological evaluation, which are described in Section 4.2.2.and Section 4.6.2. The anticipated hydrologic effects are described for the following monitoring gauge locations throughout the WCAs, which are representative of the spatial variability of CEPP hydrologic changes: 2A-17 (WCA 2A); 2B-Y (WCA 2B); 3A-NW (Northwest WCA 3A); 3A-NE (Northeast WCA 3A); 3A-3 (East-Central WCA 3A); 3A-4 (Central WCA 3A); 3A-28 (Southern WCA 3A); and Site 71 (WCA 3B). Complete supporting documentation for the summary of anticipated hydrologic effects, including stage duration curves for the indicated monitoring gauge locations, is provided in CEPP PIR Appendices C.1 (ECB versus FWO); C.2.1 (Alternatives 1 through 4 versus FWO); and C.2.2 (Alternative 4R and Alternative 4R2 versus FWO). For localized hydrologic effects at other non-specified WCA locations or daily stage hydrograph information, this information is available for Alternative 4R and Alternative 4R2 as part of the complete set of RSM-BN and RSM-GL hydrologic model performance measure output

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		that is posted on the Everglades Plan public web site for the CERP, as indicated in the CEPP PIR main report: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx
CITIZEN-171 (SL) Comment 2	2) Destruction of tree islands and habitat. We have seen firsthand for decades that it takes as little as six weeks of held high water to begin eroding tree islands in the area. WCA 2a is a prime example of this. There are few, if any, tree islands remaining in Area 2a. If the water is held too high in Area 3 it's only a matter of time before we destroy the entire area. I consider the WCAs to be Everglades even more than the actual Everglades National Park. Destruction of this area due to high water is the complete opposite of Everglades Restoration. Additionally, I don't believe it is necessary to destroy any existing habitat to further the restoration plan. If backfilling portions of the Miami Canal is necessary to the plan, existing habitat and tree islands shouldn't be destroyed to provide the fill.	The northwest region of WCA-3A has become a dense bank of willow and does not provide the elevation mosaic or the plant diversity needed to support aquatic animals, sloughs and tree islands. And, this region does not currently support CERP key indicators of restoration, such as prey-based fauna (i.e., crayfish and fish). CEPP and the Adaptive Management plan are planning on using fire to create differential flow paths that will accentuate sheetflow and minimize excessive ponding. Differential flow paths will "jump-start" the elevation mosaics needed to restore the ridge-slough-tree island landscape. The CEPP plan recognizes that a regional approach to restoration will require that tree islands be monitored for peat accumulation rates, that regions such as NW-WCA-3A will require incremental adaptive restoration because they are extremely altered, and that tree islands need to be preserved and restored.
CITIZEN-171 (SL) Comment 3	3) Furbearing animals and Wading Birds. The furbearing animal and wading bird population in the area will be decimated if the water is held too high for too long. Plain and simple, too much water destroys their home.	Section 5.1.6.5 states that CEPP implementation may negatively affect some mammals dependent upon upland habitat. Due to increased water flow and changes in water distribution it is anticipated that overdrained areas in northern WCA 3A will be rehydrated, triggering a vegetation transition from upland to wetland habitat. Although mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades, there is an increased potential for this vegetation transition to have a moderate adverse effect negatively affect mammals using upland habitat. Similar language about mammals that are dependent upon upland habitat is included in the third paragraph of Section 5.2.6.5.
CITIZEN-171 (SL) Comment 4	4) The timing of the projects. It seems that a lot of focus is being put on preparing the northern parts to allow more water in. We should be focusing on making sure we have ways to safely and efficiently get the water out before we even consider pumping more in. The current high water closure is prime example of this; if the getaway capacity is increased, as per the plan, there is a very good chance we wouldn't have the closure and irreversible damage caused by the water that is happening right now.	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Project features are grouped into three separate Project Partnership Agreements (PPAs) based upon the spatial distribution of the project features and the locations within the CEPP study area where separable hydrologic and environmental benefits would accrue. These groupings include a PPA of project features in northern WCA 3A (PPA North), a PPA of

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		project features in southern WCA 3A, 3B, and ENP (PPA South), and a final PPA which provides the new water and required seepage management features that benefits the entirety of the study area (PPA New Water). The Final PIR/EIS presents two potential implementation sequencing scenarios that are possible with the three separate PPAs currently identified: 1) PPA North → PPA South → PPA New Water and 2) PPA South → PPA North →PPA New Water. The provided comment mentions features in PPA South. The Final PIR/EIS acknowledges that PPA North or PPA South are reversible and either may be constructed first given that project dependencies noted in **Table 6-10** of the Draft PIR/EIS are met.
CITIZEN-171 (SL) Comment 5	5) Water quality to the ENP. We have heard for a long time now that Everglades National Park will take as much water as it can get. This is a scary proposition because of the water quality guidelines for pumping water into the park. As we know, the guidelines become stricter as the park takes more water. There needs to be a plan in place to make sure that: a. Park standards can be met b. If the park decides to stop taking water due to their stringent standards, we have a way to prevent pooling of water in Area 3 and sheet flow stoppage. This reflects back to focusing on getting the water out before pumping it in.	Water quality standards for the park are set by Florida statute and Federal Clean Water Act. The Federal and State partners will ensure that CEPP will be in compliance with all applicable water quality standards in the Park and elsewhere within the study area. State and Federal agencies currently participate in weekly meetings to discuss the implications of planned water management actions on water quality, fish/wildlife resources, flooding, and water supply.
CITIZEN-171 (SL) Comment 6	6) Further interaction with the public. To this point, this interaction with the public and the ability to make public commentary has been fantastic. I ask that you continue to keep the public informed and continue to take public input as the plan progresses. Our love for the Everglades knows no bounds and we are always willing to give our opinion and assist the plan in any way we can to secure the health of the Everglades for future generations to enjoy as we do.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN-172 (AG) Comment 1	Florida Bay First As a south Floridian, almost native, it is quite frustrating to see how	Alt 4R2 improved hydrologic conditions in Florida Bay in comparison to the FWO by significantly increasing overland flows. Water flowing through SRS reaches Florida Bay through the following routes: 1)

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	the restoration of the Everglades has not progressed over the last 15 years. The lack of positive forward movement on restoring the Everglades and more specifically the Florida Bay, brings into question the validity of this current plan and the commitment of those involved and in a position to make this happen. With that said, it would also appear that throughout the Draft PIR there are various sections that create a sense that the models being used to predict the outcome may fall well short of the desired goals. It has always been the goal of restoring the Everglades to have the quantity and timing of freshwater restored to the Florida Bay to the maximum amount possible with all of the other competing interests. The current models, as proposed in CEPP call for significant habitat unit increases from water being moved through Northeast Shark River Slough. The claim is that this freshwater will flow out the river system, around Cape Sable and effect ecological benefits to seagrass in an area of the Florida Bay that is hypersaline. If this were even possible, it does not appear that the information addresses the many, many basins in the Florida Bay that prevent water movement from one basin to the other due to the shallow seagrass/mud flats in the Bay. To effect change in the places most needed to create the ecological lift that the Florida Bay demands, this freshwater would need to be placed into Taylor Slough to begin to meet the claims of habitat benefits as claimed in the PIR.	surface water that enters the near-shore waters at the mouth of Whitewater Bay may flow around Cape Sable and into western Florida Bay, 2) surface water that flows north and west of the Rocky Glades may seep into southeastern Florida Bay, and 3) surface water can enter Florida Bay via Taylor Slough by seeping under the central and eastern Rocky Glades. Freshwater deliveries through each of these routes have decreased with drainage of the Everglades over the last century. Only the first of these routes likely has influence on salinities in Florida Bay today. Alt 4R2 provided increased flows within central SRS in comparison to the FWO with annual flow increases above the FWO of 168,000 acre-feet on average per year. Alt 4R2 provided increased flows within Taylor Slough in comparison to the FWO; however, increases in flow were not as significant as increases in observed flows in SRS. Alt 4R2 provided increases of 23,000 acre feet per year on average within Taylor slough relative to the FWO. Improved hydrologic conditions in central SRS directly resulted in improved salinity conditions in Florida Bay. Although Alt 4R2 provides a significant increase in freshwater needed for the restoration of the central Everglades, it is recognized that additional actions are needed to achieve the restoration envisioned in CERP. Additional freshwater flows of 500,000 to 700,000 acre-feet per year, annual average into SRS and Taylor Slough may be necessary to bring Florida Bay to full restoration. Please reference Section **G.2.3** and **G.2.7** of **Appendix G (Benefit Model**) for further information on flows to Florida Bay.
CITIZEN-172 (AG) Comment 2	Based on the current plan, the habitat ecological benefits that are being portrayed in the PIR for the Florida Bay should be removed. In order to maintain an accurate discussion and evaluation of habitat benefits for the Florida Bay, the plan should also address the placement of freshwater into Taylor Slough to increase the quantity and duration of freshwater flows to the Bay. This is not a new concept and is one that should prevent CEPP from being approved in its current state.	Please see response to CITIZEN-172; Comment 1 above. Also please reference Section **G.2.3** and **G.2.7** of **Appendix G (Benefit Model**) for further information on flows to Florida Bay.
CITIZEN-172 (AG) Comment 3	My words do not convey the importance of either placing measureable and significant amounts of freshwater into Taylor Slough or removing the habitat benefits to the Florida Bay from CEPP due to the placement of additional freshwater into NESS. It is	Please see response to CITIZEN-172; Comment 1 above. Also please reference Section **G.2.3** and **G.2.7** of **Appendix G (Benefit Model**) for further information on flows to Florida Bay.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	astounding to make the connection of placing freshwater into NESS and that water adding benefits to the Florida Bay. After spending the last 20 years in the coastal waters of the Florida Bay, I have seen the benefits of limited increases of freshwater during above normal rainy seasons and the positive change in function of the seagrass meadows being delivered from the coastal fringe and not freshwater coming from the riverine systems. Florida Bay First.	
CITIZEN-173 (RS) Comment 1	I am a member of the Airboat Association of Florida though I am speaking for myself and not the club. I am a native of Miami and have seen many changes in the Everglades that concern me. I would like to add some public commentary about the CEPP plan and what I have seen at the CEPP meetings. All in all, I believe the plan is good and a lot of positive work has gone into it. My biggest concerns about the plan are as follows: 1) The depth and duration of water in the WCAs. We need to know what the water levels will be throughout the year and how long they will be held at that level.	Thank you for your comment. Please see response to comment CITIZEN-171 Comment 1 above.
CITIZEN-173 (RS) Comment 2	2) Destruction of tree islands and habitat. We have seen firsthand for decades that it takes as little as six weeks of held high water to begin eroding tree islands in the area. WCA 2a is a prime example of this. There are few, if any, tree islands remaining in Area 2a. If the water is held too high in Area 3 it's only a matter of time before we destroy the entire area. I consider the WCAs to be Everglades even more than the actual Everglades National Park. Destruction of this area due to high water is the complete opposite of Everglades Restoration. Additionally, I don't believe it is necessary to destroy any existing habitat to further the restoration plan. If backfilling portions of the Miami Canal is necessary to the plan, existing habitat and tree islands shouldn't be destroyed to provide the fill.	See response to CITIZEN-171 Comment 2 above.
CITIZEN-173 (RS)	3) Furbearing animals and Wading Birds. The furbearing animal and wading bird population in the area will be decimated if the	See response above for CITIZEN-171 Comment 3.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
Comment 3	water is held too high for too long. Plain and simple, too much water destroys their home.	
CITIZEN-173 (RS) Comment 4	4) The timing of the projects. It seems that a lot of focus is being put on preparing the northern parts to allow more water in. We should be focusing on making sure we have ways to safely and efficiently get the water out before we even consider pumping more in. The current high water closure is prime example of this; if the getaway capacity is increased, as per the plan, there is a very good chance we wouldn't have the closure and irreversible damage caused by the water that is happening right now.	See response above for CITIZEN-171 Comment 4.
CITIZEN-173 (RS) Comment 5	5) Water quality to the ENP. We have heard for a long time now that Everglades National Park will take as much water as it can get. This is a scary proposition because of the water quality guidelines for pumping water into the park. As we know, the guidelines become stricter as the park takes more water. There needs to be a plan in place to make sure that: a. Park standards can be met b. If the park decides to stop taking water due to their stringent standards, we have a way to prevent pooling of water in Area 3 and sheet flow stoppage. This reflects back to focusing on getting the water out before pumping it in.	See response above to CITIZEN-171 Comment 5.
CITIZEN-173 (RS) Comment 6	6) Further interaction with the public. To this point, this interaction with the public and the ability to make public commentary has been fantastic. I ask that you continue to keep the public informed and continue to take public input as the plan progresses. Our love for the Everglades knows no bounds and we are always willing to give our opinion and assist the plan in any way we can to secure the health of the Everglades for future generations to enjoy as we do.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN-174 (BL)	As new avenues to divert Lake Okeechobee waters away from the east and west coast estuaries are explored, please do not overlook the potential need for C12, C10 and L8 flows SE towards and into C51. Presently there is a development at the corner of L8 and C51 that, if approved, would remove its potential as a new filtering marsh. This development needs a stay until that option can be explored. That is, this could be "STA-1N" or some other part of an US-ACE / SFWMD synergism. This could be added to CEPP by a	Thank you for your suggestions. While CEPP makes great strides in providing benefits to the Greater Everglades ecosystem and helps redirect some Lake Okeechobee regulatory releases south, the USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	simple pen stroke which moves CEPP's boundary about a mile or so NE. I REALLY REALLY think that the lands mentioned in the attachment should be bought (US-ACE / SFWMD / FPL consortium) and converted to a filtering marsh—this will help the glades and Lake Worth Lagoon. Attached is a 'short' memorandum and a set of annotated figures concerning the future of the central western communities of Palm Beach County and certain potentially disastrous impacts on the waters entering both the Everglades and Lake Worth Lagoon. Additionally, rather than just complain about rampant over development, I have tried to propose viable alternatives which will not only avoid these impacts but positively influence surface water quality and also provide carbon-free electrical power to supplement the West County Energy Center. I thank you for your time and consideration. (Feel free to distribute / paraphrase etc.) **See Attachment	
CITIZEN-175 (MAW)	My main concern is the water levels. The water levels must be kept at a correct level to ensure that the St Lucie & Caloosahatchee estuaries are not flooded like recently causing toxic algae. Also the high water levels in the WCA's to the south, causing the mammals and wading birds to not survive. When back filling the Miami Canal, it was stated that the "islands" for the mammals would only be one and a half foot high. Due to historical high water problems, 1 1/2 feet would not be high enough. There should be plenty of fill there to make these "islands" higher, about five (5) feet would be more appropriate.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. Section 5.1.6.5 states that CEPP implementation may negatively affect some mammals dependent upon upland habitat. Due to increased water flow and changes in water distribution it is anticipated that overdrained areas in northern WCA 3A will be rehydrated, triggering a vegetation transition from upland to

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		wetland habitat. Although mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades, there is an increased potential for this vegetation transition to have a moderate adverse effect negatively affect mammals using upland habitat. Similar language about mammals that are dependent upon upland habitat is included in the third paragraph of Section 5.2.6.5. If the tree islands are 5 feet high, it will be too dry for too long and the appropriate vegetation would not be present.
CITIZEN-176 (EM)	WE NEED TO RESTORE THE EVERGLADES AND CUT DOWN ON DISCHARGES FROM LAKE OKEECHOBEE. EVERYTHING DEPENDS ON IT, AND THE PEOPLE ARE SICK OF IT AND DEMAND CHANGE.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-177 (BC)	Please stop dumping polluted water in Martin County. It directly effects my business, my property values (I have waterfront and can't go into the water) Also now with the flesh eating bacteria showing up in the ocean it seams that will be off limits soon. Stop kicking the can down the road, you have had a solution for over 20 years. Just start doing it!	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-178 (GG)	As a taxpayer I find it utterly disgusting that we would first allow the Sugar industry to pollute our waterways and natural land filtration systems, then reward them with taxpayer money, so they can move to another piece of land to pollute. Then we will take more taxpayer money and clean up the old area they polluted to restore it to what it should have been allowed to remain in the first place. Every elected or appointed official that signs off on this should be stripped and flogged then put on public display as an example of what should happen to officials with no backbone. Make no mistake you may think at this point this agreement is the best you could hope for, but I disagree vehemently. What you should do is file a suit against Big Sugar force them to clean up the old site at their	Thank you for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	expense, make stricter rules of absolutely no discharge into our waterways at their new location which they can pay the taxpayers for. If they don't like it tell them to move their business overseas and pollute somebody else's waterways. We can find other work for those they layoff helping clean up our waterways.	
CITIZEN-179 (RR)	All though I am not fully informed on this project the watch groups that are protecting our everglades are. My main comment here is that from what I have read, seen, experienced in my 41 years that the army core of engineers have caused more problems than good in regards to the everglades. I am as well as other am not willing to give any more of my rights to the use of the everglades to accommodate blotches by the acoe which effects our rights, wildlife destruction, and any more impedance in regards to water levels.	Alt 4R2 provides significant benefits within the project area; beneficially affecting more than 1.5 million acres in the Caloosahatchee and St. Lucie Estuaries, WCA 3, ENP, and Florida Bay. Alt 4R2 would decrease high volume freshwater discharges from Lake Okeechobee that are currently sent to the Northern Estuaries. Additional water from Lake Okeechobee would be sent southward through canals of the EAA to the A-2 FEB. The A-2 FEB would provide storage capacity, attenuation of high flows, and limited pre-treatment prior to delivery of the redirected water to existing STAs, which would reduce phosphorus concentrations in the water to meet required water quality standards. The treated water would be distributed across the northwestern boundary of WCA 3A to flow through and help restore more natural quantity, timing and distribution of water to WCA 3A, WCA 3B, ENP, and Florida Bay. Several existing levees, canals, culverts, and pump stations would be constructed, modified, or removed to improve the flow of water through the system and provide for other water related needs.
CITIZEN-180 (MC)	In making my comments on the evaluation of water supplied to Florida Bay and the likely impacts of that water, I failed to include and reference the included attachment. It is a document prepared by the principle scientists responsible for the Florida Bay portion of the PIR for the Central Everglades Planning Project. It details the process used in evaluating project benefits to Florida Bay. The model used is certainly the accepted one used for estuarine analysis in Everglades projects and I would not hesitate to accept it's claim of benefit to the majority of the Shark River Slough. It does not, however, include any analysis of existing circulation data to justify its claim of benefit to Florida Bay. It also fails to provide justification for the claim of transfer of freshwater, at the stated volumes, to the internal water bodies east of the Ingraham Highway. While it is inarguable that the proposed benefits exist at some level of fresh water input to the Shark River System, I believe it is far from clear	Please see response to CITIZEN-172; Comment 1 above. Also please reference Section **G.2.3** and **G.2.7** of **Appendix G (Benefit Model**) for further information on flows to Florida Bay.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	that they exist at the levels proposed by the existing plan.	
CITIZEN-181 (SY)	As a 35 year resident of Martin County, I have seen many changes in the St Lucie River and Estuary. We need to find a solution to the water releases. I believe CEPP will make a difference by diverting 65 billion gallons south rather than sending it the St Lucie and Caloosahatchee. I urge the Corps to finalize CEPP and include it in the Water Resources Development Act.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-182 (JT)	Why are we allowing Doral to build west of the Turnpike? They just passed an Urban Development Boundary bill to allow the Doral Mayor's,Luigi Boria, crony, Juan Carlos Tovar, www.miamiherald.com/2013/07/20/3511546/ethics-commission-reviews-doral.html, to build west of the Florida Turnpike. http://www.miamiherald.com/2013/10/02/3666008/miami-dade-commissioners-expand.html. Why are we not making more noise about this? What happened to CERP? This land is "environmentally sensitive and important to protecting the drinking-water supply". Florida aquifers are not sustainable with further development. We need a real voice to protect our sensitive and endangered Florida Everglades.	urban development boundaries within Miami-Dade County are not within the USACE's jursidiction. The CEPP is encompassed in the CERP, which was approved by Congress as a framework for the restoration of the natural system under Section 601 of the WRDA of 2000. The purpose of the Restudy was to re-examine the C&SF Project to determine the feasibility of structural or operational modifications to the project essential to the restoration of the Everglades and south Florida ecosystem, while providing for other water-related needs such as urban and agricultural water supply and flood control in those areas served by the project. The CEPP is composed of increments of project components that were identified in CERP. Alt 4R2 increases the amount of water available for municipal and industrial water uses in LECSA 3 (Miami-Dade County) by approximately 5 MGD.
CITIZEN-183 (SS)	The CEPP intends to remove water from the IRL-S Project by pulling water at times from the C-44 system and putting into Lake Okeechobee (where it then becomes governed by different operational rules and may not be available back into the C-44 system where it may be needed during the dry season to promote proper salinities in the St. Lucie Estuary). The IRL-S Team did not develop a Savings Clause for water supply instead said "we are making more water available, therefore we are exempt". However, if CEPP removes too much water from the C-44 system, it may inadvertently violate the IRL-S Savings Clause. Please address this issue in the CEPP Final PIR.	Backflowing water from the C-44 Canal to Lake Okeechobee is consistent with today's operations of Lake Okeechobee (LORS 2008) and SFWMD water shortage operations (LOWSM) and does not affect permitted allocations. These backflows improve the ability to meet existing permitted demands by retaining more water in the regional system that is available to agricultural users. The improvement to permitted users is an additional 21 kac-ft/yr on average being back flowed from C-44 Canal to Lake Okeechobee with CEPP in place. This represents about 4 % of the average annual demand in LOSA (550+ kac-ft/yr).

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-184 (PT) Comment - 1	Page 1-65, second sentence – change "…protection as well conversion.." to "protection as well as conversion…"	The language was changed as suggested.
CITIZEN-184 (PT) Comment - 2	Throughout the report, water-level gages should be referred to by their official name. In my opinion, the official name is the name used by the agency that operates the gage. In several cases, USACE uses another name for the gage. For example, Site 3-2 is published by the operating agency (USGS) as Site 62. If a reader goes to the USGS website and looks up data for Site 3-2, they will not find it. I propose a statement at the beginning of the report about gage names. Perhaps an appendix needs to clarify the gages discussed in the report and who operates them and their official name.	The monitoring gage naming conventions used in the CEPP PIR were established to maintain consistency with the naming conventions used with CEPP hydrologic modeling output (Figure A.8-9 in Appendix A and Figure C.1-18 in Appendix C.1), since this information was referenced and presented to the technical subteams, PDT, and other stakeholders throughout the CEPP plan formulation process and since the modeling output is posted on EvergladesPlan.org as part of the additional reference information cited in the PIR. Figure 7-6 of the Draft Project Operating Manual (Annex C) has been revised to indicate alternative naming conventions for the 3A-3, 3A-4, 3A-28, and E-4 monitoring gages that are referenced in the DPOM. A comprehensive table which summarizes all key South Florida monitoring gages, primary operating agency, official name, and alternative naming conventions is not presently available for inclusion as supplemental information for the CEPP Final PIR.

Table C.3.3-4. Comment response matrix detailing comments received during the CEPP public meetings on the Draft PIR and EIS held September 16, 17, 18, 19 and 25, 2013

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
Central Everglades Planning Project Public Meeting – Draft PIR/EIS September 16, 2013 Plantation, FL		
CITIZEN-1 (AO); Comment 1	Just like the Corps of Engineers and the SFWMD, when we came to participate in this project, we had an agenda, a set of goals, a mission statement. I think the primary mission statement we had was that we wanted to prevent the backfilling of the Everglades canals and the vast fishery that's out there, and this is for you Eric, under the auspices of the CERP. Here we are 10 years later. And with this presentation I would like to say that I'd like to put, you know, maybe a close on this chapter at least on our first part of our mission, which is the preventions of the backfilling of the canal, and kind of pave the way for the second part of our mission, which is to enhance the fishing opportunities that we have now and create new fishing opportunities for future generations.	Thank you for your comment. The USACE appreciates the ongoing involvement of stakeholders from the recreational community.
CITIZEN-1 (AO); Comment 2	So with that said, I'd like to just single out a couple of people for mention. Kim, I want to thank you for all the years of advice and support that you've given us. You told us from the very beginning to stick to our guns and we'd get, you know, our voice heard and our goals accomplished. And I want to thank you for that. And Jerry Krenz of the SFWMD. He's been the face of the organization as far as recreation is concerned. I remember 10 years ago when recreation was kind of like a dirty word in the restoration process. And he's kept at it for 10 years. And I think that the level of the open policy of recreation out in the public lands is unprecedented, and I thank you for that, Jerry. And I look forward to working on the second part, which is enhancing the fishing opportunities we have. So you're not done with us yet. Thank you.	Thank you for your comment and recognition of CEPP PDT members. The USACE appreciates the ongoing involvement of stakeholders from the recreational community. The proposed recreation facilities will increase access into the Greater Everglades and enhance user's opportunities and access within the marsh.
CITIZEN – 2 (SE)	Thank you. Sorry to speak twice, but I wanted to respond to the emphasis on water quality with one point and that is we're here in Broward County. I'm here tonight because this is my home county. I live just a few minutes away from here. And just to give folks a sense of the water quality challenges and the extent to which we have to go to meet them. Right here in Broward County we have a CERP project. It's called the Broward County WPA Project. And one piece of that project, a major component of that project that has to	The Broward County Water Preserve Area (WPA) Project is a CERP project that is located within the study area of CEPP and is assumed to be in the Future Without Project Condition. Once constructed, the Broward County WPA will reduce storm water deliveries to WCA 3, thereby increasing the overall quality of water available for delivery to ENP. Increasing water flows to NESRS and introducing water flow into WCA 3B as a result of implementation of CEPP could occur once the Broward County WPA C-11 Impoundment is in place

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	be built is to prevent phosphorous from flowing directly into ENP. So the largest source of phosphorous right now is the Everglades. Certainly the EAA and the SFWMD is bringing in an additional billion dollars worth of investment to solve that problem. But one of the next largest sources of phosphrous into ENP is Broward County. And so – and just to give you a sense. Broward County is one of the leaders when it comes to local government on water quality. So the water quality in Broward County is tremendously clean by comparison. And so to give I think it was Rhonda or somebody who raised the question of how clean – do we really have high standards? In the central and –(inaudible) – Everglades we have very, very high standard for clean water. And so even with a county discharging into the Everglades as clean as Broward County, we still have to build quite a large CERP project to take care of the rest of it to get it down to that very low standard. And the last thing I would say is this sense of urgency, I think all of us share it. We share it in government and we rely on Congress for both appropriations and authorization. Authorizations to come first, then appropriations. Thank you.	to reduce S-9 discharges to the L-67 A canal, which contributes to phosphorous loads into ENP through S-333.
CITIZEN – 3 (JK)	Sorry I missed my opportunity to speak, but I think I was drinking a little too much water earlier. Anyway, the only thing that I would like to mention is that you mentioned that it takes time to get the appropriations through Congress. Are all the appropriations coming through Federally or is any of it coming through via State?	The project is cost-shared 50/50 with the South Florida Water Management District (SFWMD). The SFWMD is required to provide all lands necessary for the project and may also contribute cash or work-in-kind credits for planning, design and construction that can be credited towards their 50% of the costs.
CITIZEN-4 (DY); Comment - 1	My name is Doug Young, President of the South Florida Audubon society. The first comment I wanted to make is that the former name of the south Florida Audubon Society was Broward County Audubon, because we represent Broward County. We're one of 44 Audubon chapters in Florida. We've been around since 1956. And I just wanted to start by saying that the organization was one of the founding members of the Everglades Coalition, which was approximately 28, 29 years ago. So we've been involved with the Everglades, Everglades restoration for that period of time pre-CERP	Thank you for your comment. The USACE appreciates the ongoing involvement of the South Florida Audubon Society in the restoration of the Everglades.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	and post CERP and CEPP. And just another Audubon thing. Audubon has been very involved with this from the start. And I'd just like to recognize the late great Dr. John Ogden who worked on the Everglades for at least 40 years, and was actually a driving force for CERP and actually worked on it, the implementation.	
CITIZEN-4 (DY); Comment – 2	Now that I said that, I just wanted to say that I noticed in the EIS, and I haven't had a chance to read this portion, that there's a section of sea level rise assessment, which is terrific and I know this is happening. I know the SFWMD and everybody is incorporating both saltwater intrusion and sea level rise into what they're doing. But I also realistically understand that as far as funding and appropriation goes, that the plans that you showed don't happen, you know, overnight. It's a lengthy process. So the only positive comment I have is that having been involved with other projects that involved the Corps is that as this progresses, that the assessment that was made for the EIS, if we're looking at let's say five years down the road, the data that's available at the present time for both saltwater intrusion and sea level rise is going to change, which totally affects everything that you've spoken about. So you know, that's just a comment that I make because its -- it's a work in progress. And, you know, climate change is a work in progress. So I just wanted to bring that to light.	The effects of sea level rise were analyzed per EC 1165-2-212. This analysis looked at the effect of sea level rise on the project area as well as on the restoration benefits anticipated to result from the implementation of the Recommended Plan. The Final CEPP Integrated PIR and EIS could be updated if necessary as further information on sea level rise projections were to become available.
CITIZEN-4 (DY); Comment – 3	And I guess I wish everyone the best of luck as far as the appropriations. Because we know that even though it's so important to us and we have addressed the situation about the Everglades, America's Everglades and CERP and CEPP to across the country to congressional delegations, Senators, congressional people who have been down here touring the Everglades that it's still a very tough sell, because there's a list a mile long for projects across the country. So hopefully some dollars will be allocated for 2014 in addition to what's there right not.	Thank you for your comment. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget for administrative review. This will occur upon completion of the State and agency review of the Final CEPP Integrated PIR and EIS. Construction will be dependent upon Congressional authorization and funding.
CITIZEN-5 (DS); Comment - 1	Hi. Good Evening. Firstly I just wanted to congratulate folks. I was one of the lucky ones who attended every public hearing for the last two years on this project. And honestly the team that has been	Thank you for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	working on this has been steadfast, persistent. They were fairly unflappable in whatever, you know, curve balls were thrown. Really responded meaningfully for I mean certainly the first time in my seven years in the Everglades restoration work do I feel like the most responsive planning was held. I think that was a great stakeholder model. Really, really excited that product came out of this. It's going to take a huge step to removing levees in the Everglades. It's a big leap. A place that we didn't think we would get. And this team was able to do it with constraints on the property that we already owned, with you know a timeline that seemed unthinkable.	
CITIZEN-5(DS); Comment - 2	We're so close that the house released an authorization bill, you know, last week for the public. It's going to markup. I'm going to be up in D.C. watching over their shoulders to make sure that we can edge out a little bit of flexibility to get this plan authorized. Without congressional authorization we can't have a conversation about funding. And we desperately see the effect of not having infrastructure on the ground – (inaudible) – northern estuaries. You guys have delivered the product and actually produced a model planning project, which Congress is now trying to guide the Corps into doing more frequently on all of their planning projects. So here it is. This is the test case. This is the model. We're at the last leg. I want to congratulate you on an incredible effort. I have one nitpicky thing. I am an advocate after all. Did we really have to name the blue Shanty levee, L-67D. A little less loaded. Thank you.	Thank you for your comment. Please see response to CITIZEN-4 (DY); Comment-3 above regarding the project schedule.
CITIZEN – 6 (SP) Comment-1	Hi, my name is Stan Pannaman. I'm from the Broward County group of the Sierra Club. And among other things I'm on the Southeast Florida Marine and Water Quality Team as well as the Everglades Restoration Team. Now I would like to commend the Army Corps of Engineers for a fantastic job they've done. But unfortunately the time schedule that you have and the reality of what's happening from the water that's being dumped from Lake Okeechobee to the Gulf of Mexico as well as the Atlantic Ocean, the water quality in the ocean year after year is degrading conditions for the manatees, for our fish nurseries, and for our quality in general of the reefs, coral reefs. They're falling apart.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. Please see response to CITIZEN-4 (DY); Comment-3 above regarding the project schedule.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN – 6 (SP) Comment-2	Now I know the Corps is limited in what it can do because of money. But unless this Lake Okeechobee issue is taken into consideration, and the water treatment of this water that you want to bring south, the timing is terrible. Doug Young talked about global climate change as well as the idea of sea level rise. Well, all of this has to do with the amount of water and pressure that you have on the Everglades. If you don't get water down here soon, the saltwater will just go through this limestone that we have and destroy all of the plans and all of the hard work that you gentlemen and ladies are doing. I don't know what else to say other than just keep up the hard work. But we – I guess we citizens have got to look at the situation realistically and try to convince our Congressman and our Senators that the money be appropriated for the cleaning of this water has to be done almost immediately or else the rest of the plan that you have is going to go for not. Thank you.	The Recommended Plan is not expected to significantly affect the water quality of Lake Okeechobee. As stated in the PIR, the allocation of TMDL phosphorus loads will be addressed through revisions to the Lake Okeechobee Basin Management Action Plan. Specifically, the FDEP is in the process of developing a BMAP for Lake Okeechobee pursuant to Section 403.067, Florida Statutes. This BMAP will be an iterative effort to address water quality issues in Lake Okeechobee. Potential water quality issues associated with S-308 loads will be addressed as part of the BMAP. The effects of sea level rise were analyzed per EC 1165-2-212. This analysis looked at the effect of sea level rise on the project area as well as on the restoration benefits anticipated to result from the implementation of the Recommended Plan. Staff are working as expeditiously as possible to complete the Chief of Engineer's Report for administrative review. Please see response to CITIZEN-4 (DY); Comment-3 above regarding the project schedule.
Central Everglades Planning Project Public Meeting – Draft PIR/EIS September 17, 2013 Ft. Myers, FL		
CITIZEN-1 (PQ); Comment 1	I represent Collier Audubon and the Audubon Chapter of the Western Everglades and almost 200,000 fishermen from the Snook Foundation who increasingly tell me that they, their families and their clients not only fish but they vote. So we have a real interest in what's happening to our coast estuaries. I think I've listened to Kim more in the last 18 months than I have my wife. We've been to countless, countless meetings. And it's a really interesting and I think very informative process. We thank you for the ability to participate. From the beginning, and I noticed today was, I think, the first time in your 47 times I've heard this presentation that you didn't start out with saying this is the first increment because it is the first increment, and it is that that we need to talk about.	Thank you for your comment.
CITIZEN-1 (PQ); Comment 2	How soon can we start that second increment to talk about how do we move the million acre-feet of water that are coming down from Lake Okeechobee into our estuaries? We understand and we are fully supportive of CEPP because it builds the infrastructure that	Thank you for your comment and support of CEPP. The primary focus of the CEPP PDT is to work as expeditiously as possible to complete the Chief of Engineer's Report. The implementing agencies are committed to engaging in a public process to integrate CEPP into

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	ultimately will allow us to move additional water. But we need to start the discussion of addressing long term what do we do, not with 200,000 acre-feet, not with the million acre-feet that's coming out of the EEA, but the additional million acre-feet of water which is providing the heavy nutrient loads to our coastal waters.	the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed.
CITIZEN-1 (PQ); Comment 3	So I think that's the process I'm looking forward to, is the one we've been talking about from the very beginning. We understand where we're going, we understand the necessity to build the precursor, we understand the tremendous amounts money, we understand the necessary sequencing of these projects to make them work; but we need to start talking about the grand plan. How do we start envisioning a real solution, a real long-term solution to the million acre-feet that's coming down the Caloosahatchee year after year after year.	Thank you for your comment. Please reference Section 6.9.1 for further information. CEPP has formulated a solution for an increment of overall restoration of the south Florida ecosystem. Incidentally, there are problems and opportunities remaining. CEPP is not meeting all targets of CERP that are based on the understanding of the pre-drainage Everglades, however CEPP does provide for significant and substantial restoration of the Everglades ecosystems and achieves approximately 2/3 of the additional water flow into the WCAs that CERP envisioned. Although the recommended plan provides a significant increase in freshwater needed for the restoration of the central Everglades, additional actions are needed to achieve the restoration envisioned in CERP. The actions may include further reduce harmful discharges of freshwater from Lake Okeechobee to the St. Lucie and Caloosahatchee Estuaries and improve estuary habitat for oysters and SAV; further reduce the intensity, frequency, duration, and spatial extent of hypersaline events in Florida Bay.
CITIZEN – 2 (JH) Comment 1	Greetings, thank you, everybody. I appreciate you guys having the event tonight, and I certainly appreciate you traveling to the east coast with the message over there for them as well. I personally just came from the east coast traveling the St. Lucie River and Indian River Lagoon to where I had a bird's-eye view basically of their situation compared to our situation; it's pretty bleak over there. When I left 21 cases of dengue fever have been reported so this is a very serious concern when it comes to pollution that is actually taking effects on humans now I guess what I'm trying to get at is more of a statement. The statement being a grassroots movement has basically begun with the momentum of the Lake 0 discharges. So when it comes to the east coast and west coast combining our forces, we only empower ourselves with real fact education rather than sitting in rooms like this and hearing, you know, back and forth of examples of we don't have enough funding, or we're looking at	Thank you for your comment. The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	actually having this figured out in the year hypothetical 3012 or so, whatever number it was that you gave.	
CITIZEN – 2 (JH) Comment 2	The point being is these are all long-term fixes. We applaud your efforts, however, the reality is us coastal people who make a living on the coast are going to be effected by the runoffs for years to come. When you do travel to the east I would be quick as a representative of this movement to let you know you will be met with strong opposition for plan six. When you go over there they will very much be open arms; they're not rabble-rousers, so to speak, as we all aren't, but we all want solutions, of course, and that's what we're all here for.	Alt 4R2 redirects an average of approximately 210,000 acre-feet per year of clean freshwater into the central portion of the Everglades that would otherwise be undesirably discharged to the Northern Estuaries. The concept of a "flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Further information on the evaluation of this concept can be found in the C&SF Comprehensive Review Study (USACE 1999).
CITIZEN – 2 (JH) Comment 3	And I applaud your efforts, but I also have to make point and public record for all to know that this is where it begins on a grassroots level. I see children, I see older folks, I see everyone in between getting involved on this issue. The west I must admit is a little slower getting to it than the east, however, we are gaining momentum. I encourage all folks, all folks, especially children and everyone else in between. It's okay to speak to your children about what's going on. It's very educational for them to carry it on to the next generation. This is a 20-year plan when it comes to we're not going to really have a fix, so we have to have them as our pioneers and our stewards of the protection of our ecosystem. So basically with that, in closing I'd like to say we are now an official 50,000 member Floridian watch group upon yourselves, and we will hold your feet to the fire.	Thank you for your comment.
CITIZEN – 3 (WB) Comment 1	I'm a candidate for the U.S. Congress in Florida 17, which is ten counties that are right in the basin of Okeechobee including Okeechobee, Glades, Highlands, Desoto, Hardee, the northern part of Lee County, all the way up to Polk and Hillsborough, parts of Hillsborough. And the point I would like to make is that having been an airline pilot for 25 years and looking at Florida from great height, often at night and seeing the lights encroach upon this natural treasure we have of the Everglades system, you could see the squeeze going on, and looking at the country as a whole, we're looking at situation where certain, let's say, commercial interests	Alt 4R2 addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The CEPP is composed of increments of project components that were identified in CERP. The term “increment” is used to underscore that the study formulated portions (scales) of individual CERP components. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP, including construction of C-43 and IRL-S, to help reduce turbidity, sedimentation, and moderate

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	have held sway over environmentalist interests. And now we're in a situation where we're talking about a plan which looks to me, more or less, going hand in hand to Congress for the funds to do, as Ray pointed out, just a tenth of the job, and I think we have to think larger.	unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN – 3 (WB) Comment 2	If the federal budget is three trillion dollars roughly and a third of that goes to the Department of Defense, of which the Corps of Engineers is a part, I know it's not the Corps of Engineers' fault, but the Department of Defense has literally thumbed its nose at legislation that was passed in 1992 that all departments of the federal government will be audited every year. The Department of Defense has never been audited. So how can we determine whether, according to the information that was released by Edward Snowden, which is the closest we've come to an audit of the defense department to show that just the black budget of the Department of Defense is 57 billion dollars. Why we can't find the 20 or 30 billion dollars we need to do this project.	Thank you for your comment. USACE is committed to making the most prudent use of the annual appropriations provided.
CITIZEN – 3 (WB) Comment 3	So I would just urge you that when you go to vote think in terms of the big picture and which party and which representatives are going to go to bat for the environment or are those going to keep the status quo or the gridlock which in fact locks in place the current unbalance between the average citizen and those of the corporate bureaucracy which seems to be dominating our environment situation here today.	Thank you for your comment.
CITIZEN-4 (GB);	I'd like to touch on something a little different than most people are thinking about right now, but I don't know if everyone here believes in global warming and subsequent rise in sea levels, but some of the predictions are that by the time this long-range plan is implemented the sea levels may be six to eight inches higher than they are now, and that would put them dangerously close to the impoundment levels of the fresh water which holds back the water in the Everglades and the surrounding area. And I think that Everglades National Park may have to be renamed Everglades Marine Sanctuary. I don't	Sea level rise analysis is included in the report in Annex I. There is an external peer review of this Everglades program. The National Academy of Science does a review of progress towards restoring the Everglades every two years and one of the issues they have taken up is climate change and sea level rise. The Academy opinion and the scientific consensus is, that Everglades restoration, the comprehensive plan, and getting more water into the Everglades is a very good adaptation strategy for future climate change and sea level rise in South Florida.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	know what kind of plans you have of raising the impoundment if that becomes necessary. I'm sure there's something in effect unless nobody believes.	
CITIZEN-5(AM); Comment - 1	I represent the National Sierra Club. I run the Florida Panther campaign out of Fort Myers, and I'm also speaking on behalf of my colleague Jonathan Ulman who runs the Everglades camp. The Sierra Club supports CEPP. We believe that it's critical to restoring the natural flow to the Everglades. We understand it's not a panacea, but we hope it will help restore millions of acres of wetland.	Thank you for your comment.
CITIZEN-5(AM); Comment - 2	One change that we would like to see is that the Corps needs to revert the original intent of the water treating feature between the L-67 and the eastern end of the 2.6-mile Tamiami Trail Bridge. It was intended as a temporary weir until further decompartmentalization could be completed. The original COE intent was for it to be temporary, but now this has become a tall dam that will be tremendously expensive to maintain and very hard to remove. The Sierra Club would like to see the original intent of the structure restored. We do not want any more walls in the Everglades.	The CEPP plan does not include a water treatment feature between the L-67 and the 2.6 mile Tamiami Trail bridge. The CEPP plan does include a levee, the L-67D levee, to provide a southern flowway for water leaving WCA-3A and entering Everglades National Park. The alignment, design and dimensions of the levee will be further investigated as the project progresses in to Pre-construction Engineering and Design (PED). The function and integrity of the C&SF flood protection system provided by the L-67 A and L-67 C levee system must be maintained following CEPP implementation, and CEPP degradation of portions of the L-67 C and L-29 levees must be offset with additional infrastructure and operational constraints that maintain the pre-project level of flood protection and account for any potential increased design risk. The details of additional infrastructure, and how it would interface with operations and existing infrastructure, will be determined in the future as adaptive management, Pre-Construction Engineering and Design (PED), and as other information becomes available for this area. Consideration of a new L-67 D levee (currently included as a component of the CEPP recommended plan), including its footprint (width/height), costs, and permanency, will be cautiously considered and subject to to PDT coordination and applicable policies and permitting
CITIZEN-6 (JM); Comment - 1	I think I agree with everybody here. I'm a member of the Snook group, and the Audubon, et cetera, and so I don't think I need to say anything more about that. But I'm impressed, and the only thing I can say is Godspeed. You know, we've got this far and I think	The normal authorization process would be a Water Resource Development Act. Congress is taking one up right now. There's a bill in both houses; they're quite different, and so you don’t know when

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	there's a lot of things that need to be done, but we can't lose our focus on getting this through and getting this completed. And my hat is off to all of you, it's just keep your eye on this ball and let's get it done. And the only question I would have was in terms of funding, does this need another water bill or does it go as an independent?	or if they'll be progress on a Water Resource Development Act, but that is the necessary thing for -- as far as the Corps of Engineers is concerned, to start budgeting for any of these projects, that we would have to have it authorized first.
CITIZEN-6 (JM); Comment - 2	When do you honestly think the final go-ahead would be that you could then go for a water bill?	Thank you for your comment. Please see response to CITIZEN-4 (DY); Comment-3 above regarding the project schedule.
CITIZEN-7 (MA); Comment - 1	I'm a 40-year Lee County resident, 40-year business owner here, and I would like to commend the impressive staff and the report that we witnessed tonight. As you can see I'm not a young man. I hope to have grandchildren and I would hope that they would be able to benefit from some of these studies and implementations that are going on now.	Thank you for your comment.
CITIZEN-7 (MA); Comment - 2	As a business owner I am being impacted as we speak by what's happening today. And although this is very impressive tonight, we have a long ways to go and it seems to me that all these mandates and these schedules are not hitting the urgent need that we all are experiencing. It's a 10 percent solution as Mr. Judah had said, and it falls -- unfortunately falls short of taking care of the need.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
Central Everglades Planning Project Public Meeting – Draft PIR/EIS September 18, 2013 West Palm Beach, FL		
CITIZEN-1 (EF);	My overall feeling of course, you know that we're terribly emotionally distressed. So you know that's where we come from. But I have been at the various meetings, of course, and my observation is this, that the ladies and gentlemen of the Corps and of Water Management and of the supportive agencies have done a remarkable job in pulling together this first increment within this very narrow timeframe. And I personally didn't think it had a chance in the world, just based on history. I just didn't see how in the world we were going to be able to do it. And you've done it, and I just applaud that effort. Now all of us, Martin, Lee, all of the different counties, now we need to pick up the ball and pursue the lobbying and the contacts with our various Congressional delegations. But you guys have done well. And you still have a ways	Thank you for your comment. The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. The significant amount of water resulting from CEPP will beneficially affect more than 1.5 million acres in the St. Lucie and Caloosahatchee Estuaries, Water Conservation Area (WCA) 3A, WCA 3B, Everglades National Park (ENP), and Florida Bay. Staff will work

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	to go, but you've done well. And I wanted you to know that in spite of our distress, and candidly, that's just emotional and financial, but we do appreciate and specifically appreciate that as you are able over these last couple of weeks, that you have diminished the flow. All of those efforts are significant to us, and they come to our hearts and we appreciate your efforts very much.	as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget (OMB) for administrative review. This will occur upon completion of the State and agency review of the Final Central Everglades Planning Project (CEPP) Final Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS). Construction will be dependent upon Congressional authorization and funding.
CITIZEN – 2 (CS)	I think my comments are representative of how the public feels. This is basically very technical conversation. These are technical comments. And we seem to be dancing around the fact that the water is polluted now. Why aren't we monitoring all the substances, whatever is going into Lake Okeechobee? Why hasn't this been monitored for years? We're kind of picking up the ball now that the lake, which is our source for survival, is in jeopardy. Why at this moment aren't the wastes or anything that's going into Lake Okeechobee being monitored? I don't even know why we're having this conversation when we're talking about polluted water. Is there any way to get rid of the toxic silt at the bottom of Lake Okeechobee? I have a lot of questions. But it seems to me also this is a crisis. We don't need oil; we don't even need electricity. But we cannot survive without water. So why have we been talking about 2029? The way things are going, who knows what the world, the shape of the world's going to be. This is probably the single most important thing we can talk about, trying to preserve the water. So I think that this should be pushed into fast forward as the main project for this entire south Florida.	Thank you for your comment. Lake O Water Quality Monitoring: The SFWMD has a long-standing water quality monitoring network within Lake Okeechobee to monitor an extensive list of parameters. Lake sediments: The FDEP has conducted a limited lake sediment removal project in recent years. Extensive removal of lake sediments has been studied; however, costs are prohibitive. CEPP Schedule: The 2029 date is based on the implementation schedule of the Restoration Strategies Plan. To minimize the risk of downstream water quality impacts, the CEPP implementation plan calls for the Restoration Strategies features to be in place and operated for several years.
CITIZEN-3 (MD) Comment - 1	Michelle Diffenderfer, from the law firm of Lewis, Longman & Walker, representing the Seminole Tribe of Florida here this evening. And as you know, the Tribe is a long-standing supporter of Everglades restoration, participating in the restudy, the authorization of CERP and even funding a cost share project with the Corps of Engineers to bring water to the Big Cypress Seminole Indian Reservation. Of course, it's still under construction, but we're finding that it's not achieving all of its goals. Many of the goals are being achieved, but primarily the remaining goal of wetland restoration on the reservation, also south of the reservation in the Big Cypress	Section 5.3.2 of the PIR has been updated to include a description of the western basins and discussion of the Tribe's request for CEPP to consider opportunities to re-direct water from Lake Okeechobee to the western basins for the purposes of restoring natural areas within the Seminole Big Cypress Reservation and the adjacent Big Cypress Natural Preserve The Corps remains fully committed to ecosystem restoration and over the past several years has found success in doing so through continued engagement with key partners and stakeholders. The

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	National Preserve and additional lands where the Tribe retains customary usage rights. Both Tribes do. So since the inception of the Central Everglades Planning Project, the Tribe has sat at the table and given comments, as you are aware, of our concern that with such a wonderful planning effort and opportunity looking at the Central Everglades, that this project does not actually include those western Everglades areas, including the Big Cypress Seminole Indian Reservation, the Preserve and the additional lands, and the opportunity to take even more water from Lake Okeechobee benefitting these estuaries, bringing it south and helping restore the wetlands on the reservation and south of it. And we have continued to make that comment through this process. The concern is that with the Tribe's reservation is not included within your various lines. It makes it very difficult for the Tribe to assess whether or not there are negative impacts. But more importantly, it, of course, makes it nearly impossible to provide positive impacts.	Seminole Tribe of Florida's interest in seeing the Central Everglades Planning Project (CEPP) used as a planning vehicle to deliver the long-term hydrologic benefits is understandable. However, within the broader Comprehensive Everglades Restoration Plan (CERP), the current CEPP study cannot specifically address several restoration projects, to include the delivery of water to the Big Cypress Reservation. As only the first of several increments of CERP needed to support restoration, the CEPP study sought to identify a suite of projects that most effectively capitalized on existing data, knowledge, evaluation tools, previously constructed restoration features, and lands currently available. Implementing an incremental approach along with the continued gathering of critical scientific data and knowledge will certainly facilitate future studies and subsequent progress in restoration.
CITIZEN-3 (MD); Comment – 2	And we know that you've worked hard to ascertain that the water supply entitlement is met, that we continue to get deliveries from Lake Okeechobee for water supply needs on the reservation, and also, of course, the potential rehydration of Water Conservation Area 3A where the Tribe has rights as well. But we continue to want to focus on the western Everglades area. And we appreciate that the task force has been meeting with the Tribe, both Tribes, to look at this issue and talk more about it and identify the lack of data monitoring and modeling and maybe provide some opportunities for some of that study. But unfortunately, it's not in a timeframe for us to completely sign off on CEPP at this point, even though we recognize all the benefits of CEPP. It's just that they're not really benefits for the Seminole Tribes areas. So that's really the concern we're bringing you today. And I think that there's an opportunity, with the task force meetings, for us to get there. It just puts us in a position where we've supported Everglades restoration for so long, and I definitely would agree that you guys have done a great job. We would just be even more happy if it actually included our areas of concern to the tribal members.	Section 5.3.2 of the PIR has been updated to include a description of the western basins and discussion of the Tribe's request for CEPP to consider opportunities to re-direct water from Lake Okeechobee to the western basins for the purposes of restoring natural areas within the Seminole Big Cypress Reservation and the adjacent Big Cypress Natural Preserve. The Corps remains fully committed to ecosystem restoration and over the past several years has found success in doing so through continued engagement with key partners and stakeholders. The Seminole Tribe of Florida's interest in seeing the Central Everglades Planning Project (CEPP) used as a planning vehicle to deliver the long-term hydrologic benefits is understandable. However, within the broader Comprehensive Everglades Restoration Plan (CERP), the current CEPP study cannot specifically address several restoration projects, to include the delivery of water to the Big Cypress Reservation. As only the first of several increments of CERP needed to support restoration, the CEPP study sought to identify a suite of projects that most effectively capitalized on existing data, knowledge, evaluation tools, previously constructed restoration features, and lands currently available. Implementing an

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		incremental approach along with the continued gathering of critical scientific data and knowledge will certainly facilitate future studies and subsequent progress in restoration.
CITIZEN-4 (DV) Comment - 1	I represent 15,000 voters from the east and west coasts, a loosely formed collective of citizens who you've probably seen in the newspaper and on TV demonstrating and peacefully carrying signs, and little kids with tee shirts saying they're more valuable than water and sugar and that. And I'm here to say today that we support what you're doing. We appreciate what you're doing. Of course, we would rather not get your water, but we're doing that right now. We understand that there's issues that have to be dealt with. The concept of a good compromise is everybody walks away from the table a little upset because no one got everything they wanted. We accept that. We have a little bit of a problem in St. Lucie County understanding how we have a ten mile creek reservoir with a pumping station sitting there ready to be used, but we can't get a sign-off from some of the different federal organizations (inaudible) the Army Corps. We understand that the west coast is suing because they don't get enough water; the east coast is mad because we're getting too much water. There's all these issues, and organizations are fighting amongst themselves. I came yesterday from Marco Rubio's office, meeting with his staff. Next Tuesday I'll be in Washington, D.C. -- or in Tallahassee talking to the State Legislature. The following week we'll be in Washington, D.C. speaking before Congress. We're hoping that there's some way that everybody can come together and put these issues aside. It would be my dream that in 100 years, and we're in year 86 right now, that we could be forward on this.	Thank you for your comment.
CITIZEN-4 (DV); Comment - 2	There's a whole slew of problems. How can northern Florida be suing Georgia because they have a drought, and we're down here trying to find ways to bottle water and sell it, which, of course looks like cream cheese, so how do you sell it? But we have our problem.	Thank you for your comment. The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-4 (DV); Comment - 3	There must be a way in this state, if the water is down here, it can also go up north. We're sending it every other direction, east and west. I understand that there's a couple of pumping stations needed to make that happen, but the people on the east and west are remaining calm. They understand that you all are doing the best you can. We appreciate that. We just hope you can do something.	The Comprehensive Everglades Restoration Plan (CERP) outlines the framework for modifications to the Central and Southern Florida water management system to capture water currently being discharged to tide and re-direct that water through storage, treatment and conveyance to restore the ecosystem while providing for other water related needs. The CEPP plan is a first step in infrastructure improvements necessary to re-direct some of the water currently going to the estuaries when it is not needed.
CITIZEN – 5 (CC) Comment-1	I'm the Florida program coordinator for Clean Water Action, and I'm also happy to serve as the national co-chair of the Everglades Coalition, made up of 57 local, state and national conservation groups committed to -- for restoration of the Everglades. I'm thrilled to be here.	Thank you for your comment.
CITIZEN – 5 (CC) Comment-2	I'm thrilled to be at this juncture, to have a draft PIR to review. It's incredible. So first of all, thank you for the opportunity along this entire process and for being here this evening. I certainly appreciate it. I've been to numerous really successful public work-shops, as anybody who has heard me speak along the way has probably noted, but I just have to say again successful in terms of well facilitated, people were engaged meaningfully along the way, which really led to the true stakeholder buy-in that we're seeing. So first and foremost, I just have to say, on behalf of the Everglades Coalition, thank you, and we continue to look forward to further evidence of this project and more restoration in the future. So thank you. Clean Water Action is working with our allies in the environmental community to really fully assess and digest and un-derstand this very long process, and we look forward to submitting some of our detailed comments in group form, because we -- that would be convenient, and doing so as soon as possible.	Thank you for your comment.
CITIZEN – 5 (CC) Comment-3	We do have some specific concerns and suggestions regarding the levee and putting a permanent structure there. From the beginning the environmental has advocated for a restraining wall or a less permanent berm structure. And so we have some very specific policy and scientific recommendations involved with that levee that we will submit to you in writing.	WRDA 2000 requires (Savings Clause) CERP to not reduce the level of service for flood protection as of 2000 and in accordance with applicable law. The function and integrity of the C&SF flood protection system provided by the L-67 A and L-67 C levee system must be maintained following CEPP implementation, and CEPP degradation of portions of the L-67 C and L-29 levees must be offset with additional infrastructure and operational constraints that maintain the pre-project level of flood protection and account for

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		any potential increased design risk. The details of additional infrastructure, and how it would interface with operations and existing infrastructure, will be determined in the future as adaptive management, Pre-Construction Engineering and Design (PED), and as other information becomes available for this area. Consideration of a new L-67 D levee (currently included as a component of the CEPP recommended plan), including its footprint (width/height), costs, and permanency, will be cautiously considered and subject to PDT coordination and applicable policies and permitting.
CITIZEN – 5 (CC) Comment-4	One thing I did want to bring up tonight is towards the beginning of the document it says that the purpose of the Central Everglades Planning Project is to assess federal and non-federal interests in implementing components of CERP. And I just thought that was a little bit funny. It was something I wanted to question and flag. I can tell you, being at all these workshops, yes, there is interest in implementing components of CERP. And indeed, I would say from my perspective, and I'm sure from many of my colleagues and fellow stakeholders and Floridans, the purpose here is to make a significant stride in restoring our Everglades. So I just wanted to bring up, you know, that issue of purpose and see if that would be clarified along the way.	A "purpose and need" statement has been included in **Section 1** (**Introduction**) of the Final PIR/EIS. It is in part a restatement of the problems and opportunities. The referenced text on page ES-1 of the Draft PIR/EIS under the paragraph heading "Purpose, Need, and Scope of This Study" has been edited consistent with revisions made to **Section 1.**
CITIZEN – 5 (CC) Comment-5	Again, I look forward to submitting some specific comments, sooner than later, so that the Corps can start analyzing what we have on the table. But overall, by and large, very supportive of CEPP, very appreciative of the project and very excited to continue moving forward together. So thank you so much.	Thank you for your comment.
CITIZEN – 6 (ES) Comment-1	I have a lot of concerns, so I might as well just read it out. First of all, this plan can't be dependent on a politician's whims or campaign contributions. What happens if four years down the line we get somebody who is -- we might have somebody who's all for it, and then four years later, all against it. It can't be dependent on: Oh, here's a campaign contribution. Kill this plan. It's gotta -- for example, buy back the land, Big Sugar. Maybe that's a good idea. Is it too late to do that?	Thank you for your comment. USACE is committed to making the most prudent use of the annual appropriations provided.
CITIZEN – 6 (ES) Comment-2	Secondly, the regulatory agencies' budgets have been severely cut at a time of crisis. This is almost a crime. The EPA, the DEP, South Florida Water Management District. Severely cutting the budget is	Thank you for your comment. USACE regulatory divisions and the Non-Federal sponsor are committed to making the most prudent use of the annual appropriations provided.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	the same as crippling your ability to do the job. We have to make water conservation and preservation a priority. We're paying a huge price by putting the needs of big business first.	
CITIZEN – 6 (ES) Comment-3	And we have to include the areas north of Lake Okeechobee. 200 miles north must be included in any plans that clean the waters of Lake Okeechobee.	The FDEP is implementing Basin Management Action Plans (BMAPs) within the Kissimmee River Basin to address water quality issues.
CITIZEN – 6 (ES) Comment-4	Also, the timing of this project, 2029, might be too late to save the Everglades. Maybe you have to fast track this. Why have we waited so long to start implementing this plan? Why have the biggest polluters become so rich? Why don't we charge them for damage done to the water or environment, for agricultural runoff, for emissions, et cetera? $1.8 billion at least to try to salvage what used to be free.	All features of the State's Restoration Strategies must be completed and meet State water quality standards prior to initiating construction of most CEPP project features. Completion of the State's Restoration Strategies is anticipated to occur in the year 202. Earlier implementation could occur if water entering WCA-3A is meeting State WQ standards and all parties agree to utilize moderating provisions of the DEP permit to implement prior to completion of the State's Restoration Strategies projects.
CITIZEN – 6 (ES) Comment-5	The health of Lake Okeechobee will determine the health of the Everglades and is the source of drinking water for south Florida. Also, our priorities here, billions on incineration, billions for biotech industry, billions for power plants and natural gas lines, and the water is our most important -- we need that more than anything.	Thank you for your comment.
CITIZEN – 6 (ES) Comment-6	Also, what has been the impact to the Atlantic Ocean and Gulf of Mexico of sending all Lake Okeechobee water via canal? Also, adverse effects of west county energy center, agricultural runoff, can that be more strictly regulated? Sewage waste, mining?	The CS&F system was designed and constructed in the mid 20th century to accommodate the in-flux of several million people to the south east coast of Florida. The USACE and SFWMD are working to modify this system to better protect the water supply and natural ecosystem. The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN – 6 (ES) Comment-7	How is the health of our aquifers in south Florida? Why have we allowed the Everglades to dry up? What about the effects of global warming? What are our current water quality levels in Lake Okeechobee? What are our goals and why did we wait so long to address this issue?	The CS&F system was designed and constructed in the mid 20th century to accommodate the in-flux of several million people to the south east coast of Florida. The USACE and SFWMD are working to modify this system to better protect the water supply and natural ecosystem.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN – 7 (DM) Comment-1	I'm here on behalf of the Sierra Club. I'm the conservation chair from the Loxahatchee Sierra Club. I'm also elected to the Palm Beach County Soil and Water Conservation District. I am not here on behalf the Soil and Water Conservation District. The Corps needs to not implement a permanent future berm between the L-67 and eastern end of the 2.6 mile Tamiami Trail bridge, also known as the Blue Shanty berm. The original intent was always a temporary structure, not permanent. The Sierra Club would like to see the original intent that this weir was temporary return to the process. We support the concept of decomp, and we're concerned that this berm is going the opposite direction because it's creating a new structure. We believe that once the flow is established through the slough and this has been established and the area has been trained properly, that this berm should be able to be removed, also saving you money by building a temporary structure, since a permanent structure would be much more extensive. We support water being cleaned and sent south to the Park.	The function and integrity of the C&SF flood protection system provided by the L-67 A and L-67 C levee system must be maintained following CEPP implementation, and CEPP degradation of portions of the L-67 C and L-29 levees must be offset with additional infrastructure and operational constraints that maintain the pre-project level of flood protection and account for any potential increased design risk. The details of additional infrastructure, and how it would interface with operations and existing infrastructure, will be determined in the future as adaptive management, Pre-Construction Engineering and Design (PED), and as other information becomes available for this area. Consideration of a new L-67 D levee (currently included as a component of the CEPP recommended plan), including its footprint (width/height), costs, and permanency, will be cautiously considered and subject to applicable policies and permitting.
CITIZEN – 7 (DM) Comment-2	I would like to also say that I agree with some of the comments about water quality that people have brought up. And I think that one of the weaknesses of this planning process, which I participated in, and I think as Cara Capp said, an excellent process, very open, and we appreciate the opportunity to participate, but I am concerned that there is not enough emphasis on the source of pollution in this plan, that we're very focussed on trying to clean up pollution, but we're not really focused on where the pollution is coming from.	The SFWMD and FDEP are working directly with land owners within the Kissimmee, Caloosahatchee, St. Lucie, and EAA basins to address water quality concerns at the source through the implementation of best management practices (BMPs). This work is important to the CERP and CEPP projects.
CITIZEN – 7 (DM) Comment-3	We're talking about phosphorus, however there are many other pollutants that come from these areas that we are not dealing with right now, including mercury, other pollutants which are also -- can have long-term impacts. There are a number of chemicals coming off the agricultural fields, as well as nitrogen and phosphorus, which can be very damaging.	Thank you for your comment. State and Federal agencies are working to implement this project with the goal of compliance with all applicable water quality standards.
CITIZEN – 7 (DM) Comment-4	We think that this is a good first step. I think that the timing of this is going to be a little slow, because I think there's going to be public, really public pressure to do this a little faster.	Thank you for your comment.
CITIZEN – 7 (DM)	One place we see right now is a very strong accumulation of water in the southeast quarter of the WCA where water is accumulating.	Thank you for your comment. The USACE and the SFWMD will undertake integration of the CEPP recommended plan and the other

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
Comment-5	And the question is should we not possibly be putting some of the features in that we can begin to move that water south that is accumulating and causing a great deal of flooding? I think that that is very important. Some of the other areas up north are important. I think that the FEBs at the least should be built as soon as possible so we begin cleaning the water.	CERP projects awaiting authorization into the CERP programs' IDS, which contains the MISP, through a robust public process.
CITIZEN – 7 (DM) Comment-6	I'm not particularly in agreement with Mr. Barnett's comment that this issue is not pollution and simply a matter of how you describe the pollution. So I think that there has been evidence that water flowing into the Everglades with certain phosphorus numbers has created cattails and has created problems. And so I'm not completely in agreement with that. But I do think while the rainwater is extremely pure and that water can begin moving under the bridge as soon as possible. So we hope that you will expedite that process.	Thank you for your comment and support of CEPP. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget for administrative review. This will occur upon completion of the State and agency review of the Final CEPP Integrated PIR and EIS. Construction will be dependent upon Congressional authorization and funding.
CITIZEN – 7 (DM) Comment-7	Also, I would like to say that I think we need to continue to look if we can get more than 200,000, 210,000 acre-feet, because I think the estuaries are, you know, being hammered. And hopefully, if we begin to tweak this process, we can possibly increase that number, because I don't think we can wait past 2029 to move it, start moving water south.	Thank you for your comment. Please reference Section 6.9.1 for further information. CEPP has formulated a solution for an increment of overall restoration of the south Florida ecosystem. Incidentally, there are problems and opportunities remaining. CEPP is not meeting all targets of CERP that are based on the understanding of the pre-drainage Everglades, however CEPP does provide for significant and substantial restoration of the Everglades ecosystems and achieves approximately 2/3 of the additional water flow into the WCAs that CERP envisioned. Although the recommended plan provides a significant increase in freshwater needed for the restoration of the central Everglades, additional actions are needed to achieve the restoration envisioned in CERP. The actions may include further reduce harmful discharges of freshwater from Lake Okeechobee to the St. Lucie and Caloosahatchee Estuaries and improve estuary habitat for oysters and SAV; further reduce the intensity, frequency, duration, and spatial extent of hypersaline events in Florida Bay.
CITIZEN – 8 (JR) Comment-1	My name is John Rosier, representing the Fulltrack Club for Dade County. Also president of the Everglades Coordinating Council. I've been here from the beginning too, so I've learned more abbreviations and acronyms than I wish to in my lifetime.	Thank you for your participation in the planning process and comment. A complete list of acronyms can be found in Section 10 of the Project Implementation Report..

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN – 8 (JR) Comment-2	First of all, I want to compliment the process to get to this. I said from the get-go to have the public involved, as they were in this pilot program or whatever, is the way to go, because just coming to a meeting where you can make three minute comments, and that's all you've got, and you can't ask questions is just not the way it's done. And we've seen vast changes in the original plan. In fact, if we weren't at the original plan, we'd have a canal and no access to the area. And speaking of the gentleman that was the fishing guy who represented 15,000 people, I'd like to say that my group represents a few thousand people that use the area constantly, year-round, which many of you don't, and many of you have never been out there, you're just looking at a paper. And I say that facetiously, but it's true.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN – 8 (JR) Comment-3	And as we go on with this process, the three things that -- we support the plan, we support the project, and we've said that from day one. The sportsmen that are out there all the time, many of us have been out there for 40, 50 years, me 40 years myself. So I've seen the changes. I've seen the good; I've seen the bad.	Thank you for your comment.
CITIZEN – 8 (JR) Comment-4	Currently the Everglades is closed because of high water. I know in my heart that if this project was in place, we might not have that high water. I say might, but I'm pretty sure with the get-away capacity, we wouldn't have this problem we have now. And in saying that, I want to be involved when we get to the regulation stage, when we get the project in and we want to do the operational manual. That's why I asked the question earlier is the public going to be involved, because we have certain parameters that we believe are good for the Glades and not good for the Glades.	Thank you for your comment. The CEPP plan does provide additional outlet capacity from WCA-3 which will provide more operational flexibility within the water management system. The Draft Project Operating Manual has only been provided for the entire project. To address any future uncertainties related to incremental implementation, it is recognized that prior to implementation of each phase, additional detailed analyses pertaining to that phase of implementation will be considered in development of the Project Operating Manual, which will provide opportunities for agency and public input and review.
CITIZEN – 8 (JR) Comment-5	And that's another sticking point that Kim and I have had many conversations over. 3A is a Water Conservation Area. That's what it's called; that's what we're talking about. Everglades, when you say Everglades, you're talking about Everglades National Park, which is south of the Trial. Well, the funny part is us sportsmen, the people that are out there recreating, the guys that are in there 365 days a year, we consider 3A to be more Everglades than Everglades National Park. And we sincerely do not want to see the area degraded, tree islands disappear. Many	The objectives of CEPP to enhance ecological values include to restore seasonal hydroperiods and distribution, to improve sheetflow patterns and surface water depths and durations, and to restore more natural water level responses to rainfall (for additional detail, reference Section 01 of the CEPP PIR). CEPP alternative configurations were developed to reduce the drainage effects from Miami Canal in the northern portions of WCA 3A and restore more sheetflow across the northwest portions of WCA 3A as well as provide additional outlet capacity in southern WCA-3A to reduce the

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	of the charts we've got show there's going to be more water there. North of I-75, there's going to be higher water coming in. We're afraid the tree islands there are going to be destroyed. And we had -- you know, their own modeling efforts showed that some of the tree islands are going to have more water year-round than they have now.	ponding effects caused by the levees and re-cononect WCA-3A to 3B and to ENP to allow for a more free-flowing system. The Miami Canal causes water levels in northern WCA 3A to recede well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation and muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas. Alt 4R2 proposes to reverse the continued degradation of this area by backfilling a portion of the Miami canal north of I-75 to remove its drainage effects, re-distributing inflows through removal of approximately 2.9 miles of the south L-4 levee and increasing water flow into WCA 3A during the dry season. Water levels and durations within WCA 3A and 3B will vary across the landscape and from year-to-year if Alt4R2 were implemented, consistent with the variability in rainfall, hydrologic conditions, and operations within the upstream basins (Lake Okeechobee, EAA, WCA 1, WCA 2). Generally, water levels in northern WCA-3A will stay above ground surface for longer and the depth and duration of the wet-season water levels will increase. The water level changes anticipated with implementation of Alt 4R2 are conducive to restoring a portion of the wetland hydrology that was lost as a result of the drainage effects from the construction of the Miami Canal through the marsh in northern WCA-3A. Details regarding the expected water level changes can be found in Section 5 and 6 and Appendix C.2.1 and C.2.2. The northwest region of WCA-3A has become a dense bank of willow and does not provide the elevation mosaic or the plant diversity needed to support aquatic animals, sloughs and tree islands. And, this region does not currently support CERP key indicators of restoration, such as prey-based fauna (i.e., crayfish and fish). CEPP and the Adaptive Management plan are planning on using fire to create differential flow paths that will accentuate sheetflow and minimize excessive ponding. Differential flow paths will “jump-start” the elevation mosaics needed to restore the ridge-slough-tree island landscape. The CEPP plan recognizes that a regional approach to restoration will require that tree islands be monitored for peat

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		accumulation rates, that regions such as NW-WCA-3A will require incremental adaptive restoration because they are extremely altered, and that tree islands need to be preserved and restored.
CITIZEN – 8 (JR) Comment-6	So when we talk about restoration -- and that's another sticking point -- we're not restoring the Everglades to the way it was. That's what restoration means. We have an area out there that has been affected over the years by various interests. Let's make it better. But we can make it better for everybody. You know, we still get our way. And I feel for the people up in the estuaries. And great, give us that water. We don't care. The Park says they want all of it. You know, give us all you want. Again, the water quality issue comes up, and you know, they go: Oops, sorry. And now we're sitting with the situation we have now.	The formulation of alternatives and evaluation of CEPP project effects is based on peer reviewed scientific literature and approved RECOVER performance measures and targets in an effort to restore the Everglades to a pre-drainage condition.
CITIZEN – 8 (JR) Comment-7	So those are the things that we sportsmen are still pushing, depth, depth of the water, duration of the water and water quality issues. We seen the cattails come into the area, especially up in the north end. We took them out for a field trip. We showed them. And we know that since the water has been clean, the cattails have slowed down tremendously. So maybe that will work. We just don't want to see that continue when they're out there.	Thank you for your support of the Central Everglades Planning Project and your comment.
CITIZEN – 9 (AB) Comment-1	Like John, I'm a Gladesman, going out in the Everglades with my dad. And I do have some concerns here. Kim, you know, you guys have been great. We've been able to work with you, and we're here to work with you. We're not working for you or against you. I've known Dennis Duke, I guess now for 15 or 20 years, you know, and a number of people. And so we've seen cause and effect in the Everglades. Unfortunately, we've seen things that we don't have common sense in this country sometimes. You know, we're so technically minded, we kind of throw the baby out with the bath water. There's things that we could do right now to actually improve the situation in the Everglades. It's like take out the Tamiami Trail, clean out south of the S-12 structures. We could go down there and clean out south of the S-12 structures and let that water flow more naturally. That would be awesome. I mean that's something we could do right now for a minimal amount of money.	Thank you for your comment. The USACE and the SFWMD will undertake integration of the CEPP recommended plan and the other CERP projects awaiting authorization into the CERP programs' IDS, which contains the MISP, through a robust public process.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN – 9 (AB) Comment-2	When I look at the modeling or try to understand the modeling of what we're trying to do in the Everglades, I do have some concerns here. Our idea of restoration and your idea of restoration is different. I mean we are in sawgrass north of 3A. And we're like Chris McVoy and Fred Sklar, they're talking about making slough environments. They are from two totally different environments, and the water levels are going to be totally different.	Thank you for your comment. Please see the response to CITIZEN-12 (AB); Comment -1.
CITIZEN – 9 (AB) Comment-3	So and I see this plan evolves almost daily. Every time I look at it, I see something else and that's probably why I'm concerned about, you know, when I see another line or I see something, because this is, you know, happening very fast.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN – 9 (AB) Comment-4	I know we're in a timeframe, time sensitive, and you know, it's important to keep the public involved, you know, because we are the ones paying for it and we're the ones that, you know, are going to have to live with it.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN – 9 (AB) Comment-5	It would probably be a lot more people coming up here. I didn't know if it was necessary to have a lot of people come here. There'll be some people more down in Miami when we go down in Miami that, you know, have their concerns. So you know, just be-cause we didn't fill this room up, we have filled this room up in the past with people. And but we're not here to, you know, make a scene or anything. We just want to see the right thing done here.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, increase public input and shorten the timeframe for completion of a pre-authorization (planning) study. As result, many members of the public, including those who hunt, fish, and operate vehicles or watercraft in the water conservation areas, have been engaged throughout the study process and contributed to the design and operation of the tentatively selected plan.
CITIZEN – 9 (AB) Comment-6	And we ask you put triggers in the system that would -- obviously, we're going to have some adaptive management, you know, and we definitely want to be involved, you know, as we come up with the scheduling and all that kind of thing. But put triggers in the system where we don't shock the system. We're never going to be able to restore the system, but we could actually manage the system to where it could be better, you know, it would be beneficial to what we have out there, or unless you want to buy a mask and snorkel for a wading bird. I've seen it where all the wading birds have moved out of the area because the water was too deep. We feel if we can save the tree islands, we're going to save the fur	The Adaptive Management Plan defines the hydrologic performance for each structural element of the system by monitoring and evaluating ecosystem response including the use of ecological triggers where ecological triggers exist.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	bearing animals.	
CITIZEN – 9 (AB) Comment-7	So that's kind of how we, you know, look at these things, you know. You know, I know sometimes like when we look at a number on a chart, it's not really reflective of what's going on actually in the area. There's been a lot of operations directors of Water Management that I've talked to and I said, you know: Hey, we measured this much water out there. We've actually gone out and did the measurements and gave you that information, and it wasn't reflective of what you were showing. I don't know how or why. But, you know, these are the problems, you know, these are the things that we're concerned about, you know. We want to be involved.	The output graphics produced by regional hydrologic modeling tools, including the SFWMM and the RSM-GL, report water depths based on comparison with the average ground surface elevation within the model grid cell that contains a particular hydrologic monitoring gauge; within most of WCA 3A , model grid cell resolution for the RSM-GL is typically 0.5-3 square miles), and local microtopography features (ridges and sloughs) are generally not captured at this resolution scale. Historical water stage information at selected monitoring gauge locations, and not water depths at these gauges, are utilized during the calibration and validation of hydrologic models. For example, the average WCA 3A 3A-2 monitoring gauge elevation is reported as 9.85 in the USGS Everglades Depth Estimation Network (EDEN) as 9.82 feet NGVD while the RSM-GL grid cell for 3A-2 is 10.23 feet NGVD. Model output should be utilized for relative comparisons between alternative simulations run with the same model tool (versus absolute comparisons against historical water levels), and increased reliability should be attributed to model predictions of stage than to model predictions of depth.
CITIZEN – 9 (AB) Comment-8	It's a labor of love. I'm sorry, I hope I don't get anybody sick here. Yesterday I wouldn't have been able to make it; I was just totally too sick. But today, you know, I mustered up the energy, and otherwise I wouldn't have came up here. But it's a labor of love, you know. We care about the Everglades. We put a lot of effort into it. It's not just, you know, a place to go have fun or recreate or any, you know, wild things like that. It's just, you know, we have mud in our blood, and we grew up out there, like John, and you know, for 100 years. You know, and it's the camaraderie. And I have four kids, and John has kids, and you know, our kids go out there with us, and we want to protect it for them.	Thank you for your support of the Central Everglades Planning Project and your comment.
CITIZEN – 10 (LI) Comment-1	Lisa Interlandi with the Everglades Law Center. We absolutely support this expedited planning process. It has been a great effort. There's been so many opportunities for public comment, for meaningful input, for input from a variety of stakeholders and education of the public in a way that really was, before, really unseen in our restoration effort. So I think it's been a big step forward, and just the output alone, it's been a huge success,	Thank you for your comment supporting the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation to broaden the project support base and shorten the timeframe for completion of a pre-authorization (planning) study.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	because it's really moved restoration planning forward. So I hope that this does become a model for future planning efforts.	
CITIZEN – 10 (LI) Comment-2	Speaking of this is the first increment, one increment of CERP. And we do want to see more increments move forward, so we will -- on this project we will join in on the detailed comments that Ms. Capp mentioned. But just to kind of outline, we definitely believe that this project will have significant benefits for the Central Everglades, St. Lucie estuary, the Caloosahatchee estuary, Everglades National Park and Florida Bay. And you know, it reduces outflows to the estuaries significantly.	Thank you for your comment.
CITIZEN – 10 (LI) Comment-3	The 200,000 acre-feet to Everglades National Park is a huge benefit, and it's really going to drive and has brought more attention to other projects like Tamiami Trail bridge and the need for that to move forward. So we've seen funding come in from sources previously unexpected, so that's been a really great benefit, maybe not necessarily because of this project, but a side, you know, tangential benefit. So really, you know, this is that first increment, and in order to significantly reduce the outflows to the estuaries and reduce that harm and trauma that we've heard expressed, we need even more storage. Ultimately we're going to need more storage and ability to treat and store and convey even more water south. So absolutely support this.	Thank you for your comment.
CITIZEN – 10 (LI) Comment-4	One of the main things I think that's important is to keep this planning effort moving, get this plan done. WRDA is moving forward in Congress, and I think it would be a shame to have gone through all this expedited effort to miss a deadline to get authorization and then see this plan put on the shelf for several more years until they get another opportunity for authorization. So that is just a huge thing. We really want to see this plan move forward in a way that allows it to be authorized by Congress in this next session and move forward to implementation, because I, and I believe many other people believe -- I know this isn't necessarily related to what I just said, but 2029 is a long time to see implementation of critical components of this plan.	Thank you for your comment. Please see response to CITIZEN-4 (DY); Comment-3 above regarding the project schedule.
CITIZEN – 10 (LI) Comment-5	So to the extent that that can be moved forward in a more expeditious manner, I think that that's something that we want to see too. So thank you so much, and you'll be seeing more	Thank you for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	comments from us.	
CITIZEN – 11 (JD) Comment-1	Joanne Davis, representing 1,000 Friends of Florida. One of the things that I can say is it's been ultimately frustrating for myself and many others of us is this huge, long timeframe. And the CEPP process breathed a little bit of fresh air into that and had us all step outside of our comfort zones or traditional operating zones and really get the dialogue moving along and getting the work product moving along. Appreciate all the effort that went into that. That was a really great program. I enjoyed all the meetings, sort of. It was hard work, but it was good work. And I think that it demonstrates that, you know, we, as citizens, and the various agencies can actually do something that's innovative and creative and includes everybody.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation to broaden both public input and the project support base; and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN – 11 (JD) Comment-2	And you know, 2029 scares the hell out of me. The Everglades can't wait. So my last parting two words: Hurry up.	Thank you for your comment. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget for administrative review. This will occur upon completion of the State and agency review of the Final CEPP Integrated PIR and EIS. Construction will be dependent upon Congressional authorization and funding.
CITIZEN – 12 (SL) Comment-1	My name is Sean Litalien with the Broward Airboat, Halftrack and Conservation Club. And I'm going to sound a little bit repetitive here because these guys have touched on a lot here. But we're very supportive of the plan. We love what you guys are doing.	Thank you for your comment.
CITIZEN – 12 (SL) Comment-2	The most important part to us is the depth and duration of the water you guys are keeping out there in WCA 3. As we sit here right now, there's hundreds of deer dying. The tree islands are being eroded right now, there's so much water out there. And if we just keep going on for 29 years -- or, no, to 2029, the tree islands are going to be gone, and Area 3 is going to look just like Area 2. There's nothing left in Area 2 but sawgrass. So it's really, really important to us, and we're so willing to work with you guys every step along the way to keep this public commentary open, coordinating with us. Our clubs are so willing to work with you guys. But the water levels are crucial. If we don't get the water levels corrected, there's no point in restoring the Everglades.	Thank you for your comment. Please see the response to CITIZEN-12 (AB); Comment -1.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN – 13 (MM)	I'm from the Martin County area, born and raised in Lake Worth. It's more of a question. If the lake is shooting out in this direction, and it's coming down here and it's kind of backing up for them, but the people over here, the Seminole Tribe are asking for it, what is being done to take it from all the people who don't want it and give it to the ones that mentioned they would like it? That's my question.	The goal of the Everglades Restoration Comprehensive Plan (CERP) is to capture and re-direct the water that is currently going to tide to restore the ecosystem and increase water availability for other water-related needs such as water supply for urban, agriculture, municipal and industrial. The conceptual plan describes the kind of infrastructural changes that would be necessary to re-distribute the water. .
CITIZEN – 14 (AA)	If they brought you the satellite picture of the entire watershed from Orlando to the Keys, I remember more than 20 years ago when they connected reservoirs how many thousand of acres of reservoir here for conservation, was it 1,000 acre or 10,000 and so forth. In my opinion, that determined the future of the process. Could be wrong. So my question to you, if you would like to comment on it, what are the roles of the planners at the Corps of Engineers versus the role of the consultants?	Major features of the Recommended Plan for CERP included a number of surface water storage reservoirs planned north of Lake Okeechobee, in the Caloosahatchee and St. Lucie basins, in the Everglades Agricultural Area, and in the Water Preserve Areas of Palm Beach, Broward, and Miami-Dade counties. These areas encompassed approximately 181,300 acres and were estimated to have the capacity to store 1.5 million acre-feet of water (USACE 1999). The CEPP is a component of CERP. The A-2 FEB, proposed as part of Alt 4R2 will provide storage capacity prior to delivering water to existing STAs. The A-2 FEB is ~ 14,000 acres. Planners at the USACE play a vital role in supporting the USACE Civil Works water resources development mission. Through planning activities, Corps planners help decision makers identify water resource problems and conceive solutions to them. The Corps may advertise and award contracts to environmental and engineering consulting firms to perform necessary work related to project planning, design, and construction.
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CITIZEN-1 (CH) Comment 1	Martin County, we were among the first authorized CERP projects. We are the only county in Florida that's contributed $75 million for CERP projects. We have contributed an additional $50 million to build additional storm water treatment areas in Martin County. Finish the projects that you started first. The estuaries are in extreme, as the gentleman sitting in the blue shirt said it right, the estuaries can't wait that long. Fix them now. You're not going to have another partner, ever, ever again in Florida like you have in Martin County. So please reward us. Don't punish us.	Thank you for your comment. The USACE and the SFWMD will continue to work in partnership towards completion of the IRL-South project.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-1 (CH); Comment 2	Specific to the PIR, Martin County would like to see in the PIR improved descriptions, particularly of the project benefits to the estuary associated with the various project efforts. We also need greater details on benefits that details all of the projects that were assumed to be completed in order for the CEPP benefits to be fully realized; MOD waters, Tamiami Trail, C-1, C-11 impoundment, C-43 and the entire IRL strategy. You need to quantify benefit to estuaries if C-44 project is completed, if it's not completed.	**Section 2** (**Existing and Future Without Project Conditions**) provides a description of the FWO project condition. **Table 2-2** provides a summary of the status of non-CERP projects, CERP projects, and operational plans assumed to be implemented in the FWO project condition. **Section G.2.5** (**Northern Estuaries [Alternatives 4R and 4R2**]) summarizes benefits to the Northern Estuaries resulting from implementation of Alt 4R2. **Figure G-29** presents the number of times salinity criteria are not met within the St. Lucie Estuary. Benefits attributable to the Indian River Lagoon-South project can be understood by evaluating differences between the ECB and FWO project condition which assumes implementation of C-44 Reservoir and STA. The differences between the FWO project condition and the future with project condition (Alt 4R2) are the effects of the project. Text has been added to this section, as well as **Section 6.2** (**Environmental Benefits**) to further highlight benefits attributable to the Indian River Lagoon-South project. **Table 6-10** in **Section 6.7** (**Plan Implementation**) documents a number of project dependencies including but not limited to the C-44 Reservoir (IRL-S Project) and connection to the C-23 Canal.
CITIZEN – 2 (MQ) Comment 1	I can't resist saying that somehow against vast opinion in the southern counties to not be too responsive to our needs we have got to get this done. We should be in first place. With that said, it's a pleasure to welcome Corps of Engineers with something which I don't think quite fully has been brought out here. They are on a working schedule now that's probably six times through the years they've been accustomed to using. We should rejoice in that. We should join with St. Lucie County and back this effort because essentially at this time it's the only way to go on this project. We have got to have that billion dollars out of the Feds on this. Now you might say, haven't we been doing this all along? Well, in a sense we have for a long time trying to have a big interest in this and the Commissioner just mentioned our expenditures.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation to broaden both public input and the project support base and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN – 2 (MQ) Comment 2	Incidentally, when I mentioned that once to the southern counties and said on a per capita basis we have this 50 million, you ought to be putting in a billion, I then looked at the nearest exit to see if I might be compelled to use it. But they contented themselves with an absolute silence. But we've got to get those people somewhat	Thank you for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	on our side and we'll get our funding. And we have to argue you've got yours. You've got your flood control and water supply through the 1948-78 project, now it's our turn. We have been suffering 50 years.	
CITIZEN – 2 (MQ) Comment 3	So let us think that this is a new response from the Corps of Engineers. The job right here is an immense speedup. The Corps of Engineers A-C-E. Perhaps we should, if this goes through as we hope, that we should call them fast ACE. Let us put in our comments, but we must work with them and with other parties concerned on this. It's the only way to go. And I know they are open to sensible alternatives being suggested. And personally I'm going to get mine in by October the 5th in writing.	Thank you for your comment.
CITIZEN – 3 (MB) Comment 1	I'm your Indian River Keeper. Colonel, we need your help, sir. When they ask you what you think, when the Congressmen sit down and say, what do you think? What does the Corps think? Please, sir, tell them that we need help. We need these things funded.	Thank you for your comment. The significant amount of water resulting from CEPP will beneficially affect more than 1.5 million acres in the St. Lucie and Caloosahatchee Estuaries, Water Conservation Area (WCA) 3A, WCA 3B, Everglades National Park (ENP), and Florida Bay. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget (OMB) for administrative review. This will occur upon completion of the State and agency review of the Final Central Everglades Planning Project (CEPP) Final Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS). Construction will be dependent upon Congressional authorization and funding.
CITIZEN – 3 (MB) Comment 2	The Clean Water Act is just being violated everywhere. Every politician that we have questioned has said to us that they consider this a violation of the Clean Water Act, but yet we can't get anyone to do anything about this. They're talking about IRL South. C-44, 25 C-23-24 and 25. And you just heard that the only component that is guaranteed to us to be addressed is the C-44 project which, of course, is three-phase project and all the pieces have to be in place before it works.	Thanks for your comments. State and Federal agencies are working to implement projects that will contribute to Everglades Restoration and improved surface water quality conditions.
CITIZEN – 3 (MB) Comment 3	Well, what about, as Commissioner Heard said, what about the property we bought that we taxed ourselves? We bought property out there. We were on an implementation list for C-23 and C-24. C-23 would have been done this year and 24 next year and we would	Alt 4R2 addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	have had the ability to mitigate some of this watershed that they now have held us responsible for. You know, water management and the plumbing that has happened here, they have more than doubled our watershed responsibilities. Naturally we're about 350 square miles to the St. Lucie River and now we have 800 square 18 miles of agricultural land that we're being held responsible for. So we taxed ourselves, we bought the property, things were engineered, they were permitted. The governor took them off the plate to buy property south of the lake. And then when we went through the economic crunch, South Florida Water Management District rearranged their priorities and we got left out. They're not going to do anything until 2026.	additional actions are needed to achieve the restoration envisioned in CERP, including construction of C-43 Reservoir and IRL-S projects, to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. The implementing agencies are committed to engaging in a public process after Congressional authorization and appropriations of CEPP to integrate CEPP into the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed.
CITIZEN – 3 (MB) Comment 4	Since 2008, three-quarters of all of the polluted water that is coming to our estuary has come into us from our own basin. Not our natural basin, but the one that we're being held responsible for.	Thanks for your comments. State and Federal agencies are working to implement projects that will contribute to Everglades Restoration and improved surface water quality conditions.
CITIZEN – 3 (MB) Comment 5	We must, along with getting this project moving forward, because we really do need this, we need to take care of our own basin. Now, I think it is absolutely obscene that we give sugar and agricultural these major breaks. We price fix, we give them subsidies, we cater to them, they write the regulations for nutrient standards and for health criteria here in our own State and yet they're allowed to take their dirty water and use our STAs. These STAs that we're paying for that are supposed to clean Okeechobee water and instead it's being used as the private toilet of agriculture.	Thanks for your comment.
CITIZEN – 3 (MB) Comment 6	Right now, right now, there's a sugar glut and we're being dumped upon all over the place and they're being protected. A little note: Not a drop of Okeechobee water is coming to us right now. S-308 is shut. So all this water that we see, all the water coming into the C-23, it's all from our own watershed. So we need to do something about that. I would be willing to bet you that the economic losses on this coast and the other coast exceed the total value of the sugar crop in the State of Florida. The only way we can really fix this is a ballot box. Our elected officials are paying them to do this to us. They are protecting them in court and they are fighting against every single thing we are trying to do, except	Thanks for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	at our commission level, to protect ourselves.	
CITIZEN – 3 (MB) Comment 7	Water Management, put us back up on the priority. We need help here. Our estuary is dying. Grant Gilmore did a study and dropped a dot in the middle of the inlet and come out 2 miles and in the circle it's the most diverse fishery in North America. More than 800 species of fish. Dr. Grant Gilmore and Mark Perry did a study right there by where everybody goes to the sandbar. Gave us a designation of the most diverse estuary in all of North America. It isn't anymore. It isn't anymore. They've killed it. They've killed it. Grant makes a hell of a compelling argument that the diversity of our lagoon right here is more important than the Everglades. It's a valuable conversation. He sells it pretty well. So, please, do what we got to do. Write our letters. Don't forget this at election time. Please, help these guys every chance you get because they're our only hope. We need to cooperate as has been said.	Thank you for your comment and support of CEPP.
CITIZEN-4 (DC)	I believe there is a lack of accountability of what's been going on. If it was one individual or one small industry or business that was dumping as much toxic, black water as there is other industries and our government itself, then that person would be absolutely bankrupt and sent packing, but that hasn't happened. My question is Section C1-3 and C.112.3 -- it identifies under water quality, major threats to the St. Lucie inlet as degraded water quality. That's it. I have a good idea why it's degraded. And I think that's a severe lack of accountability if whoever it is, the Corps or Water Management, however you want to divide it up, if no one's willing to take accountability, we can't move forward. We know it's degraded. We need to know and identify why that this $1.8 billion event, the plan, is only going to reduce our black toxic water by 23 percent. We need to identify what the problem is.	Water management operations for Lake Okeechboee and the Northern Estuaries are designed to meet multiple competing criteria and goals such as flood protection, water supply, and water quality. There are times when not all of these criteria and goals can be met simultaneouly. The CEPP plan is one of many projects that will reduce excess flows to the northern estuaries. State and Federal agencies continue to plan additional efforts to resolve this problem.
CITIZEN-5 (SB) Comment - 1	Reduction to me is not acceptable. Why should we be happy when we drop from 3.8 billion gallons of water coming out. It's not the answer. $800 million to help clean up the EAA run off. Why are we held responsible for that? Why isn't the people who are violating the laws fined to pay for that $800 million. State government is	State and Federal agencies recognize that CEPP will result in only a partial reduction in the excess flows to the estuaries from Lake Okeechobee. To address high flows, these agencies are working other projects such as Herbert Hoover Dike Rehabilitation, Dispersed Water Management and Treatment Program, C-43 Storage

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	tasked with enforcing federal water regulations which they haven't done by granting variances to various companies to being able to dump polluted water into the estuary and into the lakes. If it's not clean enough for the Everglades, then why is it clean enough to come out St. Lucie inlet and go out the Caloosahatchee River?	Reservoir, C-44 Storage Reservoir and Stormwater Treatment Area. To improve the quality of water sent to the estuaries, the FDEP, FDACs, and SFWMD are developing Basin Management Action Plans (BMAPs) which will be used to achieve Total Maximum Daily Limits (TMDLs) for nutrient loading. While most of these projects are paid through general taxes, land owners within the EAA pay an "Agricultural Priviledge Tax". The proceeds from this tax are used by the SFWMD to construct stormwater treatment areas in the EAA.
CITIZEN-5 (SB); Comment - 2	And one of the last things I got is ironically watching the news in the last couple of months, the State of Florida is suing the State of Georgia over a lack of water. The Everglades doesn't have enough water. We've got plenty of it here. You guys can come get it. I'll be happy to stick it in the back of my truck and take it wherever it needs to go. We just need to get it done.	Thank you for your comment.
CITIZEN-5 (SB); Comment - 3	Last, I asked the community next May when you're all in your boats, you're out at the sandbar, you've got your beer cracked, the water is clear, kids are playing, we're going to be right back here again. Don't forget to tell your friends, tell the people that are coming down from up north that I've already seen in Publix, getting them writing letters. Get them talking to people. Because it's a vicious cycle. I've been here 31 years and I've seen the good; I've seen the bad. I've talked to the old-timers that unfortunately are not going to be around to see the end of what they started. Hopefully my children who are five and three, hopefully their grandchildren will see the final product that we're all fighting here for. It's not funny. I know you laugh about it. I hope their grandkids can see the end. I've heard from the old timers what it used to be catching jewfish on the St. Lucie River and the crystal clear water up the Roosevelt Bridge.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. The implementing agencies are committed to engaging in a public process to integrate CEPP into the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed.
CITIZEN-6 (DP)	In 1930 the Army Corps of Engineers began to oversee the Herbert Hoover Dike and the handling of the waters of Lake Okeechobee. The South Florida Water Management District was created to manage and protect water sources from the southern half of the state. Here we are today 84 years later because of failures. We're tired of the suits, the Army Corps of Engineers, the South Florida Water Management District and the governor playing the blame game. We've seen all your drafts and charts. The water is toxic. It	Thank you for your support of the Central Everglades Planning Project and your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	has been for many years. We had an old dike completed in 1937 which is leaking. You are preparing 32 sections which will take approximately five years. We have a ten-mile creek which was substandardly built and nonfunctioning. Again, an epic failure. The Army Corps of Engineers is in a legal battle for the sum of $17 million with the engineering firm who designed the project. We're here tonight to support the Central Everglades Planning Project. You created this state of emergency by messing with Mother Nature. Now you need to fix it. When I mean fix it, I mean to find real concrete solutions immediately, not 20 years down the road. Lastly, to our elected officials. You need to get your hands out of the pockets of Big Sugar because we're ready to vote you out if you don't. We are strong, we are united and we are watching.	
CITIZEN-7 (MP) Comment - 1	We have all been fighting this and the 12 thing is that this system that was built in 1940s basically we had to dike the lake, control that flow, and we channelized the Kissimmee and we channelized it out to east and west to the Caloosahatchee and St. Lucie. And now we're trying to repair all this. And the project that's coming up here is going to be only a first sequence, it's not enough. It's not near enough. 210,000 acre-feet, it's not enough compared to 1.4 million acre-feet that's going east and west on an average year. And some years like this year we far exceeded that because of all the rains that come down into the Kissimmee. It's got no capacity going south. And that hasn't been established until just now starting to get some capacity to go south, but we need more.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-7 (MP); Comment - 2	What first needs to go into this first paragraph of this CEPP plan is that this is the first increment knowing that there has to be a lot more to be done to move 1.4 million acre-feet south. So it does not. It stops the discharges going east and west and we have no discharge, and we've got to put it all south to the Everglades the way it used to.	The CEPP is composed of increments of project components that were identified in CERP. The term “increment” is used to underscore that the study formulated portions (scales) of individual CERP components. . Acknowledgement of the need for additional actions to further reduce undesirable discharges of freshwater from Lake Okeechobee to the St. Lucie and Caloosahatchee Estuaries is stated up front in the Executive Summary.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-7 (MP); Comment - 3	What has to happen too as you heard is the IRL South plan has to be done, the water quality efforts have to be done. Everybody needs to understand that Restoration Strategies we hear about, that water quality project that's the State. That's a State project. The State got sued in 2011 because they weren't cleaning water enough to get to the south.	Thanks for your comment.
CITIZEN-7 (MP); Comment - 4	Back years ago, '93-94, governor Chiles was the one who got sued by the Everglades National Park and that settlement turned into those 55 miles of STAs that we have now. We, as a State, spent $1.2 billion to clean it up back then and now we're getting ready to spend another $880 million to clean it up again. That's State money. That's not a Federal project. That's not a Corps of Engineers, but it is a dependency on this that that portion, that central portion has to be done of that Restoration Strategy so some part of that 800 million has got to be done. Governor Scott signed that law, 7065, into effect in May of this year obligating us 32 million over the next ten years. And the other ad valorem taxes are going to come out of the Water Management District. So we, as a State, are having to clean up, again, that EAA water which is not right. Agricultural should be cleaning that water up. Definitely the total in my mind.	Thank you for your comment. The state and federal partners will equally share the cost of constructing and operating the A2-FEB and share the incremental cost of treating the additional CEPP flows.
CITIZEN-7 (MP); Comment - 5	Getting back to getting his project going, everybody asks, well, are you in favor of CEPP, the Central Everglades Planning Project? I have to say, yes, I am. The reason is in year 2000, when the Comprehensive Everglades Plan got done and everybody says we're underway, it was 68 components, part of it went to C-44, C-23, that's part of those things. We went to work with an IRL South plan and that included Alapatta, Cypress Creek, natural storage areas which weren't in the original plan and we put our money where our mouth is and stood up and taxed ourselves here in Martin County. And it took us from year 2000 to 2007 to get it authorized and then another two years to get it appropriated so it took like 9 years to get that done.	Thank you for your comment and support of CEPP.
CITIZEN-7 (MP); Comment - 6	This is a fast-track process that they started in 2011 and is going to complete this year. So it's a two-year process versus a nine-year process. For that reason, I'm in favor of let's get this fast track	Alt 4R2 redirects an average of approximately 210,000 acre-feet per year of clean freshwater into the central portion of the Everglades that would otherwise be undesirably discharged to the Northern

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	going. And let's do this process for the next step or the second increment which has got to be a plan six project, a new plan six project that takes that total area between Miami North to River Canal where you see those arrows and make that all a flow-way, all a project, that will store, convey, and treat that water going south. All of that 1.4 million acre-feet that's now going east and west so we totally stop those discharges and we allow that flow and that restoration of the river grass. Because if we don't do that ultimately, then we're still going to be here, not next generation, but the generation after them. And I'm like you guys, I've been fighting this 35 years. I'm ready to pass the baton. But the people I pass the baton to run the next relay of this race, that next leg has to be educated. The young people in the back, the people in their suits that have come, it's great that they're here. They're getting educated as to what that next step's got to be. We've got to pass that baton.	Estuaries. The concept of a "flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Further information on the evaluation of this concept can be found in the C&SF Comprehensive Review Study (USACE 1999).
CITIZEN-7 (MP); Comment - 7	Because even this, if it got authorized today, you hear it's going to take until 2029. That's a long time. So right away, even if we get this going and authorized and we tell Congress, authorize this project, we've got to immediately get to work on the next step. That's why I'm encouraged by people like Congressman Murphy. He's holding a meeting up in DC. On October 2nd and 3rd, I'm going to be up there and he has the Secretary of the Army who's going to be there and we're going to say to her exactly the same thing, this is fine, but it's not enough. We've got to get the next project underway right now so that in another ten years at least we get a plan six project, the whole flow-way done and get all those discharges stopped completely.	The CEPP is composed of increments of project components that were identified in CERP. The term “increment” is used to underscore that the study formulated portions (scales) of individual CERP components. The implementing agencies are committed to engaging in a public process to integrate CEPP into the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed. Regarding, the reference to Plan 6 in the provided comment. The concept of a "Flowway" or broad shallow marsh area that is used to flow water freely from Lake Okeechobee to one or more of the WCAs was screened from further consideration as part of the CERP. Soil subsidence in the EAA has substantially reduced the hydraulic head that drives the southward flow of water; hence, velocities and flow rates are greatly reduced. By spreading the water over shallower areas (as opposed to reservoirs) and maintaining proper hydration of a functioning marsh habitat, evapotranspiration loss could be doubled. A "flowway" through the EAA would require the relocation of numerous roads, bridges, and railroads. Further information on the evaluation of the concept can be found in the

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		C&SF Comprehensive Review Study (USACE 1999).
CITIZEN-8 (JP) Comment - 1	I came here tonight and started looking around for the plan that started with eminent domain of the Everglades Agricultural Area and taking all the subsidies that they got from the government and putting it towards this plan, but I didn't see it in any of the plans. Unfortunately, I think part of the problem it's still existing.	The Comprehensive Plan for Everglades Restoration provides authorization from Congress for a framework of modification to the Central and Southern Florida Project to restore the ecosystem while providing for other water related needs. The authorization also includes provisions that require the modifications do not adversely affect other project purposes such as water supply and flood protection to the areas currently served by the water management system. It does not provide authority for real estate acquisition for the purposes of land management.
CITIZEN-8 (JP); Comment - 2	One thing I really don't understand that's in here that was told to me maybe five, six years ago by one of your predecessors, Colonel, thank you for being here, they mentioned the reason that they kept the water level on the lake so precipitously high and dangerously close to breaching was for navigation. I don't see anything up here about holding water in the lake for navigation. And I would ask you the same question I asked him and didn't get an answer to at that time was, if that was so critical, why weren't they just dredging the channels deeper so they didn't have to hold as much water? And I got no answer to it. To me it was sort of like the old joke which wasn't much of a joke about a truck gets wedged under the overpass and you get all the engineers out there trying to figure it out, we'll cut the bridge, lift it up. The kid comes by and says, let the air out of the tires. You know, let the dirt come up and you don't need as much water in there and you don't have to worry about doing these discharges.	When the lake stage falls below 12.5 ft NGVD the authorized project depth for Okeechobee Waterway navigation channel is not maintained. This corresponds to the lower lake levels that the Corps seeks to maintain and is not associated with high lake levels.
CITIZEN-8 (JP); Comment - 3	I live out on the C-44 and I see this stuff coming by. And I hear Big Sugar's now saying, well, it's the septic tanks in Martin County. The water coming in from the lake has already got the green granules in it. It's already got that slime in it. It's not coming from on the other side of the St. Lucie locks. It's coming out of the lake and I just don't understand why you guys have to keep so much water in there that you have to panic every time there's a rainstorm, a tropical storm, or anything coming up.	Water quality concerns in the St. Lucie River comes from both Lake Okeechobee and from local in-basin runoff. The State and Federal parties are working to address this problem through the CERP projects which include CEPP and IRL-South. The state is implementing its Basin Management Plan (BMAP) effort to reduce stormwater runoff at the source.
CITIZEN-9 (DD) Comment - 1	I'm the ecosystem manager for Martin County. As you've heard the Martin County Board of County Commissioners all advocated the completion of the Indian River Lagoon South project authorized by	Thank you for your comment.

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	Congress in 2007. The first component in the project was C-44 reservoir, and STA, that's currently under construction. We're proud partners with the Corps and the District in the completion of this vital restoration project. Our citizens, as you've heard, have voluntarily taxed themselves generating $75 million towards the implementation of this project and we acquired 45,000 acres of land to do so. This unique and substantial partnership reflects the importance of Everglades restoration to all people of Martin County. Martin County continues to voice our support of the Central Everglades Planning Project. We recognize and appreciate the 23 percent reduction in the highest volumes of fresh water flows from Lake Okeechobee into the St. Lucie.	
CITIZEN-9 (DD); Comment - 2	We also stress, as the Corps notes in the PIR and also what has come up in the numerous PIR meetings that occurred throughout this process that, quote, additional actions are needed to further reduce harmful discharges of fresh water from Lake Okeechobee to the St. Lucie and Caloosahatchee estuaries. We support CEPP as one of many efforts to reduce fresh water flows to the St. Lucie. Moving forward, a critical component of the restoration discussion is the need to complete the remaining components of IRL South beyond the C-44 reservoir STA. And to establish a minimum of one million acre-feet of new storage capacity north and south of Lake Okeechobee to meaningfully reduce the fresh water discharges that currently goes to the St. Lucie from the lake and the basin.	Alt 4R2 addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The CEPP is composed of increments of project components that were identified in CERP. The term “increment” is used to underscore that the study formulated portions (scales) of individual CERP components. The USACE acknowledges that further actions are needed to achieve the restoration envisioned in CERP, including additional storage capacity and construction of the C-43 Reservoir and IRL-S projects, to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. The implementing agencies are committed to engaging in a public process after Congressional authorization and appropriations of CEPP to integrate CEPP into the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-9 (DD); Comment - 3	Specific to the PIR, Martin County would like to see improved descriptions within the narrative and graphically of the project benefits to the estuaries associated with various protect efforts. You have generalized drafts in the PIR. They're on your poster, second poster from the left back there and they show improvement to the estuary. However, those graphs do not provide relevant detail regarding to which those projects benefits are attributed and that is very important for people to understand. In order to make the benefits of this project clear and transparent so we can better explain and advocate to our congressional members the merits of both IRL South and CEPP, we ask that greater explanation be provided in the new PIR.	Please see response to CITIZEN-1; Comment – 2 above.
CITIZEN-9 (DD); Comment - 4	Specifically, Martin County respectfully requests that the Corps edit the graphs to include greater detail on benefits as well as add language in the PIR, particularly in the executive summary, that details all of the projects that were assumed to be completed in order for CEPP benefits to be fully realized. Examples: Modified water deliveries, Tamiami Trail next step, C-11 impoundment, Restoration Strategies, C-43 reservoir in the IRL project. And also how systemwide benefits are attributed to each of those projects in the context of the CEPP benefit. This type of details will assist all of your stakeholders in understanding what CEPP entails and the benefit of what each of the related project brings to the greater Everglades ecosystem including the estuaries. We appreciate and understand the benefits that CEPP brings for use in harmful fresh water discharges to the lake and to the estuaries and we offer our assistance to your team now in addressing our comments to provide more information that can be readily	Please see response to CITIZEN-1; Comment – 2 above.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	understood by the public, by elected officials, or anyone who is not immersed day to day in this federal process regarding what CEPP brings to the way of improved conditions compared to other relevant restoration efforts.	
CITIZEN-10 (MS)	I live on the St. Lucie River right by the Palm City Bridge. I'm a wake boarder. So I spend as much time as I can on the south fork of the St. Lucie. So as of lately, I haven't been in for about two months which is really a bummer and I'm really worried that it might not ever get fixed so I'm here to support it.	Thank you for your comment.
CITIZEN-11 (CL) Comment - 1	As a professional educator who's focused on this since, I was a freshman in high school when we were trying to pass the original CERP. The more I learn about this, the more disheartened I get. I don't know that I'm ever going to see this or that my five year old is ever going to see this come to fruition and that's upsetting.	Construction has begun on the first generation of CERP projects already authorized by Congress. These include the IRLS-Project, the Picayune Strand Restoration Project, and the Site 1 Impoundment Project. The second generation of CERP projects, authorized by Congress in WRRDA 2014, include the Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, the C-43 West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for CEPP for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget for administrative review. This will occur upon completion of the State and agency review of the Final CEPP Integrated PIR and EIS. Construction will be dependent upon Congressional authorization and funding.
CITIZEN-11 (CL); Comment - 2	A-2 that's on that diagram, that Lieutenant Greco did say who they were finally leased by, it's owned by the State of Florida leased to US Sugar. They just, this legislative session, renewed those leases for 30 years. And I stood up at that meeting because the one woman from Hobe Sound said that 30 years was a learning experience and I said I wanted to point out that I was 30 years old and 30 years isn't a learning experience, 30 years is a damn lifetime. And 2029 is a lifetime for most people in this room.	Thank you for your comment. Please see the Real Estate Appendix D.10.1 for specific information regarding the leases on the A-2 footprint. ……Grantor has the right to continue farming any field unless and until: farming or access for farming purposes becomes incompatible with, as reasonably determined by the District and the Corps, the initiation of actual construction or the Implementation of a District/Corps Project("Project") and the required notices are given. …..
CITIZEN-11 (CL); Comment - 3	Everybody asks me, what would happen, how can we fix this? And I always tell them if a magic fairy came out tonight and while everybody was sleeping made flow-way six happen and made it all just magically happen, it wouldn't matter. It wouldn't matter a damn bit because that lake over there, which is only part of the	Thank you for your comment summarizing \ that restoration of the Everglades and Northern Estuaries will require addressing water quality issues in Lake Okeechobee as well as in other contributing basins such as the Caloosahatchee and St. Lucie.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	problem because our own basin like Marty and Mark and everyone else knows who have been educated on this is really the biggest problem, that that lake water is 80 to 90 parts per billion. It has to be ten parts per billion to flow south legally.	
CITIZEN-11 (CL); Comment - 4	So if that fairy showed up and made it all happen as far as these graphs, it wouldn't make a damn difference. That's what everybody should be upset about. Everybody should be upset that the EAA is pooping in our lake. And the Kissimmee River needs to be finished. We need to finish the Kissimmee River. We need to finish the IRL South. We have people working at the county tirelessly day after day about our own basin runoff.	Thank you for your comment. The USACE and the SFWMD will continue to work in partnerships towards completion of the Kissimmee River Restoration and IRL-S projects.
CITIZEN-11 (CL); Comment - 5	And I really hope that when December comes around hopefully when the discharges end that we don't all just fall asleep. I don't think anybody in this room will. But I hope that you make sure your neighbors know about this and keep the fight up. They're all waiting for it to go away. They're waiting for us to be quiet. We cannot be quiet.	Alt 4R2 addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP, including construction of C-43 and IRL-S, to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. The implementing agencies are committed to engaging in a public process to integrate CEPP into the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed.
CITIZEN-12 (DV) Comment - 1	I'm a member of the Marine Cleanup initiative. Today I'm here as one of the 15,000 demonstrators for the safety of the Indian River Lagoon. I was told last night that we're really 35,000, but I don't want to quibble on numbers.	Thank you for your participation in the public meeting.
CITIZEN-12 (DV); Comment - 2	But since we're talking about numbers right now which one of you is the environmental person? What is the acceptable loss that you put into your charts for our estuary as far as sea grass loss, or animal loss, or human loss because of disease? Because when I asked yesterday was it considered into the matrix and modeling that you did in consideration for the lands and for the people south of us, what is the basis? What is acceptable for you? A hundred percent? Because our sea grass loss in the St. Lucie estuary right	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. No additional

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	now is about $640 million worth of economic loss. So did you figure that in? I would like to see that in the report.	losses of seagrass will occur due to this project, CEPP will reduce the number of freshwater releases, thus providing a benefit to the seagrasses.
CITIZEN-13 (TG) Comment - 1	First I would like to thank Mark Perry and several others in the room for carrying this fight on for twice as long as I have. I got started on it in seventh grade when I did my seventh grade science project on the Everglades restoration entitled "Everglades: Man Destroys, Man Restores." And I thought I would be fishing in clean water in Lake Okeechobee and the Florida Bay sometime about the time when I got out of high school, maybe college. I'm about to turn 40. I've lost $6,000 this summer in charters.	Thank you for your comment.
CITIZEN-13 (TG); Comment - 2	I'm up here to applaud CEPP. And please, please, please check all the boxes and get this done and get it in the Chief's report, get it authorized and let's get it funded. I will go to DC a thousand times, I'm up there twice a month anyway, to help you with that if possible.	Thank you for your comment.
CITIZEN-14 (GM) Comment - 1	About a year ago I authored a paper about the dead zone in the Gulf of Mexico. Had no idea that after spending eight and a half months in Key Largo that I was going to move back into my house in Stuart and find the same thing.	Thank you for your comment.
CITIZEN-14 (GM); Comment - 2	I saw friends of mine put out of business. Hence the poisoning of prosperity of people. I said, well, what prior planning didn't go into that? And that's not an indictment of Colonel Greco or the Corps. It's been going on for years and you all know it. I just want to amplify the comments that have been made; let's not go to sleep now. Let's keep this awake. And let's not forget that, didn't this happen what seven, eight years ago? What are we going to do, just wait another eight years? We really can't. What we've got to do is stay active now without vitriol. Without any negative comments. We just need to be active and take responsibility for our own backyard because the whole not in my backyard mentality has never worked.	The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-15 (JT) Comment - 1	The whole point of it is the point is Congress, period. If the money is not there, they're not doing it. And, right, the money's not there. I	Thank you for the comment. Congress cannot appropriate funds for this project until after it is authorized.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	asked the question earlier: Do you have the $1.8 billion? No. It's sitting there in transformation, so forth and so on.	
CITIZEN-15 (JT); Comment - 2	Under the sequester, the Corps is not getting any money. So you got to go to Washington. The Corps right now is borrowing money from FIND to do projects up and down the cost here because they don't have the money. It all comes from Congress.	Thank you for the comment.
CITIZEN-16 (MG)	I want to reiterate what that young man said, we need to talk to our politicians. We need to talk in the voting booth. Demand they reappropriate. Move money around and bring some home. Bring our soldiers home. Stop the war and get money right here.	Thank you for the comment.
CITIZEN-17 (DM) Comment - 1	My name is Donna Melzer from Martin County Conservation Alliance and I'm here to support CEPP. We agree with all the comments that have been made.	Thank you for your comment.
CITIZEN-17 (DM); Comment - 2	The alliance was represented many, many years ago by Max Quackenbos when he was a very young man. So it's frustrating, but it's critical that we want to stop the water coming from the north so much, get more water going south, but CEPP needs to start now because even though it's not enough, it's still a start and we have to start somewhere.	Thank you for your comment.
CITIZEN-17 (DM); Comment - 3	We support CEPP and hope that you move forward. And we believe that you can get it done if they tell you that you can get it done. So we're asking you to please get it done in time for the authorization because if the authorization isn't there, you're not going to get the money on the projects. We need the authorization in December.	Thank you for your comment. Please see response to CITIZEN-4 (DY); Comment-3 above regarding the project schedule.
CITIZEN-18 (MM) Comment - 1	Last night there was a bit of a discussion about the Seminole Indian Reservation located just west. And today on the phone with them they mentioned that they do have reservoirs that were already put in place, but they're not holding water. That they tried it a couple of times but the water would just go through and it was something that was brought up. We're all dealing with time constraints and limited money.	Section 5.3.2 of the PIR has been updated to include a description of the western basins and discussion of the Tribe's request for CEPP to consider opportunities to re-direct water from Lake Okeechobee to the western basins for the purposes of restoring natural areas within the Seminole Big Cypress Reservation and the adjacent Big Cypress Natural Preserve.
CITIZEN-18 (MM); Comment - 2	So one thing is that black line to the Miami Canal, if we're trying to go back to natural, original flow which is not east and west, it is south, we would love to see that black line going across our two channels. And if there's some way that can stay open whether it becomes a tunnel that still goes through and continues out. If that	The Comprehensive Everglades Restoration Plan (CERP) outlines the framework for modifications to the Central and Southern Florida water management system to capture water currently being discharged to tide and re-direct that water through storage, treatment and conveyance to restore the ecosystem while providing

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	just keep flowing out and could create a greater reduction on both of our coasts as well as connecting just at the end that red line to the Seminole Reservation where they have two holding areas already that need to be -- if their water is going quickly through it, that's great. What's going on? Let's access things that seem to be more affordable.	for other water related needs. The CEPP plan is a first step in infrastructure improvements necessary to re-direct some of the water currently going to the estuaries when it is not needed. The idea of lining the Miami canal has been considered in the course of various planning efforts for CERP, however, it was eliminated due to the high construction and maintenance costs.
CITIZEN-19 (JC) Comment - 1	First of all, I think we should appreciate what has been done. The expedited planning process. I believe it's well researched. Recognize that this is part of many different plans. And all those plans are needed whether they're north of Lake Okeechobee, south of Lake Okeechobee, east of Okeechobee, west of Okeechobee and in Lake Okeechobee. The non-CERP projects, first generation projects, second generation projects.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN-19 (JC); Comment - 2	The study, however, for this project was completed. It's well thought out. I'm happy that the planning process is coming to a close. But I don't want you to forget, the next stage is the permit process and we want to expedite that. I want to get these projects under construction. I would like to say tell us how we can build this project in ten years. I think that's what our goals should be right now is ten years.	Thank you for your comment and support of CEPP. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget for administrative review. This will occur upon completion of the State and agency review of the Final CEPP Integrated PIR and EIS. Construction will be dependent upon Congressional authorization and funding.
CITIZEN-19 (JC); Comment - 3	I want you to put innovations in the projects in both the final design of construction because that's what it's going to take. We're not going to solve everything with this first plan right here. But when we get under construction and when we get under design there will be ways to make innovation happen. I want to make sure the plan is expandable because we all know this is only one part of a future plan.	Thank you for your comment. During screening of project management measures (Section 3), one of the criteria used in the evaluation and acceptance of specific project feature was future compatibility, in light of the understanding that CEPP is an increment of full restoration.
CITIZEN-19 (JC); Comment - 4	And last but not least, I think everybody keeps forgetting this is going to bring a lot of jobs. This and many of all the other projects. If there's one thing that Florida needs, it's jobs. I think if you look at it there's 7.5 million people that are in this service area. We put a lot of those people to work. Not every one of them. But if put how much money each one of them would contribute to this it would be very insignificant to this number that you're talking here.	The construction of any recommended plan features would have a beneficial effect on employment and demand for local goods and services during the construction period. See **Section 4.5.3** (**Regional Economic Development Account [RED]**) for further information.
CITIZEN-19	Now I know this takes a lot of money. The last thing I would like to	Thank you for the comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
(JC); Comment - 5	just remind you all is that the fight is not here in south Florida, the fight is not with the Corps of Engineers, the fight is going to be in Tallahassee and Washington finding money. Everybody else has said it, we just need to get to the politicians and get them to give you guys the money to do this. Whether they give it to the Corps or whether they give it to the State, let's remember it's a 50/50 partnership.	
CITIZEN-20 (PG) Comment - 1	I work for Audubon Florida. We're a conservation group. We've been working in the Everglades for more than a hundred years. One of our wardens got killed protecting a plume bird. We very strongly support this project.	Thank you for your comment.
CITIZEN-20 (PG); Comment - 2	When I started studying the numbers of the volumes of water that was getting into the lake didn't have anything to do with except harmful stuff which is astronomical the amount of pollution going into the lake. We're trying to figure out how to take care of that. This project is trying to send some of that water south so it doesn't harm us. When these latest round of releases started there were people calling me up, Paul, where can we put this water so they don't dump it the estuary? At that point we were releasing down the estuary about 25,000 acre-feet a day. That's enough to cover 40 square miles at one foot deep, 40 square miles. So they're like, what can we do with it? I'm like, well, you know, if you found someone that owned 40 square miles of land you could say can we put one foot of water across your land? And if they said, sure, go ahead, well, you would have to figure out how to get it on there. How would you get 40 square miles of water on someone's land? That would take care of one day. So the next day you have to do it again and the next day and the next day. It starts piling up and you realize, wow, this is just immense volumes of water.	Thank you for the comment. The PIR/EIS recognizes the need for additional storage, and that future opportunities exist to provide benefits that extend beyond this increment of restoration.
CITIZEN-20 (PG); Comment - 3	When you have these big problems and these long-term problems and this doesn't get us all the way. It's a very good first step. It's going to start opening up the southward pathways. After we get this done we're going to have to do more projects and move even more water south.	Thank you for your comment and support of CEPP. The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		extremely detrimental to estuarine communities. The implementing agencies are committed to engaging in a public process to integrate CEPP into the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed.
CITIZEN-20 (PG); Comment - 4	But I'm not so concerned about when we're going to get done with this, I'm concerned about when we're going to get started. Let's get going on this because our future has got to change. What this hearing tonight is about is getting this approved, getting the Water Resource Development Act in Congress. And if we can get it in there, that authorizes them to move forward. If we don't get it in there this year, they may not do another one for several years and then there will be no activity on this at all. None. It will just stop.	Thank you for your comment. Please see response to CITIZEN-4 (DY); Comment-3 above regarding the project schedule.
CITIZEN-21 (JB) Comment - 1	This year's estuaries troubles has brought heightened interest by the people. And I want you to keep that up. Write to Congress. I think what's been said before, write to Congress, get in the word, get it authorized and also get it appropriated. We need some of our initial IRL things appropriated. Write to the governor and the legislators in Florida that we need more money than they're giving us.	Thank you for the comment.
CITIZEN-21 (JB); Comment - 2	You may realize that back in the day of Florida Forever we were getting 300 million for things like this. We're getting like 9 million this year I think it was. Anyhow we also need that C-23, C-24, C-25 to be done as soon as possible. And we need that south flow. We need to let the water out of the bottom of the lake.	Alt 4R2 addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP, including construction of C-43 and IRL-S, to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. The implementing agencies are committed to engaging in a public process to integrate CEPP into the CERP Master Implementation Sequencing Plan which defines the order in which CERP projects would be planned, designed, and constructed.
CITIZEN-22 (LJ)	Please make an effort to finalize CEPP. So much depends on this. CEPP is the catalyst for restoring the Everglades, Lake Okeechobee, the St. Lucie and Caloosahatchee Rivers, as well as all related waterways. Please don't just let this slide. There will come a point where damage to the environment will be irreversible. It's very soon.	Thank you for your comment. The significant amount of water resulting from CEPP will beneficially affect more than 1.5 million acres in the St. Lucie and Caloosahatchee Estuaries, Water Conservation Area (WCA) 3A, WCA 3B, Everglades National Park (ENP), and Florida Bay. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		Assistant Secretary of the Army for Civil Works and Office of Management and Budget (OMB) for administrative review. This will occur upon completion of the State and agency review of the Final Central Everglades Planning Project (CEPP) Final Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS). Construction will be dependent upon Congressional authorization and funding.
CITIZEN-23 (NB) Comment - 1	I want to thank you all for your efforts, but I have to say that after all this time and money, seeing the releases reduced by 23 percent is still devastating. If we got 23 percent of we just got, the lagoon would still be dead so I'm a little concerned about that.	Thank you for your comment. CEPP is an increment to restoration and the PIR/EIS reflects that future opportunities exist to provide benefits that extend beyond this increment of restoration.
CITIZEN-23 (NB); Comment - 2	I do ecology tours and wildlife tours at the estuary. And as you can note, I'm sure that my tours aren't very busy right now. I'm being criticized for not finding good things out there, but I've got to tell you they're pretty hard to find right now. I'm concerned that by the end of year we're not going to have any live sea grass. And if we have no seagrass, we have no life.	Thank you for your comment. The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where undesirable amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The CEPP plan is an increment of restoration and the first step towards re-directing water from Lake Okeechobee away from the estuaries and restoring the central Everglades ecosystem. The USACE also acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-23 (NB); Comment - 3	So I heard a lot of comments of water quality standards and how we have to keep the water quality standards for every place else this is going. But I'm wondering why the Indian River Lagoon, the most viable diverse estuary in North America, it's the only one we don't have to worry about the water quality standards of.	Thank you for your comment. The FDEP has established Total Maximum Daily Limits (TMDLs) for nutrients in the Indian River Lagoon. State and Federal agencies are working to address water quality and quality issues that affect the Indian River Lagoon.
CITIZEN-24 (CH); Comment - 1	I'm a second generation Floridian right here in Stuart. Somebody was saying it took 20 years to build all this, the Army Corps of Engineers, to put the dike around the lake. How long did actually take to stop the water flow? Do you know how many years that took back in the 40s before all this happened and it all flowed naturally?	Thank you for your comment. Evergladesplan.org contains much of the history of the Central and South Florida Flood control project. The Comprehensive Plan for Everglades Restoration provides authorization from Congress for a framework of modification to the Central and Southern Florida Project to restore the ecosystem while providing for other water related needs. It does not provide authority for real estate acquisition for the purposes of land management.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-24 (CH); Comment - 2	To me they should be able to undo what they did pretty quick with the equipment we have these days. And with eminent domain and Big Sugar, take it back over and say, hey, sorry. Just do it. You would take one of our houses in a heartbeat if you wanted to build a road. It's all about money. Let's get off the money and let's get what's good for the environment much less what everybody wants. I mean, you're killing Florida. It's sinking anyway, but you're killing it so much faster. I don't get it. You screwed it up, now you got to fix what you screwed up.	
CITIZEN-25 (AB) Comment - 1	I'm from the coal regions of Pennsylvania and if you ever want to see devastation of your environment, that would be the place to go. But I just want to say, if you go back to those towns now, it's welfare. That's all it is welfare right now. That was because of the coal barons. I can see the sugar barons doing the same thing to our economy down here because this is paradise down here, but I can see it being devastated and ruined. I see that with dolphins, the manatees and the fish. People are going out of business. You're talking welfare down here too. That will be the future of these peo-ple being put out of business.	Thank you for your comment. The Recommended Plan addresses the need to restore ecosystem function in the Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities.
CITIZEN-25 (AB); Comment - 2	Yet when you look at sugar, sugar got 80 million this year in subsi-dies. Between Louisiana and Florida, they got 2.3 billion and yet these people are being put out of work. Just like the coal regions with the coal barons. You have the same sugar barons. It's the same group of people. They probably all congregate and figure how they're going to do as much damage as they can without us com-plaining.	Thank you for your comment.
CITIZEN-26 (RH) Comment - 1	Other parts of the country where we're releasing waters that need to be released, they're releasing it in a way that the top of the water is released by a spillover versus just opening up gates the way you guys are doing it and letting all the heavy nutrients, phosphorus, nitrogen, the sludge to come out. Would that be a simple short term? That's my thought.	Replacement of the existing regional canal system outlet structures would require additional analyses to determine cost-effectiveness and eligibility for Federal cost-sharing.
CITIZEN-26 (RH); Comment - 2	What about cutting open some channels. I know you don't have the money even to take care of St. Lucie Inlet, but opening up channels on the barrier island to let the tidal flow flush out every six hours so that we can get some of that stagnant filthy water that is killing everything, pumped out.	The CERP authorized the USACE to consider modifications to the Central and Southern Florida water management project. Cutting channels through the barrier islands to flush out the estuaries is outside the scope of the authorization to modify the water management system.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-26 (RH); Comment - 3	Can we pump the water instead of down Caloosahatchee and the St. Lucie, why can't we pump it out 2 or 3 miles out into the ocean? I know we're talking about a lot of money, but this whole project is costing money and not going to be done until 2029 and there's not much to save at that point so I'm just throwing that out to everybody to see if that makes any sense at all.	The USACE must consider cost-effective solutions associated with modifications of the Central and South Florida water management project.
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CITIZEN-1 (ND)	Thank you. Actually, my cousin, Maggy Hurchalla, who some of you may know, she's a former Martin County Commissioner very involved in Florida water issues, cannot be here tonight, so she asked me, enlisted me to come and just read this short message. To all you folks here who worked on the plan, thank you. You're heroes. It's ironic that the Corps is usually criticized for going too slow. Now some people are criticizing you for going too fast. Please don't slow down. The effort and dedication you have put into creating this plan cannot be wasted by stumbling now; you have created a good plan you can be proud of. It does not begin to solve all the problems of the Everglades and coastal estuaries and all the other places. We got the water wrong, it never claimed to. It does make things get better. It is a first step. And if we don't make the first step, we go back to go. People have criticized CEPP because it doesn't make things better fast enough. If we stumble on the first step, things will go even slower, the estuary will die and the Everglades won't be far behind. There has been a lot of unhappy speculation that even with our enthusiastic support, the Corps in Washington can't get through all the required approvals in time for CEPP to be included in the WRDA. Please pass this message on to the Corps in Washington. They can be heroes too. They can make it happen, and if they do, the Corps will have set a new standard what it can do. I don't expect all those that like to throw rocks at the Corps, whenever water goes the wrong way, to stop throwing rocks. But you have proved that the Corps of Engineers is the group that actually did something to get the water right. Thank you.	Thank you for your comment. Staff will work as expeditiously as possible to complete the Chief of Engineer's Report for submittal to the Assistant Secretary of the Army for Civil Works and Office of Management and Budget for administrative review. This will occur upon completion of the State and agency review of the Final CEPP Integrated PIR and EIS. Construction will be dependent upon Congressional authorization and funding.
CITIZEN-2 (DB) Comment - 1	Good evening, Debbie Brady, the Executive Director of the Dade County Farm Bureau. And again, I thank you for coming to Homestead. Our comments started with the current conditions.	For the CEPP PIR, both water quality evaluation and the analyses for CEPP associated with Section 601(h)(4) and 601 (h)(5) of WRDA 2000

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	Excessive water is moving to South Florida naturally. Phasing water into areas efficiently was your words. With the CERP that might work. But first, we have water quality standards, and there's a concern already in 3A and 3B. Our members are concerned that the implementation of the proposed deviation will result in a negative impact on privately on lands, ag lands in Miami-Dade County.	and the Programmatic Regulations for the CERP (33 CFR Part 385) for Project-Specific Assurances and Savings Clause were conducted for the recommended plan. The level of detail and associated risks have been affirmed as sufficient for the CEPP planning effort. The next phase of the Corps Civil Works process is the preliminary engineering and design phase that will refine project design, risks and costs. The USACE District Engineer will ensure that Project-Specific Assurances and Savings Clause requirements are met per applicable policies and laws. Compliance with the requirements for water quality and the Savings Clause will be maintained throughout the entirety of the CEPP implementation period.
CITIZEN-2 (DB) Comment - 2	It's very important to complete your Mod Waters project. Five hundred million invested, approximately 200 million to complete. Doubling the capacity of the 356 pump station where there's problems currently existing is not what can work. Our problems we see, we want you to have – we want to help solve those with you. We want to point them out and we want to help share the information with you. When you're going -- when are you going to finish Mod Waters? We would like to see that you can complete that project and what it will -- I'm sorry -- we would like to see that you can complete that project and it will do what we were promised it would do before we support a whole new project to put more water into the same area. Thank you.	The Corps is actively pursuing operational testing (relaxation of G-3273 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Planning for the G-3273/S-356 field test has started but is not complete and necessary approvals (including FDEP) have not been attained. Information from the test will be used to develop the Final Water Control Plan for the MWD project which will allow for re-distribution of existing water flow from Western Shark River Slough to Northeastern Shark River Slough. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation.
CITIZEN-3 (JR); Comment - 1	Yeah, I was at the meeting in Palm Beach and of course after you go home and you realize, oh, I should have said this, I should have said that, so, not going into my long speech that I had that time, I just wanted to first of all say, John Rosier, president of the Everglades Coordinating Counsel, also president of the Full track Conversation Club, Dade County, we represent user groups. We're the ones that are out there all the time. I forgot to mention the Native Americans, the Seminoles, and the Miccosukees are also out there, so we have a lot of the same concerns.	**Section 6.7.1** (**Implementation Phases and Construction Sequencing**) has been edited since the release of the Draft PIR/EIS for public review on August 29th, 2013. Project features are grouped into three separate PPAs based upon the spatial distribution of the project features and the locations within the CEPP study area where separable hydrologic and environmental benefits would accrue. These groupings include a PPA of project features in northern WCA 3A (PPA North), a PPA of project features in southern WCA 3A, 3B, and ENP (PPA South), and a final PPA which provides the new water and required seepage management features that benefits the

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	One of the things I noticed in your presentation packet is the implementation phase. Basically the problems we have now is the Everglades being close due to high water. To me, it seems kind of funny that we're going to start on the north end. We can already push water south really easy right now because we've done it. So I would just suggest that in the phase in the end of the project that the south end is really the place to start first, to start getting some of that water. To start with, we can't get the water we've got in there now – now right now. If we had some of these projects in place, we wouldn't have the problem in the Glades being closed right now.	entirety of the study area (PPA New Water). The Final PIR/EIS presents two potential implementation sequencing scenarios that are possible with the three separate PPAs currently identified: 1) PPA North → PPA South → PPA New Water and 2) PPA South → PPA North → PPA New Water. With each scenario, non-CEPP project features and non-CERP project features identified as project dependencies in **Table 6-10** of the Draft PIR/EIS still apply. Other viable options for the implementation of project features and subsequent groupings into PPAs may be considered in the future and is acknowledged within the Final PIR/EIS.
CITIZEN-3 (JR); Comment - 2	And one of the other things I, again, back to habitat. I don't want to see us destroy one habitat to create another. That's been said over and over again for the last two years. I still feel this is – there's a – there's a push to make this an aquatic area instead of a fur bearing area, which it is now. I've always said you're not going to restore it back to the way it was. Let's use what we've got, make it better. You know, it can work all the way around.	The objectives of CEPP to enhance ecological values include to restore seasonal hydroperiods and distribution, to improve sheetflow patterns and surface water depths and durations, and to restore more natural water level responses to rainfall (for additional detail, reference Section 01 of the CEPP PIR). CEPP alternative configurations were developed to reduce the drainage effects from Miami Canal in the northern portions of WCA 3A and restore more sheetflow across the northwest portions of WCA 3A. The water level changes anticipated with implementation of Alt 4R2 are conducive to restoring a portion of the wetland hydrology that was lost as a result of the drainage effects from the construction of the Miami Canal through the marsh in northern WCA-3A. Details regarding the expected water level changes can be found in Section 5 and 6 and Appendix C.2.1 and C.2.2. Section 5.1.6.5 states that CEPP implementation may negatively affect some mammals dependent upon upland habitat. Due to increased water flow and changes in water distribution it is anticipated that overdrained areas in WCA 2 and northern WCA 3A will be rehydrated, triggering a vegetation transition from upland to wetland habitat. Although mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades, there is an increased potential for this vegetation transition to have a moderate adverse effect negatively affect mammals using upland habitat. Similar language about mammals

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		that are dependent upon upland habitat is included in the third paragraph of Section 5.2.6.5.
CITIZEN-3 (JR); Comment - 3	And the only other thing is, the water quality issue, which is going to be a big sticking point, please, don't make Area 3 a giant estuary. Because I can see maybe some of things would make - - create north of the SDA, we can solve a lot of that and – The only other comment is that we can really cure all of this if we took away the sugar subsidies, because we have lots of land up in Central Florida.	The CEPP project will not convert WCA-3 into a giant estuary. The project is intended to modify the hydrology of WCA-3 so that it better matches pre-development conditions.
CITIZEN-4 (DC)	Yeah, I'd just like to emphasize a few of things that John brought up. I'm really not on board with the knocking the established environmental areas, the – the backfilling of the Miami Canal. It -- it takes so long for these areas to bounce back, the minute you guys go in there and whether you're digging a drainage canal or you're building a levee. I've already seen the L-5 levee to the north of Water Management Area 3 in my lifetime, and it was beautiful as a kid, and -- and there was so much habitat up along that levee and gone. You know what I'm saying. And -- and -- and I just -- I'm a property owner up in Kissimmee and I see the way that the Corps and South Florida Water Management work. It's a -- it's a jump, think, and -- and I agree with some of the things that were said -- fast track, things need to get taken care of expeditiously, but to just run out there and -- and decimate an area, even worse than what the water is doing to it, not without bulldozers and -- and dredges and all of that crap, we really need to make sure that this project is going to work. Thank you.	Thank you for your comment. Please see the response to CITIZEN-12 (AB); Comment -1.
CITIZEN-5 (EK)	Good evening, my name is Eric Kimmel. Start out parroting Damon and John Rosier's comments, I agree with them. You said, you stated earlier you have been taking comments for 15 years. Actually, it's been a lot longer than that. You know, Tom surely was making comments 25 years ago saying the exact same thing, that you guys are stacking the water too high. I got charts from years ago, from the 80's, where you guys, just 18 inches of water being stacked, destroyed hammocks of 100 to 150 year old trees. I've got pictures that -- that --recommended water seasonal that would have been more traditionally historical amounts of water, the lengths of times, but every time you would stack water for a longer duration that what, you know, go over six weeks in some areas at	Thank you for your comment. Please see the response to CITIZEN-12 (AB); Comment -1. Operations of WCA-3 are governed by federally approved Water Control Manual which outlines the operating critieria for inflow and outflow structures based upon water levels within WCA-3A. Modifications to any Water Control Manual is done through appropriate coordination with other Federal and State agencies and the public. Deviations from an approved Water Control Plan require approval from the Corps South Atlantic Division.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	eight inches and wipe out the area. And the facts have been given to the Army Corps many times over the years, and it's just repetitive, repetitive comments. I've seen Mr. Shirley give you guys the same comments time and time again, and you keep coming back with plans that are showing that you're just going to stack the water. You have no triggers to release it. You also don't have, like right now, ENP tells you not to let water go south of the Trail, in areas, so either the Army Corps has control of the water or it doesn't. Right now, ENP simply uses our land for their own private -- as a private laboratory for their own experiments, and the costs have been higher in the north and Central Everglades. I have pictures of the devastation. I have some -- I have another book, when the Market's families were here in the 1800's. There is an article in the Sun Sentinel saying that there was high water all over the place. Meanwhile, this family, he was saying there was no deer hunting going on up there, and I have written histories from that family stating they hunted that area. So I'm really concerned about you don't have any real control of the water or the depths. Everything that's -- you don't have any triggers that says you're going to release that water without damaging that environment. And until you have triggers and real releases, because right now, and like they stated earlier, they could move that water out of 3A right now. There's enough water. Even with the old culvert system, as calm as they are, if they had opened the levees years ago, even the Miccosukees even brought it up several times, that they could have -- you could have brought a lot of water through to ENP, but ENP, apparently controls Army Corps or does Army Corps control the water. I mean, what is it, you know.	
CITIZEN-6 (AB Jr.); Comment -1	You guys talked about 17 acres on the Miami River, and there are miles of tree islands out there now. Those 17 acres, we're losing a lot. You know, there's way more than 17 acres there. I'm not sure how much there is, but I know it's a lot more. And the trees that are there now, you know, you talk about saving only 20 percent of the islands that are there now, you know, a lot of those trees, they take a long time to grow.	The purpose of backfilling the Miami Canal and removing the spoil mounds is to render the Miami Canal invisible hydrologically and ecologically at a landscape scale and eliminate the harmful drainage effects that the Miami Canal has on the interior Everglades marsh that results in adverse effect on aquatic flora and fauna. Spoil mounds on both sides of the Miami Canal from S-8 to S-339 would be removed and 22 spoil mounds (the highest priority/highest functioning Florida Fish and Wildlife Conservation Commission (FWC) enhanced spoil mounds) would be in order to promote sheetflow

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		across the backfilled Miami Canal, additional mounds would be created every mile from S-8 to Interstate 75 to prevent hydraulic channelization of flow and provide upland animal habitat. This would provide an additional 49 acres of upland habitat. This additional upland habitat provides refuge for terrestrial mammals during periods of high water. These mounds also align with the historic ridge habitat and there is the possibility that the placement of the mounds would help reestablish the ridge and slough pattern in WCA 3A.
CITIZEN-6 (AB Jr.); Comment -2	And the buggy bridge, you know, we don't want to see that go anywhere. You know, the buggy bridge needs to stay and 500 feet in both directions. There's a big -- big islands there. They're real high and they got some big trees on them too. And I would like to see a pavilion over there where the buggy bridge is. I don't know if that's in your plan or not.	The bridge (aka the Buggy Bridge) at S339 is an existing structure that is anticipated to require structural maintenance activities or be decommissioned in advance of CEPPs 2020 implementation schedule and therefore is not included as a recreational component in the Central Everglades Planning Project. Appendix F - Recreation Site E includes a shelter and an earthen crossing at this site to ensure the continued connection of existing buggy trails across the Miami Canal.
CITIZEN-6 (AB Jr.); Comment -3	Down here, I work, I'm a farmer, and right now, down here, we got a problem with the ground water. It's too high. You know, the farm I work on is flooded out right now. It's just getting worse.	For the CEPP PIR, the analyses for CEPP associated with Section 601(h)(4) and 601 (h)(5) of WRDA 2000 and the Programmatic Regulations for the CERP (33 CFR Part 385) for Project-Specific Assurances and Savings Clause were conducted for the recommended plan. Should the project be implemented in multiple PPAs, the USACE District Engineer will ensure that Project-Specific Assurances and Savings Clause requirements are met per PPA, per applicable policies and laws. NEPA Documentation will be updated if applicable as revisions are made to Water Control Plans and/or Project Operating Manuals associated with each PPA. Compliance with the requirements of the Savings Clause will be maintained throughout the entirety of the CEPP implementation period. This statement has been included in Section 6.7 (Plan Implementation) of the Final PIR/EIS. The WRDA 2000 Savings Clause requires that CERP does not reduce the level of service for flood protection as of 2000 and in accordance with applicable law. Consistent with the analysis provided in Annex B of the PIR, implementation of the CEPP project will not reduce the

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		levels of service for flood protection within the areas affected by the project, including LOSA, EAA, LECSA 2, and LECSA 3. The following text was added to CEPP PIR Section 6 TSP description for the 'yellowline' area to further highlight remaining uncertainties and need for more information before implementing a seepage barrier in CEPP: "There are remaining uncertainties about the effectiveness of the CEPP TSP seepage cutoff wall in maintaining desired stages in marshes of ENP while maintaining water supply, flood protection and water availability to Biscayne Bay. Therefore, additional analysis of the CEPP seepage cutoff wall will be conducted during the PED phase. See **Section 6.10.1.2**, the Engineering Appendix (**Appendix A**), the analyses required by WRDA 2000 (**Annex B**), and the CEPP Adaptive Management Plan (**Annex D Part 1**) for more detail about the remaining uncertainties and suggested analysis to be completed to determine the need for and extent of a CEPP seepage cutoff barrier wall." To address the commenter's concerns the following text was added to the introduction to the LEC section of the adaptive management plan: "There are remaining uncertainties about the effectiveness of the CEPP TSP seepage cutoff wall in maintaining desired stages in marshes of ENP while maintaining water supply, flood protection and water availability to Biscayne Bay. Therefore, additional analysis of the CEPP seepage cutoff wall will be conducted during the PED phase. See **Section 6.10.1.2**, the Engineering Appendix (**Appendix A**), the analyses required by WRDA 2000 (**Annex B**), and the CEPP Adaptive Management Plan (**Annex D Part 1**) for more detail about the remaining uncertainties and suggested analysis to be completed to determine the effectiveness of the CEPP seepage cutoff barrier wall."
CITIZEN-6 (AB Jr.); Comment -4	And what's the water quality going into 3A North right now. I know that it's -- should be around 13 parts per million, and I think it's a little bit higher than that right now. I'm not a hundred percent sure, but I'm pretty sure. That's about all I have to say.	At present, phosphorus concentrations in water entering WCA-3 slightly exceed 13 ppb. Long-term, the CEPP plan in combination with the State's Restoration Strategies Plan are likely to result in a reduction of phosphorus concentrations within WCA-3 to levels

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		below 13 ppb.
CITIZEN-7 (JU); Comment - 1	Hi, I'm John Ullman. I'm the Everglades representative for the National Sierra Club based here in Miami. The Sierra Club has more than 800,000 members in the United States as well as 30,000 here in the State of Florida. We use the Everglades. We follow the Everglades restoration. It's a very important part of our -- of our program. We support CEPP and we -- we support it because it provides hope for a damaged system. It's a chance to restore the flow by eliminating key barriers.	Thank you for your comment.
CITIZEN-7 (JU); Comment - 2	The Miami Canal, which was built in, between 1909 and 1912. The L-67A and C, which were built in the 60's. These were extremely damaging activities that did not create a better situation, but destroyed a very good situation. And the only way we can keep ourselves from deteriorating, not only at the Everglades but our own quality of life as – as human beings, is to restore these features. And it's becoming more and more imperative with the sea level rise. If you are afraid of anything in this plan, ladies and gentlemen, you should be more afraid of sea level rise, and one of the benefits of this plan is if -- it -- it helps to reduce the impacts of sea level rise.	The effects of sea level rise were analyzed per EC 1165-2-212. This analysis looked at the effect of sea level rise on the project area as well as on the restoration benefits anticipated to result from the implementation of the Recommended Plan. The Final CEPP Integrated PIR and EIS could be updated if necessary as further information on sea level rise projections were to become available.
CITIZEN-7 (JU); Comment - 3	There's one -- one issue that we have, you probably heard us speak about this at other hearings, is the -- the -- the north/south feature you have which you called the L-67D. I was hoping you would not call it the L-67D because the L-67A and C has such a bad environmental reputation. This is a -- this was supposed to be a temporary weir that was easy to put in and easy to take out, because this is not the end of the line, this CEPP project. This is a stepping stone to further decompartmentalization, because we have to actually restore all of the WCA3B and into Everglades National Park to restore Shark River Slough. So this is a temporary feature for us to get from place A to point B. But this, as it's structured right now, is a permanent feature. It's-- it's really something that is not so easy to take back. And we -- we strongly encourage you to go back to the original intention, which was a training weir. All we're trying to do is temporarily get the water south through the -- the two and a half mile bridge. And then, in order to move restoration farther to the east, to move it farther to	The alignment, design and dimensions of the levee will be further investigated as the project progresses in to Pre-construction Engineering and Design (PED). The function and integrity of the C&SF flood protection system provided by the L-67 A and L-67 C levee system must be maintained following CEPP implementation, and CEPP degradation of portions of the L-67 C and L-29 levees must be offset with additional infrastructure and operational constraints that maintain the pre-project level of flood protection and account for any potential increased design risk. The details of additional infrastructure, and how it would interface with operations and existing infrastructure, will be determined in the future as adaptive management, Pre-Construction Engineering and Design (PED), and as other information becomes available for this area. Consideration of a new L-67 D levee (currently included as a component of the CEPP recommended plan), including its footprint (width/height), costs, and permanency, will be

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	the east, we take down that levee, well, it is not a levee, it's a trained weir, and I really strongly urge you to consider that. It's a tremendous expense and unnecessary. And there's really nothing to flood. It's the Everglades. You know, the water is not -- it's not going to be an impact to -- to life or limb. We don't need to build something very substantial.	cautiously considered and subject to coordination and applicable policies and permitting.
CITIZEN-7 (JU); Comment - 4	CEPP is very important and something that needs to be done and should have been done and it must get done and we urge you to move forward. Thank you.	Thank you for your comment.
CITIZEN-8 (NR)	My name is Neil Ruddy. I am vice president of the Dade Club. I'd like to say, I agree with everything that they said at the meeting that we had at the IGFA. I guess my primary question was, I get that you've got to send water, okay, and by sending water south, my main complaint was, what happens when you say they have too much water, that we have too much, and then I was assured that they can shut it down and that's it. Okay, well, that's fine. But now the water is trapped in Area 3. Where is the guarantee that that will be let out? What I'm -- I'm mainly worried by, because right now, like you're saying, if it's full of water, where is it going to be in hunting season, and more importantly, I don't want to say that I'm focused on that, but when the water's going to be high continually, there isn't going to be a hunting season, okay, so maybe we could still recreate while there -- I want my kids to see deer and stuff that I did. But then it's going to be too hard on deer, so they're going to end up and stop recreating, so we're not going to be able to go in those areas, period. So where's the guarantee that they're going to stop the water and that you can pump it back out, clear our area out, if they don't want any more water sent. Thank you.	Thank you for your comment. Despite the additional 200,000 acre-ft of new water to the Everglades, the TSP caused EWMA closures twice, in 1994 and 1995. According to the 2-gauge average north of Alligator Alley, the duration of the 1994 event when water depths were over 2 ft for more than 60 days, was 146 days for the TSP, 151 days for the FWO, and 159 days for the ECB. According to the 2-gauge average north of Alligator Alley, the duration of the 1995 event when water depths were over 2 ft for more than 60 days, was 67 days for the FWO, 68 days for the ECB and 85 days for the TSP.
CITIZEN-9 (JHG) Comment - 1	Thank you. Julie Hill-Gabriel here on behalf Audubon Florida, and as always, I have to start by saying thank you at meetings like this for, you know, really for everyone in the room that's come, but especially for also putting so much effort into planning and speaking down here. You know on behalf of Audubon, this is by far the most exciting and to be celebrated projects and planning that we have ever seen, anywhere, not just in the Everglades. And it really is being looked at across the nation as a model that we can use and replicate over and over again.	Thank you for your comment.

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
CITIZEN-9 (JHG) Comment - 2	Usually we focus on four main things that are considered reform or things like that, are great developments that have taken place in this project. One is, of course, finally getting to the central part of restoration. Although those other projects are absolutely critical, but this project involves some of these hard questions that we haven't been able to get to before this process. That's number one. Number two, as we talk about at presentations, combining planning so we don't have the chicken and the egg, where we don't know, we don't know what we're doing down there, what we're doing up here. Let's gather and do it at one time. Three being, of course, building and more stake holder opportunity, so we all have been a part of this process and we know, you know, that we've had a prolonged wait. And of course, number four, is doing it faster. And you know, I work every day to try to push Congress to do something that will help accommodate a project like this in the timeframe that we're stuck within, and that is mainly to make sure folks in this room who put in their 15 and 20 hour days to get that timeframe set up will actually get to see those benefits.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN-9 (JHG) Comment - 3	But if you want to just add one focus which is the adaptive management piece, we really do hope that as we continue this sort of process which is just the kind of thing that is needed, blessed by members of Congress who try to find a way to do things faster, that we use on the ground adaptive management and that part of that can be looking at how do we construct different elements of projects together. If we can find some of those, as we're looking at the sequencing, so that, you know, when everyone hears 2029, asking why on earth did we bother doing this faster anyway, you know, everything takes forever no matter what we do, and just continue to look for those opportunities to speed up that process as that develops further. Thank you.	Part of the intent of the CEPP adaptive management plan is to inform decision makers during the implementation of CEPP, so that they will learn from components that have been constructed to optimize the components that are in line to be constructed. Adopting this adaptive management style saved time during the CEPP planning process and should continue to save time during CEPP's implementation.
CITIZEN-10 (VR)	Hi, good evening. I'm with the Miami Sierra club also, the executive group, and Sierra club -- says Sierra Club supports the concept. It's very important to restore the water through the Central Everglades and under the planned 2.6 mile bridge over Tamiami Trail. We do however object to the height potential permanency of the north/south water training feature. This was supposed to be a short temporary weir and it has morphed into something far more	Thank you for the comment. The alignment, design and dimensions of the levee will be further investigated as the project progresses in to Pre-construction Engineering and Design (PED). The function and integrity of the C&SF flood protection system provided by the L-67 A and L-67 C levee system must be maintained following CEPP implementation, and CEPP degradation of portions of

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	expansive and difficult to remove. We must not build more walls in the Everglades. Thank you.	the L-67 C and L-29 levees must be offset with additional infrastructure and operational constraints that maintain the pre-project level of flood protection and account for any potential increased design risk. The details of additional infrastructure, and how it would interface with operations and existing infrastructure, will be determined in the future as adaptive management, Pre-Construction Engineering and Design (PED), and as other information becomes available for this area. Consideration of a new L-67 D levee (currently included as a component of the CEPP recommended plan), including its footprint (width/height), costs, and permanency, will be cautiously considered and subject to to PDT coordination and applicable policies and permitting .
CITIZEN-11 (LR) Comment - 1	Thank you. I represent the Tropical Audubon Society, which is here in Miami. We have about 4000 members, and we work very closely with our -- our State partner, Julie Hill, so I want to reiterate this comment that she just made and also wanted to also express our excitement for this project. I think that, you know, I just finished publishing the top ten things we can do here in Miami before our sea level rise and something that I hope with the release with the IPCC report will maybe be in the Miami Herald. I'm hoping for that. And the top number one thing is Everglades Restoration. And its been on that list for years, somebody said almost 30, 25 years, that we've been talking about what we have to do here to fix it, so it's very exciting to be here.	Thank you for your support of Everglades restoration.
CITIZEN-11 (LR); Comment - 2	A couple concerns that I mentioned earlier is just making sure the adaptive management includes, you know, some assurances for Biscayne Bay and for Pennsuco wetlands, for the Miami Wetlands, making sure that we're not creating a new impact as we move forward. So I've already kind of asked those questions. I think I just want to talk to you further about how that will play out as you get more data and as you refine your adaptive management plan and your --your monitoring. So I want to stay in the loop on that.	Thank you for your comment. CEPP monitoring and adaptive management includes Biscayne Bay and the Pennsuco wetlands. The monitoring is described in Annex D of the CEPP Project Implementation Report (PIR). The monitoring described there is intended to work in conjunction with existing and potential future monitoring networks in order to maximize the availability of information about the well-being of these important areas.
CITIZEN-11 (LR); Comment - 3	Just know that, and I also want to say moving fast is also a concern. I really don't want to be 50 and standing here and saying the same thing. So I'm also working along with Julie to push the funding for this project, so that we can, you know, preserve some of the things	Thank you for your comment and support of CEPP.

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	for future generations, and I have to -- I would be remiss not to mention the late John Ogden, who served on our board for the -- for the last five years of his life, and this kind of, to me, is what his vision was, you know, early on in some of his early writings, and I feel like about a year before he passed away he said, if we don't do this in the next ten years, we're going to lose it all. And so I do want to just encourage you to move fast and keep going. I know that there's lots of concerns and lots of headaches and I really appreciate all of the work that you guys are doing. Thank you.	
CITIZEN-12 (AB); Comment -1	I kind of resent the idea calling the 3A north, 3A south a water conservation area. It's the Everglades. And the Everglades is a fragile environment. And if you -- you can look at Area 2. If you want to do some restoration, I think you should go to Area 2 and start over there and fix the mess you guys did a long time ago. You killed all the tree islands out there. The water depth and the water duration that are out there and the water quality is important and how -- how the Everglades is going to survive or not survive. The habitat, the fur bearing animals, the wading birds, you don't see the wading birds out there like you used to. You put too much water out there, you might as well buy them all a mask and a snorkel.	The conditions in the system today were brought about by the drainage and impoundments created as a result of construction of the Central and Southern Florida Flood Control project. The Miami Canal has caused over-drainage of the upper reaches of WCA 3A and the levees have resulted in ponding of water in the southern reaches of WCA 3A. The objectives for CEPP and CERP are to restore more natural water levels and fluctuations that are beneficial to the ecosystem and is based upon the best peer reviewed scientific information available about the needs of the natural system. The plan and operations of the system will provide for restoration of seasonal hydroperiods and includes appropriate recession of water levels in the dry season for ridges and sloughs. The objectives of CEPP to enhance ecological values include to restore seasonal hydroperiods and distribution, to improve sheetflow patterns and surface water depths and durations, and to restore more natural water level responses to rainfall (for additional detail, reference Section 01 of the CEPP PIR). CEPP alternative configurations were developed to reduce the drainage effects from Miami Canal in the northern portions of WCA 3A and restore more sheetflow across the northwest portions of WCA 3A. The Miami Canal causes water levels in northern WCA 3A to recede well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation and muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas. Alt 4R2 proposes to reverse the continued degradation of this area by backfilling a portion of the Miami canal north of I-75 to remove its drainage

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		effects, re-distributing inflows through removal of approximately 2.9 miles of the south L-4 levee and increasing water flow into WCA 3A during the dry season. Water levels and durations within WCA 3A and 3B will vary across the landscape and from year-to-year if Alt4R2 were implemented, consistent with the variability in rainfall, hydrologic conditions, and operations within the upstream basins (Lake Okeechobee, EAA, WCA 1, WCA 2). Generally, water levels in northern WCA-3A will stay above ground surface for longer and the depth and duration of the wet-season water levels will increase. The water level changes anticipated with implementation of Alt 4R2 are conducive to restoring a portion of the wetland hydrology that was lost as a result of the drainage effects from the construction of the Miami Canal through the marsh in northern WCA-3A. Details regarding the expected water level changes can be found in Section 5 and 6 and Appendix C.2.1 and C.2.2. In general, with implementation of Alt 4R2, water levels in Northwest and North Central WCA-3A are predicted by the period of record modeling results to remain above ground surface throughout the year to reduce continued soil oxidation and invasion of woody vegetation, significantly reduce the susceptibility of that area to risk of muck fire and beginning to restore the ridge and slough landscape that was evident in the western portion of this area in the 1940s. Water levels in the northeastern portion of WCA-3A are predicted by the POR modeling to remain conducive to maintaining the sawgrass plains in this area that were also evident in the 1940s Central WCA-3A will remain similar to today's condition, and water levels and durations in southern WCA 3A will be slightly reduced due to the increased outlet capacity (to WCA-3B and the expanded S-333) included in Alt 4R2. Section 5.1.6.5 states that CEPP implementation may negatively affect some mammals dependent upon upland habitat. Due to increased water flow and changes in water distribution it is anticipated that overdrained areas in WCA 2 and northern WCA 3A will be rehydrated, triggering a vegetation transition from upland to

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		wetland habitat. Although mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades, there is an increased potential for this vegetation transition to have a moderate adverse effect negatively affect mammals using upland habitat. Similar language about mammals that are dependent upon upland habitat is included in the third paragraph of Section 5.2.6.5.
CITIZEN-12 (AB); Comment -2	You're talking about putting another 210,000 acre feet of water in the Everglades. We don't mind you moving water through the Everglades, but then you stack it up and hold it. We've had a situation where they micromanaged the Everglades National Park over to Seaside Sparrow. You sacrificed 850,000 acres to the north to --because the Everglades National Park didn't want water. They shut the structures down and you wiped out all the thousands of animals out there as well as the habitat out there and to the north.	Thank you for your comment. Changes to Everglades water distribution, timing, and volumes with CEPP will be implemented gradually. . The gradual changes are expected to promote gradual adaptation of the ecosystem to the restored conditions. The changes will help to conserve soil by building peat and preventing oxidization and muck fires, and to restore the diverse topography of higher and lower ground through the Everglades that supports diverse species. Doing so will support wildlife throughout the Everglades including improving conditions in Everglades National Park. These expectations, and the science that supports them, are explained in the Benefits section of the CEPP PIR and in the CEPP ecosystem services report.
CITIZEN-12 (AB); Comment -3	So I've got a big concern about the water quality. They may say, oh, we don't want the water because it's not clean enough, or we can't pump the water because we got to save the sparrow. So I mean, these are, you know, these aren't things that we're worried about happening. These are things that have happened, and we've seen it happen through experience. We've been talking about restoration of the Everglades for the past 50 years. I can bring people here right now, some of them are still alive, and they've been involved in going to these meetings, and they're saying the same thing over and over again, and you just keep, you know, we're stuck on stupid or something here. We don't seem to learn from our mistakes, you know. Whatever amount of water that you're running in the north, we ought to have some triggers in place. If you can't let the water out of the south end, then you ought to have a trigger in place saying you can't pump any more water in there. There ought to be some kind of safety measures or something, somebody looking out for the wildlife out there because it hasn't happened in the past.	Thank you for your comment. Operating the South Florida water management system is complex as your comment indicates and progress towards restoration requires cooperation of multiple agencies and input from the public. The CERP and CEPP projects work to get input from all affected parties during the planning and implementation phases.
CITIZEN-12	We've got public access issues. You know, I come to a lot of these	

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(AB); Comment -4	meetings, you guys know that. And now we come up with another idea on how to block us off the L-4 levee. Well, when we came, we had asked you to leave a mile and a half of the L-4 levee and you said, yeah, that was fine. But now we got to divert the water from the S8 pump station into the L-4 canal, we're going to lose all of our public access on the L-4. And I know you're not going to build a bridge, because that's going to cost too much money. I talked to Jerry about us putting some kind of levee where we could come down the Miami River by a service road or something where we'll have access to the west side of 3A north. You know, not everybody has a vehicle to get out there. You know, a lot of people like to go archery hunting or muzzle loading, a general kind of block hunting and you just cut all of us guys out of that area. We can't go in on the L-28. We only have three places that we can come in off the I-75 area. There's no area that we can come in off of anymore, so basically we're down to the L-5 and the L-4. So I mean, I have some real concerns here.	The CEPP Recreational Plan maintains and improves existing access and provides additional access points for recreational and hunting opportunities. Please refer to Appendix F, Figures F2, F3 and F4 that identify existing, improved and new access points for recreational opportunities that include hunting and fishing.
CITIZEN-12 (AB); Comment -5	I think you know if we're talking about this project in 2029, you might as well – I think you --When I was involved in this back when this all started back in '94, this phase of the project, they were going to put the S8 pump station in the mothballs. Well, for some reason the State wanted to spend some money, so they restored the pump station. Maybe by 2029, you can build a new pump station in place of the G-404 and move the water that way instead of making of all this impact to the habitat. You know, without digging another canal out there, that's the last thing in the world we need.	For CEPP, the S-8 pump station and/or G-404 may require design modifications (or possible replacement). S-8 is currently used to discharge runoff water via the Miami Canal, as well as provide an outlet for STA 3/4 discharges into WCA 3A. CEPP will maintain the existing design capacity for the S-8 complex through a combination of the following design considerations: pump station design modifications, a new hydraulic connection from S-8 to the degraded L-4 Levee (New S-8A), utilization of the existing G-404 pump station, and leaving the 1-2 mile segment of the Miami Canal as available getaway conveyance capacity during peak flow events. The proposed S-8A culvert and associated canal connecting the Miami Canal to the L-4 Canal will be reassessed in further detail during PED.
CITIZEN-12 (AB); Comment -6	On the Miami River, we supported, you know, went along with filling in part of the Miami River. You know, it looks like we're going to lose – loss of habitat out there. You're going to take out miles and miles of spoil banks that the wildlife's adapted to, you know, that's been there since 1912, is when all this started with the Miami River, when Woodrow Wilson started the Federal Reserve. That's where they had all that funny money and they started doing all these crazy projects.	The Miami Canal causes water levels in northern WCA 3A to recede well below the ground surface for long periods of time, which has resulted in extensive and documented losses of peat soils from oxidation and muck fires and resultant lowering of the ground surface elevations in northern WCA 3A by up to 3-ft in some areas. Alt 4R2 proposes to reverse the continued degradation of this area by backfilling a portion of the Miami canal north of I-75 to remove its drainage effects, re-distributing inflows through removal of

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		approximately 2.9 miles of the south L-4 levee and increasing water flow into WCA 3A during the dry season. Water levels and durations within WCA 3A and 3B will vary across the landscape and from year-to-year if Alt4R2 were implemented, consistent with the variability in rainfall, hydrologic conditions, and operations within the upstream basins (Lake Okeechobee, EAA, WCA 1, WCA 2). Generally, water levels in northern WCA-3A will stay above ground surface for longer and the depth and duration of the wet-season water levels will increase. The water level changes anticipated with implementation of Alt 4R2 are conducive to restoring a portion of the wetland hydrology that was lost as a result of the drainage effects from the construction of the Miami Canal through the marsh in northern WCA-3A. Details regarding the expected water level changes can be found in Section 5 and 6 and Appendix C.2.1 and C.2.2.
CITIZEN-12 (AB); Comment -7	Okay, you're going to take out oak trees out there that you couldn't wrap your arms around. There's -- figs out there, the three of us couldn't wrap our arms around. And you're going to go through there and you're going to wipe them out. You know, the wildlife out there have adapted to what we have. We need to use adaptive management to manage what we have, not what it was for free drainage or anything else. We need to have some common sense and try to save what we have the way we have it. Not to try to change it back to free drainage and put it all out and turn it into an Area 2, which to me, is wasteland. I worked in Everglades National Park, and I'll tell you right now that area out there is a wasteland, too. There's not the wildlife. It's not in there. The tree islands are not healthy. It's full of cattails. It's a disaster. It's not the pristine place that everybody thinks it is. I've had a chance to work out there. I do logistic --logistics on environmental studies.	Thank you for your comment and your attention to these important issues. Changes to Everglades water distribution, timing, and volumes with CEPP will be implemented gradually. The gradual and limited changes are expected to promote gradual adaptation of the ecosystem to the restored conditions. The changes will help to conserve soil by building peat and preventing oxidization and muck fires, and to restore the diverse topography of higher and lower ground through the Everglades that supports diverse species. Doing so will support wildlife throughout the Everglades including improving conditions in Everglades National Park. These expectations, and the science that supports them, are explained in the Benefits section of the CEPP PIR and in the CEPP ecosystem services report.
CITIZEN-13 (MM); Comment -1	Martha Musgrove from the Florida Wildlife Federation. I just want to make a few statements here because we do expect to submit some detailed comments on the report, and I want to praise you. It's well written and edited, those parts that I've read so far. I'm now plowing through the appendix's and the annex's. I want to give some support for continuing to the Corps, as it continues to do	Thank you for your comment.

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	fast track projects. I felt that the fast track actually forces some decisions to be made that otherwise linger, because it's very, very difficult to come to consensus, and at some point people have to give up, you know there's, you know, or at least move to the center, tell it to Congress.	
CITIZEN-13 (MM); Comment -2	The openness and responsiveness during the workshops was exceptional and appreciated. I didn't think you'd fill this room at night, in all honesty. You're just getting the models out there and locating the camps. Yes, people have had heartburn throughout the whole process, but it's better to have some sense of what is being planned than no sense in having it corrected because we can all make changes during the process.	Thank you for your comment regarding the Civil Works Program - Pilot Study Implementation. This study process continues to use quality planning practices and is intended to increase public participation, broaden public input and shorten the timeframe for completion of a pre-authorization (planning) study.
CITIZEN-13 (MM); Comment -3	CEPP does treat the 3A and B, Florida's Everglades, as a -- as a mosaic for habitats, supporting a variety of fish and wildlife. I don't see the water founders here, but sometimes they -- they're really excited about the -- the L-4. This does not make a plan. We will continue -- as an organization, we've had a long history with the hunting community, the fishing community, and natural resources. We do support moving ahead with CEPP, and we will work with you to prove it during the detail design process. We hardly think it's over. We haven't even gotten it authorized, and it takes 20, 30 years to implement, so during that time, a lot of things will change, I suspect.	Thank you for your support of the Central Everglades Planning Project and your comment.
CITIZEN-13 (MM); Comment -4	We do personally and as an organization, we have some concerns about implementation. We recognize the importance of finishing Mod Waters. That has to be done. And clearing them to do that, we -- we will support the Corps and the District in clearing out this contract eight problem, because you've absolutely got to connect the retention, the pond retention areas with the flood control features to the north. Nothing works for Taylor Slough if you don't. And Taylor Slough is your avenue for getting water to Florida Bay, where it's most needed to reduce salinity. We also will work vigorously to get that second bridge, because when all is said and done, the outflow capacity has to equal the inflow capacity of -- the Water Conservation Area 3A has to be a flow- through system, and we have to show people that it will be.	The projects mentioned in the provided comment (MWD 1-Mile Bridge and Road Raising, C-111 South Dade, and Tamiami Trail Next Steps Bridge and Road Raising) have been noted as project dependencies in **Table 6-10** of the Draft PIR/EIS that must be integrated into the sequencing of CEPP to avoid unintended adverse consequences. Thank you for your comment and support.
CITIZEN-13	We want to move water south, rather than to dump it into the	The Recommended Plan addresses the need to restore ecosystem

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
(MM); Comment -5	estuaries. The last hearing that we had was up in the Treasure Coast, and the Treasure Coast area is -- is not only devastated, but people are very, very angry too, and legitimately so. And at each of these hearings, there has been a lot of memory in the room. This one, the early ones, the mid ones, I'm -- I'm sorry I didn't get over to the West Coast. I thought that was outside of my -- my territory. Although as of my trip today, I think it's easier maybe to get from West Palm to the West Coast than it is to get to Miami. But CEPP is a component of CERP and we all agreed that CERP was the framework from which to work, to move water south and to restore those areas they can, and at the same time, CERP was a three legged stool. You get environmental benefits. But you also have flood protection and water supply guaranteed, and we are cognizant of that. We accept that, and we'll try to work with all the groups to make sure that occurs. Thank you.	function in the Northern Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. The USACE acknowledges that additional actions are needed to achieve the restoration envisioned in CERP and to help reduce turbidity, sedimentation, and moderate unnatural changes in salinity that are extremely detrimental to estuarine communities. Thank you for your comment and your support of CEPP.
CITIZEN-14 (JH) Comment - 1	I'll be brief this time. And Laura, rest assured, you're going to keep your job for the next 60 years, plus the world's coming to an end, and we need your effort. Martha, I appreciate some of your remarks and I reiterate those. As far as connecting the south, that flood control and water supply for the part of this 35 minute consideration and environmental considerations, some people have forgotten that, I'm afraid.	The analyses conducted for CEPP did include evaluation of the effects on flood protection and water supply which are included in Annex B.
CITIZEN-14 (JH) Comment - 2	Anyway, again, thank you for coming, and just to be redundant, I want to again mention Mod Waters. I want to say that right now, the farming season can't even start in some areas here. And I wish for once, I've asked you to come down and we're going to show you what I'm talking about when you come down. You're the first person to say you would, that I think might actually come down.	The Corps is actively pursuing operational testing (relaxation of G-3273 gage operational constraint and S-356 test) to utilize the constructed Modified Delivery Project features. Planning for the G-3273/S-356 field test has started but is not complete and necessary approvals (including FDEP) have not been attained. Information from the test will be used to develop the Final Water Control Plan for the MWD project which will allow for re-distribution of existing water flow from Western Shark River Slough to Northeastern Shark River Slough. The Corps anticipates an operational plan and completion of MWD prior to CEPP implementation.
CITIZEN-14 (JH) Comment - 3	It seems like, you know, it's not a miracle you're here, and NEPA process requires you to have these public meetings, and how you forgot Homestead I'll never know, but you did. It's a legal requirement, and I think we need to start looking at the legality of	We have followed the NEPA process. . We conducted 5 public meetings throughout the project area to present the draft report.

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	this, NEPA, because I really think that I'm not sure the Corps knows how to do NEPA anymore. They know how to do a FONSI, I'll tell you that. They show up quick, and there's no problem with it.	
CITIZEN-14 (JH) Comment - 4	But 75 percent of your tree islands have been destroyed over the last 50 years, no doubt about it. The reason you're not sending water south of the Everglades now is the Everglades is opposed to you sending water through some of the -- taking the vegetation away from south of the Trail. Remember that. Because it's a wilderness, and they don't want to remove the obstacles to moving water south. We seem like a contradiction, since they want it. But anyway, appreciate you coming. I will send comments up and thanks to everybody. I know you're underappreciated often, but I do appreciate what you do, and you do what Congress asks you to do. You just don't go out and do things, you know, like you do it at the request of the government, which we all are a part of. Thank you.	Thank you for your comment. Please see the response to CITIZEN-12; Comment -2.
CITIZEN-15 (CR)	Thank you for taking the time to make this presentation to us tonight. I represent the - - my name is Charles Ratner. I represent the Nathan Ratner Testamentary Trust, Nathan Ratner Charitable Foundation, myself and my sister, Amy Ratner. I've been coming to the meetings like this since I was ten years old, and I'll be 50 next month, so that's been a long time. You mentioned that the private budget, earlier when I asked a question, does not include a private property acquisition or budget, but I believe you should reconsider this and take another look at that. My family is one of the largest private property owners in the WCA 3A and 3B, with approximately 10,000 acres. We own portions of the L-67 A and the L-67 C, likely portions of the proposed locations of the new Shanty Levee and L-33 levee and possibly the S-356 pumping station site. Your plan will involve moving dirt and moving rocks, some of which we own, some of which other private property owners own, building structures on our property likely cutting off access and moving access or any of the SFWMD is under a court order to build my family access over L-67 A and L-67 C, which has not been built in the last 20 years, despite the court order. The District's flowage easements likely trespass on our property by pumping polluted water, which could	Thank you for your comment. A comprehensive review and investigation of all deeds has been completed and it has been determined that the State has all necessary rights for conveyance of water over these properties. The properties have reserved mineral rights and rights of access solely for the purpose of these mineral rights.

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	potentially result in the future of the termination of the flowage easements, and cleanup of the water coming in is not likely to be addressed until 2029, like your presentation. So I think it's prudent to include an examination at least of private property rights and potential overuse of the flowage easements as a component in your plan, and we welcome an opportunity to discuss this with you further and even offer our lands to create a storage basin to widen 3B and 3A, at our expense, if that had interest as part of this component. Given the timing, the next time I will bring my kids who are 11, 13, and 15 and at the age that I started coming to these meetings, to future meetings, because they'll probably be addressing these issued when they're 50 years old, and it's time for them to learn about it. Thank you.	
CITIZEN-16 (AB Jr.)	Something I forgot about. These pictures here are what stacking water does. This is 50 years before. This is part of the problem that you guys have caused. This is what they look like not. That same - - all the trees are gone, and it's nothing but sawgrass. We've already lost big trees. Another question I had, where - - when you - - when you measure you 15 inches that you're proposing for the 3A north, where are you going to take your measurements from? From the south part or the north part or the middle? We have - - this problem that just came upon us this past couple months, we didn't even get a hurricane or nothing. This is only rainwater that flooded us out up there in 3A north. I mean, what's going to happen when you guys get a couple storms that roll through here. To be honest, I'm kind of scared of what - - what the outcome of this program is going to be. I mean, in the past it's been, you guys don't have a good history, you know. I mean, this is a problem and problem again, and I just wanted to say thank you for coming to Homestead, too. I - - I really appreciate that.	The CEPP project redirects an average annual volume of 210,000 acre feet of water discharged from Lake Okeechobee to the Northern Estuaries through the central Everglades system, with approximately 85 percent of this volume increase occurring during the dry season (generally November through May) when FEB storage and STA water quality treatment capacity is typically available. The magnitude of change between the FWO project and with CEPP project stages for WCA 3A north will vary inter-annually and intra-annually, but stages are generally significantly increased by 0.6-0.8 feet for WCA 3A-NW (or approximately 7-10 inches), with the increased antecedent stages at the end of the dry season resulting in a carry-over stage increase during the wet season (generally June through October). For the 1965-2005 simulated period of record, daily stage increases exceed 1.25 feet (15 inches) approximately 8.7 percent of the period of record, with a maximum daily stage difference of 2.63 feet (August 1989). A summary of the anticipated hydrologic effects of the CEPP action alternatives is provided in Table 5.1-2 for CEPP Alternatives 1 through 4 and in Table 5.2-1 for Alternative 4R and the TSP Alternative 4R2. The summary of regional hydrologic differences includes quantitative comparisons between the ECB and FWO and between the FWO and each action alternative based on the Regional Simulation Model (RSM)-BN and RSM-GL CEPP modeling representations of these baselines and alternatives. The determination of the directionality of hydrologic change

COMMENTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
		(improvements and/or adverse hydrologic change) within each specified geographic region is principally based on the results of the ecological evaluation, which are described in Section 4.2.2 and Section 4.6.2. The anticipated hydrologic effects are described for the following monitoring gauge locations throughout the WCAs, which are representative of the spatial variability of CEPP hydrologic changes: 2A-17 (WCA 2A); 2B-Y (WCA 2B); 3A-NW (Northwest WCA 3A); 3A-NE (Northeast WCA 3A); 3A-3 (East-Central WCA 3A); 3A-4 (Central WCA 3A); 3A-28 (Southern WCA 3A); and Site 71 (WCA 3B). Complete supporting documentation for the summary of anticipated hydrologic effects, including stage duration curves for the indicated monitoring gauge locations, is provided in CEPP PIR Appendices C.1 (ECB versus FWO); C.2.1 (Alternatives 1 through 4 versus FWO); and C.2.2 (Alternative 4R and Alternative 4R2 versus FWO). For localized hydrologic effects at other non-specified WCA locations (including stakeholder requested hunting camp locations) or daily stage hydrograph information, this information is available for Alternative 4R and Alternative 4R2 as part of the complete set of RSM-BN and RSM-GL hydrologic model performance measure output that is posted on the Everglades Plan public web site for the CERP, as indicated in the CEPP PIR main report: http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx

C.3.3.4 Draft PIR/EIS Letters

Congress of the United States
Washington, DC 20510

September 13, 2013

The Honorable Jo Ellen Darcy
Assistant Secretary of the Army (Civil Works)
The Pentagon
108 Army Pentagon
Washington, DC 20310-0108

Dear Assistant Secretary Darcy:

Thank you for your continued dedication to the restoration of America's Everglades. We are writing to express our support for the approval of the Central Everglades Planning Project (CEPP). The U.S. Senate passed the Water Resources Development Act on May 15, 2013, and the U.S. House of Representatives is working on companion legislation. The draft Project Implementation Report/ Environmental Impact Statement was released for public review with comments due by October 14, 2013.

We are hopeful that the U.S. Army Corps of Engineers will complete the final planning stages as soon as possible to provide an opportunity to advance this and the interdependent projects in a WRDA bill. There are already four Everglades projects with completed Chief's Reports. Ensuring that these projects are all authorized in the upcoming WRDA bill will ensure restoration can progress without further delay.

CEPP will increase flow to the south by 217,000 acre feet (70 billion gallons) of water, thus reducing harmful discharges to the St. Lucie and Caloosahatchee estuaries, while still maintaining needed dry season flows. By delivering more water to the Southern Everglades, critical habitat will be improved, leading to a better functioning ecosystem that will benefit Florida's economy.

As one of the Corps of Engineers' pilot projects for streamlined planning, the project formulation timeline was reduced from five to seven years to two years. That is something to be celebrated. Completing the final stages of project planning, however, is essential to reap the benefits of this reform.

We look forward to continuing to work with you to finalize CEPP and restoring America's Everglades.

Sincerely,

Bill Nelson
Senator Bill Nelson

Representative Mario Diaz-Balart

Representative Alcee Hastings

Representative Patrick Murphy

Representative Bill Posey

Representative Daniel Webster FL-10

Representative Debbie Wasserman Schultz

Representative Joe Garcia

Representative Bill Young

Representative Kathy Castor

Representative Dennis Ross

Representative Tom Rooney

Representative Ted Deutch

Representative Lois Frankel

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

November 1, 2013

Colonel Alan M. Dodd
Commander
United States Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear COL Dodd:

Thank you for the opportunity to review and provide comments on the *CENTRAL EVERGLADES PLANNING PROJECT DRAFT INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT* (Draft PIR/EIS), dated August 2013. The Department of the Interior (Department) supports the Recommended Plan as contained in the Draft PIR/EIS. The Central Everglades Planning Project (CEPP) will provide meaningful steps toward restoration of the central Everglades, Everglades National Park (ENP) and coastal estuaries. The Department supports continuing forward with the CEPP approval process on an expedited schedule. The Department lauds the U.S. Army Corps of Engineers (Corps) for including the Central Everglades Planning Project (CEPP) as one of seven national pilot projects designed to improve the Federal planning process by significantly reducing the timeframe and process necessary to develop a Corps feasibility study. Successful restoration of the Everglades is contingent on streamlining both this timeframe and process. The Department, like the Florida Department of Environmental Protection (FDEP), would like to see the streamlining of both the timeframe and process for Corps feasibility studies utilized in this pilot program become a national practice for Corps feasibility studies.

The Department appreciates the progress that has been achieved in authorizing and implementing several Comprehensive Everglades Restoration Plan (CERP) projects located primarily on the periphery of the Everglades. The CEPP is the first major CERP project aimed at addressing ecological conditions and functions within the central portion of the Everglades, from ridge, slough, and tree island communities down through southern estuaries, all of which continue to decline due to lack of sufficient quantities of freshwater flow, obstructions to sheetflow, and altered flow timing and distribution problems. The purpose of the CEPP, which is comprised of multiple CERP components, is to identify and recommend an initial increment of restoration benefits by reducing damaging freshwater discharges from Lake Okeechobee to the St. Lucie and Caloosahatchee estuaries while restoring flows southward through the central Everglades to Florida Bay. This work is essential to restore or improve the central portion of the Everglades ecosystem (with component wetlands, uplands, and estuaries), including its water quality, habitats, and wildlife, while sustaining water supply, flood control, and cultural resources and values.

The Recommended Plan

The recommended plan, Alternative 4R2, when combined with ongoing non-CERP and planned CERP projects, addresses the primary objectives of Everglades restoration, which include expanded water storage, water quality treatment, improved conveyance, and seepage management. The CEPP recommended plan is comprised primarily of refined components of original CERP features including: the Everglades Agricultural Area Storage Reservoirs (CERP Component G), Water Conservation Area (WCA) 3 Decompartmentalization and Sheetflow Enhancement (CERP Components AA and QQ), S-356 Pump Station Modifications (CERP Component FF), L-31 Levee Seepage Management (CERP Component V), System-wide Operational Changes - Everglades Rain-Driven Operations (CERP Component H), and Flow to Northwest and Central WCA 3A (CERP Component II). The well-balanced Alternative 4R2 recommended plan was made possible by the innovative development and application of many cutting edge assessment and modeling tools, and the adoption of a highly inclusive planning process combining inter-agency project teams with regular stakeholder workshops. The Department commends the Corps and South Florida Water Management District (SFWMD) for these efforts.

Regional Environmental Benefits

- *Benefits to the Upstream Everglades Watershed*

The recommended plan provides **significant** environmental benefits across much of the South Florida Ecosystem, including to numerous land, water and wildlife resources for which the Department has management, stewardship and/or regulatory responsibilities. Alternative 4R2 will provide benefits in the upstream Everglades watershed by reducing the number and severity of harmful, high-volume discharges from Lake Okeechobee to the northern estuaries, and re-directing these flows back into the historical southern flow path. This will improve the overall salinity and nutrient conditions in the St. Lucie and Caloosahatchee estuaries. In addition to redistributing the existing treated water that enters WCA 3A in a more natural sheetflow pattern, the CEPP recommended plan will provide an average of approximately 210,000 acre-feet per year of additional clean freshwater flowing into and through the central Everglades. The Draft PIR/EIS states that this increase in freshwater flow to the Everglades represents approximately two-thirds of the additional flow estimated to be provided by the CERP. A key premise of Everglades restoration has always been that the best available scientific information will guide planning and decision-making. It is important to note that after the authorization of CERP, a scientific consensus developed (in part via scientific workshops convened by the Science Coordination Group and the CEPP interagency science team) that increased flows of freshwater, over and above the CERP estimate, are needed to re-establish more natural marsh water depths and flooding durations, as well as salinity patterns in the southern estuaries. The CEPP recommended plan represents an important first increment toward our longer-term efforts to restore the historic flow connection between Lake Okeechobee and the downstream Everglades.

- *Benefits to the Central and Southern Marsh Habitats*

The Draft PIR/EIS recognizes that large regions of the central and southern Everglades have been degraded in response to drainage, altered flow patterns, and the loss of sheetflow. The combination of CEPP recommended incremental levee removal, canal back-filling, and additional water flowing into

northern WCA 3A, WCA 3B, and ENP will help to reverse the overly-dry conditions that have contributed to peat oxidation, increased fire intensities, and invasions by woody vegetation. The recommended plan also includes significant infrastructure and operational improvements to ensure that water flows through the Everglades, thereby reducing the likelihood and severity of harm caused by prolonged ponding, such as in southern WCA 3A. By slowing changing water flow patterns and increasing water volumes we can begin to restore the pre-drainage vegetative communities and habitat that are critical to supporting native populations of fish and wildlife. This will also afford incremental restoration of the natural processes critical for the development of peat soils and tree islands, which are essential features of the ridge, slough, and tree island landscape of the Everglades.

- *Benefits to the Southern Estuaries*

The embayments and nearshore areas of Florida Bay currently experience wide seasonal fluctuations in salinities and frequent peaks of damaging hyper-salinity. With increased freshwater flows through ENP and into the southern estuaries of Florida Bay we expect modest improvements in nearshore salinities in Central Florida Bay. The CEPP recommended plan shows a significant reduction in salinity in these areas, which should result in greater abundance and diversity of seagrass habitat and will benefit animal populations (including important recreational fishery species) that depend on this habitat, and are harmed by high salinity. Within the nearshore areas of Biscayne Bay, recent operational changes have been implemented that redirect additional available freshwater into the southern Miami-Dade coastal canal system. These small flow changes appear to temper high salinity events and lengthen the beneficial salinity window as the region transitions into the dry season. These operational flow improvements should be sustained and, where possible, expanded through the implementation of the CEPP and the Biscayne Bay Coastal Wetlands project. In addition, the Department recommends that the CEPP Adaptive Management Plan include an acknowledgement of the importance of maintaining beneficial freshwater flows to Biscayne Bay.

Incremental Progress, Adaptive Management and Ecological Monitoring

The Department notes that the sequential improvements from the combination of ongoing pre-CERP projects (such as the Modified Water Deliveries and C-111 South Dade projects) and the CEPP will incrementally improve water flows and marsh water depths in the Everglades and downstream estuaries over time. This incremental approach will give the ecosystem time to adjust to these changes. The CEPP recommended environmental monitoring program (as envisioned in the CEPP Adaptive Management and Ecological Monitoring Plans (Annex D)) is a critically important to tracking the health of key ecosystem features. The Department recommends that the Corps also implement a robust endangered species monitoring plan and assess the results in coordination with the U.S. Fish and Wildlife Service and other wildlife agencies to allow timely modifications to project operations for the protection of those species. Given the uncertainty and risk associated with mercury in the Everglades, the Department recommends additional monitoring and assessment at major project features and in associated downstream systems, beyond Annex D's sole specification for monitoring the A-2 Flow Equalization Basin (FEB).

The Department is committed to working with its bureaus and all partner agencies to ensure that wise and efficient resource investments are made to provide incremental progress towards meeting the goals of CERP, and restoring the central Everglades and downstream estuaries.

Water Quality

The suite of projects proposed in the CEPP Draft PIR are dependent on the existing system of stormwater treatment areas (STAs) in the Everglades Agricultural Area, as well as the proposed A-1 FEB in the central flow path of the State's Everglades Water Quality Restoration Strategies Plan (Restoration Strategies). The Department commends the State for their commitment to complete the Restoration Strategies plan and to commit the funding necessary to implement this $880 million plan. Once the Restoration Strategies and CEPP features are implemented, they should provide both hydrologic and water quality benefits to significant portions of the Everglades Protection Area (EPA), and northern and southern estuaries. The recommended CEPP features will improve the function and capacity of the STAs by increasing the acreage of FEBs, distributing flows to WCA 3A with sheet-flow over its northwestern marshes, which have been damaged by decades of drainage, and reducing the short-circuiting of southward flows by the Miami Canal.

The CEPP Draft PIR/EIS acknowledges that there may be some concerns that the redistribution of additional water in the Everglades could cause compliance problems related to the Consent Decree in the *United States of America vs. South Florida Water Management District, et al* (Consent Decree). These would likely be temporally and spatially limited impacts as a result of construction and stabilization activities. The combination of Restoration Strategies and the CEPP proposed projects should result in long-term water quality improvements throughout the affected areas of the EPA, including lowering the flow-weighted mean total phosphorous (TP) concentration entering the ENP. The Department lauds the efforts of the State of Florida and the Federal government in negotiating an agreed-upon framework to address water quality issues that may occur as a result of the implementation of CEPP. The Department concurs with the FDEP that the Draft PIR/EIS, as currently written, provides the appropriate framework to address water quality issues that may occur as a result of the implementation of CEPP.

Component Sequencing

The Department agrees with the State of Florida that although the implementation schedule requires refinement and optimization, this need not and should not delay completion of the PIR/EIS and submittal to the Congress for authorization. The implementation schedule should be flexible to allow changes in the sequencing of CERP projects (including the CEPP components) and non-CERP projects and activities as appropriate. Flexibility is essential to successful CEPP implementation given the uncertainties associated with the lengthy implementation period and the inevitable improvement in scientific knowledge about the functioning of the greater Everglades and estuaries that will occur as planned CERP and non-CERP projects and activities are completed. The Department recommends that the Corps explicitly acknowledge, in the PIR/EIS, the importance of such flexibility.

The well documented history of high water problems in southern WCA 3A is a good example of how modest refinements in CEPP project sequencing *could* be used to address adverse ecological conditions more quickly than the CEPP component sequencing currently proposes. As the CERP/CEPP planning

process moves forward, the Department will recommend at the appropriate time that the Corps adjust the timing of conveyance and seepage management features around Tamiami Trail to move toward earlier implementation of WCA 3A outflow capacity improvements to convey existing water southward during times of high rainfall. The State's recent commitment to jointly fund the 2.6-mile Tamiami Trail Bridge (the first increment of the Tamiami Trail Next Steps project) creates a unique opportunity to pull several, relatively low cost CEPP southern conveyance and seepage management features (S-333N, the S-355W/ L-29 divide structure, and the removal of Old Tamiami Trail) forward and make faster progress on improving the conditions in both WCA 3A and Northeast Shark River Slough. The current CEPP implementation schedule assumes that these features will not be implemented for approximately 15-20 years, while our Tamiami Trail Next Steps first increment efforts would presumably have the western portion of the Tamiami Trail flow-ready 5-10 years earlier. We acknowledge that moving these CEPP conveyance and seepage management features earlier would require completion of upstream water quality improvements (specifically the A-1 FEB). Fortunately, the A-1 FEB is currently scheduled to be on-line by approximately 2019, which should either coincide with or precede the completion of Tamiami Trail Next Steps first increment. We also believe that we would gain significant additional public support for, and alleviate stakeholder concerns about, the upstream WCA 3A hydropattern restoration improvements by focusing on addressing the current WCA 3A high water problems and generally on increasing WCA 3A outflow capacity prior to increasing inflow capacity.

Another example of beneficial sequencing flexibility is the implementation of the L-31N seepage barrier in the CEPP, which is currently included in phase 7 (contract 10), or near the end of the CEPP implementation. The CEPP recommended plan conservatively included a seepage barrier of the length and depth necessary for CEPP project seepage management requirements, in the event the barrier must be constructed as part of CEPP. The recently completed 2-mile L-31N seepage barrier project constructed by the Miami-Dade Limestone Products Association (Association), as mitigation for seepage increases caused by rock mining, is currently being analyzed. If this segment of the seepage barrier shows positive results, then it is anticipated that the Association will construct, for additional mitigation credit, the remaining 3 to 5 miles of seepage wall to extend this seepage barrier south, as required by the *Final Supplemental Environmental Impact Statement on Rock Mining in the Lake Belt Region of Miami-Dade County, Florida*, dated May 2009. This non-CERP approach could pull these features forward to correspond with the general completion of the Tamiami Trail Next Steps first increment, or approximately 15-20 years earlier than is currently anticipated in CEPP. This possibility should be examined in future revisions to the sequencing schedule.

Establishing Clear Restoration Goals for Biscayne National Park and Biscayne Bay

It is important for CEPP to maintain the existing beneficial freshwater flows to Biscayne National Park (BISC) and the broader Biscayne Bay. Modeling for CEPP indicates that the recommended plan produces a small reduction in wet season canal discharges to the Bay, which can be beneficial, particularly if this freshwater can be redirected into the Biscayne Bay coastal wetlands. We commend the Corps and SFWMD for sustaining the more critical dry season flows, and focusing on smoothing out the seasonal change in flows. The Department recommends that further improvements in freshwater flows to BISC and Biscayne Bay be included in the next increment of CEPP, as most of the Bay is designated as an Outstanding Florida Water (OFW). These important coastal ecosystems depend on freshwater inflows

from the Lower East Coast canal system to sustain current habitats and salinity regimes. Additional freshwater will be needed to meet our established restoration targets and to achieve the full benefits of the CERP Biscayne Bay Coastal Wetlands project features. Restoration goals for future CEPP increments and system-wide operational modifications that increase the historic flow connection between Lake Okeechobee and the Everglades, should include extending the transition from the wet season to the dry season and increasing freshwater flows to Biscayne Bay. As an example, the supplemental deliveries to the south Miami-Dade canal system in water year 2013 were a critical component of providing more freshwater to the Bay and BISC, and they highlight the benefits that supplemental dry season flows can have in the Bay.

Modified Water Deliveries to Everglades National Park

The Modified Water Deliveries Project (MWD) is an essential part of the restoration of Everglades National Park, and the completion of MWD is one of the Department's top priorities. The physical features of the MWD project are either completed or under construction, and in any case will be completed by the spring of 2014. However, the Corps has not yet established a timeline for the development of the Water Control Plan (WCP) that is necessary to operate the physical features of MWD. While the completion of MWD is not a precondition for CEPP authorization, as CEPP moves toward authorization this spring, the Department urges the Corps to work with the Department, FDEP and the SFWMD to initiate the development of a WCP so that MWD features are operational as soon as possible and long before the *construction* of WCA 3 decompartmentalization and sheetflow enhancement features of CEPP.

The Department and its bureaus were extensively involved in the planning and development of the CEPP recommended plan and Draft PIR/EIS, and we look forward to continuing to work with the Corps and the SFWMD as we move toward authorization and implementation of CEPP and future phases of CERP.

Sincerely,

Shannon A. Estenoz
Director, Office of Everglades Restoration Initiatives
United States Department of the Interior

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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November 1, 2013

Eric Bush
Chief, Planning Division
Jacksonville District, U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

SUBJECT: Draft Environmental Impact Statement for Central Everglades Planning Project - CEQ# 20130250

Dear Mr. Bush,

The U.S. Environmental Protection Agency (EPA) has reviewed the referenced Draft Environmental Impact Statement (DEIS) in accordance with its responsibilities under Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA). The Jacksonville District of the U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) propose implementation of the Central Everglades Planning Project (CEPP). The purpose of the Central Everglades Planning Project (CEPP) is to assess federal and non-federal interest in implementing components of the Comprehensive Everglades Restoration Plan (CERP), which was authorized in the 2000 Water Resources Development Act (WRDA) as a framework for restoring the south Florida ecosystem while providing for other water related needs of the region. Several components of CERP have been implemented (Indian River Lagoon-South, Picayune Strand, and Site 1 Impoundment and Melaleuca and Other Exotic Plants Biological Controls). The DEIS states that despite this progress, ecological conditions and functions within the central portion of the Everglades ridge and slough community continue to decline due to a lack of sufficient quantities of freshwater flow into the central Everglades and timing and distribution problems. The purpose of CEPP is to restore or improve the Everglades ecosystem (including wetlands, uplands, and associated estuaries), water quality, water supply, and recreation while protecting cultural and archeological resources and values. USACE proposes to accomplish this by redirecting approximately 210,000 acre-feet of additional water annually from Lake Okeechobee to the historical southerly flow.

The plan formulation strategy for CEPP consisted of multiple formulation phases that followed the natural southerly flow of water from Lake Okeechobee through the Everglades ecosystem to Florida Bay. The strategy involves the formulation of interdependent management measures and components that serve to restore the central portions of the Everglades including Water Conservation Area (WCA) 3 and the Everglades National Park (ENP), while improving the northern and southern estuary ecosystems and increasing water supply for municipal and agricultural users. The plan formulation process used data and findings developed in previous

plan formulation efforts including CERP planning and restoration initiatives, such as the Everglades Agricultural Area (EAA) Reservoir project, WCA 3 Decompartmentalization and Sheetflow Enhancement Project (Decomp), and the ENP Seepage Management Project. CEPP used a sequential analytical screening process that increasingly became more comprehensive and detailed as plan formulation progressed.

During the plan formulation, USACE identified 4 alternatives (Alternatives 1-4). All build alternatives (Alternatives 1, 2, 3 and 4) proposed re-directing flow through a series of flow equalization basins (FEBs) that will provide storage capacity and attenuation of high flows. Water quality attenuation would be achieved through delivery to existing stormwater treatment areas (STAs). Each build alternative has a combination of re-routing water from water conservation areas (WCAs), removing portions of levees, constructing structures to improve flows through Tamiami Trail, constructing seepage barriers, constructing pump stations and spreader canals. Each build alternative uses various combinations of these components to accomplish the goal of improving historic southerly flows. Alternative 1 maximizes the use of existing infrastructure while providing moderate ecosystem benefits. Alternative 2 would increase the passive inflow and outflow structures of WCA 3B over Alternative 1. Alternative 3 would increase the passive inflow structure capacity over Alternative 2 and incorporate pump stations to move water out of WCA 3B. Alternative 4 builds off Alternative 2's infrastructure with the addition of the Blue-Shanty Flow levee and degrading of the L-29 levee within the flowway in lieu of the additional outflow structure on L-29.

USACE has identified Alternative 4 as the tentatively selected plan (TSP) and further refined Alternative 4 and identified it as Alternative 4R2. The DEIS documents that Alternative 4R2 provides the greatest overall benefits with the least cost per habitat unit, provides the greatest ecological connectivity and longest uninterrupted flow-way by removal of the L-29 levee and provides the greatest benefits to ENP. Major components of Alternative 4R2 include: construction of A-2 FEB and integration with A-1 FEB, refining operations to Lake Okeechobee, removal of portions of L-4 levee, L-29, L-28, L-67, L-67C, removal of approximately 6 miles of Tamiami Trail, backfilling of Miami Canal, construction of 8.5 mile levee in WCA 3B and connecting L67A to L-29.

Overall, EPA is supportive of the selection of Alternative 4R2 as the TSP. EPA appreciates the USACE's collaborative, multi-agency effort in formulating the TSP. EPA has some concerns with the current project's scheduling of the implementation of A-2 FEB, statements made concerning water quality, the format of the DEIS and the need for additional environmental justice analysis. These concerns are outlined in the attachment.

The A-2 FEB will be constructed in Phase 7 (the last phase) and year 19 of overall project construction. EPA strongly recommends that USACE consider moving the construction of A-2 FEB forward in the schedule because most of the hydrological benefits of CEPP (averaging 210,000 acre-ft/year) will be realized upon construction of A-2 FEB. The A-2 FEB will provide increased water storage (averaging 210,000 acre ft/year) and will have more far reaching benefits to the estuaries, and to the Everglades. It is EPA's view that expediting the construction of this important component of the overall project would be in the best interest of the environment and the public. In regards to water quality, some of the discussions of water

quality expectations, especially regarding Total Phosphorus (TP), are inconsistent with EPA's understandings. EPA recommends USACE address these inconsistencies (as discussed in our attached detailed comments). Additionally, given the potential changes in phosphorus loads and flows into the Everglades, the EPA is encouraged that the USACE and the SFWMD will closely monitor these loads and flows. EPA is committed to providing technical assistance to USACE to address these issues when developing the FEIS.

We rate this document EC-1 (Environmental Concerns with adequate information) and request that our comments be addressed in the FEIS. Enclosed is a summary of definitions for EPA ratings. We appreciate the opportunity to review the proposed action and will work with the USACE to help to resolve our issues. Please contact me at 404-562-9611 or my staff, Jamie Higgins at (404) 562-9681, if you want to discuss our comments.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Environmental Accountability

Enclosures

CEPP DEIS
EPA Detailed Comments
November 1, 2013

1. Wetlands:

EPA is concerned regarding the current project implementation schedule. Currently, A-2 FEB will be constructed in Phase 7 (the last phase) and year 19 of construction (page ES-6). EPA recommends that USACE consider moving the construction of A-2 FEB to an earlier date because most of the hydrological benefits of CEPP (averaging 210,000 acre-ft/year) will be realized upon construction of A-2 FEB (Figure 6-11, page 6-40).

EPA notes that project sequencing is critical to assuring that the Everglades receive water that meets applicable water quality standards. In particular, projects involving the L-4 levee degradation, L-5 canal improvements and L-6 diversion are planned for years 1-3. EPA is concerned that these projects will provide the ability to increase flow and discharge water (such as STA bypass events) directly into the northern marsh of WCA3A, regardless of the quality of that water. It is important that this water be fully treated by the Restoration Strategies projects prior to discharge into the Everglades. EPA requests to be involved with development of Operations Manuals for CEPP implementation and to be a member of the interagency Operations/Adaptive Management teams in order assist with addressing these water quality issues. The A-2 project, currently scheduled for year 19, is an essential component of treating flows greater than those in the Future Without (FWO) condition and Restoration Strategies prior to discharge into northern WCA3.

2. Water Quality:

a. Main Report:

1. On page ES-7, USACE states, "...FEB included in SFWMD's "Restoration Strategies" project. To achieve restoration objectives for WCA 3A, the recommended plan involves discharges from these stormwater treatment areas to previously un-impacted areas. Concerns were expressed about the effects of the new discharges on water quality and native flora and fauna in those un-impacted areas. Flows into WCA 3A must meet state water quality standards before discharges to un-impacted areas occur. To ensure that the recommended plan meets state water quality standards, discharge permits with associated effluent limits will govern discharges from the state facilities." All discharges to the Everglades must meet applicable water quality standards. Accordingly, EPA recommends that this statement should say, "discharges into WCA 3A...." not flows, and deleting the reference to un-impacted areas. It is important to note that all regulated discharges into all areas of the Everglades, not just un-impacted areas, must meet the WQBEL.

2. On page ES-8, USACE states, "The recommended plan also increases flows into Shark River Slough in Everglades National Park subject to the limits for total phosphorus contained in Appendix A of the 1991 Settlement Agreement for U.S. vs. SFWMD (Case No. 88-1886-Civ-Moreno) and in accordance with state water quality standards. Since the

compliance determination calculation is inversely proportional to flow, increases in flow will lower the compliance limit. State and federal water managers expressed concerns that the recommended plan may increase the probability of exceeding the compliance limit and agreed to consider reevaluating the Shark River Slough compliance calculation." The United States Department of Justice (DOJ) will need to agree to this language. Similar language shows up in Chapter 8.

3. On In Table 2-8, under water quality, USACE states, "The SFWMD Restoration Strategies water quality treatment plan will be fully in place by 2025. Compliance with the 2012 Consent Order WQBELs is expected after 2025 when the SFWMD has completed implementation of the Restoration Strategies water quality treatment plan." The NPDES permit also requires that the remedies be implemented and specifies that the WQBEL is effective immediately. EPA recommends USACE better explain this point in the FEIS.

4. On Table 6-3, page 6-28 (under water quality), USACE states, "Implementation of the project is not expected to significantly affect the water quality of Lake Okeechobee or the Northern Estuaries. Changes in the quantity, timing, and distribution of flows within WCA 3A and WCA 3B may result in temporary increases in phosphorus concentrations at some TP Rule monitoring stations; however, this should not significantly affect TP Rule compliance. Over the long-term, distributing the flow over the northern WCA- 3A marsh, reducing short-circuiting down the canals, adding more flow from the lake that is treated to the WQBEL, should result in improved water quality within WCA 3 and a reduction in flow weighted mean total phosphorous concentration entering the Park. Southern Estuaries salinity conditions are expected to be improved by the project. Actions by the State of Florida's Restoration Strategies would decrease pollutant concentration and future loadings to the project area. If authorized in the next Water Resources Development Act Actions (WRDA), the Broward County WPA Project, (report approved in 2007) would reduce storm runoff deliveries to WCA 3 and improve water quality coming across Tamiami Trail." Also under the cumulative effect section, USACE states, "While anthropogenic effects on water quality are unlikely to be eliminated, water quality is expected to slowly improve over existing and recent past conditions." These paragraphs infer that water quality standards (TP) will not be met. The SFWMD cannot exceed water quality standards. EPA requests clarification regarding this paragraph and recommends that this paragraph better explain whether the proposed project will cause violations of standards.

5. In Table 5.1-3, Effects of Alternatives on Water Quality (page 5-14), USACE states, "There is risk that [W]QBEL will not be met without future modification of the Restoration Strategies plan; however, this risk is being minimized through implementation of the Restoration Strategies Science Plan which is a requirement of the Restoration Strategies Consent Orders and Framework Agreement." EPA disagrees with the first part of the sentence and believes that the Restoration Strategies projects in concert with an effectively implemented Science Plan should meet the WQBEL. EPA requests clarification and recommends that USACE better describe the Restoration Strategies plan in the FEIS.

b. Appendix C:

1. Water Quality (C.1.1.12.1 Nutrients, page C.1-52): USACE doesn't mention the Numeric Nutrient Criteria (NNC) or the current status of the 1991 Settlement Agreement compliance. However, further in the document (C.1.1.12.6 Everglades Agricultural Area, page C.1-58, and several other sections within Appendix C and Annex F) USACE better describes the NNC and Settlement Agreement. EPA recommends that the USACE cross-reference C.1.1.2.6 (and other applicable sections) in the Nutrients section.

2. WQBEL: In section C.1.3.12.3 Everglades Agricultural Area, page C.1-120, USACE states, "The [W]QBEL is applied at the discharge of each individual STA. Restoration Strategies documents produced by the SFWMD acknowledge that meeting the [W]QBEL will be difficult given that few of the existing STAs have demonstrated the ability to consistently produce effluent that meets this standard." EPA disagrees with this statement and thinks it incorrect. The Restoration Strategies was developed to ensure water quality standards will be met. EPA requests USACE clarify this statement or delete it from the FEIS.

3. On page C.1-121, USACE states, "Nutrient and sulfate concentrations and loads for WCA 3A for the FWO condition should decrease relative to the existing baseline condition because of the implementation of the SFWMD's Restoration Strategies features within the eastern flow path of the EAA." EPA requests USACE confirm that eastern flow path efforts are projected to affect central flow path discharges into WCA3A.

c. Annex F:

1. Annex F is generally well presented.

2. On page F-3, USACE states, "Compliance with WQBEL for the STAs cannot be determined until all corrective actions have been completed and sufficient discharge data exists to assess compliance with both components of the WQBEL. Compliance with the WQBEL shall be determined based on the conditions contained within the NPDES permit (FL0778451), EFA permit (0311207), NPDES Consent Order (12-1148), and EFA Consent Order (12-1149)." The WQBEL has two parts which both must be met: STA discharges shall not exceed 13 parts per billion (ppb) as an annual flow-weighted mean (FWM) in more than three out of five years on a rolling basis (Part 1), and shall not exceed 19 ppb as an annual FWM in any water year (Part 2). Once corrective actions have been completed, if in the first subsequent year the STA discharges at higher than 19 ppb, then it is possible to determine that the WQBEL is not met at that time. This phrase should be deleted: "and sufficient discharge data exists to assess compliance with both components of the WQBEL."

3. On page F-7,USACE states, "For instance, it is possible that the water depth and duration of inundation may cause the FEB to be less efficient at removing TP than predicted by the DMSTA2 modeling presented here. This may result in a failure to consistently meet the WQBEL at the outfall of STA 3/4 and STA 2B." A failure to meet the WQBEL is a problem. EPA requests clarification on this statement.

4. On page F-9, USACE refers to FWM TP concentrations shown in Table F-1. This is the wrong citation.

5. On page F-26, USACE, "The TP concentrations at these structures are elevated, although the adjacent marsh concentrations are low, where the average annual concentration (for Federal Water Year Oct-1 to Sep- 30) varies between approximately 10 and 39 ppb." These referenced concentrations are from the structures, not the adjacent marsh, as the sentence currently reads. EPA recommends USACE more accurately discuss this in the FEIS.

6. On page F-27, Table F-6 provides arithmetic average TP data for grab samples at structures in canals near Shark Slough. Annual water year TP averages presented as a flow-weighted mean or geometric mean would be more informative since all Everglades structure discharge compliance data are presented as flow-weighted means, and marsh data are presented as geometric means.

7. On page F-29, USACE states, "The TP concentrations at these SRS marsh stations are expected to remain at or below existing background levels given the distribution of flows across the length of the degraded levee." "When more natural overland flow is established with CEPP, there is uncertainty as to how loading and water movement will affect how total phosphorous concentrations in the marsh respond." These two statements appear to be contradictory. How does one conclude what marsh concentrations are expected given the uncertainty? EPA suggests further qualifying "expected" in the first sentence.

8. On page F-30, USACE states "(2) although long-term TP concentrations and loads entering northeast SRS are expected to decrease,..." Flow into the Park is expected to be increased by over 120,000 acre-feet from the FWO, and the FWO TP concentrations are already low at 10 ppb. Please confirm that loads are expected to decrease.

9. On page F-35, the following statements appear to be contradictory: "Notwithstanding the inability to confidently predict future SRS inflow concentrations, SRS TP concentrations are expected to improve relative to ECB conditions and are likely to improve under ALT4R2 conditions." "Given the magnitude of the hydrologic changes proposed in ALT4R2, this project presents some risk of future non-compliance with water quality criteria particularly in WCA-3 and at SRS." If SRS TP concentrations already meet water quality criteria and concentrations are expected to improve, then how does the project present some risk of future non-compliance?

d. Mercury and Sulfur:

There are many specific statements about mercury or sulfur in Appendix C and the DEIS that need a citation. There are other statements that tend to overstate the science and overlook scientific uncertainty. EPA is committed to providing technical assistance to the USACE to address these portions of the EIS. Some examples follow. Page C.1-52 states that approximately 90% of atmospheric mercury in peninsular Florida is sourced internationally (no reference, and this is an area of scientific disagreement). Please cite the Florida mercury TMDL as appropriate and confirm the statement or revise as needed. On page 5-15 and elsewhere there are statements that mercury load available for net methylation in the Everglades is likely to increase as a result

of increased atmospheric load (no reference). On page C.1-53 it states that between 1997 and 2012 fish tissue has fallen significantly in response to reductions in local mercury sources. (The 2014 draft SFER notes that any significant decrease in largemouth bass occurred prior to WY2000 and concentrations in the Park have been increasing over this same time period; 2014 draft SFER reports no change in Everglades mercury wet deposition from WY 1996-2012.) The relationship between specific sulfate and mercury concentrations on page C.1-53 is stated as fact rather than hypothesis (this is an area of scientific debate, and citations are needed). EPA agrees with the summary statement on page C1.121 which better reflects this uncertainty: "Given the complexity of the methylmercury cycle, it is not possible to predict with certainty the effect of future hydrology and mercury/sulfate loading on methylmercury formation and bioaccumulation."

3. EIS Lay Out:

The USACE's layout of the DEIS is noticeably different from typical EIS and EISs from other federal agencies as well as USACE regulatory EISs. EPA understands that the USACE has developed a new way of conducting NEPA and feasibility studies called "Smart Planning." EPA appreciates the USACE's attempts at streamlining NEPA to produce more efficient and effective documents; however, 40 CFR Parts 1500-1508 outlines the requirements for an EIS. The current lay out of the EIS omits key sections required by NEPA (40 CFR 1502.10). For example, omitted from the DEIS is the "Affected Environment" and "Environmental Consequences" section of the EIS. Omission of these important sections of the DEIS is confusing not only to resource agencies, but other stakeholders and the public. The table of contents table roughly outlines the location of required EIS sections; however, some sections are scattered throughout the DEIS. For example, the required "Environmental Consequences" section can be found scattered throughout Sections 4, 5 and 6 and the "Alternatives Section" can be found in Section 3, 5, and 6. This disjunction can lead to confusion and lacks the transparency required of NEPA. Most of the information regarding "Affected Environment" and "Environmental Consequences" can be found in the main document (Section 2, 4, 5 and 6) and Appendix C. EPA recommends that USACE state the page numbers that various EIS sections can be found within the document to assist the reader in finding the pertinent information. Additionally, EPA recommends that the USACE consider formatting future EIS's to more closely follow the NEPA EIS template instead of the feasibility study template.

4. Environmental Justice (EJ) and Children's Health:

There is no mention of EJ in Section 2 (Existing and Future Without Conditions) or Appendix C. There is a short paragraph discussing EJ and NEPA and the USACE asserts "....no high or adverse effects." However, the USACE doesn't identify potential EJ communities (other than tribal communities) within the EIS. Did USACE conduct any EJ specific outreach opportunities? Additionally, we recommend that the USACE better outreach to known EJ communities within the study area. In the FEIS, EPA recommends that the USACE identify EJ communities and potential impacts (both positive and negative) to these communities in both Section 2 and Appendix C. For example, reduced flows (and thus lowered nutrient levels) discharging from the St. Lucie and Caloosahatchee canals could improve fisheries production, which might benefit EJ communities along the coast. Additionally, there is no mention of

children's health in the DEIS. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks encourages federal agencies to consider impacts and risk to children's health when planning projects. EPA recommends USACE describe any possible children's health risks in the FEIS.

5. Tribal Consultation:

The DEIS discusses ongoing tribal consultation. EPA encourages continued consultation with the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida at all levels of decision-making. The EPA works closely with both Tribes on Everglades matters and is committed to working with other federal partners to prioritize the Tribes' water quality and water management concerns.

6. Table 2-1. Existing Conditions and Future Without Project Conditions.

a. Cross-reference to Appendix C: This table does an adequate job of briefly describing the existing conditions; however, there are no citations within the table that would reference each specific condition to more detailed information in Appendix C. For ease of use and readability, EPA recommends USACE cite the section in which each specific condition can be found within Appendix C.

b. Water Quality entry: The water quality entry (pg 2-8) discusses TMDLs, and states that implementation of TMDLs would improve water quality. However, the USACE doesn't list the TMDLs or the status of development or implementation of the TMDLs. EPA recommends USACE better discuss TMDL implementation within Appendix C and cross reference in Table 2-1. Additionally, USACE states, "Compliance with the 2012 Consent Order WQBELS is expected after 2025 when the SFWMD has completed implementation of the Restoration Strategies water quality treatment plan." However, it is not just the 2012 consent order, but the NPDES permit that also requires the remedies be implemented and the WQBEL is effective immediately. EPA recommends USACE better discuss the Restoration Strategies in the FEIS.

c. Air Quality entry: In the Air Quality entry (pg 2-9) under the FWO, USACE states that, "It is anticipated that increased population and economic expansion in southeast Florida will result in an increase in ozone and other air quality pollutants." EPA believes there is no basis for this statement and requests clarification. Additionally, there are inconsistencies in how population numbers are presented. For example, in the Water Supply entry (page 2-8), states "Economic forecasts have changed since the Restudy, decreasing the population projections…", which seems contradictory to the population statement in the Air Quality entry. Additionally, in the Populations section (page 2-9) discusses population trends and expansion from 1950 to 2000. EPA recommends that USACE use the 2010 Census data or more recent population projection data to more adequately discuss population trends and consistently use these numbers in Table 2-1 and other sections within the document.

7. Graphic Displays:

a. Figure 2 (page ES-3) is an excellent graphic comparing the various components of each alternative. However, the graphic is too small and is hard to read. EPA recommends that the Figure 2 (and other displays of this graphic) be enlarged to a full page so it is easier to read.

b. Appendix C: EPA recommends the map on page C.1-84 depict the difference between the red and yellow highlighted areas.

U.S. ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL IMPACT STATEMENT (EIS) RATING SYSTEM CRITERIA

EPA has developed a set of criteria for rating Draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft.

RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

$ LO (Lack of Objections): The review has not identified any potential environmental impacts requiring substantive changes to the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.

$ EC (Environmental Concerns): The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.

$ EO (Environmental Objections): The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental objections can include situations:

1. Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;
2. Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction or expertise;
3. Where there is a violation of an EPA policy declaration;
4. Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or
5. Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts.

$ EU (Environmentally Unsatisfactory): The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions:

1. The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on a long-term basis;
2. There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or
3. The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.

RATING THE ADEQUACY OF THE ENVIRONMENTAL IMPACT STATEMENT (EIS)

$ 1 (Adequate): The Draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

$ 2 (Insufficient Information): The Draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the Draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the Final EIS.

$ 3 (Inadequate): The Draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the Draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the Draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised Draft EIS.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

October 31, 2013

To: Dr. Gretchen S. Ehlinger
US Army Corps of Engineers
P.O. Box 4970.
Jacksonville, FL 32232-1682
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From: Joan A. Browder
Ecosystems Investigations Unit
Protected Resources and Biodiversity Division

Subject: Comments on the CEPP Planning Process

Dear Dr. Ehlinger:

Thank you for the opportunity to comment on the Project Implementation Report and related documents of the Central Everglades Project Plan (CEPP). My comments are from the viewpoint of a scientist at the NOAA-NMFS Southeast Fisheries Science Center who is working with RECOVER, is a member of the RECOVER Leadership Group, and has taken part in some of the planning workshops. My comments in no way supplant or intentionally contradict any comments provided by resource managers in the Habitat Conservation or Protected Resources divisions of the NOAA-NMFS Southeast Regional Office, St. Petersburg, Florida, who may be commenting.

I support the objectives of CEPP, as stated in the PIR. I agree that Alternative 4R2, as refined to avoid the potential damage to the water supply of the Lower East Coast and Biscayne Bay that was suggested by the hydrologic models used in plan development, is the best choice as the Tentative Selected Plan. I am encouraged that the tentatively selected plan will, as expected, benefit Florida Bay and the southwest Florida coast by augmenting freshwater flow to these estuaries and thus reducing the intensity and duration of ecologically damaging high salinity levels and variations in both ecosystems. I hope that the implemented plan will prevent the St. Lucie and Caloosahatchee River ecosystems from receiving excessively high regulatory discharges from Lake Okeechobee such as those that occurred this year.

My main points of concern are directed at the treatment of Biscayne Bay in the Draft Plan. Although concerns for potential effects of the preferred alternative on freshwater flows to Biscayne Bay are expressed in several places, especially the Adaptive Management Plan, the scarcity of any mention of Biscayne Bay in the main sections of the plan, even where the Lower East Coast (LEC) is mentioned, is surprising. Surely the

potential loss of freshwater flow to Biscayne Bay if the water table east of L31-N is lowered by the Tentative Selected Plan is an unresolved issue that should be listed in the ES section. Lack of mention of Biscayne Bay in the description of the South Florida geography, even when the LEC is described (page 1-5), is another glaring omission. This omission might cause confusion to readers when, later in this document, possible impacts of the Project on Biscayne Bay are mentioned. I suggest adding the following wording to the LEC section of Table 1-1, Description of the Study Area Regions: "Biscayne Bay and the contiguous water bodies Card, Little Card, and Barnes sounds and Manatee Bay lie along the eastern mainland boundary of the Lower East Coast and receive their freshwater supplies as inflows of surface and groundwater that are dependent on water table stages east of L31-N."

Biscayne Bay also should be mentioned on page 1-11 under "Constraints" and on page 3-30 with respect to seepage management and possible effects on freshwater flows to Biscayne Bay (i.e., in section 3.2.4 Screening of Seepage Management (Yellowline).

Finally in Section 4, Evaluation and Comparison of Alternative Plans, Table 4-1, Biscayne Bay is mentioned in the last objective, "Reduce water loss (seepage out of the natural system to promote appropriate dry season recession rates for wildlife utilization "; however, the omission is in the last sentence, which reads "The TSP will be modified to reduce seepage management infrastructure and/or improve operations in order to avoid impacts to water supply. (I suggest that you insert the following in front of the period ", including water flows to Biscayne Bay".)

The next objective, "Increase availability of water supply", fails to specifically say that efforts will be made to increase water flow to Biscayne Bay.

Fortunately, these issues and the potential for making improvements in performance relative to Biscayne Bay, are included in the Adaptive Management Plan, although in some cases reference to Biscayne Bay is obtuse.

Looking over the plan, it seems even more unfortunate, in retrospect, than at the beginning of Central Everglades planning, that Biscayne Bay, as a southern estuary influenced by CERP, was not given full membership in the study area and the planning process. Biscayne Bay is important to the economy and wellbeing of Miami-Dade County. Greater Biscayne Bay (including the sounds and Manatee Bay) is the site of Biscayne National Park, a Florida Aquatic Preserve, and the upper part of the NOAA Florida Keys National Marine Sanctuary. Maintaining its freshwater supply is crucial to its future and its natural and economic value.

In all modeling work exploring the potential for preventing any decrease in flows to Biscayne Bay and augmenting flows to Biscayne Bay, relative to existing conditions, special emphasis should be given to mid and late dry season flows, which are especially stressful to the ecosystem. Hypersaline conditions have already been recorded near the western shoreline of Biscayne Bay, which has no fresh water inflow to spare.

Two other comments on the CEPP PIR: Longer hydroperiods and higher water tables in the Greater Everglades could potentially increase both local and regional rainfall, since evapotranspiration will increase. An increase in evapotranspiration is mentioned as an effect of the Alternatives, but increased rainfall is not.

Silica should be added, along with nitrogen and phosphorus, as a nutrient to follow in water released from the Greater Everglades to the southern estuaries (e.g., Florida Bay and Biscayne Bay), because blooms of diatoms that occur in these systems may be promoted by silica loads flushed from the Everglades after release from soils.

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Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Dr. Ehlinger:

We are writing to provide comments on the Central Everglades Planning Project (CEPP) *Draft Integrated Project Implementation Report/Environmental Impact Statement* (CEPP PIR/EIS) on behalf of the Seminole Tribe of Florida. The Seminole Tribe continues to support the protection of water for the natural system and appreciates the opportunity to comment on the CEPP PIR/EIS. The Seminole Tribe and the Army Corps of Engineers (USACE) have a long history of working together for the preservation and restoration of the Everglades, and the Seminole Tribe looks forward to continuing this relationship. Please accept for review the Seminole Tribe's combined comments addressing some general, water resource, environmental, and cultural resource issues for the CEPP PIR/EIS. Additional and more detailed comments are attached as Appendix A to this letter.

The Seminole Tribe is a long standing supporter of Everglades restoration, supporting the Restudy and CERP, including funding a cost share Critical Project with the USACE to bring water to the Big Cypress Seminole Indian Reservation and ultimately to historic flow-ways when conditions allow. This project is still in construction and is not yet achieving all of its intended benefits for wetland restoration on the Reservation, Addition lands, and the Big Cypress National Preserve.

As the Central Everglades Planning Project is being planned and moved forward the Seminole Tribe of Florida has continued to ask for inclusion of the Big Cypress Seminole Indian Reservation in the planning and study area to ensure no harm occurs to the Seminole Tribe's resources and more importantly to identify opportunities for CEPP to provide water to the Western Everglades for restoration purposes. The Seminole Tribe appreciates the anticipated benefits to WCA-3A where the Seminole Tribe has hunting, fishing, trapping and frogging rights and the modeling efforts that have been done to ensure that the Seminole Tribe's water rights continue to be delivered. However, the Seminole Tribe remains concerned that there is still no solution included to supply water to the Western Everglades for restoration of this area. There has not been enough attention paid to this area, including necessary monitoring and modeling to adequately assess

impacts from CEPP to the area and to assess restoration alternatives. To that end the Seminole Tribe has brought to the attention of the USACE and the SFWMD from the beginning of the CEPP scoping effort its concerns about the restoration needs in the western Everglades. As a result your agency and the SFWMD as a part of the Task Force for South Florida Ecosystem Restoration (Task Force) has been meeting with the Seminole Tribe and other agencies to discuss these issues and to start work on a plan for the restoration of this important part of the Everglades.

The current draft EIS recognizes the meetings that are occurring among the Task Force member agencies and Tribes, including the Seminole Tribe of Florida, to discuss the issues the Tribe has raised, including restoration of the wetlands on the Tribe's Big Cypress Reservation, Big Cypress National Preserve, and Addition lands. However, due to the lack of data, monitoring, and modeling in this area the agencies are not yet at a point to make significant commitments to the Seminole Tribe of Florida for restoration of the area. The Seminole Tribe remains concerned about the lack of attention given to the Western Everglades. The Seminole Tribe's continued support of CEPP is based on the understanding that the USACE and the SFWMD will continue to work with the Seminole Tribe towards restoring and rehydrating the Western Everglades system including the Big Cypress Reservation, Big Cypress National Preserve, and the Addition lands. Specific comments on water resources are included in Appendix A to this letter.

The Seminole Tribe appreciates the USACE's consultation efforts with regard to cultural resources. The USACE's archaeologist Cynthia Thomas has made an admirable effort to consult with the Seminole Tribe early and often. This is the first project that the USACE has conducted early formal government to government consultation on cultural resources with the Seminole Tribe. This approach is greatly appreciated, and we are hopeful this approach will be taken with existing and future projects. During the consultation process, the Seminole Tribe expressed concerns about the level and quality of the archaeological work conducted by the USACE's consultants. The Seminole Tribe also expressed concerns over the numerous unknowns regarding cultural resources within the area of potential effect. In response to the unknowns, the USACE committed to the completion of a human remains policy that would be a binding agreement governing the treatment of burial resources and would serve as an adaptive management plan for the protection of burial resources. The development of such an agreement was first proposed by Colonel Pantano, which the Seminole Tribe supported. The Seminole Tribe is encouraged by the USACE's assurance to continue to honor Colonel Pantano's commitment to protect burial resources in a culturally sensitive manner. The human remains agreement has not yet been finalized; however, we look forward to continuing to work with the USACE on its completion. It is critically important that the District Engineer's recommendations for CEPP capture this commitment to develop this Agreement. Therefore, we respectfully request that the development of this human remains agreement be included in the District Engineer's recommendations in the PIR. Attached in Appendix A

are more detailed comments regarding cultural resources. We thank you in advance for your consideration of these comments and continuation of the consultation process.

Finally, please find attached a copy of an earlier commentary email with some attached handwritten comments to the draft PIR which was sent in on behalf of the Seminole Tribe to the USACE but not included in the comments section of the document. Please include these in Appendix B as part of the consultation record with the Seminole Tribe.

Again, the Seminole Tribe appreciates the opportunity to review and comment on the Central Everglades Planning Project *Draft Integrated Project Implementation Report/Environmental Impact Statement.* Thank you for your consideration of these comments.

Yours Sincerely,

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c: James E. Billie – Seminole Tribe of Florida
Danny Tommie – Seminole Tribe of Florida
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Armando Ramirez – South Florida Water Management District

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Appendix A

This Appendix A contains the Seminole Tribe of Florida's additional, more detailed environmental, water resource and cultural resource comments on the CEPP PIR/EIS.

I. Seminole Tribe's Hunting, Fishing, Trapping, and Frogging Rights

In Section 2.6 of the Main Report, the document recognizes the Seminole Tribe's hunting, fishing, and frogging rights in WCA 3A. The Seminole Tribe appreciates that the CEPP PIR/EIS recognizes these rights but requests that the word "trapping" be added to this list to more completely describe the Seminole Tribe's rights and match the language in the 1987 Seminole Tribe of Florida and State of Florida Settlement Agreement. Similarly, Section 5.3 states that subsistence activities for members of the Seminole Tribe include hunting and fishing; the Seminole Tribe requests that the terms "trapping" and "frogging" be added to this sentence.

Additionally, in Section 6.1.2.3, which is in the Tentatively Selected Plan section under Lands and Interests in Lands for Water Conservation Area 3A and 3B, the Seminole Tribe requests that language be added stating that the Seminole Tribe has customary usage rights in WCA 3A. The Seminole Tribe has legally protected interests in these lands that should be acknowledged here. It should also be acknowledged that this area holds significant cultural significance to the Seminole Tribe in addition to its customary usage rights.

II. Seminole Tribe of Florida

Annex B (Analyses Required by WRDA 2000) refers to the Seminole Tribe by a variety of different names, including but not limited to the "Seminole Indian Tribe" and the "Seminole Indian Tribe of Florida." The Seminole Tribe requests that this document be changed to refer to the Seminole Tribe consistently as "the Seminole Tribe of Florida."

III. Water Supply to the Seminole Tribe

In Table B-4 of Annex B, under (ii), the table contains the following sentence fragment: "Implementation of the project will not reduce the levels of service for flood protection within the areas affected by the project including". This sentence should be

completed to say "including the Seminole Tribe of Florida's Brighton and Big Cypress Reservations."

Also in Annex B, Section. B.3.1.3 states "the Seminole Indian Tribe also withdrawals groundwater ..." In addition to changing the document to refer to the Seminole Tribe as the Seminole Tribe of Florida, this sentence should change the word "withdrawals" to "withdraws."

Additionally, on page C-19 of Annex C (Draft Project Operating Manual) a sentence reads "S-630 would be located in the L-4 Canal, east of the existing L-4 Levee gap, to maintain existing water supply deliveries to the Seminole Tribe reservation ..." The Seminole Tribe appreciates that the document references maintaining the existing water supplies, but requests that this sentence specifically identify the Reservation so as to provide greater clarity.

The Seminole Tribe would also like to reiterate that it remains interested in continued discussions on assisting the USACE and SFWMD in their water management goals by taking excess water from Lake Okeechobee for storage on the Big Cypress Reservation, thereby helping restore the natural areas on the Reservation, as well as Big Cypress National Preserve and the Addition lands. This would be an achievable, positive step towards restoration of the Western Everglades and the Seminole Tribe continues to support CEPP with the understanding and expectation of further consultation on this matter with the USACE and the South Florida Water Management District.

IV. Modeling

The Seminole Tribe has continuously requested that the USACE consider discussing the possibility of sending water from Lake Okeechobee to the Big Cypress Reservation for storage, which would also benefit the ecological health of the Western Everglades. Although the modeling for CEPP has considered the Seminole Tribe's entitlement to water, it has not considered the Seminole Tribe's restoration needs for the Western Everglades area and the Tribe's potential ability to store excess water from Lake Okeechobee. The Seminole Tribe requests further modeling so the Seminole Tribe, the USACE and the SFWMD can better understand the quality and quantity of any water that might be delivered to determine if such a delivery would be mutually beneficial. Additionally, the modeling fails to address the Seminole Tribe's water needs for natural resources and customary usage. The modeling should consider the impact on the Seminole Tribe's Big Cypress Reservation and the western basins with regard to these concerns.

V. Cultural Resource Comments

The CEPP Area of Potential Effects ("APE") landscape is populated with over 20,000 known archaeological sites, including numerous burial sites. It is suspected that there are many more sites that have not yet been discovered. These sites (known and unknown), especially the burial sites, hold significant cultural/religious importance to the Seminole Tribe. The tree island landscape, which usually host these sites, form the fabric of the

Seminole Tribe's cultural identity. As the PIR/EIS acknowledges, there have been decades of unmitigated impacts to tribal cultural resources due to water control projects. The Seminole Tribe is encouraged by the commitments made by the USACE during the consultation process to move forward with treating these sites in a culturally sensitive manner. We respectfully request the PIR/EIS be amended to reflect those commitments as the Seminole Tribe has made significant efforts to be a partner in Everglades restoration, including CEPP.

The Seminole Tribe is also encouraged by the stated goals of restoring historic water levels/hydrological patterns and restoring/preserving tree islands and ridge/slough systems. Appropriately designing the CEPP project to achieve and monitor these goals will enhance the protection of cultural sites within the APE. Generally, most cultural sites are located on tree islands. Various studies have been conducted noting the significant impacts water control projects have had on tree islands (for example: http://www.sfwmd.gov/portal/page/portal/PG_GRP_SFWMD_WATERSHED/Tree_Island_Research413?project=1338&ou=440; http://www.sfwmd.gov/portal/page/portal/PG_GRP_SFWMD_WATERSHED/WCA_Historical_Tree_438?project=1354&ou=440). We are encouraged that the USACE is committed to restoring and preserving these environmentally and culturally significant resources.

A. District Engineer's Recommendations

During the government to government consultation process, the Seminole Tribe raised a significant concern about the USACE relying on insufficient data (unknowns) concerning cultural resources and impacts. The Seminole Tribe's comments were based on the concern that the lack of cultural resource data and potential errors in hydrological modeling could result in unintended impacts to burial resources. The USACE acknowledged the Seminole Tribe's concerns and a mutual commitment was made that the Jacksonville District Human Remains Policy (currently in development) would serve as the mechanism to address treatment of burial resources within the CEPP APE. This Policy would be formalized as a binding agreement between the USACE and the participating tribal governments. In essence, the Human Remains Policy would serve as a legal agreement: (1) to resolve impacts to burial resources under both Federal Trust Responsibility and Section 106 of the National Historic Preservation Act and (2) to be the basis for an adaptive management plan for cultural resources if unintended impacts occurred.

The purpose of the District Engineer's Recommendations in any PIR is to set forth all the necessary agreements with federal, state, Tribal and local governments. However, the current PIR does not include the development of the Jacksonville District Human Remains Policy, which will govern the CEPP project. We therefore request the following language be added to Section 8, the District Engineer's Recommendations: "The USACE is in the process of entering into a binding agreement with the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida setting forth protocols for the appropriate treatment of burial resources throughout the Jacksonville District pursuant to the Federal Trust Responsibility and Section 106 of the National Historic Preservation Act. The USACE

shall enter into this binding agreement and it will govern the treatment of burial resources that are culturally/religiously significant to the participating tribal governments."

B. Compliance with the National Historic Preservation Act

The PIR/EIS repeatedly states that the project is in compliance with the National Historic Preservation ACT ("NHPA"); however, the USACE does not state how it is in compliance. It is important to note that the Advisory Council on Historic Preservation's regulations and case law is clear that Section 106, NHPA is not satisfied when an agreement to resolve adverse impacts is not finalized before completion of the National Environmental Policy Act documentations or before the Record of Decision. We understand that the USACE is in the process of developing a human remains policy that would resolve, pursuant to the Trust Responsibility and Section 106, impacts to burial resources. These burial resources may also be Section 106 properties in addition to being trust resources. We also understand that the USACE is in the process of completing studies pursuant to the Environmental Restoration Transitional Plan Programmatic Agreement in order to assess Section 106 impacts resulting from water control projects. However, at some point the USACE will need to develop a legally binding agreement to address Section 106 impacts that are not covered by the human remains policy. Until such time as the human remains policy and the Section 106 agreement are finalized, the USACE is in process of complying with the NHPA but is not yet in compliance. The Seminole Tribe is hopeful that the USACE will continue to honor its commitment to develop the human remains policy. The USACE acknowledges that compliance has not yet been achieved on page C.2.2-121 of Appendix C but erroneously provides it is in compliance in other sections. The acknowledgement that compliance is not yet achieved but ongoing should be consistently stated throughout the document.

C. Effects of the Alternatives and the Tentatively Selected Plan

i. The USACE outlines its assessment of direct and cumulative impacts to cultural resources both in the Main Report and in Appendix C. The Seminole Tribe is concerned that this evaluation does not reference avoidance and minimization efforts and implies that only mitigation (excavation of resources) will occur. In Sections 5.1.16 and 6.3.3 of the Main Report, the USACE simply notes that direct and cumulative impacts to cultural resources will be adverse and significant and that mitigation measures might lessen the impacts. There is absolutely no mention of the USACE undertaking avoidance or minimization efforts. The same is true in Sections C.2.1.17, C2.2.17, and C.2.2.19/Table2.2-16 (Appendix C); the PIR/EIS does not provide any discussion of avoidance or minimization of direct or cumulative impacts to cultural resources. Conversely, the USACE specifically provides it will undertake efforts to avoid, minimize and mitigate environmental impacts. Based on the exclusion of avoidance and minimization with regard to cultural resources, the Seminole Tribe is concerned that the USACE is not planning on considering or pursuing such measures. Such an approach is inconsistent with both the Federal Trust Responsibility and the NHPA. We respectfully request that the assessment of impacts include a discussion on avoidance and minimization.

ii. Further, it appears the assessment of impacts was only evaluated under the NHPA. It is important that the PIR/EIS evaluate impacts pursuant to the Federal Trust Responsibility as well. The federal government's trust obligation is more than just formal consultation and requires consideration and protection of cultural resources. The Advisory Council on Historic Preservation defined the federal trust obligation as "establish[ing] [a] fiduciary obligation to the tribes including duties to protect tribal lands and cultural and natural resources for the benefit of tribes and individual members/land owners." See *ACHP Policy Statement Regarding the ACHP's Relationships with Indian Tribes*, dated November 17, 2000. Similarly, the Department of Defense implemented its *American Indian and Alaska Policy* in October 1998 ("Department of Defense American Indian Policy"), recognizing the significance tribes "ascribe to certain natural resources and properties of traditional or customary religious or cultural importance."

The Department of Defense's American Indian Policy provides for enhancing tribal capabilities to "effectively protect and manage natural and cultural tribal trust resources whenever [Department of Defense] acts to carry out a program that may have the potential to significantly affect those tribal trust resources." By memorandum dated February 18, 1998, the USACE announced six basic tribal policy principles that must guide the USACE' decision-making when actions may affect tribes and trust resources: (1) tribal sovereignty; (2) trust responsibility; (3) government to government relations; (4) pre-decisional and honest consultation; (5) self reliance, capacity building and growth; and (6) natural and cultural resources. Specifically, the USACE stated that it "will act to fulfill obligations to preserve and protect trust resources" whereby trust resources include cultural resources. See *Memorandum for Commanders, Major Subordinate Commands, and District Commands*, dated February 18, 1998. In doing so, the USACE "will reach out...to involve Tribes in collaborative processes designed to ensure information exchange, consideration of disparate viewpoints before and during decision making, and utilize fair and impartial dispute resolution mechanisms." *Id.*

Therefore, the USACE owes the Seminole Tribe the obligation to preserve and protect the cultural resources within CEPP in addition to its obligations under the NHPA (NHPA does not supersede the Trust Responsibility). The Seminole Tribe respectfully requests the PIR/EIS include an evaluation of the impacts pursuant to the Trust Responsibility.

iii. Finally, the assessment of impacts is completely void of any discussion of the Jacksonville District Human Remains Policy, which will govern both the treatment of impacts to burial resources and set forth how impacts to such resources will be assessed. This agreement will be critical to the assessment and treatment of impacts to burial resources and should be included in the discussion of impacts to cultural resources.

D. Relationship to ERTP

The ERTP APE overlaps with the CEPP APE. Throughout the PIR/EIS the USACE references studies that will be required pursuant to the ERTP Programmatic Agreement. The ERTP Programmatic Agreement also provides that treatment of burial resources will be conducted consistent with the ERTP Human Remains Policy, which is a binding

agreement between the USACE and the Seminole Tribe (along with other state and federal parties). Until such time as the Jacksonville District Human Remains Policy is formalized, the ERTP Human Remains Policy remains the governing document for resolution of impacts to burial resources within the ERTP APE. The PIR/EIS should be revised to include the ERTP Human Remains Policy in the discussion of existing conditions/present actions and assessment of impacts.

E. Government to Government Consultation

The Seminole Tribe appreciates the USACE's early consultation efforts concerning cultural resources. This approach has helped create a mutual understanding and hopefully will help avoid future conflicts regarding cultural resources. We hope that the USACE will duplicate this approach for future projects. The Seminole Tribe does want to point out that the CEPP consultation process concerning cultural resources was not just conducted pursuant to the NHPA. The cornerstone of the federal government's relationship with Indian Country is the Federal Trust Responsibility. It is a special fiduciary obligation that carries with it the duty to act "with good faith and utter loyalty to the best interests" of federally recognized Indian Tribes such as the Seminole Tribe. The principal component of a federal agency's fiduciary trust obligation to Indian Tribes is the duty to formally consult with Indian Tribes (government-to-government) on actions that may impact their interests including historic properties. Although the NHPA includes a specific requirement for federal agencies to consult with Indian Tribes during the Section 106 review process, the duty to conduct government-to-government consultation is primarily a Trust obligation mandating federal agencies to act in a fiduciary capacity. In short, the NHPA requirements do not supersede the Federal Trust Responsibility.

F. Archaeological Data

As noted earlier, at this point there are more unknowns about cultural resources within the APE than there are known data. In part, this is due to the archaeological surveys being done during a very wet period which prevented the USACE contracted archaeologists from completing sufficient surveys. Less than one percent of the APE was selected for survey and out of that sample size only a few sites were dry enough to partially test. It is important to note that despite the self imposed limitations, the surveys discovered culturally significant material including burial resources at a high percentage rate. Therefore, it is highly likely that there are numerous unknown cultural sites within the APE. As the project moves forward, we respectfully request the USACE conduct more survey work during dry periods. We are also confident that if the USACE protects and restores the tree islands within the APE, that the likelihood of unintended impacts will be greatly lessened. However, sufficient monitoring will be necessary to determine impacts and to appropriately identify sites. The PIR/EIS is currently void of any discussion regarding archaeological monitoring. The Seminole Tribe suspects that archaeological monitoring can be done in conjunction with monitoring tree islands if the right protocols are developed. We respectfully request that the PIR/EIS be revised to note the limitations of the cultural resource data, link the protection and restoration of tree islands to the preservation of cultural resources, and include the commitment to develop archaeological monitoring protocols.

G. Existing Conditions of Native Americans

The Seminole Tribe appreciates that the USACE included a section concerning the existing conditions of the Native Americans. However, it is important to note that it may not be appropriate to rely on the Seminole Tribe's website or its Museum website as the source for this section. The Seminole Tribe's website serves several functions which include advertising for is commercial activities. It would be more appropriate to consult with the tribal governments in the development of this section versus taking information from websites.

Also, the Seminole Tribe's websites are not intended to represent the history or culture of the Miccosukee Tribe of Indians. Finally, the section is entitled "Existing Conditions of Native Americans;" however, the only language concerning the existing conditions is one sentence: "Today most Tribal members live within the confines of their reservations located in South Florida." All of the other language summarizes the Seminole Tribe's history and does not provide any information about the Tribe's existing conditions.

We therefore respectfully request the USACE consult with both Tribes and the Independent Native Americans living in the area to more accurately detail the existing conditions for Native Americans.

H. Compliance with Laws

In Section 7 of the Main Report, the USACE discusses how the project is in compliance with various legal obligations. While this section discusses compliance with cultural resource related federal statutes and orders, it is void of any discussion on compliance with the Federal Trust Responsibility. The Federal Trust Responsibility is a legal obligation that requires the USACE's compliance. Therefore, we respectfully request the USACE include a discussion on compliance with the Trust Responsibility regarding cultural resources and environmental resources.

I. Funding

The PIR/EIS does not provide any estimate on the cost of identifying, evaluating and treating cultural resources. Cost is briefly mentioned in a memorandum for the record that is included in the PIR/EIS. The Seminole Tribe requests that the USACE consult with its Tribal Historic Preservation Office on the appropriate cost estimates for cultural resources and that funding for cultural resources (under NHPA and Trust Responsibility) be a specific line item budget for the project.

We are aware that the Corps' Engineering Regulations provide for the cost of "data recovery" for the Federal sponsor to be no more than 1% of the total project cost. We believe that is a fair cost estimate for data recovery. We are also aware that the same Regulations provide that the following activities are not considered "data recovery:" (1) measures for avoidance, minimization and mitigation; and (2) activities to survey, test and evaluate archeological resources. We request further consultation with the Corps to determine what would be a reasonable cost estimate for the activities and measures that are not considered "data recovery."

Appendix B

From: Stephen Walker
Sent: Tuesday, July 16, 2013 5:32 PM
To: 'Ramirez, Armando'; 'donna.s.george@usace.army.mil'
Cc: 'Cherise Maples'; Michelle Diffenderfer; 'Patty Power'; 'Jim Shore'
Subject: Seminole Tribe Comments to the PIR

Dear Donna and Armando,

Please see attached to this email the Seminole Tribe's handwritten comments to the Draft PIR. The Seminole Tribe of Florida ("Tribe") appreciates the opportunity to comment on the Draft PIR for the Central Everglades Planning Project ("CEPP") that is being prepared by the South Florida Water Management ("District") and the U.S. Army Corps of Engineers ("Corps"). We appreciate the opportunity to provide our comments on the PIR as a PDT member and look forward to providing more formal comments in the tribal consultation process. The Seminole Tribe remains supportive of the restoration of the Everglades, including the Central and Western Everglades, of which it is a part. The Tribe's remaining concerns regarding CEPP center largely on the Corps' inability to anticipate impacts, positive or negative to the Big Cypress Reservation, Preserve and Addition lands. The Tribe remains concerned that the project does not contemplate or consider the impact on the Western Basins including the Tribal Big Cypress Reservation, Preserve and Addition Lands. The failure to fully assess the impacts to the Western Basins and incorporate benefits for this area into the CEPP planning process continues to be an issue. This inability to model or analyze the Western Basins in connection with CEPP is a fundamental flaw.

We are disappointed to see that the PIR does not include any substantive analysis regarding supplemental water for restoration of tribal natural resources and protection of the Tribe's customary usage rights. We believe that the PIR should have discussed in detail, the Tribe's environmental water request. We recommend that the PIR consider development of alternatives which would direct supplemental water to the Big Cypress Seminole Indian Reservation and the Big Cypress National Preserve and Addition Lands. This is particularly relevant as the Tribe is the local sponsor for a Critical Project in the Western Basins which has the capacity to bring water for the restoration of wetlands on Big Cypress Reservation, Big Cypress National Preserve and Addition Lands. There are greater restoration benefits that could be realized by looking at a larger restoration landscape that are being lost by the segmentation of CEPP. At a

minimum, the Corps should consider how CEPP and the Tribe's Critical Project could be analyzed in a more holistic manner to better accomplish the environmental goals of CEPP.

Sincerely,

Stephen A. Walker

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2.0 EXISTING AND FUTURE WITHOUT CONDITIONS

Please open the foldout figure at the end of this section to reference while reading.

This section provides a description of existing and future without (FWO) project conditions within the study and a definition of the FWO project condition and how and why it is developed.

2.1 "WITH" AND "WITHOUT" COMPARISONS

The U.S. Water Resources Council's *Principles and Guidelines* provide the instructions and rules for Federal water resources planning. One *Principles and Guidelines* requirement is to evaluate the effects of alternative plans based on a comparison of the most likely future conditions with and without those plans in place. In order to make this type of comparison, descriptions (often called forecasts) must be developed for two different future conditions: the FWO project condition and the future with project condition. Note that the project referred to in this context is any one of the alternative plans that have been considered in the study. The FWO project condition describes what is assumed to be in place if none of the study's alternative plans are implemented. The FWO project condition is the same as the alternative of "no action" that is required to be considered by the Federal regulations implementing the National Environmental Policy Act (NEPA) of 1969. The future with project condition describes what is expected to occur as a result of implementing each alternative plan that is being considered in the study. The differences between the future without project condition and the future with project condition are the effects of the project.

2.2 PLANNING HORIZON

The planning horizon encompasses the Planning Study period, construction period, economic analysis period, and the effective life of the project. The time frame used when forecasting future with and without project conditions while considering impacts of alternative plans is called the period of economic analysis. It may also be referred to as simply the period of analysis. It is the period of time over which scientists think extending the analysis of the plan impacts is important. This time period is frequently confused with the planning horizon, which is a longer and more encompassing concept. **Figure 2-1** shows that the period of analysis is part of the planning horizon.

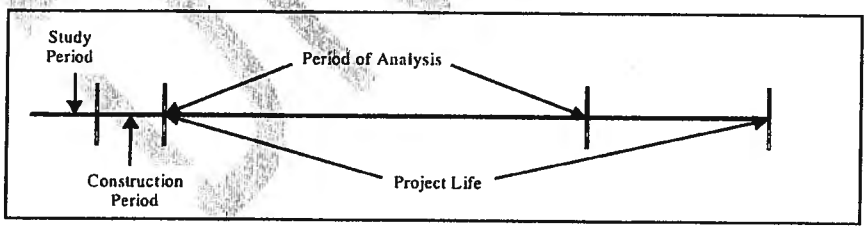

Figure 2-1. Planning Horizon

The period of analysis for water resources projects usually falls between 50 and 100 years. Even if project structures last more than 100 years, there is too much inherent uncertainty to reliably forecast conditions and impacts beyond 100 years. Although the typical period of analysis for a Civil Works project is 50 years, the Comprehensive Everglades Restoration Plan (CERP) differs because of the programmatic requirement to calculate system-wide benefits. In order to accurately predict system needs and project operations for the entire system, all CERP projects utilize the same ending date for the period of analysis as the most current version of the plan (*i.e.*, the April 1999 "Final Integrated

Feasibility Report and Programmatic Environmental Impact Statement" used 2050). Although future planning efforts may extend the end date of the period of analysis for projects that will undergo planning at a later date, doing so requires the development of a new system-wide condition or update of the CERP plan for project analysis. At this time, no new system-wide condition has been developed. The following is referenced from CERP Guidance Memorandum Number 2:

> *"The Plan was based on a 50-year period of analysis and a planning horizon to the year 2050. The period of analysis for calculating the benefits and associated costs for a project will begin the year in which the project will be functional (base year). The end-point for the period of analysis used in a PIR will coincide with the period of analysis end-point used in the most current version of the Plan. This end-point consistency is necessary for the proper calculation of system-wide benefits. The PDT should note that this could result in a period of analysis shorter than 50 years. As periodic CERP updates are completed in accordance with section 385.31(c) of the Programmatic Regulations, the end point for the period of analysis will be revised to reflect the new condition."*

The base year for the period of economic analysis for CEPP is year 2022. As such, the period of analysis for the proposed project will be 28 years, ending in the year 2050.

2.3 EXISTING AND FORECASTED ECOLOGICAL DESCRIPTION/SETTING

The study area for CEPP encompasses Lake Okeechobee, the Northern Estuaries (St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary), a portion of the Everglades Agricultural Area (EAA), the Water Conservation Areas (WCAs), Everglades National Park (ENP), the Southern Estuaries (Florida Bay and Biscayne Bay), and the Lower East Coast (LEC). The following describes a summary of the existing and FWO project conditions within the study area. **Table 2-1** provides a comparison of existing and FWO project conditions.

Lake Okeechobee is the largest lake in the southeastern United States and is a central part of the south Florida watershed. Lake Okeechobee receives water from a 5,400 square mile watershed that includes four distinct tributary systems: Kissimmee River Valley, Lake Istokpoga-Indian Prairie/Harney Pond, Fisheating Creek, and Taylor Creek/Nubbin Slough. With the exception of Fisheating Creek, all major inflows to Lake Okeechobee are controlled by gravity-fed or pump-driven water control structures. Lake Okeechobee provides water supply to urban areas, agriculture, and downstream estuarine ecosystems during the dry season (November-May) and is used for flood control during the wet season (June-October).

Under pre-drainage conditions, Lake Okeechobee is thought to have been eutrophic (Steinman et al. 2002) and was considerably deeper and larger (spatially) than it is today (Aumen 1995). Outflows from the lake were largely restricted to sheet flow to the south and east. A southern marsh comprised the northern headwater of the Florida Everglades, with the lake often supplying water during periods of high lake levels or as a result of tropical storms. The historic high and low stages for the lake are estimated at approximately 22.5 feet (ft) and 19 ft, respectively (Wright 1911). Historic observations indicate the presence of a substantial sawgrass community located along the western side of the lake suggesting a historic eight month hydroperiod for the area during which soils were saturated with water. Historically, stages within the lake may have risen around two feet above the marsh ground elevation in the wet season and may have fallen up to a foot by the end of the dry season (McVoy et. al. 2005).

Currently, Lake Okeechobee differs from the historic lake in size, range of water depth and connection with other parts of the regional ecosystem. Connecting Lake Okeechobee to the Caloosahatchee River

and construction of the St. Lucie Canal in the early 1900s greatly reduced system-wide water storage and sheet flow to the south during drier periods (NRC 2007). Construction of Herbert Hoover Dike (HHD) around the lake reduced the size of Lake Okeechobee's open-water zone by nearly 30 percent, resulting in considerable reductions in average water levels, and produced a new littoral zone within the dike that is only a fraction of the size of the natural one (Aumen 1995, Havens and Gawlik 2005). Today, the lake has a surface area of 730 square miles and is extremely shallow. The lake has an average depth of 8.1 ft (average stages 14.11 ft NGVD) based on the period of record from 1972 to 2012. Composition of vegetative communities within the remaining littoral zone of the lake has changed. They remain essential for the ecological health of the Lake but are stressed by extreme high and low lake levels and by the spread of exotics. Lake Okeechobee has also been the recipient of increasingly excessive inputs of nutrients primarily from agricultural activities in the watershed (Flaig and Havens 1995, Havens et al. 1996). The sustained influx of nutrients has resulted in dramatic undesirable changes in water quality. In the open water or pelagic region of the lake, large algal blooms have occurred which can result in lower dissolved oxygen levels and fish kills. Vast quantities of soft organic, nutrient-laden sediments have accumulated which are easily re-suspended causing Lake Okeechobee to become turbid and may impact plants, which in turn may affect those organisms that utilize the plant communities as a food source or for habitat.

The St. Lucie River, which is part of the Indian River Lagoon ecosystem, is located on the east coast of Florida. The St. Lucie River is approximately 35 miles long and has two major forks, the North and the South, that flow together and then eastward to the Indian River Lagoon and Atlantic Ocean at the St. Lucie Inlet. Historically, the St. Lucie River system was a freshwater stream flowing into the Indian River Lagoon. An inlet was dug in the late 1800s by local residents to provide direct access from the Indian River Lagoon to the Atlantic Ocean, thus changing the St. Lucie from a river to an estuary. The St. Lucie estuary is now connected to Lake Okeechobee by the C-44 canal constructed in the early 1900s. Other major canals constructed in the watershed include the C-23, C-24, and C-25 canals.

The Caloosahatchee River and Estuary is located on the west coast of Florida. The Caloosahatchee River is the major source of freshwater for the Caloosahatchee Estuary. Alterations to the Caloosahatchee River and watershed over the past century have resulted in a major change in freshwater inflow to the estuary. The Caloosahatchee River was originally a shallow, meandering river with headwaters in the proximity of Lake Hicpochee, near Lake Okeechobee. The Caloosahatchee River is now connected to Lake Okeechobee by the C-43 canal constructed in the early 1900s. Today, the river extends from Lake Okeechobee to San Carlos Bay. The river now functions as a primary canal (C-43) that conveys both runoff from the Caloosahatchee watershed and releases from Lake Okeechobee. The canal has undergone numerous alterations including channel enlargement, bank stabilization, and a series of three lock and dam structures. The final downstream structure, W.P. Franklin Lock and Dam (S-79), demarcates the beginning of the estuary and acts as a barrier to salinity and tidal action, which historically extended farther east to near the LaBelle area.

Water management activities and dredging practices within the watersheds of the St. Lucie and Caloosahatchee have resulted in significant alterations in the timing, distribution, volume and quality of water flow into these estuaries. Prior to these impacts, the Northern Estuaries were highly productive systems with an abundance of aquatic plants and animals. These pre-drainage estuarine systems received freshwater inflow primarily from direct rainfall and basin runoff that resulted in low nutrient inputs. These natural patterns of freshwater inflow sustained an ecologically appropriate range of salinity conditions with much fewer salinity extremes then are experienced currently. As a result of channelization (C-43 and C-44) and operation of water control structures (S-79 and S-80) freshwater

flows into the estuaries tend to be excessive in the wet season and occasionally insufficient in the dry season. The estuaries have lost large acreages of both submerged aquatic vegetation (SAV) and oysters due to large fluctuations in salinity caused by excessive freshwater discharges during wet times and a lack of base flow during extremely dry years. There is also a problem with re-colonization in areas where salinity conditions are favorable due to the lack of suitable substrate needed to support benthic fauna and flora. This sediment problem includes both large areas of thick organic mucky sediment which is especially a problem in the St. Lucie Estuary as well as lack of hard bottom substrate needed for oyster colonization. The natural ability of the estuaries to filter nutrients has also been impacted leading to degraded water quality.

Regarding salinity, damaging flood control discharges from Lake Okeechobee would still occur in the future scenario. These may be partially offset by future optimization of Lake Okeechobee regulation schedules and risk reduction actions related to HHD combined with possible increases in lake storage. The spatial extent of the Northern Estuaries is not expected to significantly decline as a result of land development. Local, state and Federal wetland regulatory programs would likely limit impacts to high value, estuarine wetlands, and compensatory mitigation would be required to offset any loss of wetland function or value that may occur. Any future effects from local stormwater runoff and resulting eutrophication would likely be offset by stormwater facility construction and/or Best Management Practices.

The remaining portion of the Greater Everglades wetlands includes a mosaic of interconnected freshwater wetlands and estuaries located primarily south of the EAA. A ridge and slough system of patterned, freshwater peat lands extends throughout the WCAs into Shark River Slough in ENP. The ridge and slough wetlands drain into tidal rivers that flow through mangrove estuaries into the Gulf of Mexico. Higher elevation wetlands that flank either side of Shark River Slough are characterized by marl substrates and exposed limestone bedrock. Those wetland areas located to the east of Shark River Slough include the drainage basin for Taylor Slough, which flows through an estuary of dwarf mangrove forests into northeast Florida Bay. The Everglades marshes merge with the forested wetlands of Big Cypress National Preserve to the west of WCA 3 and ENP.

Declines in ecological function of the Everglades have been well documented. In the pre-drainage system, the inundation pattern supported an expansive system of freshwater marshes including long hydroperiod sawgrass "ridges" interspersed with open-water "sloughs", higher elevation marl prairies on either side of Shark River Slough, and forested wetlands in the Big Cypress marsh. Rainfall and seasonal discharge from Lake Okeechobee resulted in overland surface flows (sheet flow) which helped to maintain the microtopography, directionality, and spatial extent of ridges and sloughs. Accretion of peat soils typical of the ridge and slough landscape required prolonged flooding, characterized by 10 to 12 month annual hydroperiods, and ground water that rarely dropped more than one foot below ground surface (Tropical BioIndustries 1990). The depths, distributions and duration of surface flooding largely determined the vegetation patterns, as well as the distribution, abundance and seasonal movements, and reproductive dynamics of all of the aquatic and many of the terrestrial animals in the Everglades (Kushlan 1989, Davis and Ogden 1994, Holling et al. 1994, Walters and Gunderson 1994).

Construction of canals and levees by the Central and Southern Florida (C&SF) project resulted in the creation of artificial impoundments and has altered hydroperiods and depths within the study area. For example, northern WCA 3A has been over drained and its natural hydroperiod shortened while the eastern and southern portion of WCA 3A is primarily affected by high water and prolonged periods of inundation. The result has been substantially altered plant community structures, reduced abundance

and diversity of animals and spread of non-native vegetation. The once vast, naturally connected landscape has been cut into a mosaic of various-sized habitat patches. The ridge and slough habitat has become severely degraded in a number of locations and is being replaced with a landscape more uniform in terms of topography and vegetation with less directionality (NRC 2003, SCT 2003). The canals adjacent to the project area likely serve as an effective barrier to wildlife movement, interfering with or preventing life functions of many native wildlife species.

The remaining portions of the Everglades are stressed and exhibit levels of reduced aquatic function. The overall negative ecological trends in the remaining portions of the Everglades are expected to continue into the future, with additional loss of resources through landscape alterations and degradation of habitat. The effects of the existing infrastructure and future water management practices will continue to cause dryouts in the natural system. The prevalence of extreme fires will persist, destroying peat that is necessary for plant growth and water retention. Soil subsidence will also continue as dryouts, particularly extreme during periods of drought, contribute to further soil oxidation. Additionally, unnatural shorter or longer hydroperiods will likely continue to cause detriment to remaining tree islands. The overall spatial extent of WCA 3A, WCA 3B and ENP is not expected to decline, as these areas are publicly-owned and protected from development; however, current problems plaguing the areas are expected to continue and worsen in some areas. Some minor improvement could occur after remediation of HHD with possible optimization of Lake Okeechobee regulation schedules; however, these steps would only prolong the changes and would not reverse the damaging trends.

2.4 COMPARISON OF EXISTING AND FUTURE WITHOUT PROJECT CONDITIONS

Table 2-1 provides a comparison of existing and FWO project conditions. Existing and FWO project conditions are further documented in **Appendix C.1 (Existing and Future Without Project Conditions)**.

246 **Table 2-1. Existing Conditions and Future Without Project Conditions**

CONDITIONS	EXISTING CONDITIONS	FUTURE WITHOUT PROJECT CONDITIONS
Vegetative Communities	Sawgrass prairie, slough vegetation, tree islands, spike rush and beak rush flats, mangroves, freshwater wetlands, muhly prairie, cypress stands, native dominated forested wetlands, hydric hammocks and exotic-dominated forests.	Possible future development, changes in availability and distribution of freshwater, and further disruption of natural sheet flow from discontinuities in hydrology due to possible construction of levees, roads, canals, etc. could exacerbate the changes occurring in the natural sawgrass, marl prairie, tree island, and mangrove ecotones.
Fish and Wildlife Resources	A great diversity of fish and wildlife species occur throughout south Florida.	Declining environmental trends from existing C&SF drainage structures would continue to cause stress on the ecosystem. Disruption of the natural hydrology has resulted in changes in aquatic vegetation communities, and disruption of aquatic productivity and function. These changes have had repercussions throughout the food web, including wading birds, raptors, larger predatory fishes, reptiles, and mammals. These detrimental effects are likely to continue.
Invasive and Nuisance Species	Existing resources indicate 163 species of non-native plants have been documented to occur within the project area; 123 of the plant species are considered invasive or noxious weeds. Existing information indicates 89 non-native animal species have been documented to occur within the project area.	It is expected that anthropogenic effects would continue to negatively impact the project area. New invasions and the expansion of invasive plant and animal species currently present would continue in the future. Native nuisance species such as cattail would persist and expand in the project area.
Threatened and Endangered Species	A total of 41 federally protected species occur or have the potential to occur within the project area. Species include but are not limited to the Florida panther, Florida manatee, Everglade snail kite, wood stork, American alligator, American crocodile, and Eastern Indigo snake. Designated critical habitat for the American crocodile, Everglade snail kite, West Indian manatee, smalltooth sawfish, and Cape Sable seaside sparrow also occurs within the project area. Many state listed species also occur throughout the project study area.	Existing Federal regulations such as the ESA, Marine Mammal Protection Act and Fish and Wildlife Coordination Act, along with similar state regulations should be sufficient to preserve the continued existence of most endangered plant and animal species in the proposed project area. Given the expected decline of the system, there would likely be adverse effects on many threatened and endangered species that live solely within the greater Everglades, however, some these effects would potentially be partially mitigated by development and implementation of species recovery plans and other public and private efforts.
Essential Fish Habitat	The project is located in areas designated as EFH for corals and live bottom habitat, and is habitat for numerous species of fish and invertebrates.	The Magnuson-Stevens Fishery Conservation and Management Act should be sufficient to maintain existing fisheries. Current disruptions caused by flood control regulatory freshwater releases would continue to cause harm to estuarine systems in coastal areas. Potential negative effects to active fisheries could occur as a result of unregulated agricultural runoff and other secondary effects of development.
Climate (including Sea	The project area is characterized by a subtropical climate with distinct wet and dry seasons, high rates of evapotranspiration	Climate change is expected to alter rainfall and evapotranspiration patterns over the next 100 years. USACE sea level rise projections to 2050 for Key

CONDITIONS	EXISTING CONDITIONS	FUTURE WITHOUT PROJECT CONDITIONS
Level Rise)	and floods, droughts, and hurricanes. The climate represents a major physical driving force that sustains the Everglades while creating water supply and flood control issues in the agricultural and urban segments. Of the 53 inches of annual average rain in south Florida, 75 percent falls during the wet season (May – October). Multi-year high and low rainfall periods often alternate on a time scale approximately on the order of decades. Average annual temperature for the southern Everglades is76°F (24° C).	West, Florida and the broader south Florida area for historic, intermediate and high rates of future sea level rise are +5 inches, +9 inches and +20 inches, respectively http://publications.usace.army.mil/publications/eng-circulars/EC_1165-2-212.pdf. For modeling purposes, tidal data from two primary (Naples and Virginia Key) and five secondary NOAA stations (Flamingo, Everglades, Palm Beach, Delray Beach, and Hollywood Beach) were used to generate a historic record to be used as sea level boundary conditions for the entire simulation period. The historic climate conditions used in the period of record is assumed to represent conditions that are expected to occur in the study area in the future. Some examples of sea level rise and climate change impacts in the future would be continued saltwater intrusion, reduced freshwater supply, reduced flood protection, retreating shoreline, and habitat transition.
Geology and Soils	The regional geology of EAA, WCA 3 and ENP consists of (from youngest to oldest) recent fill material, undifferentiated sandy, clay materials, and limestone. Recent fill material consists of poorly graded gravel, sand, silt and minor shell. Layers of peat are embedded within the clay layers. Miami Limestone represents the upper portion of the Biscayne Aquifer. South Florida is underlain by Cenozoic age rocks to a depth of approximately 5,000 ft below land surface with various percentages of sand, limestone, clay and dolomite. The marl soils are typically characterized as silts with high concentrations of lime. Marl soils form under shallow water conditions and are an important constituent of the whole ecosystem, typically having standing water for short periods of time and are associated with thick algal mats and periphyton.	Based on current land use indicators, the landscape of south Florida would be developed consistent with County Growth Management Plans. While the majority of development is expected to occur on previously farmed lands, some wetland soils located in the area could be altered as a result of potential development. Wetland soils would be drained and/or displaced with fill materials to support the urban development. Existing C&SF drainage structures will continue to maintain reduced hydroperiod in many locations, continuing peat soil loss by oxidation and lightning-induced fires.
Municipal and Industrial (M&I) Water Supply/ Demand	Well fields are the primary source of municipal water supplies and are recharged by water from the WCAs and rain. WCAs maintain groundwater levels and canal stages in the coastal area for public water supply, agriculture irrigation, and maintain a freshwater head along the lower east coast (LEC) to prevent saltwater intrusion. The South Florida Water Management District (SFWMD) adopted a restricted allocation area rule for the Everglades and Loxahatchee River Water Bodies in 2006. This rule caps consumptive use withdrawals	Increase in population and infrastructure would increase demand with the same frequency of shortages and restrictions, leading to both economic and environmental harm. In the LEC, groundwater from the surficial aquifer system is the predominant source of water for M&I uses. This trend is expected to continue in the future. Since the Restudy, M&I users reliance on water from the Floridan aquifer, reuse and other sources has grown significantly. Use of these alternative sources to meet a portion (10-15%) of future demands will continue in the future. Economic forecasts have changed since the Restudy, decreasing the population projections. Between

CONDITIONS	EXISTING CONDITIONS	FUTURE WITHOUT PROJECT CONDITIONS
	from the Everglades actual use as of April 1, 2006. Since adoption of the rule restricting allocations, the SFWMD has issued 20-year permits allocating 1,039 million gallons per day (MGD) from the surficial aquifer system. Like public water supplies, industrial demands dependent on the surficial aquifer system have also been capped.	these two changes, the 2050 demands contemplated in the Restudy without project condition were 1,276 MGD compared to the 20-year permits issued by the SFWMD allocating 1,014 MGD from the surficial aquifer system. Like public water supplies, industrial demands are turning to alternative sources of water than the surficial aquifer system. The projected industrial demands in 2030 from the surficial aquifer, including thermoelectric, are 12 MGD.
Flood Control	Areas may become flooded during heavy rainfall events due to antecedent conditions that cause saturation and high runoff from both developed and undeveloped areas.	Flood damage reduction needs have increased since the original C&SF Project was constructed and will likely continue to increase in the future. As agricultural and urban development continues, the volume, duration, and frequency of floodwaters may increase, and the actual level of flood damage reduction may decline in some areas. Flood damage reduction may also decline as a result of sea level rise. Most coastal flood control structures are gravity driven. Discharge capability of these structures may be reduced.
Water Quality	Existing water quality conditions within most of the study area (Lake Okeechobee, coastal estuaries, EAA, WCAs and ENP) are impaired mostly related to excessive nutrient concentrations. The Florida Department of Environmental Protection (FDEP) is in the process of developing total maximum daily load (TMDL) limits, which when enforced will improve water quality conditions. Total Phosphorus concentrations and loads to the Everglades Protection Area (WCAs, ENP) have been the subject of ongoing litigation between State, Federal and Tribal parties. The 2012 Consent Order requires the SFWMD to construct additional water treatment in order to meet discharge criteria in the WCAs.	Implementation and enforcement of water quality TMDL's within the study area should result in improved water quality conditions. The SFWMD Restoration Strategies water quality treatment implementation plan will be fully in place by 2025. Compliance with the 2012 Consent Order WQBELs (water quality based effluent limits) is expected after 2025 when the SFWMD has completed implementation of the Restoration Strategies water quality treatment plan. Effects on water quality from agricultural activities should be reduced as land use near urban areas converts to residential and commercial development. Water quality in urban areas should improve somewhat as stormwater controls are retrofit in areas that undergo redevelopment.
Air Quality	Existing air quality in the affected environment is good to moderate. All areas of Florida, except one, are now attainment areas. Orange County, Duval County, the Tampa Bay area including Hillsborough and Pinellas Counties, and Southeast Florida including Miami-Dade, Broward, and Palm Beach Counties continue to be classified by the United States Environmental Protection Agency (USEPA) as attainment/maintenance areas for the pollutant ozone and a portion of Hillsborough County is a non-attainment area for lead.	It is anticipated that increased population and economic expansion in southeast Florida will result in an increase in ozone and other air quality pollutants. It is possible that Miami-Dade, Broward, and Palm Beach Counties may be classified as air quality non-attainment zones. This is more likely to occur if air quality standards become more stringent by 2050.

CONDITIONS	EXISTING CONDITIONS	FUTURE WITHOUT PROJECT CONDITIONS
Hazardous, Toxic and Radioactive Waste (HTRW)	Lands potentially used for this project are very likely to have a past or present agricultural land use. Activities conducted over the past 100 years are likely to have resulted in the presence of some HTRW materials on some of this land. State and Federal databases include information on the known HTRW contamination sites. Phase I and II environmental site assessments will be used to identify unknown HTRW sites as well as test cultivated areas for the presence of residual agricultural chemicals.	In the absence of the project, potential project lands would likely continue to be farmed. This would likely result in continued minor HTRW contamination associated with storing and applying agricultural chemicals as well as petroleum products. Cultivated soils would continue to have agricultural chemicals applied which may accumulate in the soils depending upon the properties of chemicals. Should the subsequent land owner opt to change the land use to something other than agriculture, they would have to meet all applicable Federal and state regulatory levels for that land use, which may require remediation of residual agricultural chemicals.
Cultural Resources (includes Cultural and Historic Properties)	Several thousand historic properties exist within south Florida. Due to the existence of known historical properties within previously surveyed portions of the study area, there is a high probability of unrecorded sites within the project area of potential effect. Further cultural resources investigations will need to be conducted for this project in order to assess effects to significant historic properties. Lands leased to the Miccosukee Tribe of Indians of Florida are experiencing long-term high water staging in the southern part of WCA 3A, which may affect culturally significant sites.	Effects on cultural resources within the A-2 are unknown. Continued agricultural practices within the A-2 footprint may continue to affect unidentified cultural resources. Cultural resources within ENP will continue to be managed under the Park's established management plan. Investigations mandated in the Programmatic Agreement for the Everglades Restoration Transition Plan (ERTP) are in the process of being completed. Sea level rise and climate change effects have the potential to cause changes to cultural resources in the future.
~~Native Americans~~	~~Lands leased to the Miccosukee Tribe of Indians of Florida are experiencing long-term high water staging in the southern part of WCA 3A, which effects subsistence practices and increases inundation risks to islands utilized by the Tribe.~~	~~Predicted sea level rise for the south Florida area for historic, intermediate and high rates of future sea level rise are +5 inches, +9 inches and +20 inches, respectively http://publications.usace.army.mil/publications/eng-circulars/EC_1165-2-212.pdf. Sea level rise would potentially effect habitation, ceremonial and sacred areas south of Tamiami Trail and west of the Miccosukee Reserved Area.~~
Populations	From 1950 to 2000, Florida achieved dynamic change in population. In relation to the remainder of the United States, Florida outgrew the other states by almost 500 percent. This growth can be attributed to Florida's desirable climate and historically low property costs. Broward County experienced the largest increase in the region as population increased 1,832 percent in the 50-year span. With population expansion comes the myriad of challenges related to infrastructure, land use/pattern changes, water demand, environmental impacts, depletion of resources, and health and human safety issues.	Continued above average population growth expected until saturation. It is expected that the study area region, as well as the cities encompassed in the study area, will continue to grow both in population and in the development that population demands. Both Florida and the region are expected to grow at a rate exceeding the national growth rate, but is expected to diminish in the future. While absolute populations of the counties will continue to increase, the rate at which individuals are added to those populations will not be as great as historic growth rates. Counties that have traditionally grown at a rate exceeding the state growth rate will slow and it is to be expected that the most intense growth in population will occur in other counties.

CONDITIONS	EXISTING CONDITIONS	FUTURE WITHOUT PROJECT CONDITIONS
Economy	Generally, a strong wholesale and retail trade, government and service sectors characterize Florida's economy. Compared to the national economy, the manufacturing sector has played less of a role in Florida, but high technology manufacturing has begun to emerge as a significant sector over the last decade. Employment in the LEC when compared to employment in the rest of Florida and the region shows a greater emphasis toward service or tourism related industries.	Future economic growth within the study area is expected to remain consistent with the population growth of the area, while maintaining a mix of service, retail, and administrative jobs. Also to be expected is a shift of income and employment from Miami-Dade County to the surrounding counties of Broward and Palm Beach.
Agriculture	Agricultural production is an important sector of the state's economy. Despite continued urban expansion, agriculture throughout south Florida remains a valuable industry and employer. South Florida is a major source of vegetables, tropical fruits, sugar, and other produce year round.	Agriculture is considered fully developed in most areas of south Florida, where permitted acres and cropping practices are not projected to change significantly. Sugarcane, other field crops, sod, and greenhouse/nursery are expected to increase slightly over the planning horizon, while other fruits and nuts and vegetables, melons, and berries are expected to fall slightly.
Study Area Land Use	The existing use of land within the study area varies widely from agriculture to high-density multi-family and industrial urban uses to natural areas for conservation. A large portion of south Florida remains natural, although much of it is disturbed land.	Urban or commercial development should occur within major urban service areas located within the project area. Agriculture is expected to remain a strong economic force, yet conceding some ground to urban development and conservation efforts.
Recreation	Many areas throughout south Florida are used for recreational activities including birding, fishing, hunting, kayaking, canoeing, hiking, and air-boating.	All of the areas throughout south Florida are expected to have significant increases in demands for selected recreation activities with a commensurate need to increase development of the region's recreational resources and facilities. Ecosystems support a significant amount of outdoor recreation in the LEC of Florida. A significant portion of the expenditures comes from tourists. Recreational activities that are projected to have a lack of supply as a result of increased demands include hiking, freshwater fishing, and bicycle riding.
Noise	Within natural areas, external sources of noise are limited. Existing sources of noise outside of the rural communities are limited to vehicular traffic, agricultural vehicles, etc.	Noise impacts will change in areas where land use is projected to change from agriculture to residential/commercial.
Aesthetics	Natural areas within south Florida are comprised of a variety of wetlands, sawgrass marshes, wet prairies, and tree islands. The land is very flat, with slight topographic rises on some tree islands. Much of the visible topographic features are a result of human development, such as canals and levees. Views of much of the area offer pleasant perspectives of the Everglades and tree islands.	Urbanization is expected to occur in the future, resulting in a potential loss of opportunity to aesthetically view open agricultural and natural areas due to build-out.

2.5 STRUCTURAL AND OPERATIONAL ASSUMPTIONS IN THE FUTURE WITHOUT PROJECT CONDITION

The FWO project condition for CEPP assumes the construction and implementation of currently authorized CERP and non-CERP projects, and other Federal, state or local projects constructed or approved under existing governmental authorities that occur in the CEPP study area. Construction has begun on the first generation of CERP projects already authorized by Congress. These include the Indian River Lagoon-South Project, the Picayune Strand Restoration Project, and the Site 1 Impoundment Project. Second generation of CERP projects for Congressional authorization includes the Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, the Caloosahatchee River (C-43) West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. Non-CERP projects included within the FWO project condition consist of the SFWMD Restoration Strategies, C&SF Canal-51 West End Flood Control Project, the C-111 South Dade Project, the Kissimmee River Restoration Project, Modified Water Deliveries to ENP (MWD) Project, and the Department of Interior (DOI) Tamiami Trail Modifications Next Steps Project. **Table 2-2** summarizes the status of non-CERP projects, CERP projects and operational plans assumed to differ between the existing condition and FWO project condition. Refer to **Sections 2.5.1** through **2.5.15** for further information on how project features in **Table 2-2** were represented in the hydrologic model simulation of the FWO project condition, where applicable.

Table 2-2. Status of Non-CERP Projects, CERP Projects, and Operations Plan for Existing and Future Without Project Conditions

CATEGORY	EXISTING CONDITION	FUTURE WITHOUT PROJECT CONDITION
Status of Non-CERP Projects	Construction complete and features operated: Modified Water Deliveries to ENP Project (MWD), including the S-355A and S-355B gated spillways, 4-mile degrade of L-67 Extension Levee, 8.5 Square Mile Area Flood Mitigation Project	Construction completed and features operated: C-111 South Dade (Contracts 8 and 9); C&SF C-51 West End Flood Control Project; Kissimmee River Restoration; SFWMD Restoration Strategies (Central Flow Path features). Construction completed: MWD, including existing condition components plus Tamiami Trail Modifications (1-mile eastern bridge); DOI Tamiami Trail Modifications Next Steps Project (5.5 miles of additional bridges). Seepage Barrier Near the L-31 N Levee (Miami-Dade Limestone Products Association)
Status of CERP Projects	No completed projects	Construction completed and features operated: Indian River Lagoon-South Project; Picayune Strand Restoration Project; Site 1 Impoundment Project; Biscayne Bay Coastal Wetlands Project; Broward County Water Preserve Areas Project; Caloosahatchee River (C-43) West Basin Storage Reservoir; C-111 Spreader Canal Western Project.
Operations Plan for WCA 3A, ENP and the SDCS	Interim Operational Plan (IOP (2002, 2006); L-29 Canal maximum operational stage limit: 7.5 feet (ft) National Geodetic Vertical Datum (NGVD); G-3273 constraint: 6.8 ft NGVD	ERTP (2012); L-29 Canal maximum operational stage limit: 7.5 ft NGVD; G-3273 constraint: 6.8 ft NGVD

2.5.1 Lake Okeechobee Operations

The FWO project conditions assumption for the operation of Lake Okeechobee is Lake Okeechobee Regulation Schedule (LORS) 2008 (USACE 2007). The CEPP team recognizes that when it was approved, LORS 2008 was identified as an interim schedule and that a subsequent schedule would be considered

after the modifications to HHD were completed. Until a new operating schedule is developed under a different, future study, LORS 2008 is the best estimate for operations.

2.5.2 Herbert Hoover Dike

The HHD surrounds Lake Okeechobee, which is 720 square miles in size. The HHD was first authorized in 1930 and built by hydraulic dredge and fill methods. HHD has 143 miles of embankment with 5 spillway inlets, 5 spillway outlets, 32 Federal culverts, 9 navigation locks and 9 pump stations. There are structural integrity concerns with the embankment and internal culvert structures that resulted in a Dam Safety Action Classification (DSAC) risk rating of Level 1. DSAC Level 1 represents the highest U.S. Army Corps of Engineers (USACE) dam risk of failure rating and requires remedial action. The Major Rehabilitation Report (MRR) from 2000 divided the 143 mile dike into eight (8) Reaches with the initial focus on Reach 1. The current approved and planned remediation measures will address the highest points of potential failure in the system based on known areas of concern. These efforts are intended to lower the DSAC rating from Level 1. The CEPP FWO project condition will assume the planned remediation of HHD will lower the DSAC risk rating and be completed by 2022. The following text provides the basis for this assumption.

Historically, the majority of embankment and foundation issues have occurred in Reaches 1, 2, and 3 related to one of the following primary potential failure modes: internal erosion through the embankment and internal erosion through the foundation. The additional failure modes associated with the culvert structures are: internal erosion along the conduits and internal erosion into the conduits.

Current approved HHD remediation measures consist of cutoff wall in Reach 1: cutoff wall task orders 1 – 9 are scheduled for completion in 2013, and 32 culvert replacements or removal around the lake are scheduled for completion in 2018. Planned remediation measures consist of cutoff wall and/or a seepage management system in Reaches 2 and 3. These actions are scheduled for completion in 2022. These remediation measures will not resolve all issues with the dam, nor will all current design criteria be met. To assess other issues and address future modifications with HHD, a comprehensive potential failure mode analysis and risk assessment is being performed and will be included in the ongoing Dam Safety Modification Report (DSMR). This report is scheduled for completion/approval in 2014.

Prior to LORS 2008, Lake Okeechobee operated under the Water Supply and Environmental Regulation Schedule (WSE). The LORS study was initiated because of adverse environmental impacts that WSE had on the lake ecology. Dam safety was later added as a performance criterion since lowering of the lake, as LORS was pursuing, is one of the basic Interim Risk Reduction Measures implemented for deficient dams until appropriate remediation is effectuated. The WSE held Lake Okeechobee stages approximately 1.0 – 1.5 feet higher than LORS under wet conditions. Studies for the remediation of HHD are based on the WSE, which was used as the basis for the development of the Standard Project Flood (SPF). The SPF is the design condition used for the remediation to address internal erosion failure modes.

2.5.3 SFWMD Restoration Strategies Project

The SFWMD is required to meet a numeric discharge limit, referred to as the WQBEL, which is contained in the National Pollutant Discharge Elimination System (NPDES) permit for discharges from the storm-water treatment areas (STAs) into the Everglades Protection Area (EPA). The WQBEL was developed to assure that such discharges do not cause or contribute to exceedances of the 10 parts per billion (ppb) total phosphorus (TP) criterion (expressed as a long-term geometric mean [LTGM]) established under 62-302.540, Florida Administrative Code (F.A.C.). The TP criterion is measured at a network of stations

across the EPA marsh and is intended to prevent imbalances of aquatic flora and fauna. The WQBEL is measured at the discharge points from each STA and requires that the total phosphorus concentration in STA discharges shall not exceed: 1) 13 ppb as an annual flow weighted mean in more than three out of five water years on a rolling basis; and 2) 19 ppb as an annual flow-weighted mean in any water year. Excess phosphorus discharged into the EPA has caused ecological impacts within the Everglades.

To address water quality concerns associated with existing flows to the EPA, the SFWMD, FDEP, and USEPA engaged in technical discussions starting in 2010. The primary objectives were to establish a WQBEL that would achieve compliance with the State of Florida's numeric phosphorus criterion in the EPA and to identify a suite of additional water quality projects to work in conjunction with the existing Everglades STAs to meet the WQBEL. Based on this collaborative effort, a suite of projects has been identified that would achieve the WQBEL. The Restoration Strategies Regional Water Quality Preliminary Plan (SFWMD 2012) describes those resulting projects and the evaluation tools and assumptions that were utilized in the technical evaluation. The projects have been divided into three flow paths (Eastern, Central and Western), which are delineated by the source basins that are tributary to the existing Everglades STAs. The identified projects primarily consist of FEBs, STA expansions, and associated infrastructure and conveyance improvements. The primary purpose of FEBs is to attenuate peak stormwater flows prior to delivery to STAs and provide dry season benefits, while the primary purpose of STAs is to utilize biological processes to reduce phosphorus concentrations in order to achieve the WQBEL. The Eastern Flow Path contains STA-1E and STA-1W. The additional water quality projects for this flow path include an FEB in the S-5A Basin with approximately 45,000 acre-feet (ac-ft) of storage and an STA expansion of approximately 6,500 acres (5,900 acres of effective treatment area) that will operate in conjunction with STA-1W. The Central Flow Path contains STA-2, Compartment B and STA-3/4. The additional project is an FEB with approximately 54,000 ac-ft of storage that will attenuate peak flows to STA-3/4, and STA-2 and Compartment B. The Western Flow Path contains STA-5, Compartment C and STA-6. An FEB with approximately 11,000 ac-ft of storage and approximately 800 acres of effective treatment area (via internal earthwork) within STA-5 are being added to the Western Flow Path. Based on the CEPP project objectives, only the Central Flow Path features are included in the CEPP modeling representation of the FWO project conditions. The FEB located within the Central Flow Path will be located on the A-1 Talisman site.

2.5.4 Caloosahatchee River (C-43) West Basin Storage Reservoir Project

The Caloosahatchee River (C-43) West Basin Storage Reservoir Project is a CERP project located within Hendry County (USACE 2010). The purpose of the project is to improve the timing, quantity, and quality of freshwater flows to the Caloosahatchee River and Estuary. The project provides approximately 170,000 ac-ft of above-ground storage volume in a two-cell reservoir. Major features of the project include external and internal embankments, and environmentally responsible design features to provide fish and wildlife habitat such as littoral areas in the perimeter canal and deep water refugia within the reservoir. The project contributes toward the restoration of ecosystem function in the Caloosahatchee Estuary by maintaining a desirable minimum flow of freshwater to the estuary during the dry season. The project also contributes to a reduction in the number and severity of events where harmful amounts of freshwater from basin runoff and Lake Okeechobee are discharged to the estuary. These two primary functions help to moderate unnatural changes in salinity that are detrimental to estuarine communities.

2.5.5 Indian River Lagoon-South Project

The Indian-River Lagoon-South Project is a CERP Project that is located within Martin and St. Lucie Counties (USACE 2004a). The purpose of the project is to improve surface-water management in the C-

23/C-24, C-25, and C-44 basins for habitat improvement in the St. Lucie River Estuary and southern portions of the Indian River Lagoon. Project features include the construction and operation of four above ground reservoirs to capture water from the C-44, C-23, C-24, and C-25 canals for increased storage (130,000 acre-ft), the construction and operation of four STAs to reduce sediment, phosphorous, and nitrogen to the estuary and lagoon, the restoration of over 90,000 acres of upland and wetland habitat, the redirection of water from the C-23/24 basin to the north fork of the St. Lucie River to attenuate freshwater flows to the estuary, muck removal from the north and south forks of the St. Lucie River and middle estuary. The project is expected to provide significant water-quality improvement benefits to both the St. Lucie River and Estuary and Indian River Lagoon by reducing the load of nutrients, pesticides, and suspended materials from basin runoffs.

2.5.6 Operations at Southern WCA 3A, ENP, and the South Dade Conveyance System

~~The current approved operational plan for southern WCA 3A, ENP, and the SDCS as of October 2012 is known as the ERTP. It superseded the 2006 Interim Operational Plan for Protection of the Cape Sable seaside sparrow (IOP) and is intended to be a transitional plan to be used until completion of the final operational plan that was to be developed as part of the MWD and Canal 111 South Dade Projects. The final operational plan for these two projects has not yet been developed. IOP was the governing regulation schedule for the project area at the start of the CEPP planning process. In addition, existing hydrologic conditions within the project area are a result of IOP operations from 2002 to 2012. Therefore, for planning purposes, the CEPP FWO project condition includes ERTP as the operational plan. The ERTP contains an operational constraint at gage G-3273 of 6.8 ft NGVD and a maximum operational stage limit of 7.5 ft NGVD in the L-29 borrow canal. The CEPP alternatives will consider and potentially include higher stages in the L-29 borrow canal.~~ The 2006 Interim Operational Plan for Protection of the Cape Sable seaside sparrow (IOP) was the governing regulation schedule for the project area at the start of the CEPP planning process. In addition, existing hydrologic conditions within the project area are a result of IOP operations from 2002 to 2012. Therefore, for planning purposes, the existing condition includes IOP as the operational plan. The current approved operational plan for southern WCA 3A, ENP, and the SDCS as of October 2012 is known as the Everglades Restoration Transition Plan (ERTP). It superseded the 2006 IOP and is intended to be a transitional plan to be used until completion of the final operational plan that was to be developed as part of the MWD and Canal 111 South Dade Projects. The final operational plan for these two projects has not yet been developed. Therefore, for planning purposes, the CEPP FWO project condition includes ERTP as the operational plan. The ERTP contains an operational constraint at gage G-3273 of 6.8 ft NGVD and a maximum operational stage limit of 7.5 ft NGVD in the L-29 borrow canal. The CEPP alternatives will consider and potentially include higher stages in the L-29 borrow canal.

2.5.7 Modified Water Deliveries Project

The 1989 Everglades National Park Protection and Expansion Act (Public Law 101-299) directed the Secretary of the Army, in consultation with the Secretary of the Interior, to construct modifications to the C&SF to improve water deliveries to ENP. Construction of modifications to the C&SF project as authorized in the 1989 Act are justified by the environmental benefits to be derived by the Everglades ecosystem in general and by the Park in particular and shall not require further economic justification. The goal of the MWD Project is to improve water deliveries into ENP and, to the extent practicable, take steps to restore the natural hydrologic conditions within ENP.

The following MWD features have been constructed or are in progress.

1. Conveyance and Seepage Control Features
    a. Spillway Structure S-355 A and B in the L-29 Levee - complete;

b. S-333 and S-334 Modifications - complete;
c. Tigertail Camp Raising - complete;
d. Osceola Camp Elevation Evaluation - complete;
e. S-331 Command and Control - complete;
f. Pump Station S-356 – complete (temporary pump station), no operational permit;
g. Degradation of 9 miles of the L-67 Extension Canal and Levee - 4 miles complete.

2. Flood Mitigation for 8.5 Square Mile Area
   a. Perimeter Levee - complete;
   b. Seepage Collector Canal - complete;
   c. Pump Station S-357 - complete;
   d. Detention Area - complete;
   e. Seepage Collection Addition – design in progress.

3. Tamiami Trail Modifications
   a. One Mile Bridge Construction - in progress;
   b. Road Reconstruction and Resurfacing Construction (to accommodate maximum stages in the L-29 Canal up to 8.5 feet NGVD) - in progress.

4. Project Implementation Support
   a. Monitoring and Mitigation – ongoing;
   b. Technical and Project Management Support – ongoing;
   c. G-3273 Relaxation and S-356 Pump Station Test (1st year) – in progress.

For planning purposes, the MWD Project will be assumed to be complete upon completion of those features currently under construction. In the absence of a final operational plan for the MWD Project, the modeling of operations for the CEPP FWO project condition assumes the L-29 borrow canal maximum operational limit at 7.5 ft NGVD as per 2012 ERTP operations. The one mile MWD eastern MWD Tamiami Trail bridge is represented in the RSMGL simulation of the FWO condition.

2.5.8 Site 1 Impoundment Project

The purpose of the Site 1 Impoundment Project is to capture and store excess surface water runoff from the Hillsboro watershed as well as releases from the Arthur R. Marshall Loxahatchee National Wildlife Refuge (LNWR) and Lake Okeechobee (USACE 2006). Located in the Hillsboro Canal Basin in southern Palm Beach County, the project will supplement water deliveries to the Hillsboro Canal by capturing and storing excess water currently discharged to the Atlantic Coastal Waterway. These supplemental deliveries will reduce demands on LNWR. Project features include a 1,660 ac above ground storage reservoir, an inflow pump station, discharge gated culvert, emergency overflow spillway, and a seepage control canal with associated features. Project features will also provide groundwater recharge, help reduce seepage from adjacent natural areas and prevent saltwater intrusion by releasing impounded water back to the Hillsboro Canal when conditions dictate.

2.5.9 Picayune Strand Restoration Project

The Picayune Strand Restoration Project involves the restoration of natural water flow across 85 square miles in western Collier County that were drained in the early 1960s in anticipation of extensive residential development (USACE 2004b). This subsequent development dramatically altered the natural landscape, changing a healthy wetland ecosystem into a distressed environment. The Picayune Strand Restoration Project will restore wetlands in Picayune Strand (Southern Golden Gate Estates) and in

adjacent public lands by reducing over-drainage, while restoring a natural and beneficial sheetflow of water to the Ten Thousand Islands National Wildlife Refuge. Project features include 83 plugs in four canals, 227 miles of road removal, and the addition of pump stations (3) and spreader swales to aid in rehydration of the wetlands. The Picayune Strand Restoration Project is located west of the RSMGL hydrologic model domain.

2.5.10 Broward County Water Preserve Areas Project

The Broward County Water Preserve Areas (WPA) Project is a CERP project that is located within the study area of CEPP (USACE 2012b). Three impoundment areas will be constructed to reduce seepage, provide groundwater recharge, provide water supply to urban areas, and help prevent saltwater intrusion. Pollution load reduction targets necessary to protect water quality within the receiving waters are included in the design. The three project features consist of the WCA 3A/3B Levee Seepage Management system designed to reduce seepage by allowing higher water levels within the L-33 and L-37 borrow canals; the C-11 Impoundment in western Broward County, which will collect direct runoff from the western C-11 drainage basin, thereby reducing the S-9 pumping into WCA 3A and the C-9 Impoundment, located in the western C-9 Basin, designed to store runoff from the C-9 drainage basin and divert water from the western C-11 Basin and aid to reduce seepage. Once constructed, the Broward County WPA will reduce storm water deliveries to WCA 3, thereby increasing the overall quality of water available for delivery to ENP.

2.5.11 Tamiami Trail Modifications: Next Steps Project

The DOI, through the National Park Service (NPS) and ENP, completed a study to evaluate the feasibility of additional Tamiami Trail bridge length, beyond that to be constructed pursuant to the MWD Project to restore more natural water flow to ENP and Florida Bay and for the purpose of restoring habitat within ENP (NPS 2010). This study was authorized by the 2009 Omnibus Appropriations Act passed by Congress on March 10, 2009. The Tamiami Trail Modifications Next Steps (TTNS) approved plan called for 5.5 miles of bridging, which would be in addition to the 1-mile bridge authorized by the MWD Project and currently under construction. The remaining unbridged sections of roadway would be elevated to allow a design high water stage of 9.7 ft NGVD in the L-29 borrow canal. This road height is expected to accommodate the maximum potential range of future stage increases envisioned by CERP without damage to the road. The project was authorized by Congress in the Consolidated Appropriations Act, 2012. The DOI is preparing an implementation strategy.

The FWO project condition assumes that additional bridging and road elevation will be accomplished under DOI authority. Since a final operational plan for the MWD Project has not been completed, for planning purposes, the CEPP FWO project condition will assume the 7.5 feet NGVD operational constraint in the L-29 borrow canal that is associated with ERTP will remain in place. CEPP alternatives will identify if and how much bridging and roadway raising are needed to convey CEPP flows. No additional Tamiami Trail bridges, corresponding to the TTNS project features, were represented in the RSMGL simulation of the CEPP FWO condition due to uncertainty regarding the implementation sequence and schedule for the TTNS bridges.

2.5.12 Seepage Barrier near the L-31N Levee

In 2009, the Miami-Dade Limestone Products Association constructed a 1,000 foot long, 18 foot deep slurry wall to reduce seepage between ENP and rock mine properties to the east of ENP. In July 2012, the association completed construction of a 2 mile long, 35 foot deep seepage wall in this same location south of Tamiami Trail. It is unknown whether the extent to which the 2 mile long, 35 foot deep seepage wall will reduce seepage to the east, or whether the association will construct an additional

wall if this new test is ineffective. The association also has an "option" to construct an additional 5 miles of seepage wall south of the 2-mile seepage wall if permitted. Since the capability of the seepage wall to mitigate seepage losses is under ongoing investigation, CEPP will not include any length and depth of seepage wall in the FWO project assumptions. The CEPP alternative plans will have to identify and develop the total amount and types of seepage management needed for the volume and distribution of water that the plans would deliver from WCA 3B and/or ENP. Consistent with these assumptions, the 2 mile seepage wall is not represented in the RSMGL simulation of the FWO project condition.

2.5.13 Biscayne Bay Coastal Wetlands Project

The purposes of the Biscayne Bay Coastal Wetlands (BBCW) Project is to rehydrate wetlands and reduce point source discharge, improve water quality and provide more natural timing and quantity of water to Biscayne Bay (USACE 2012b). The proposed project would replace lost overland flow and partially compensate for the reduction in groundwater seepage by redistributing available surface water entering the area from regional canals. The BBCW Project features were not explicitly included in the CEPP modeling representation of the FWO since these features along the coast in Miami-Dade County were not considered significant for CEPP formulation.

2.5.14 C-111 Spreader Canal Western Project

The C-111 Spreader Canal (C-111 SC) Western Project is a CERP project that is located within the study area of CEPP (USACE 2009). It is intended to improve quantity, timing and distribution of water delivered to Florida Bay via Taylor Slough; improve hydroperiods and hydropatterns in the Southern Glades and Model Lands to restore historic vegetation patterns; and to return coastal salinities to historical recorded conditions though the redistribution of water that is currently discharged to tide. These objectives will be realized through the creation of a hydrologic ridge between Taylor Slough and the C-111 Canal, to reduce seepage loss from Taylor Slough and its headwaters. SFWMD has implemented the features of this project. Information gained from the C-111 SC Western Project will be used for the planning and design of a spreader canal system to replace the existing C-111 Canal (C-111 SC Eastern Project). The Record of Decision was signed on July 19, 2012 and has been transmitted to Congress for authorization.

2.5.15 C-111 South Dade Project

The C-111 South Dade County 1994 Integrated General Reevaluation Report and Environmental Impact Statement (EIS) was published in May 1994 (USACE 1994). This report described a conceptual plan for five pump stations and levee-bounded retention/detention areas to be built west of the L-31N Canal, between the proposed S-332B and S-332D pump stations, to control seepage out of ENP while providing flood mitigation to agricultural lands east of C-111 Canal. The original and current configuration of these structural features is further discussed in the description of IOP Alternative 7R, within the 2006 IOP Final Supplemental EIS (USACE 2006). Operational guidance for the new S-332DX1 structure was included in the ERTP Final EIS (USACE 2012c).

For the FWO project condition, the USACE assumed the C-111 South Dade Project will be completed with Contract 8 (C-111 North Detention Area) and Contract 9 (L-31W canal plugs). The FWO project operations of the C-111 South Dade project features are assumed consistent with ERTP. The FWO project condition assumes no inflows to the C-111 North Detention Area from the 8.5 Square Mile Area detention Area, consistent with MWD 2011 8.5 Square Mile Area Interim Operating Criteria.

556 **2.6 NATIVE AMERICANS**
557 Lands leased to the Miccosukee Tribe of Indians of Florida are currently experiencing long term high
558 water staging in the southern part of WCA 3A, which effects subsistence practices and increases
559 inundation risks to islands utilized by the Tribe.
560
561 Predicted sea level rise for the south Florida area for historic, intermediate and high rates of future sea
562 level rise are +5 inches, +9 inches and +20 inches, respectively
563 http://publications.usace.army.mil/publications/eng-circulars/EC_1165-2-212.pdf. Sea level rise would
564 potentially effect habitation, ceremonial and sacred areas south of Tamiami Trail and west of the
565 Miccosukee Reserved Area under FWO project conditions.
566

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The Seminole Tribe has customary usage Rights in WCA 3A, the Big Cypress Preserve and addition Lands. We recommend adding language to address these rights and analyze how this project will impact these rights under the existing and without analysis.

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4.0 EVALUTION AND COMPARISON OF ALTERNATIVE PLANS

Please open the foldout figure at the end of this section to reference while reading.

Upon identification of the final array of alternatives, each alternative was evaluated for its effects on the environment (ecological and social benefits) (see **Section 5** for details). ~~, the four system of accounts (National Economic Development, Environmental Quality, Regional Economic Development and Other Social Effects), and t~~The alternatives were compared using the Principles and Guidelines (P&G) criteria (Completeness, Acceptability, Efficiency and Effectiveness). Project benefits were quantified using project specific performance measures, planning level costs were calculated for each alternative plan and an analysis was conducted using Cost Effectiveness and Incremental Cost Analysis (CE/ICA) to identify alternatives that maximize environmental benefits compared to costs. The alternatives were also compared using the system of accounts (National Economic Development, Environmental Quality, Regional Economic Development and Other Social Effects). The evaluation and comparison resulted in the identification of the National Ecosystem Restoration (NER) plan and the Tentatively Selected Plan (TSP).

4.1 PLANNING PRINCIPLES AND GUIDELINES EVALUATION CRITERIA

- Principles and Guidelines criteria:
  - Effectiveness: Extent to which an alternative plan alleviates the specified problems and achieves the specified opportunities **(Evaluated in Section 4.1.1)**
  - Acceptability: The workability and viability of the alternative plan with respect to acceptance by state and local entities and the public and compatibility with existing laws, regulations, and public policies. **(Evaluated in Section 4.1.2)**
  - Completeness: The extent to which a given alternative plan provides and accounts for all necessary investments or other actions to ensure the realization of the planned effects. **(Evaluated in Section 4.1.3)**
  - Efficiency: A Cost Effectiveness and Incremental Cost Analysis (CE/ICA) identified plans producing maximal environmental benefits compared to costs **(Evaluated in Section 4.2)**

4.1.1 Effectiveness

The extent to which an alternative plan alleviates the specified problems and achieves the specified opportunities for CEPP is a measure of effectiveness. Section 1 of this report describes the problems and opportunities throughout the diverse project area, and includes discussion of how the problems and opportunities drove the development of the planning objectives. Since the problems are closely linked to the objectives, the effectiveness is addressed by how well the alternatives achieve the planning objectives. Each of the objectives is addressed **Table 4-11**. Additional details on hydrologic and ecological performance can be found in **Section 5.1, Appendix C** (Environmental Information), and **Appendix G** (Environmental Benefits Model). Additional details on hydrologic performance can be found in **Appendix A** (Engineering).

Table 4-1. Summary Comparison of Effectiveness of Meeting the Planning Objectives of CEPP.

FWO	Alt 1 (S-333)	Alt 2 (gravity)	Alt 3 (pumps)	Alt 4 (flowway)
Objective: Restore seasonal hydroperiods and freshwater distribution to support a natural mosaic of wetland and upland habitat in the Everglades System				
Ridge and slough is the most common habitat in the Greater Everglades. The Slough Vegetation performance measure provides a measure of the suitability of hydrologic conditions for two key species of slough vegetation. All alternatives improve conditions for slough vegetation. They maximize continuous hydroperiods and minimize dry downs and improve average wet season and dry season depths. Performance between alternatives varies by 1-4 percent, depending on location. All alternatives are closest to the targets in southern WCA 3A and ENP. *(Performance Measure for Slough Vegetation, 0-100 scale, target is 100)*				
33 to 37 in zones north of I-75; 40 to 79 in zones south of I-75	64 to 68 north 60 to 81 south	61 to 66 north; 60 to 81 south	61 to 66 north; 62 to 83 south	61 to 67 north 58 to 83 south
Objective: Improve sheetflow patterns and surface water depths/durations in the Everglades in order to reduce soil subsidence, frequency of damaging peat fires, decline of tree islands, and salt water intrusion.				
The intensity of drying events that occurred in the pre-drained Everglades ridge and slough landscape produced a balance between organic soil accretion during wet periods and loss during droughts and fires. The Central and Southern Florida (C&SF) Project substantially altered hydrology and shifted the balance toward less soil accretion and more oxidation and fire. All alternatives reduce the risk of soil oxidation and peat fires relative to the FWO. All alternatives perform similar to each other. Alternatives increase the amount of time that water levels are above the ground surface and do this for a larger portion of the project area relative to the FWO. Alternatives reduce soil oxidation and fire more in the northern zones than in the southern zones. *(Performance measure for soil oxidation, 0-100 scale, target is 100)*				
26 to 60 in zones north of I-75; 51 to 71 in zones south of I-75	85 to 100 north; 77 to 93 south	82 to 100 north; 77 to 95 south	81 to 100 north; 84 to 96 south	83 to 100 north; 86 to 100 south
Objective: Reduce high volume discharges from Lake Okeechobee to improve the quality of oyster and SAV habitat in the Northern Estuaries (St Lucie Estuary (SLE) and Caloosahatchee (Cal) Estuary)				
High volume discharges from Lake Okeechobee can result in rapid decreases in salinity. Sustained exposure to reduced salinity produces adverse effects on oyster reefs, juvenile marine fish, sea grass beds, and other submerged aquatic vegetation in the Northern Estuaries (St Lucie Estuary and Caloosahatchee Estuary). Reducing the frequency and magnitude of the high volume discharges improves conditions in these estuaries. All alternatives reduce high volume discharges to the Northern Estuaries. Since they are dependent on the operations of the Flow Equalization Basin, STA 3/4, and Lake Okeechobee, and all alternatives contain the same features and operations. The CEPP alternatives reduce the moderately high lake inflow and estuary discharge events by diverting flow to the south, to the storage and treatment facilities, and reducing flows that would have otherwise gone to the estuaries. The largest lake inflow and estuary discharge events far exceed the combined available storage and treatment capacity in the A1 and A2 FEBs, STA 3/4, and STA 2, and as a result, the CEPP alternatives do not substantially reduce the frequency of extreme high flows to the Northern Estuaries. *(Number of months of high flow and of extreme high flows, fewer is better)*				
High flows: SLE - 46 months; Cal- 81 months Extreme high flows: SLE - 26 months; Cal – 33 months	High flows: SLE - 34 months; Cal- 68 months; Extreme high flows: SLE – 24 months; Cal – 31 months			
Objective: Reduce water loss (Seepage) out of the natural system to promote appropriate dry season recession rates for wildlife utilization				
Without management of seepage, a large portion of the new water delivered to the system would seep across and under the eastern perimeter levees, reducing the desired hydroperiod and water depth changes that produce the ecosystem benefits of the project alternatives. Allowing more seepage than existing and FWO conditions may also				

FWO	Alt 1 (S-333)	Alt 2 (gravity)	Alt 3 (pumps)	Alt 4 (flowway)
cause an increased risk of flooding in the urban and agricultural areas east of the perimeter levee. Allowing less seepage than existing and future without project conditions may reduce water supply availability for municipal and agricultural uses and Biscayne Bay. All alternatives maintain seepage rates to the east that are equivalent to or less than the FWO. Thus, the alternatives retain the existing and new water within the natural system. However, some of the alternatives allow less water to enter the urban areas to the east than FWO, potentially adversely affecting water supply. The alternatives require minor modification to allow more water to move eastward so that water supply is not reduced. Any alternative identified as the TSP will undergo revisions to reduce seepage management infrastructure and consequently costs to maintain water supply integrity of the Lower East Coast.				
No change in seepage	All alternatives allow less seepage than the FWO			
Objective: Restore more **natural water level responses to rainfall** to promote plant and animal diversity and habitat function.				
The target dry season recession rate in WCA 3A is approximately 0.05 feet per week from January 1 to June 1 (or onset of the wet season). This equates to a net stage difference of approximately 1.0 feet. Recession rates that are too slow prevent the gradual concentration of small fish and amphibian prey species into smaller, higher concentration areas where wading birds and other predators can catch them – the fish and other prey stay widely dispersed. Recession rates that are too fast lead to dryouts before the end of the dry season and eliminate the small fish and amphibians prey base. Rapid recession rates also may harm vegetation communities which are critical to nesting success of several bird species. All alternatives performed better than FWO, with more weeks in the target and moderate recession rate zones, and fewer weeks in the lowest zone (recession rate too fast or too slow). All alternatives performed similar to each other. *(Dry season recession rate in WCA 3A (strive for 0.05 feet/week from Jan 1 to Jun 1))*				
115 of 880 weeks within 0.05 of target rate	143 of 880 weeks within 0.05 of target rate	142 of 880 weeks within 0.05 of target rate	144 of 880 weeks within 0.05 of target rate	148 of 880 weeks within 0.05 of target rate
Objective: Increase availability of **water supply.**				
NEED LANGUAGE All alternatives performed the same for the Lake Okeechobee Service Area, since they depend on the operations of the Flowage Equalization Basin, STA 3/4, and Lake Okeechobee, and all alternatives contain the same operations for these features. The alternatives had less water supply cutback volumes than the FWO during 7 of the 8 years with the highest water supply cutback volumes (excluding 1981). This means that the alternatives were better than the FWO at meeting water supply demands when water supply was most limited.				
	Alternatives have lower cutback volumes than FWO for 7 of the 8 years with largest cutbacks			

Comment [dec1]: This statement is incorrect. Seepage varies widely across the alternatives, and there is also a wide range of spatial variability of seepage. Net seepage is reduced by seepage return pumps.

Kevin/Brad – I would like to further discuss with you how this evaluation was developed, so we can agree how to best correct.

Comment [dec2]: See comment above.

Comment [dec3]: Is this objective only evaluated based on recession rates. Recommend additional consideration of the increased spatial extent of sheetflow and hydrologic connectivity (etc.) in evaluation of this objective.

Comment [baf4]: need to finish this description of the water supply metric.

Do we add something for LEC WS?

4.1.2 Acceptability

Acceptability is the workability and viability of the alternative plan with respect to acceptance by state and local entities and the public and compatibility with existing laws, regulations, and public policies. Acceptability was evaluated and compared for stakeholder concern, and policy and legal issues.

4.1.2.1 Stakeholder Concern

The following section includes a description of specific concerns that have been raised regarding acceptability of alternative components by project component (**Table 4-2**).

Table 4-2. Stakeholder Concerns Regarding Acceptability of Alternative Components by region

All Alternatives Concerns: Flow Equalization Basin access and recreational opportunities should be provided Provide deep water refugia to support fish and wildlife during dry periods Limited additional water supply afforded by the project Limited additional benefits to the Northern Estuaries
All Alternatives Concerns: Potential effects on upland wildlife from changes in water depths in northern WCA 3A sawgrass areas Increased closure of WCA 3A to public access for hunting Cattail expansion along spreader canal inflow locations Sufficient deep water refugia to support fish and wildlife during dry periods Conflicting concerns about impacts to Miami Canal spoil mounds • Pro: Removing spoil mounds removes an impediment to flow • Con: Removing spoil mounds also removes refuge for fur bearing animals Conflicting concerns about leaving the Miami Canal open south of I-75 • Pro: Filling in the Miami Canal removes an unnatural disturbance in WCA 3A • Con: Filling in the Miami Canal impacts prime fishing opportunities in south Florida
Alternatives 2, 3 and 4: • Pro: Capability for operational flexibility to reduce fire risk • Pro: Fishing in HRF to offset impacts due to Miami Canal backfilling (boat ramps) • Con: Fewer WCA 3A benefits than Alternative 1, yet more costly • Con: Greater impact on recreational hunting access than Alternative 1
Alternative 1: • Pro: Least expensive • Con: Provides minimal sheetflow in WCA 3B, does not remove barriers to flow
Alternative 2: • Pro: Low O&M costs for spillways compared to pumps • Con: Surface water flow does not go south, and lack of flow through WCA 3B, does not remove barriers to flow • Con: Concerns regarding modifications to Agricultural ditches as collectors to aid flow of water out of WCA 3B
Alternative 3: • Pro: Allows greater water than Alternatives 1, 2 and 4 to flow through WCA 3B • Con: Increased costs (construction, O&M) and carbon footprint associated with extensive pumping • Con: Does not increase ecological connectivity
Alternative 4: • Pro: Provides southerly flow direction in a portion of WCA 3B • Pro: Removal of part of L-29 levee creates greatest ecological connectivity between WCA 3B and NESRS • Con: Building a new levee is not removing barriers to flow and levee would be a long term landscape feature • Con: Does not provide flow to the majority of WCA 3B • Con: The lack of control of releases from western WCA 3B could exacerbate dry-outs or reverse flow situations
All Alternatives: • Con: Potential adverse impacts on water supply with seepage management options • Con: Potential adverse impacts to Biscayne Bay with seepage management options • Con: Water quality concerns for infrastructure returning seepage directly to ENP
Alternatives 1 and 2 • Con: Increased capital and O&M costs associated with pumping • Con: Point source discharge rather than distributed flow due to pumping directly to ENP along L-31N

4.1.3 Completeness

Completeness is the extent to which a given alternative plan provides and accounts for all necessary investments or other actions to ensure the realization of the planned effects.

Components in CEPP are interdependent features that necessitated formulation from a systems approach. The components in the central part of the Everglades are hydraulically connected from Lake Okeechobee to Florida Bay; and rely on one another for both inflows and outflows. These interdependencies required system-wide plan formulation from a spatial perspective to optimize structural and operational components, rather than formulating separable components that may not be compatible or complete for the cumulative watershed. Consequently, no alternative is complete unless all of the identified operations and infrastructure are included. In order to maintain completeness and meet constraints during construction, a strategic implementation sequencing and adaptive management plan will be required for any alternative recommended as the TSP.

In addition to the interdependent completeness of the components in the alternatives, there are both CERP and non-CERP activities that will be required to realize benefits are achieved and constraints are met.

- All alternatives in the final array depend on non-CEPP activities:
  - Tamiami Trail Next Steps – 2.6 mile western Bridge and road raising
  - State of Florida – Restoration Strategies Water Quality Infrastructure
  - C-111 South Dade – North Detention Area completion
- All alternatives in the final array depend on CERP activities:
  - Broward County WPAs
  - C-44 Reservoir (IRL-South)
  - C-43 Reservoir

4.2 EFFICIENCY ANALYSIS: ENVIRONMENTAL BENEFITS AND COSTS OF ALTERNATIVE PLANS

The CEPP recommended plan is justified by the environmental benefits derived by the south Florida ecosystem; however, a comparison of the benefits and costs of alternative plans is also conducted to ensure that a selected alternative is efficiently producing the environmental benefits. The measurement of efficiency is the extent to which an alternative plan is the most cost-effective means of alleviating the specified problems and realizing the specified opportunities, consistent with protecting the nation's environment.

Cost effectiveness/incremental cost analysis (CE/ICA) is used to evaluate and compare the production efficiency of alternatives, thus identifying plans that reasonably maximize ecosystem restoration, which is considered in identifying the NER plan. Cost effectiveness analysis begins with a comparison of the costs and outputs of alternative plans to identify the least cost plan for every level of output considered. Alternative plans are compared to identify those that would produce greater levels of output at the same cost, or at a lesser cost, as other alternative plans. Alternative plans identified through this comparison are the cost effective alternative plans. Cost effective plans are then compared by examining the additional (incremental) costs for the additional (incremental) amounts of output produced by successively larger cost effective plans. The plans with the lowest incremental costs per unit of output for successively larger levels of output are the best buy plans. The results of these calculations and comparisons of costs and outputs between alternative plans provide a basis for addressing the decision question "Is it worth it?" i.e., are the additional outputs worth the costs incurred to achieve them?

The CE/ICA analysis follows guidance from the U.S. Army Corps of Engineers , ER 1105-2-100, Appendix E, para. E-36. Costs are based initially on a planning level estimate and benefits are based on the habitat unit (HU) evaluation. As per this guidance, CE/ICA analysis compares the alternative plans' average annual costs against the appropriate average annual habitat unit estimates. The average annual outputs are calculated as the difference between with-plan and without-plan conditions over the period of analysis (through year 2050).

4.2.1 Costs of Final Array of Alternative Plans

Costs represent the difference between conditions without any plan (the "base condition" or "without project condition") and with a plan or alternative. For purposes of this report and analysis, NED costs (National Economic Development costs, as defined by Federal and USACE policy) are expressed in 2013 price levels. Costs of a plan represent the value of goods and services required to implement and operate/maintain the plan. The cost estimate for the alternatives (**Table 4-3**) includes construction, lands, easements, right-of-ways, relocation (LERR), PED costs, construction management and OMRR&R and was developed through engineering design and cost estimation, and real estate appraisal efforts.

4.2.1.1 Overview of the Planning Level Cost Estimating Tool

A Planning Level Cost Estimating Tool has been developed and designed by SFWMD to enable a "Planning Level" Construction Cost Estimate for reservoirs, STA's, ASR's, and canals. The construction costs included in the planning level estimate include PED and construction management. Additionally, the costs include a 30% contingency.

The costs generated by this tool are screening level relative costs, not absolute costs. These costs should only be used to compare the costs of alternatives relative to one another, and are not to be used as the detailed costs for construction. These costs were developed using historical costs from SFWMD constructed projects. This cost estimating tool can be used to generate simple cost estimate comparisons between specific features, components and configurations. The tool takes into account soil conditions such as muck, sand, and clay, as well as local impacts such as the construction or removal of roads, bridges, transmission lines, railroads, rail yards, and/or railroad bridges, housing, farms, telemetry, etc. This tool does not take into account value engineering for having multiple features with shared components.

4.2.1.2 Overview of Real Estate Costs

A detailed analysis of the real estate requirements of the final array was completed. Each parcel required for construction or restoration activities was identified, characterized, and a value estimate was calculated. The real estate was valued in fee, however, lesser estates and interests in land could be considered.

Each of the alternatives had essentially the same land requirements. For all four of the alternatives, 14,521 acres in the A-2 Compartment were valued at SFWMD actual acquisition costs since these lands were purchased with both Federal Farm Bill funds and SFWMD funds. For all four of the alternatives, 145.5 acres (90.93 acres owned by the State of Florida and 54.57 acres owned by SFWMD) were required for the new feeder canal leading from the Miami Canal on the west running east to the A-2 Compartment. These lands were valued at an estimated fair market value. For all four of the alternatives, lands were required for construction of pump stations, and other structures within Water Conservation Areas 3A and 3B. These lands were not assigned a value as they were provided for the prior Central and Southern Florida Flood Control Project.

4.2.1.3 Average Annual Costs

The timing of a plan's costs is important. Construction and other initial implementation costs cannot simply be added to periodically recurring costs for project operation, maintenance and monitoring if meaningful and direct comparisons of the costs of the different alternatives are to be made. A common practice of equating sums of money across time with their equivalent at an earlier point in time is the process known as discounting. Through this mathematical process, which involves the use of an interest rate (or discount rate) officially prescribed by Federal policy for use in water resource planning analysis (set at 3.75% at the time of the evaluation), the cost time stream for the alternative plans were mathematically translated into an equivalent time basis value. There is some uncertainty as to how any of the alternatives would be implemented. It is recognized that any of the plans would likely be implemented over a considerable length of time. For purposes of this evaluation, construction costs are assumed to incur on an equal monthly basis during the implementation of the alternative plans and would be implemented with no fiscal appropriation constraints.

ER 1105-2-100 requires that interest during construction IDC be computed, which represents the opportunity cost of capital incurred during the construction period. IDC was computed for PED costs from the middle of the month in which the expenditures were incurred until the first of the month following the estimated construction completion date. IDC was computed for both real estate and construction costs. IDC was computed for the total real estate cost starting from the month prior to construction commencing. The total first cost is the sum of construction and other capital cost, such as real estate and pre-construction. The total project investment is the first cost plus IDC. Table 4-3 summarizes the total investment cost and average annual costs of each alternative plan.

Table 4-3. Planning Level Construction and Investment Cost of Alternative Plans.

	SUMMARY OF COSTS FOR CEPP ALTERNATIVE PLANS*			
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Cost Component				
Construction Features	$ 952,500,000	$1,123,300,000	$ 1,174,700,000	$ 1,090,500,000
Lands	$41,200,000	$38,700,000	$38,700,000	$38,700,000
Total First Cost	**$993,700,000**	**$1,162,000,000**	**$1,213,400,000**	**$1,129,200,000**
Interest During Construction				
Construction	$53,000,000	$62,500,000	$65,400,000	$60,700,000
Lands	$4,300,000	$4,300,000	$4,300,000	$4,300,000
Total Interest During Construction	**$57,300,000**	**$66,800,000**	**$69,700,000**	**$65,000,000**
Total Project Investment	**$1,051,000,000**	**$1,228,800,000**	**$1,283,100,000**	**$1,194,200,000**
Average Annual Cost				
Interest & Amortization	$61,300,000	$71,600,000	$74,800,000	$69,600,000
Operation & Maintenance	$5,500,000	$6,400,000	$6,900,000	$6,500,000
Average Annual Cost	**$66,800,000**	**$78,000,000**	**$81,700,000**	**$76,100,000**

* NER Annual costs are based on a 28-year period of analysis costs do not include Recreation Cost for Plan Formulation
*Costs are planning level costs and do not coincide exactly with the detailed costs of the TSP presented in other sections of the report. Computation of the detailed estimate for the TSP will be based on additional engineering and design.

4.2.2 Ecological Evaluation (Habitat Units)

The CEPP devised a project-specific tool, referred to as the CEPP planning model to evaluate alternatives within the CEPP project area. The primary areas evaluated included the St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary, WCAs 3A and 3B, ENP, and Florida Bay. The CEPP planning model is a Microsoft (MS) Excel spreadsheet that utilizes project performance measures to derive a Habitat Unit (HU) score that represents the ecological performance achieved by each alternative. The complete description of the model and further information pertaining to the alternative evaluation is described in **Appendix G (Benefit Model)**.

The CEPP planning model was used to aggregate the results of project performance measures. Each of the performance measures for the CEPP planning effort were derived from those approved for use in CERP by Restoration, Coordination and Verification (RECOVER). Eight performance measures were identified (**Table 4-4**). Performance measures were developed from the Northern Estuaries, Greater Everglades Ridge and Slough, and Florida Bay Conceptual Ecological Models (CEMs) (Barnes 2005, Ogden 2005a, Rudnick et. al. 2005, Sime 2005). CEMs, as used in the Everglades restoration program, are non-quantitative planning tools that identify the major anthropogenic drivers and stressors on natural systems, the ecological effects of these stressors, and the best biological attributes or indicators of these ecological responses (Ogden et al. 2005b). These CEMs have been extensively peer reviewed and provide the framework for the planning and assessment of the CERP.

Each performance measure has a predictive metric and targets based on hydrologic requirements necessary to meet empirical or theoretical ecological thresholds. Detailed estimates of hydrology across the 41-year period of record (January 1965 – December 2005) generated by the RSM-BN (for the Northern Estuaries) and the RSM-GL (for the Greater Everglades and Florida Bay) were used to calculate performance measure scores.

Table 4-4. Performance Measures Used to Quantify Identify National Ecosystem Restoration Plan

REGION	PERFORMANCE MEASURE	DESCRIPTION
Northern Estuaries	**Caloosahatchee Estuary** • PM 6.1 Low Flow Targets • PM 6.2 High Flow Targets **St. Lucie Estuary** • PM 7.1 Low Flow Targets • PM 7.2 High flow Targets	Measure of flow events correlated to be representative of median salinities favorable to marine fish, shellfish, oyster and SAV. Based on frequency of flows from S-79 and S-80.
Greater Everglades	**Hydrologic Surrogate for Soil Oxidation** • PM 3.1 Drought Intensity Index	Measure of cumulative drought intensity to reduce exposure of peat to oxidation.
	Inundation Duration: Ridge and Slough Landscape • PM 1.1 Percent Period of Record of Inundation	Measure of the number and duration of inundation events
	Number and Duration of Dry Events: Shark River Slough • PM 4.1 Number of Dry Events • PM 4.2 Duration of Dry Events • PM 4.3 Percent Period of Record of Dry Events	Measure of the number of times and mean duration in weeks that water drops below ground.

REGION	PERFORMANCE MEASURE	DESCRIPTION
	Sheet flow in the Ridge and Slough Landscape • PM 2.1Timing of Sheetflow • PM 2.2 Continuity of Sheetflow • PM 2.3 Distribution of Sheetflow	Measure of the timing and distribution of sheet flow across the landscape.
	Slough Vegetation Suitability • PM 5.1 Hydroperiod • PM 5.2 Drydown • PM 5.3 Dry Season Depth • PM 5.4 Wet Season Depth	Measure to evaluate the hydrologic suitability for slough vegetation
Southern Coastal Systems	**Salinity in Florida Bay** • PM 8.1 Dry Season Regime Overlap • PM 8.2 Wet Season Regime Overlap • PM 8.3 Dry Season High Salinity • PM 8.4 Wet Season High Salinity	Measure of salinities correlated to be representative of salinities favorable to marine fish, shellfish, oyster and SAV.

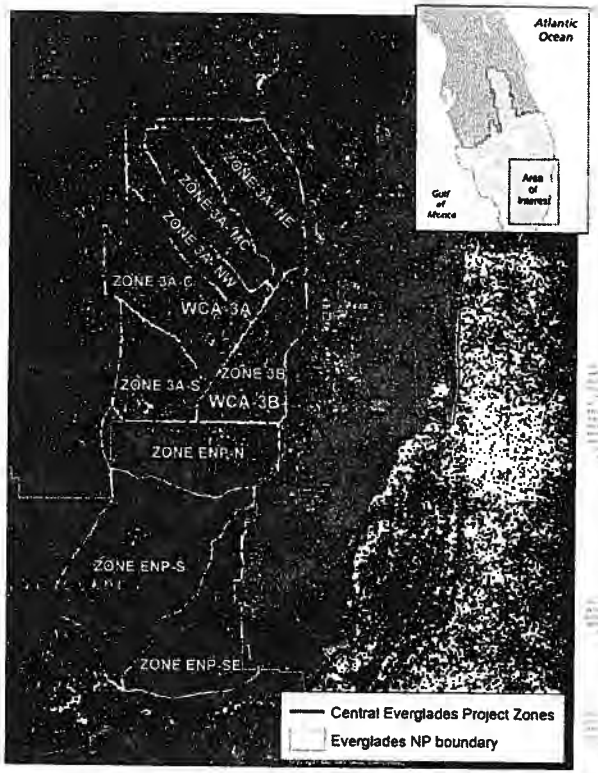

Figure 4-1. Zones for Habitat Suitability within the Greater Everglades

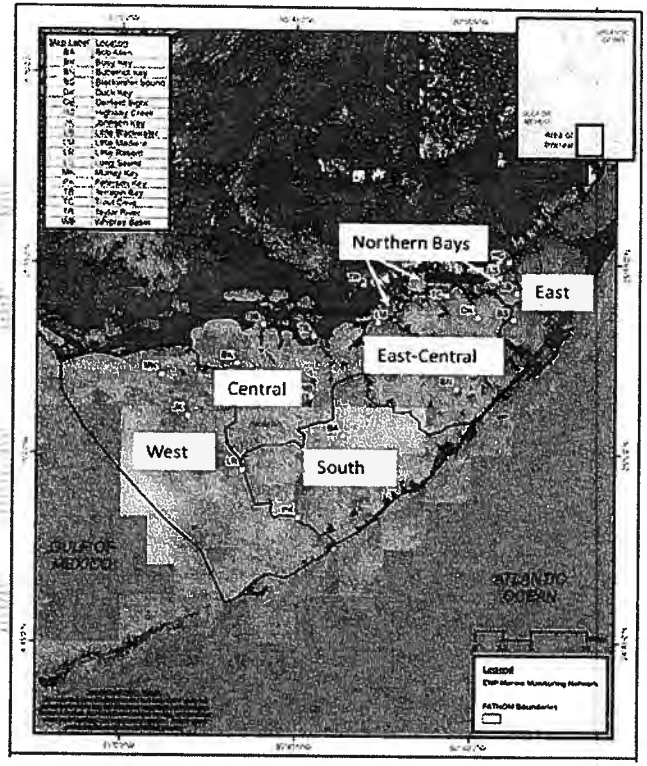

Figure 4-2. Zones for Habitat Suitability within Florida Bay

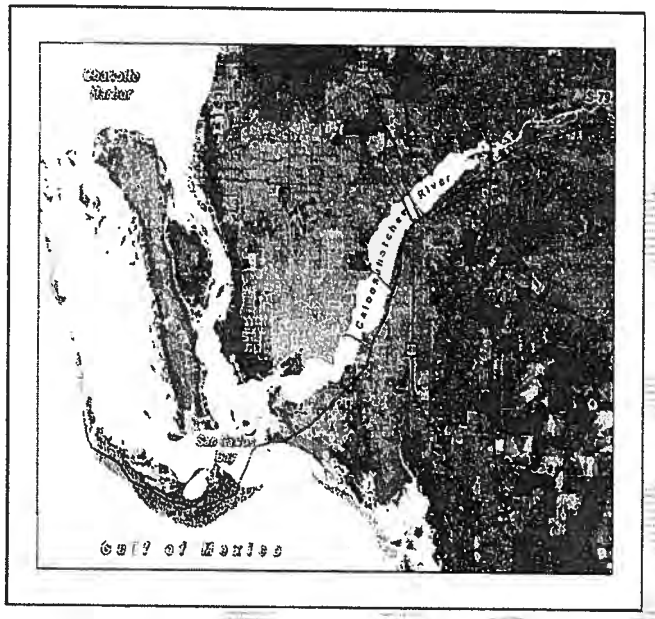

Figure 4-3. Zones for Habitat Suitability within the Caloosahatchee Estuary

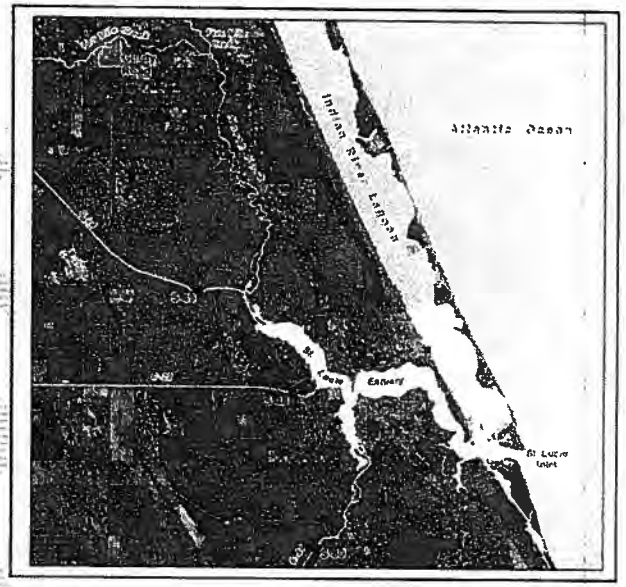

Figure 4-4. Zones for Habitat Suitability within the St. Lucie Estuary

Performance measure scores are displayed as a function of restoration potential or achievement of the target with the minimum value of zero representing a fully degraded ecosystem and a maximum value of 100 representing the restoration target. Habitat suitability indices associated with each performance measure are then summed and applied to the total spatial extent (acres) for each of the 17 zones (**Figure 4-1 through 4-4**) to produce habitat units.

Habitat unit results for the existing conditions baseline (ECB), the future without project condition (FWO) and the alternatives are displayed in **Table 4-5**.

Table 4-5. Habitat Unit Results.

Project Region (Zone)	ECB	FWO	Alt 1	Alt 2	Alt 3	Alt 4
Caloosahatchee Estuary (CE-1)	2,839	34,070	39,038	39,038	39,038	39,038
St Lucie Estuary (SE-1)	2,099	2,399	4,798	4,798	4,798	4,798
Total Northern Estuaries	**4,938**	**36,469**	**43,836**	**43,836**	**43,836**	**43,836**
Northeast WCA 3A (3A-NE)	44,451	29,634	96,311	96,311	96,311	96,311
WCA 3A Miami Canal (3A-MC)	32,847	27,373	57,874	57,092	56,310	57,092
Northwest WCA 3A (3A-NW)	30,970	30,266	54,902	53,494	53,494	53,494
Central WCA 3A (3A-C)	108,414	105,669	109,786	109,786	109,786	109,786
Southern WCA 3A (3A-S)	69,247	68,423	68,423	67,598	67,598	68,423
WCA 3B (3B)	55,697	48,842	58,268	59,125	57,411	54,840
Northern ENP (ENP-N)	57,557	55,054	102,601	101,350	103,852	102,601
Southern ENP (ENP-S)	124,068	126,454	169,400	169,400	176,558	188,488
Southeast ENP (ENP-SE)	79,711	81,062	82,413	82,413	82,413	83,764
Total Greater Everglades	**602,962**	**572,777**	**799,978**	**796,569**	**803,733**	**814,799**
Florida Bay West (FB-W)	23,693	20,534	42,647	42,647	47,386	52,124
Florida Bay Central (FB-C)	8,205	8,205	15,589	14,769	17,230	17,230
Florida Bay South (FB-S)	16,614	14,659	30,296	29,318	33,228	35,182
Florida Bay East Central (FB-EC)	21,984	20,225	36,933	36,933	42,209	46,606
Florida Bay North Bay (FB-NB)	2,154	2,028	2,661	2,661	2,788	2,915
Florida Bay East (FB-E)	9,440	8,685	10,573	10,573	10,950	10,950
Total Florida Bay	**82,090**	**74,336**	**138,699**	**136,901**	**153,791**	**165,007**
Total All Regions	**689,990**	**683,582**	**982,513**	**977,306**	**1,001,360**	**1,023,642**

4.2.2.1 Average Annual Habitat Units

The average annual outputs were calculated as the difference between the with-plan and without plan conditions over the period of analysis (through year 2050). The average annual habitat unit lift is calculated as subtracting the future without project habitat units from the future with project habitat units for each year and averaging over the 28 period of analysis. The anticipated time it will take to realize the benefits is necessary to calculate the average annual lift associated with each alternative.

Natural ecosystems are complex, dynamic systems and the exact functional form of the relationship among variables is often unknown. The analysis of ecological response times for large, diverse

ecosystems is extremely difficult to calculate. A linear function is the simplest quantitative way to describe the relationship between two variables. Linear functions essentially split the difference between over-and under-estimation, and are more conservative estimates of ecological response. A linear approach was used to predict ecological response time for each of the three regions of the project area for both the future without and future with project conditions; however the anticipated time to realize benefits varied with each region.

Northern Estuaries

An ecological response time for the Northern Estuaries was determined based on the ability of CEPP to improve conditions for oysters and submerged aquatic vegetation. The ecological response time was estimated to be approximately 6 years until full impact would be realized.

Greater Everglades

An ecological response time for the Greater Everglades was determined based on the ability of CEPP to improve conditions for aquatic and herbaceous vegetation communities, periphyton, piscivorous fish, aquatic prey base organisms, and geomorphological reshaping of ridges and tree islands. The ecological response time was estimated to be approximately 75-100 years until full impact would be realized, with a certain percentage of benefits accruing much faster as identified in **Table 4-6.**

Table 4-6. Ecological Response Time for Greater Everglades.

Percentage of Benefit Achieved Over Time for the Greater Everglades				
0-2 Years	2-5 Years	5-10 Years	25-50 Years	75-100 Years
50%	70%	80%	90%	100%

Florida Bay

An ecological response time for Florida Bay was determined based on the ability of CEPP to improve conditions for phytoplankton, zooplankton, seagrass, and large and small invertebrates. The ecological response time was estimated to be approximately 15-25 years until full impact would be realized, with a certain percentage of benefits accruing much faster as identified in **Table 4-7.**

Table 4-7. Ecological Response Time for Florida Bay.

Percentage of Benefits Achieved Over Time for Florida Bay				
0-2 years	2-5 years	5-10 years	10-15 years	15-25 years
40%	80%	90%	95%	100%

Table 4-8 includes the average annual lift when taking into account the ecological response times described above.

Table 4-8. Average Annual Habitat Unit Lift.

	Average Annual Habitat Units				
	No Action	ALT 1	ALT 2	ALT 3	ALT 4
St Lucie	2,363	4,471	4,471	4,471	4,471
Caloosahatchee	30,285	34,650	34,650	34,650	34,650
Greater Everglades	580,808	747,566	745,064	750,322	758,444
Florida Bay	75,586	129,573	128,065	142,232	151,640
Total	689,041	916,260	912,250	931,676	949,205
Average Annual Habitat Unit Lift		227,219	223,209	242,635	260,164

4.2.3 Cost Effective Analysis/Incremental Cost Analysis

Sometimes it is difficult to summarize the results of CE/ICA when the analyses are performed separately on HUs for distinct species, communities or geographic areas. This phenomenon often occurs simply because different management measures or alternative plans have different functions, provide different types of output, and provide benefits to different biological communities. This is the case for the CEPP plans, in which certain features or alternatives provide greater benefits to Florida Bay and Everglades National Park, while other alternatives provide greater benefits for Northern WCA 3A and WCA 3B.

Costs and benefits for each geographic area (Northern Estuaries, Greater Everglades and Florida Bay) were examined both independently and combined. However, a combined HU score summing all geographic areas of the study area, while not appropriately representing the significance of each geographic area, provides a valuable cumulative analysis for determining the plan which best meets the needs of the entire watershed and was be used to ensure a cost effective solution is identified.

For the incremental cost analysis, only the cost effective plans are arrayed by increasing output to clearly show changes in cost (i.e., increments of cost) and changes in output (i.e., increments of output) of each cost effective alternative plan compared to the without plan condition. The plan with the lowest incremental costs per unit of output of all plans is the first best buy plan. After the first best buy plan is identified, all larger cost effective plans are compared to the first best buy plan in terms of increases in (increments of) cost and increases in (increments of) output. The alternative plan with the lowest incremental cost per unit of output (for all cost effective plans larger than the first best buy plan) is the second best buy plan. In summary, CE/ICA was performed using the following four spatial metrics to represent various ecosystem outputs of the CEPP alternatives:

1. System-Wide HU Score
2. Northern Estuaries
3. Greater Everglades
4. Florida Bay

4.2.3.1 CE/ICA Analysis – Total System-Wide Outputs

As can be seen in the following table (**Table 4-9**), both Alternatives 1 and 4 are identified as being cost effective for the aggregated system-wide habitat units. Alternatives 2 and 3 are both more costly than Alternative 4 and provide fewer overall habitat units, and these alternatives are not cost effective for the production of system-wide habitat units.

Table 4-9. Results of cost effectiveness analysis for total system-wide performance

	ALT1	ALT4	ALT2	ALT3
Average Annual Cost	**$66,800,000**	**$76,100,000**	**$78,000,000**	**$81,700,000**
Northern Estuaries	6,474	6,474	6,474	6,474
Greater Everglades	166,758	177,636	164,256	169,514
Florida Bay	53,987	76,054	52,479	66,646
Average Annual System-wide HUs	227,219	260,164	223,209	242,635
Cost Effective	Yes	Yes		

Best Buy		Yes		

Notes: Values for alternatives are differences between "Without" plan and "With" plan on an average annual basis. Values assume system benefits (ecosystem outputs that would accrue to the study area if rest of CERP were constructed). Alternatives are arranged by increasing costs.

Table 4-10 shows that there is one best buy plans for the combined system-wide HU production, Alternative 4. Alternative 4 has the lowest cost per unit of output of any of the alternatives ($293 per combined habitat unit). The next best alternative in terms of average cost per combined habitat unit is Alternative 1 ($294), which is also a cost-effective alternative. Alternative 4 provides an increment of 32,945 additional habitat units over Alternative 1 at an incremental cost of over $9,300,000 (incremental cost of $282 per habitat unit). Alternative 4 provides approximately 14% greater benefits for a cost increase of 14%.

Table 4-10. Results of incremental cost analysis

	Cost	Habitat Units	Cost Per HU	Incremental Cost Increase	Incremental HU Increase	Incremental Cost/HU
Alt 1	$66,800,000	227,219	$294	$66,800,000	227,219	$294
Alt 4	$76,100,000	260,164	$293	$9,300,000	32,945	$282

4.2.3.2 Efficiency Analysis

Following the results of the system-wide CE/ICA analysis, a more detailed examination of alternative components following the spatial perspective would:

- Provide insight into the efficiency of specific components,
- Provide logic and opportunity to revise alternatives to maximize benefits while minimizing costs
- Identify information that would support selection of a more expensive cost effective plan (will help identify if the additional benefit is worth the additional cost)

Northern Estuaries

No component refinements resulted from the efficiency analysis of the Northern Estuaries. The benefits accruing to the Northern Estuaries are realized primarily due to the construction of the FEB and Lake Okeechobee operations. However, it should be noted that without the project components in the Greater Everglades and corresponding seepage management features, benefits to the estuaries will not be realized. All alternatives included the same infrastructure and cost ($486 million) relating to the FEB and operations, and as there is no difference in benefits between alternatives for these project components.

Greater Everglades - Water Conservation Area 3A

The components providing benefits to Northern WCA 3A include the HRF and Miami Canal infrastructure needed to distribute the water delivered from the FEB. The hydropattern restoration feature is the primary difference between Alternative 1 (HRF west of the S-8 pump station) and Alternatives 2, 3 and 4 (HRF both west and east of the S-8 pump station).

As can be noted in **Table 4-11**, Alternative 1 was the highest performing alternative for WCA 3A, with little overall difference between alternatives. Alternative 1 also had the least amount of infrastructure,

and consequently the lowest costs to achieve the benefits in WCA 3A. There is minimal spread in benefits between the alternatives (~2% difference) with a large cost difference (~25%).

The main difference in benefits among the alternatives occurs in the northern zones of WCA 3A (3A-NE, 3A-MC and 3A-NW). As the available water flows south, the hydrology and associated ecological benefits equilibrates across the system regardless of where the water entered northern WCA 3A, as noted by the equal benefits occurring in the central zone (3A-C). Differences among alternatives in southern WCA 3A are attributed to differences in infrastructure in delivering water to WCA 3B and/or ENP.

Table 4-11. Capital Costs per Alternative.

Zone	ALT1	ALT2	ALT3	ALT4
Capital Cost	$375,000,000	$472,000,000		
3A-NE	66,677	66,677	66,677	66,677
3A-MC	30,501	29,719	28,937	29,719
3A-NW	24,636	23,228	23,228	23,228
3A-C	4,117	4,117	4,117	4,117
3A-S	0	-825	-825	0

*Note Benefits in this table are lift over the future without condition, and are not annualized; costs are non-annualized planning level construction cost that were used in the calculation of the project first cost

As a result of this efficiency analysis, the HRF and Miami Canal infrastructure included in Alternative 1 was identified to minimize costs while increasing the benefits over the other Alternatives. Consequently, Alternatives 2, 3 and 4 were recommended to be revised to include the HRF and Miami Canal infrastructure contained in Alternative 1.

Greater Everglades - Water Conservation Area 3B and ENP

No cost effective infrastructure modifications were recommended to be made to any of the alternatives. However, it is recognized that operational changes to the L-67 structures could provide greater benefits to WCA 3B and the tentatively selected plan should further investigate the operational changes during the creation of the draft operations plan.

4.3 RECOVER SYSTEM WIDE EVALUATION

CERP's interagency science group (the REstoration COordination and VERification team, or RECOVER) conducted a broad-scale evaluation of ecological effects of Alternatives 1 through 4 on Lake Okeechobee, the Everglades, and the related estuaries, as required in the Programmatic Regulations. The scope of the review covers all areas expected to be improved by CERP, beyond the boundaries expected to be improved by CEPP, and includes a broad range of evaluation tools, performance measures, and best professional judgment that reach beyond the tools and expertise of the traditional USACE planning process. The tools and professional backgrounds of the reviewers represented decades of experience studying and modeling the ecology of south Florida. The purpose of the review is three-fold: to provide insight into whether some alternatives performed better ecologically than others, to indicate whether alternatives may lead to unintended ecological conditions, and to investigate for unintended effects beyond CEPP's boundaries that could potentially contradict CERP on a regional scale.

Key findings:

- All areas that CEPP intends to improve can be improved by the proposed alternatives. These include the Northern Estuaries, the Greater Everglades, and the southern coastal systems.

- The CEPP planning team's intent was to remain within the existing water schedule for Lake Okeechobee and thereby not impact the Lake's ecology. Modeling indicated that there are periods where the Lake's water level is held approximately 6 to 12 inches higher than ECB or FWO levels, while remaining within the current schedule. The higher water events are expected to be rare enough to avoid significant ecological effects.
- Modeling of the hydrology, salinity, and associated ecology of the St. Lucie and Caloosahatchee Estuaries, referred to collectively as the Northern Estuaries, showed a small reduction in fresh water discharges from Lake Okeechobee to the Northern Estuaries. Although the difference was not statistically significant, RECOVER concurred that the change is 'in the right direction' for reducing peak flow events. Ecological projections for oysters and sea grasses, key species in the estuaries, indicated improvements with CEPP implementation. Modeling indicated less fresh water entering the St. Lucie Estuary during low-flow times, when small amounts of fresh water are needed. CEPP operations and future increments of CERP should remain aware of the need for small amounts of base flow into the estuaries during drier times. Future operations of the Indian River Lagoon-South project can be optimized to help provide these base flows.
- In the Greater Everglades, all CEPP Alternatives provide significant improvement towards restoration, compared to the FWO. All alternatives showed improved ecological performance for fish, wading birds, and apple snails in northern and central WCA 3A and Shark River Slough. Improved hydroperiods and sheetflow in WCA 3A, WCA 3B, and ENP result in less soil oxidation, which promotes peat accretion necessary to rebuild the complex mosaic of habitats across the landscape. There are some differences among the Alternatives based on where and how the water will be distributed, i.e., Alt 1 may provide sheetflow to a larger area in WCA 3A, while Alternatives 3 and 4 provide more water to Shark River Slough and the southern marl prairies, improving conditions for fish, wading birds, alligators, tree islands and ridge and slough habitat. Overall, Alternative 4 appears to make the most 'efficient' use of the water CEPP is adding to the Everglades according to the surface flow vectors, sheetflow information, and wading bird, small fish performance measure outputs. Concerns were expressed about the Blue Shanty Levee in Alternative 4 limiting restoration of WCA 3B in the future. Suggestions were made to not include the levee or move it eastward from the Blue Shanty Canal location initially identified for Alternative 4. Given these concerns, the PDT may use adaptive management to determine the true need for, best use of, and best placement of the levee. A preference was also expressed to use passive structures rather than pumps in order to lower operations/maintenance and increase the natural aspects of Everglades restoration.
- The Southern Coastal Systems are estuaries on the southern end of Florida, which require fresh water inputs to reduce salinity levels and maintain ecologically favorable brackish conditions. All CEPP Alternatives showed decreased salinity compared to the FWO in Florida Bay, with associated ecological improvements for key species such as sea trout, pink shrimp, and crocodiles. Alternative 4, which yielded more flow through Shark River Slough, improves estuarine salinity conditions over the other alternatives. The differences among alternatives were much less than the differences between each alternative and the FWO. Based on the hydrologic connections between Shark River Slough and the southwest coastal areas of Florida, there is high likelihood that the southwest coastal areas will experience significant ecological benefits from any CEPP alternative; however, these could not be quantified to be added to CEPP evaluations due to the lack of salinity and ecological models in that area of the estuaries. Biscayne Bay may have reduced fresh water flows in the dry season compared to ECB and FWO in the area of CERP's Biscayne Bay Coastal Wetlands Project and Biscayne National Park, which could have adverse ecological effects. The CEPP planning team will investigate this further during the Savings Clause and Assurances analyses modeling.
- Overall, it appears that the alternatives that provide the most amount of water to ENP provide the least amount of water to Biscayne National Park, and vice versa, almost certainly due to the type of

seepage management and operational protocols employed. This will be addressed in the Savings Clause and Assurances analyses and will continue to be addressed with adaptive management during CEPP's implementation and operation.

- There was consensus that proceeding with an adaptive management approach can further increase the benefits of CEPP and positively influence the implementation of CEPP in sensitive areas. Adaptive management provides a means to learn during implementation and operations, improves delivery of benefits, and can minimize impacts, and therefore adaptive management is a significant source of ecological risk buy-down for CEPP.

4.4 SUMMARY OF OUTPUTS FOR THE FOUR ACCOUNTS

Upon identification of the final array of alternatives, each alternative plan and the FWO were evaluated and compared to identify the expected effects on the environment, the economy, society, and how well each plan met project objectives and avoided constraints.

4.4.1 National Economic Development (NED)

NED benefits are defined as increases in the economic value of the goods and services that result directly from a project. These are benefits that occur as a direct result of the project and are national in perspective. Benefit categories considered by the analysis include recreation, water supply, and flood control. While these three categories represent important national considerations, this project is not formulated to maximize NED benefit streams. NED benefits of the project would therefore be classified as incidental. Water supply and flood control benefits would be included only as a qualitative discussion. Recreation benefit quantification is necessary because those benefits would be used to offset costs of construction of proposed recreation features.

4.4.2 Environmental Quality (EQ)

The EQ account is used to present non-monetary effects on ecological, cultural, and aesthetic resources including the positive and adverse effects of ecosystem restoration plans. The Environmental Quality outputs for this project were displayed in the environmental effects section (**Section 5**), and as habitat units that were assessed for cost effectiveness and incremental cost analysis (**Section 4.2**).

4.4.3 Regional Economic Development Account (RED)

All alternatives are anticipated to provide RED benefits. In particular, the construction of any recommended features would have a beneficial effect on employment and demand for local goods and services during the construction period. In addition, if recreational features are included it is anticipated that some lasting benefits would accrue to the area as a result of additional recreational use and the associated economic activity.

The expenditures are related to construction activities and the employment will occur when the expenditures are executed (**Table 4-12**). The total jobs created per $1 million spent: 15.3

Table 4-12. Jobs Generated from CEPP Expenditures: Employment Created by Construction Expenditures.

Alternative 1	Alternative 2	Alternative 3	Alternative 4
16,500	19,400	20,300	18,900

4.4.4 Other Social Effects Account (OSE)

Potential areas of social effects have been assessed as part of the study process. The key areas analyzed to date are summarized below. Relatively similar impacts would be anticipated for all alternatives.

Prime and Unique Farmland: The majority of land within the project area is ridge and slough, sawgrass marsh, coastal wetlands and nearshore/open bay habitat with minimal potential for reduction in unique farmland. All project lands are state owned. The NRCS will be consulted regarding to documenting loss of Prime and Unique Farmland when CEPP has definitive project footprints. The EAA area proposed for conversion to a FEB is prime and unique farmland and represents the greatest adverse impact on this resource.

Environmental Justice: *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires the Federal government to achieve environmental justice by identifying and addressing high, adverse and disproportionate effects of its activities on minority and low-income populations. Through the public participation process of the outreach and National Environmental Policy Act (NEPA) scoping, no high or adverse effects were identified. There was sufficient public input to feel confident that scoping was successful and that the breadth of the potential impacts were communicated and understood by the public.

Safety/Health:
All alternatives would be designed to dam safety requirements. All alternatives would maintain the WCA 3A Zone A regulation schedule, the Lake Okeechobee regulation schedule, and the level of service for flood protection in LEC.

Community Cohesion: Community cohesion would not change. No additional land purchase is proposed. No real estate relocations of residences are proposed.

Recreation: All alternatives reduce fishing opportunities in the backfilled portion of the Miami Canal. All alternatives include an FEB which adds 15,000 acres of recreational opportunities. No alternatives impact fishing access in the L-67A. Alternatives 2, 3 and 4 would lead to greater impact on recreational fur bearing animal hunting than Alternative 1 due to HRF location.

4.5 IDENTIFICATION OF THE NER PLAN AND TSP

The overarching goal of CEPP is the environmental restoration of an Everglades ecosystem considered to be of both national and international significance. An alternative plan that reasonably maximizes ecosystem restoration benefits compared to costs, consistent with the Federal objective, is identified as the national ecosystem restoration plan (NER). Selecting the NER plan requires careful consideration of the plan that meets planning objectives and constraints and reasonably maximizes environmental benefits while passing tests of cost effectiveness and incremental cost analyses, significance of outputs, acceptability, completeness, efficiency, and effectiveness. In accordance with USACE guidance, the selected plan **must** be shown to be cost effective and justified to achieve the desired level of output (ER-1105-2-100 **Appendix E, E-41**).

Based on the information included in the preceding description of the P&G evaluation criteria, the following table (**Table 4-13**) rates each plan on the ability of each plan to meet the specified criteria (Ø not applicable; ≠ does not meet; + partially meets; ++ fully meets). Both Alternative 1 and 4 are rated as highly functional, with Alternative 4 rated slightly higher than Alternative 1.

Table 4-13: P&G Evaluation Criteria

Evaluation Criteria	FWO/ No Act	Alt 1	Alt 2	Alt 3	Alt 4

Effectiveness	≠	+	+	+	++
Efficiency	Ø	++	≠	≠	++
Completeness	Ø	+	+	+	+
Acceptability	≠	+	+	≠	+

4.5.1 Modification of the Final Array and Identification of the NER Plan

Resulting from the efficiency analysis, HRF and Miami Canal infrastructure modifications were recommended to Alternatives 2, 3 and 4 and the descriptor "M" was added to the title to represent the modification.

Modifications to the HRF and Miami Canal infrastructure of Alternatives 2M, 3M, and 4M resulted in the a cost reduction of $87,000,000 (**Table 4-14**). Since there was no significant difference between alternatives for the area influenced by the HRF and Miami Canal backfill, benefits were not recalculated and consequently, these alternatives were not re-modeled. Alternatives 1 and 4M are cost effective for the revised system-wide evaluation, and Alternatives 2M and 3M are not cost effective since they cost more than Alternative 4M yet provide fewer benefits. The original Alternatives 1, 2, 3 and 4 would no longer be cost effective since the costs of the revised alternatives decreased while the benefits were unchanged.

Table 4-14. Revised Alternative construction, real estate and O&M cost.

	Alternative 1	Alternative 2M	Alternative 3M	Alternative 4M
Construction Costs (30% Contingency)	$952,500,000	$1,036,200,000	$1,087,700,000	$1,003,500,000
Real Estate	$41,200,000	$38,700,000	$38,700,000	$38,700,000
Capital Cost Total	$993,700,000	$1,074,900,000	$1,126,300,000	$1,042,100,000
O&M/yr	$5,500,000	$6,400,000	$6,900,000	$6,500,000
Average Annual Cost	**$66,800,000**	**$72,700,000**	**$76,300,000**	**$70,700,000**
System-Wide Average Habitat Unit Lift	**227,219**	**223,209**	**242,635**	**260,164**
Average Annual Cost/Average Annual Habitat Units	**$294**	**$326**	**$314**	**$272**
Cost Effective	Yes			Yes
Best Buy				Yes

The results of the efficiency analysis (CE/ICA) demonstrate that Alternative 1M and Alternative 4M are viable for implementation. Alternative 4M increases benefits over Alternative 1 by 14% while only increasing average annual costs by 6% ($50,000,000 total investment increase). Alternative 4MR is the lowest cost alternative at producing system-wide benefits, and is therefore the only best buy alternative.

From an efficiency perspective, this assessment provides significant justification for identifying Alternative 4M as the NER Plan. The revised cost effectiveness evaluation demonstrated that Alternative 4M is the most efficient and effective at meeting project objectives, while meeting the completeness and acceptability requirements.

Additional opportunities should be listed. This will help PDT members understand how stakeholders can help work toward mutual goals.

4.5.2 Operational Refinements of the NER Plan

The results of the NER analysis identified Alternative 4M infrastructure as providing the greatest overall benefits with the least cost per habitat unit; however, the evaluation identified the need to revise the operations of Alternative 4M to ensure the project savings clause constraints are met, minimize localized adverse ecological effects, and identify additional opportunities to provide for other water related needs.

The modeling does not demonstrate how the 4M infrastructure or the 3 modeling scenarios will impact the Tribe's water needs for natural resources and customary usage.

Three modeling scenarios were conducted to identify project effects resulting from operational changes.

Alt 4R

The first refinement, Alt 4R, focused on operation changes to avoid potential impacts to water supply levels of service in the Lake Okeechobee Service Area (LOSA) and Lower East Coast (LEC). Refinements included alleviating potential ecological impacts from lowered water depths in WCA 2B by retaining a small portion of the water in WCA 2B that Alternative 4M had diverted to WCA 3A. Increases in low flow events to the St. Lucie Estuary, minimized reductions in freshwater flows to Biscayne Bay, and improved water depths in eastern WCA 3B for purposes of improving environmental conditions were also considered.

Alternative 4R changed assumptions from Alt 4M by including:

- St Lucie Reservoir (C-44) backflow to Lake Okeechobee.
- Revised Lake O. schedule releases to re-balance Lake / Water Supply / Estuary objectives.
- Reduced frequency & magnitude of CEPP L-6 Diversion operations in ALT4R relative to Final Array ALTs.
- Increased utilization of S144, S145 and S146 relative to S11s.
- Increased seepage out of eastern ENP

This refinement resulted in an alternative that lessened concerns over violating constraints yet there remained room for improvement in LOSA water supply and the spatial distribution of groundwater and canal discharges in the LEC to provide greater confidence in meeting legal requirements of the savings clause. This alternative did not fully address the low flow events to the St. Lucie Estuary nor did it identify additional opportunities for other water related needs. ALT4R maintains the majority of the system benefit identified for Alt 4M in the final array evaluation and demonstrates a substantial hydrologic improvement over the baselines; however, represented a 6% decrease in overall project benefits due to competing demands for the allocation of water in the regional system.

The modeling should consider the impact on the Tribe's BCR and western basins and better examine how flood impacts will be dealt with in connection with Lake Okeechobee releases.

Alt 4R.1

The second refinement, Alt 4R.1, was performed to determine if water supply cutbacks on LOSA could be further reduced and if increases in the LEC public water supply (PWS) could be met while maintaining the natural system performance realized from the adjustments that were made for Alt 4R. The PWS demands utilized in the alternative are based on per capita demand increases proportional to Florida's Bureau of Economic and Business Research (BEBR) medium population projections.

Alternative 4R.1 changed assumptions from Alt 4M by including:

- Revised PWS demand for LEC Service Areas 2 from 277 MGD to 295 MGD
- Revised PWS demand for LEC Service Area 3 from 412 MGD to 465 MGD

- Operational updates to CERP's Indian River Lagoon South and Broward Water Preserve Areas projects were incorporated to ensure system-wide CERP operational efficiencies
- Reduced flood control releases within the flexibility of LORS 2008
- Refinement of backflows from C-44 reservoir to LOK and low-flow salinity discharges to meet St Lucie target

Alternative 4R.1 was successful in delivering additional water supply to LECSA 2 and LECSA 3 while maintaining the benefits identified for Alt 4R, but caused potentially adverse impacts by reducing freshwater flows to Biscayne Bay. Additionally, the higher rate of increased pumpage was found to cause groundwater drawdown in the vicinity of water supply wells which could lead to the contamination of wellfields from saltwater intrusion. These negative effects compelled further operational refinement so further pursuit of Alt 4R.1 was abandoned.

Alt 4R.2

The third refinement, Alt 4R.2 was also performed to determine if water supply cutbacks on LOSA could be further reduced and if increases in the LEC public water supply (PWS) could be met while maintaining the natural system performance realized from the adjustments that were made for Alt 4R, yet not incur the negative effects to groundwater and Biscayne Bay that Alt 4R.1 realized. This refinement limited the increase in PWS deliveries by reducing the demand in the model.

Alternative 4R.2 changed assumptions from Alt 4M by including:

- Revised PWS demand for LEC Service Areas 2 from 277 MGD to 291 MGD
- Revised PWS demand for LEC Service Area 3 from 412 MGD to 417 MGD
- Operational updates to CERP's Indian River Lagoon South and Broward Water Preserve Areas projects were incorporated to ensure system-wide CERP operational efficiencies
- Reduced flood control releases within the flexibility of LORS 2008
- Refinement of backflows from C-44 reservoir to LOK and low-flow salinity discharges to meet St Lucie target

Alternaitve 4R.2 ....INSERT IMPACTS..

Table 4-15. Habitat Unit Results for Alt 4R and 4R.2x

Project Region (Zone)	Habitat Units			
	Existing Condition Baseline	FWO Condition	Alt 4R	Alt 4R.2
Caloosahatchee Estuary (CE-1)	2,839	34,070	39,038	39,038
St Lucie Estuary (SE-1)	2,099	2,399	5,098	5,098
Total Northern Estuaries	4,938	36,469	44,136	44,136
Northeast WCA 3A (3A-NE)	44,451	29,634	92,606	91,372
WCA 3A Miami Canal (3A-MC)	32,847	27,373	54,746	54,746
Northwest WCA 3A (3A-NW)	30,970	30,266	54,198	54,198

Formatted Table

Central WCA 3A (3A-C)	108,414	105,669	109,786	111,159
Southern WCA 3A (3A-S)	69,247	68,423	68,423	68,423
WCA 3B (3B)	55,697	48,842	58,268	59,125
Northern ENP (ENP-N)	57,557	55,054	98,847	98,847
Southern ENP (ENP-S)	124,068	126,454	169,400	169,400
~~Southeast ENP (ENP-SE)~~	~~79,711~~	~~81,062~~	~~85,116~~	~~83,764~~
Total Greater Everglades	**602,962**	**572,777**	**791,390**	**791,034**
Florida Bay West (FB-W)	23,693	20,534	39,488	41,068
Florida Bay Central (FB-C)	8,205	8,205	13,948	14,769
Florida Bay South (FB-S)	16,614	14,659	27,364	28,341
Florida Bay East Central (FB-EC)	21,984	20,225	33,416	34,295
Florida Bay North Bay (FB-NB)	2,154	2,028	2,661	2,661
Florida Bay East (FB-E)	9,440	8,685	9,818	9,818
Total Florida Bay	**82,090**	**74,336**	**126,695**	**130,952**
Total All Regions	**689,990**	**683,582**	**962,221**	**966,122**

The results of the ecosystem benefits analysis indicate a reduction in alternative performance for Alternative 4R and 4R.2 when incorporating the operational refinements. The reduction is a direct impact of meeting project constraints as can been noted in the results of the Alt 4R compared to Alternative 4M habitats units. The costs and environmental benefits of 4R and 4R.2 are equal, yet Alt 4R.2 better meets projects objectives by increasing public water supply opportunities and alleviates concerns over violating legal constraints of the project.

A similar reduction in benefit trends would be expected for any of the alternatives in the final array if the operational modifications required to ensure legal requirements were being met was similarly applied. Alternative 4R.2 would remain the only best buy alternatives. Although Alternatives 1M, 2M and 3M were not re-modeled, there is reasonable confidence that even if these alternatives only realized a 2% reduction in benefits as opposed to the 6% realized in Alternative 4R.2; Alternative 4R.2 would still be a cost effective alternative and fulfill the requirements for justifying a recommended plan as described in WRDA 2000. There are also substantial benefits that Alt 4R.2 exhibits in the Blue Shanty Flow-way that are not captured in the Habitat Unit calculation, yet are significant and compelling reasons for identifying Alt 4R.2 as the Tentatively Selected Plan.

4.5.3 Tentatively Selected Plan

Alternative 4R2 (Figure 4-5) is the Tentatively Selected Plan for the following reasons:

- Alternative 4R.2 is the NER (National Ecosystem Restoration) plan.
- Alternative 4R.2 meets the planning constraints for maintaining flood protection in the LEC, maintaining water for existing users in the Lake Okeechobee Service Area, would not adversely

affect Tribal compacts, and with adjustments maintaining water supply for existing users in the LEC (xx confirm/edit the highlighted items after Assurances modeling is completed in late June 2013).

- Alternative 4~~R~~ ranks highly for the four P&G criteria. It is the most efficient of the four final alternatives and is near the most effective in achieving the objectives for the entire planning area. The acceptability of Alternative 4~~R~~ is similar to the other three alternatives. None of the alternatives were completely free of stakeholder concerns. ~~All four alternatives meet all legal criteria for implementation. Alternative 4R is complete, as are the other three alternatives.~~
- Alternative 4R.2 would provide the greatest habitat unit benefits, defined as the average annual difference between With Project and Without Project conditions, for the Greater Everglades and Florida Bay while providing for other water related needs. Within the Greater Everglades region, Alternative 4R.2 would provide the greatest number of habitat units relative to the FWO in ~~,~~ northeastern WCA 3A~~southern ENP (Zone ENP-S), and southeastern ENP (Zone ENP-SE)~~. Alternative 4R.2 would provide the second and third greatest number of habitat units relative to the FWO in northern and southern ENP (Zones ENP-N and ENP-S) and the fourth greatest number of habitat units relative to the FWO in areas adjacent to the Miami Canal in WCA 3A~~WCA 3B~~ (Zone 3A-MC~~B~~). ~~Alternative 4R would provide the same benefits as Alternatives 1, 2, and 3 to northern WCA 3A, central WCA 3A, and the St Lucie and Caloosahatchee estuaries.~~
- ~~The ecological performance of Alternative 4R in WCA 3B is expected to be improved as the operations of the WCA 3B infrastructure is refined.~~
- The flow-way generated by the Blue Shanty levee in Alternative 4R.2 would increase flows through western WCA 3B (**Figure G-3620**) while maintaining protective water depths in eastern WCA 3B. For the action alternatives considered with CEPP, Alternative 4R.2 would also best achieve the goal of re-establishing hydrologic and ecologic connectivity of WCA 3A, WCA 3B, and ENP by degrading the L-67 C and L-29 levees west of the Blue Shanty levee. Long, continuous and uninterrupted patterns of sheetflow from north to south are a defining characteristic of the Everglades. ~~(Refer to Section G.2.2.3 of Appendix G [Benefit Model]) for further information on changes in overland sheet flow (Figure G-17) and proposed water depths (Figure G-20) with Alternative 4 and potential benefits within the Blue Shanty flow way.~~
- Alternative 4R.2 is a cost effective and best buy plan. It has the lowest annualized cost per output for habitat units in the Greater Everglades area (WCAs and ENP) and habitat units in Florida Bay.

Alt 4R, for Northern Estuaries, Greater Everglades and Florida Bay combined:

- 3,190,660 acres (~4,985 square miles),
- $1,019,000,000 first cost; $72,500,000 average annual cost; 259,110 average annual HU benefit.
- 319 first cost $ / acre;
- 280 average annual $ / average annual HU;
- CEPP unit costs are lower than Picayune Strand & Kissimmee River, which are justified and successful restoration projects.

Comment [MAN5]: Is this correct statement? I thought Alts 1-4 had potential issues in meeting 6(b)(5) clause requirements.

Do you need to do an additional P&G ranking of Alternatives 4R, 4R.1 and 4R.2? Or do you say that Alternative 4 ranked highly for the four P&G criteria so Alt 4R.2 ranks high by default?

Comment [MAN6]: Edited this section to reflect new scores. Did not draft original text not sure only is needed. Summary paragraph on benefits appears in Section 6.

Comment [MAN7]: Reference write-up Myrika D. and Kim T. did on Blue Shanty – not sure where it is in the report.

Comment [baf8]: Need to check all these numbers.

Comment [dec9]: Clarify this descriptor.

Comment [dec10]: Is this needed? I assume the reverse is also true, in that other successful projects have lower unit costs.

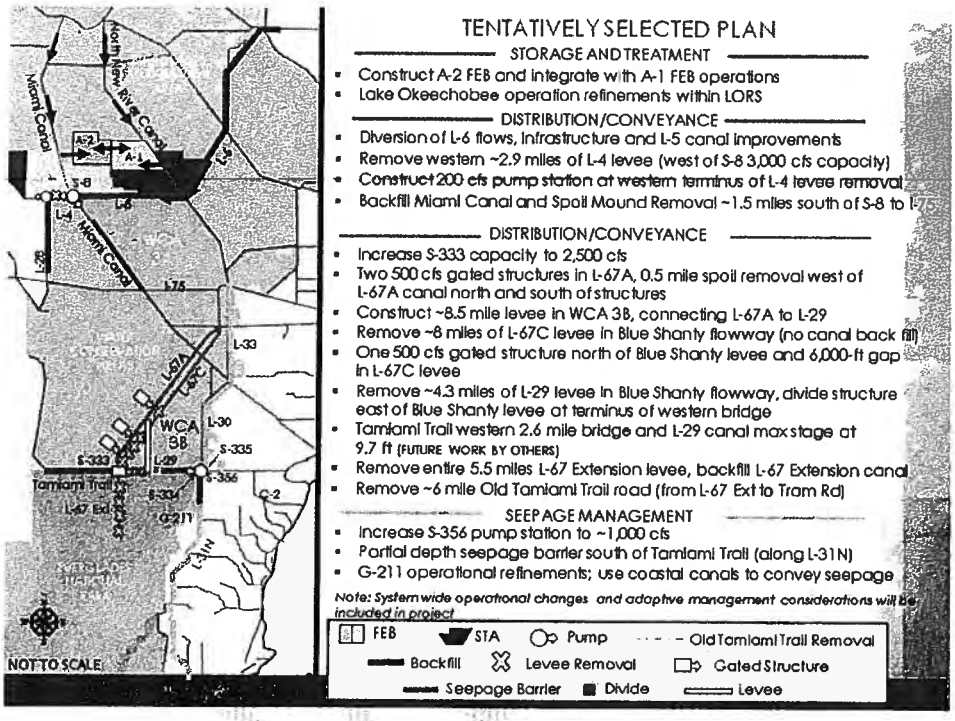

Figure 4-5. The CEPP TSP

Figure 4-5. The CEPP TSP

Comment [dec11]: Ensure figure is referenced in preceding text. Update for latest TSP figure, when available.

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6.0 TENTATIVELY SELECTED PLAN

Please open the foldout figure at the end of this section for reference while reading.

The tentatively selected plan (TSP) will benefit the St. Lucie and Caloosahatchee E~~e~~stuaries by decreasing the large pulses of regulatory flood control releases sent from Lake Okeechobee. Redirecting~~ing~~ approximately 200k-acft of additional water to the historical southerly flow path south to FEBs will provide storage capacity, attenuation of high flows, and ~~limited~~ pre-treatment prior to delivery to existing stormwater treatment areas (STAs). The STAs reduce phosphorus concentrations in the water to meet required water quality standards. Rerouting this treated water south and redistributing it across spreader canals will facilitate ~~raising water levels~~hydropattern restoration ~~in Northern WCA 3A~~.in Water Conservation Area 3A(WCA3A) This, in combination with Miami Canal backfillingand other CERP components, is paramount to re-establishing a 500,000-acre flowing system through the northern most extent of the remnant Everglades. ~~Subsequently,~~T~~-~~he treated water will be distributed through~~from~~ WCA 3A to ~~ENP and~~Water Conservation Area 3B (-WCA 3B) and Everglades National Park via ~~additional outflow~~ structures and creation of the Blue Shanty Flowway~~flow-way~~. The Blue Shanty Flowway will restore continuous sheet-flow and re-connection of a portion of WCA 3B to Everglades National Park.

6.1 ~~DESCRIPTION OF PLAN~~ PLAN DESCRIPTION

6.1.1 Plan Features

~~The tentatively selected plan (TSP) would decrease the large pulses of Lake Okeechobee water that currently are sent east to the St. Lucie and west to the Caloosahatchee estuaries and send this water southward through Everglades Agricultural Area (EAA) canals to flowage equalization basins (FEB). This reduction of the existing high flows to the St. Lucie and Caloosahatchee estuaries would help restore these estuaries. The FEBs would provide storage capacity, attenuation of high flows, and limited pre-treatment prior to delivery of this redirected water to existing stormwater treatment areas (STAs), which would reduce phosphorus concentrations in the water to meet required water quality standards. The treated water would be released at thedistributed across the northwestern end boundary of Water Conservation Area (WCA) 3A to flow through and help restore more natural quantity, timing and distribution of waters to restore much of WCA 3A, WCA 3B, Everglades National Park (ENP), and Florida Bay. Several existing levees, canals, and culverts, and pump stations would be constructed, modified, or removed to improve the flow of water through the system. The TSP's is, referenced throughout the document as~~ Alternative 4R.2 (Alt 4R.2), compone~~ and features~~nts ~~of it~~ are organized into ~~four~~three~~four~~ ~~major~~geographic ~~groups~~areas: North of the Redline, South of the Redline, the Green/Blue lines and along the ~~and along Blue Green~~ Yellowline.

I. ~~Features in the~~ EAA (North of the Redline) includes construction and operations to divert, store and treat Lake Okeechobee regulatory releases.

Storage and treatment of new water will be possible with the construction of ~~of the~~a 14,000 acre A-~~2~~-FEB and associated distribution features on the A-2 footprint that is operationally ~~(L-624 perimeter levee and L-625 interior levee; C-624, C-624E, C-626 internal distribution channels; S-623, S-624, S-628 inlet structures; S-625 outlet structures, and C-625E, C-625W canals and channels connecting the FEB to the Miami Canal). Operation of the A-2 FEB would be~~ integrated with ~~the operation of the A-1 FEB, a~~ state-funded and state-constructed A-1 FEB and existing STAs. LAKE OPERATIONS NEED TO BE MENTIONED HERE~~FEB.~~

Comment [SFWMD1]: This Section needs to be re- written to focus first on the primary areas that receive project benefits (WCA 3A, ENP)

Comment [dec2]: Acronyms in this section should have been previously defined within the document.

Comment [dec3]: Recommend rewording here to clearly indicate that CEPP is only constructing the A-2 FEB.

Comment [dec4]: Not sure "restore" is correct here, perhaps "improve" is more accurate given the modest reduction in high events; recommend also indicating which estuary characteristics are being improved – i.e. salinity for seagrasses, etc.

Comment [baf5]: New text suggested by TRB 5098135, saying the old text overstates the expected benefits.

Comment [KMW6]: Add detailed write-up description to the graphic

Comment [KMW7]:

~~Features in the EAA include construction of the 14,000 acre A-2 FEB (perimeter levees, internal distribution channels, inlet structures, outlet structures, and channels connecting the FEB to the Miami Canal north of S-8. Operation of the A-2 FEB would be integrated with the operation of the A-1 FEB, a state-funded and state-constructed FEB.~~

II. ~~Conveyance features in~~ **WCA 2A and N**~~n~~**orthern WCA 3A** (South of the Redline) includes conveyance features to deliver and distribute existing flows and the redirected Lake Okeechobee water through ~~Northern~~ WCA 3A.

Backfilling 13.5 miles of the Miami Canal between I-75 and the S-8 pump station, and converting the L-4 canal into a spreader canal by removing 2.9 miles of the southern L-4 levee are the key features needed to ensure spatial distribution and flow directionality of the water entering WCA 3A.

Conveyance features to move water into and throughget ~~water into~~the Northwest portion of ~~Northern~~ WCA 3A include:~~: S-620~~ a gated culvert to deliver water from the L-6 Canal to the remnant L-5 Canal, ~~S-622~~ a new gated spillway to deliver water from the remnant L-5 canal to the western L-5 canal (during L-6 diversion operations), ~~S-621~~ a new gated spillway to deliver water from STA 3/4 to the S-7 pump station during peak discharge events (eastern flow route is not typically used during normal operations, including L-6 diversion operations, ~~enlarge approximately 13.6 miles of the L-5 Canal, degrade approximately 2.9 miles of the southern L-4 Levee along the northwest boundary of WCA-3A, S-630~~ a 360 cfs pump station to maintain Seminole Tribe water supply deliveries west of the L-4 Canal, and ~~S-8A~~ new gated culverts to deliver water from the Miami Canal (downstream of S-8, which pulls water from the L-5 Canal) to the L-4 Canal.~~,~~

~~and backfill approximately 13.5 miles of the Miami Canal and include upland mounds between a point approximately 1.5 miles south of the S-8 pump station and Interstate Highway I-75.Conveyance features in WCA 2A and northern WCA 3A include: a gated spillway to deliver water from the L-6 Canal to the L-5 Canal, a new gated spillway to deliver water from STA 3/4 to the L-5 Canal, enlarge ~13.6 miles of the L-5 Canal, degrade ~2.9 miles of the southern L-4 Levee, a 200 cubic feet per second (cfs) pump station to move water within the L-4 Canal to maintain Tribal water supply deliveries west of the L-4 Canal, gated culverts to deliver water from the Miami Canal (south of the S-8 Pump Station) and the L-5 Canal to the L-4 Canal, and backfill ~13.5 miles of the Miami Canal and include upland mounds between a point 1.5 miles south of the S-8 Pump Station and Interstate Highway I-75.~~

The Miami Canal will be backfilled to bedrock from about a mile south of S-8 to S-339 and to about one foot above bedrock from S-339 to I-75 so that the backfill will be ~1.5 below the peat surface for the entire length of the backfill. This project element proposes to remove all spoil mounds on the east and west side of the Miami Canal from S-8 to S-339. From S-339 to I-75 all FWC enhanced spoil mounds will be removed except for 22 spoil mounds identified by FWC as the highest priority. In addition, this project element proposes to construct and create mounds approximately every one mile along the entire reach of the Miami canal (S-8 to I-75) where historic tree islands once existed. The remaining FWC spoil mounds will be incorporated into the constructed mounds that will be constructed along the ridges of the historic ridge and slough landscape to use as potential tree island generators. LANGUAGE ON FWS MOUNDS!!!!

III. **Southern WCA 3A, WCA 3B, and ENP** (Green/Blue Lines) includes conveyance features to deliver and distribute

~~Additional conveyance features that would be located in southern WCA 3A, WCA 3B, and the northern edge of ENP (Blue Green line) include:~~

A new Blue Shanty levee extending from Tamiami Trail northward to the L-67A levee will be constructed. This Blue Shanty levee will divide WCA 3B into two subunits, a large eastern unit (3B-E) and a smaller western unit, the Blue Shanty Flowway (3B-W). A new levee is the most efficiently means to restore continuous southerly sheetflow through a practicable section of WCA 3B and alleviates concerns over effects on tree islands by maintaining lower water depths and stages in WCA 3B-E. The width of the 3B-W flow-way is aligned to the width of the 2.6-Mile Tamiami Trail Next Steps bridge, optimizing the effectiveness of both the flow-way and bridge.

In the western unit, two new controlled structures on the L-67A, removal of the L-67C and L-29 Levees within the flowway, and construction of a divide structure in the L-29 Canal will enable continuous sheetflow of water to be delivered from WCA 3A through WCA 3B to ENP. A controlled structure will also be added to the L-67A, outside the flowway, to improve the hydroperiod of the eastern unit of WCA 3B.

Increased outlet capability at the S-333 structure at the terminus of the L-67A canal, removal of approximately 5.5 miles of the L-67 Extension Levee, and removal of approximately 6 miles of Old Tamiami Trail between the Everglades National Park (ENP) Tram Road and the L-67 Extension Levee will facilitate additional deliveries of water from WCA 3A directly to ENP.

IV. **Lower East Coast Protective Area (Yellowline):** Includes features primarily for seepage management, which are required to mitigate for increased seepage resultant from the additional flows into WCA 3B and ENP.

~~I. S-333N a 1,150 cfs gated spillway adjacent to S-333, S-631 a 500 cfs gated culvert in L-67A Levee and an associated 6,000 foot gap in the L-67C Levee, a flowway through the western end of WCA 3B (S-632 and S-633 2 gated culverts in L-67A Levee, removal of approximately 8 miles of L-67C Levee, removal of approximately 4.3 miles of L-29 Levee, construct L-67D a new approximately 8.5 mile levee), S-355W a gated spillway in the L-29 Canal to maintain water deliveries in the L-29 Canal to the eastern Modified Water Deliveries (MWD) 1-mile bridge and maintain western access to the L-29 Levee, remove approximately 5.5 miles of the L-67 Extension Levee, and remove approximately 6 miles of Old Tamiami Trail between the Everglades National Park (ENP) Tram Road and the L-67 Extension Levee. Work in this area also includes removal of spoil along the western L-67A canal in the vicinity of the new control structures and removal of vegetation along WCA 3B agricultural ditches.Additional conveyance features would be located in southern WCA 3A, WCA 3B, and the northern edge of ENP: a 1,000 cfs gated spillway adjacent to S-333, a 500 cfs gated culvert in L-67A Levee and an associated 6,000 foot gap in L-67C Levee, a flowway through the western end of WCA 3B (2 gated culverts in L-67A Levee, removal of ~8 miles of L-67C Levee, removal of ~4.3 miles of L-29 Levee, construct new ~8.5 mile levee), a gated spillway in L-29 Canal to control water movement in the L-29 Canal and provide access to the L-29 Levee, remove ~5.5 miles of the L-67 Extension Levee, remove ~6 miles of Old Tamiami Trail between Tram Road and L-67 Extension Levee, and remove spoil mounds along the northwestern side of the L-67A Canal adjacent to the new structures in the L-67A Levee, and incidental remove vegetation along agricultural ditches.~~

~~Features primarily for seepage management (Yellowline), which are required to mitigate for increased seepage resultant from the Blue Green line features include:~~ ~~S-356 a~~A new 1,000 cfs pump station will be constructed to replace the existing temporary S-356 pump station and an ~approximately 4.2 mile

long, 35 feet deep ~~tapering~~ seepage barrier cutoff wall along the L-31N Levee just south of Tamiami Trail.

~~Features primarily for seepage management along the eastern edge of ENP include a new 1,000 cfs pump station to replace the existing temporary S-356 pump station and a ~4 mile long, 35 feet deep tapering seepage barrier cutoff wall along the L-31N Levee just south of Tamiami Trail.~~

The specific features ~~are itemized in Table 5-1~~ and located in **Figures 5-1** through **5-~~43~~** **(also see end of section foldout figure)**. TO BE REPLACED WITH THE GRAPHICS FROM PATRICE AND DAVID

Comment [SFWMD8]: Include caveat language for the rock miner's cutoff wall here

Comment [SFWMD9]: Will there be a structure fact sheet included for each identified project area and each feature within that project area?

294
295 **Table 6-5-15-1. Summary of Tentatively Selected Plan Features**

Structure/Feature Number	Structure/Feature Type	Design Capacity (cfs)	Location	Tech Spec & Notes
NORTH OF THE REDLINE – STORAGE AND TREATMENT FLOW EQUALIZATION BASIN (FEB) – A-2				
S-623 (DS-8)	Gated Spillway	3,700	On STA 3/4 Supply Canal	Delivers water from Miami Canal to existing G-372
S-624 (DS-5)	Gated Sag Culvert (FEB inflow structure)	1,550	On STA 3/4 Supply Canal	Receives water from G-372 via STA 3/4 Supply Canal and delivers to C-624 canal
S-625 (DS-7)	Gated Culverts (FEB discharge structure)	1,550	Discharge structure in FEB perimeter levee L-624	Delivers water to FEB outflow canal
S-626 (PS-1)	Seepage Pump Station	500	West side of seepage canal, C-626	Delivers seepage back into the FEB outflow canal C-625W
S-627 (CS-4)	Emergency Overflow weir	445	Between A-2 and A-1 FEB, just north of S-628	445 cfs for 100-yr 24-hr (per DCM-2)
S-628 (DS-9)	Gated Culvert FEB intake/ discharge structure	930	Between A-2 and A-1 FEB	Delivers water in both directions between A-2 and A-1 FEB
L-624	Levee		FEB Perimeter Levee	~ 20 miles, 11.3 h, 14ft w, 3:1
L-625	Levee		FEB interior inflow canal levee	~ 4 miles, 11.3 h, 12ft w, 3:1
C-624	Inflow Canal	1,550	West side of FEB	~ 4 miles
C-624E	Spreader Canal		Northern boundary of FEB	~ 4 miles
C-625E	Collection Canal	400	FEB interior collection canal along southern perimeter	Existing seepage canal for STA 3/4 Supply Canal, used to supplement FEB sheetflow during normal operating conditions; provides primary conveyance when no sustained pool depth (i.e., only sheet flow)
C-625W	Outflow Canal	1,550	FEB exterior outflow; between S-625 and G-372 HW	FEB Outflow is the expanded seepage canal for the STA 3/4 Supply Canal
C-626	Seepage Canal	400	West and Northern exterior perimeter of FEB	~ 11 miles
SOUTH OF THE REDLINE – DIVERSION & CONVEYANCE				
S-620 (CS-1)	Gated Culvert	500	In L-6 Canal	Delivers water from L-6 canal to L-5 canal
S-621 (CS-2)	Gated Spillway	2,500	On STA 3/4 Outflow Canal	Closed to direct STA-3/4 discharges to western L-5 Canal during normal operations; controls water from STA 3/4 to the S-7 pump station during peak events.

TABLE A-1. Summary of Tentatively Selected Plan Features CONT'D

Structure/Feature Number	Structure/Feature Type	Design Capacity (cfs)	Location	Tech Spec & Notes
SOUTH OF THE REDLINE CONT'D – DIVERSION & CONVEYANCE				
S-622 (CS-3)	Gated Spillway	500	In L-5 Canal	Delivers water from east to west in L-5 canal
New (S-8A)	Gated Culverts w/canal	3,080 & 1,020 (costed)	In Miami and L-4 Canal	Delivers water from L-5 west to L-4 (3,120 cfs and remaining Miami Canal segment 1,040 cfs)
S-630	Pump Station	360	In L-4 Canal	Delivers water from L-4 Canal west to maintain existing water supply deliveries
	Levee Removal		L-4 Interior Levee	Remove ~2.9 miles, 6ft h, 10ft w, 2.5:1 side slopes
	Canal		Miami Canal	Remove ~ 13.5 miles
	Tree Islands Mounds		Miami Canal	Create habitat and promote sheetflow in WCA 3A
	Canal	500	Remnant L-5 Canal east	Enlarging canal
	Canal	3,000	L-5 Canal west	Enlarging canal
BLUE GREEN YELLOW LINE – DISTRIBUTION, CONVEYANCE & SEEPAGE MANAGEMENT				
S-333 (N)	Gated Spillway w/new canal	1,150	Just north of existing S-333	Delivers water from L-67A Canal to L-29 Canal
New S-356	Pump Station	1,000	In vicinity of existing S-356	Provides seepage management for WCA 3B and NESRS stages
S-631	Gated Culvert	500	In L-67A Levee	Delivers water from WCA 3A to 3B, east of L-67D Levee
S-632	Gated Culvert	500	In L-67A Levee	Delivers water from WCA 3A to 3B, west of L-67D Levee
S-633	Gated Culvert	500	In L-67A Levee	Delivers water from WCA 3A to 3B, west of L-67D Levee
	Levee Removal Gap		L-67C Levee	~ 6000 ft gap corresponding to S-631, 5ft height, 10ft w, 3:1
L-67D	New Levee		In WCA 3B	~ 8.5 miles connects from L-67A to L-29, 6 ft height, 14 ft crest width, 3:1 side slopes
	Levee Removal		L-67C Levee	~ 8 miles complete removal from New Levee (L-67D) south to intersection of L-67A/L-67C; L-67C canal is not backfilled
S-355W	Gated Spillway	1,230	In L29 Canal, east of L-67D Levee terminus and 2.6 mile bridge	Maintains water deliveries in L-29 Canal to 1-mile bridge & maintains access for Tigertail Camp to Tamiami Trail
	Levee Removal		L-29 levee	~ 4.3 miles removal east of ValuJet monument to L-67D Levee intersection with L-29 Levee. 10ft height, 10ft w, 3:1

TABLE A-1. Summary of Tentatively Selected Plan Features CONT'D

Structure/Feature Number	Structure/Feature Type	Design Capacity (cfs)	Location	Tech Specs & Notes
BLUE GREEN YELLOW LINE CONT'D – DISTRIBUTION, CONVEYANCE & SEEPAGE MANAGEMENT				
	Road Removal		Old Tamiami Trail (from L-67 Ext west to ENP Tram Rd)	~ 6 miles of Old roadway removal , 5 ft height, 20 ft w, 2:1
	Levee Removal and Canal Backfill		L-67 Ext levee and Canal	~ 5.5 miles complete removal of L-67 Ext; 8ft height, 10ft w, 3:1
	Seepage Barrier Cutoff Wall		In L-31N levee just south of Tamiami Trail	~4.2 miles of 3 ft wide, 35 ft deep, Soil Cement Bentonite (SCB) Wall
S-346	2-72" metal culvert w/Flash Board Removal	165	In Old Tamiami Trail	Anticipate removal if ~5.5 miles of L-67 Ext removed

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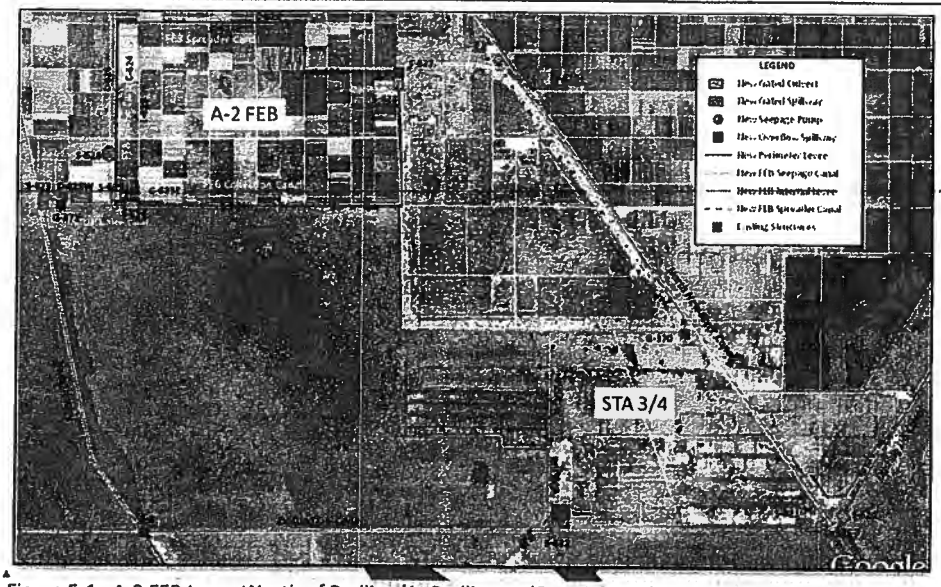


Figure 5-1. A-2 FEB LayoutNorth of Redline/At Redline or (EAA WCA 3A) Location Map

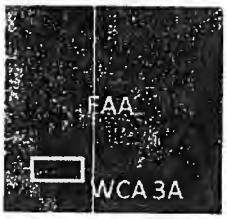
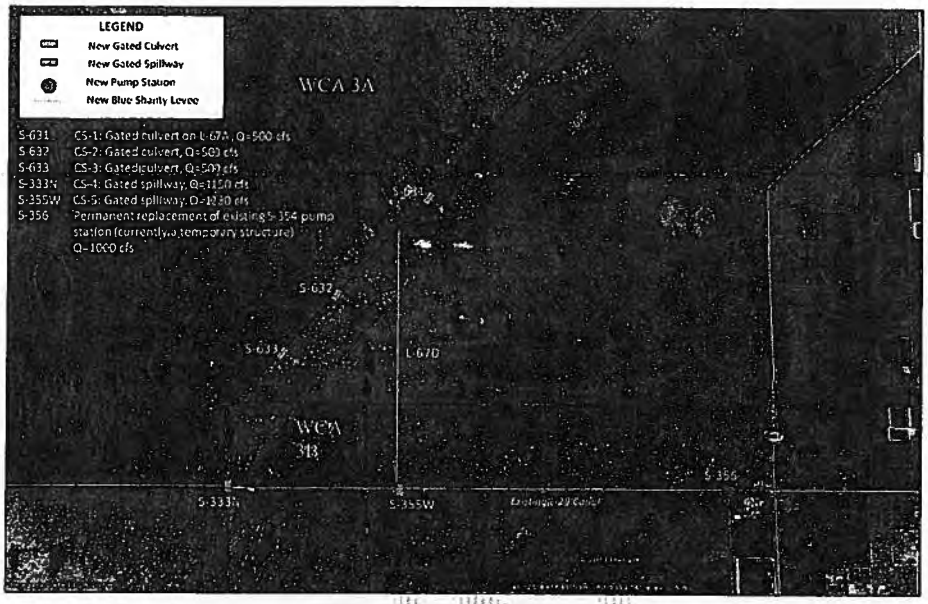


Figure 5-2. L-4 Location Map



~~Figure 5-3. WCA 3B Location Map~~

6.1.2 Lands and Interests in Lands

Comment [SFWMD10]: Need to add in an opening description of what the lands are needed for (construction and OMRR &R)

6.1.2.1 A-2 Flow Equalization Basin

Fee title will be required for the project footprint of the A-2 FEB and the A-2 FEB Discharge Canal. The A-2 FEB requires approximately 13,849 acres in Compartment A, of which approximately 13,839.44 acres were acquired in the Talisman exchange/acquisition. The remaining approximately 9.9 acres in the A-2 FEB were acquired by the SFWMD using State funds. In March 1999, the "Talisman Exchange and Purchase and Sale Agreement" effected transactions in which certain landowners in the EAA would sell lands to, or exchange lands, with other landowners and the SFWMD in order for SFWMD to own contiguous parcels of land in the southern portion of the EAA for the purposes of Everglades restoration. As part of the transaction, SFWMD contributed total payment to buy out the farming reservation held by the St. Joe Paper Company. As per the terms of the Cooperation Agreement between the SFWMD and the Department of Interior (DOI), SFWMD elected to apply program income revenue towards the repayment of its contribution. If the program income revenue does not totally satisfy the repayment of SFWMD's contribution, SFWMD will seek credit for the balance of its contribution as an allowable project expense for cost-sharing purposes. The Federal funds contributed by DOI pursuant to the Farm Bill Section 390 of the Federal Agriculture Improvement and Reform Act of 1996 (Public Law 104-127, 110 Stat. 1022) will be credited to the Federal share of the project cost pursuant to Section 601 (e)(3) of the Water Resources Development Act of 2000. The state funds contributed by SFWMD for the acquisition of the Talisman property, subject to the paragraph above, will be credited to SFWMD. These lands are currently leased by the SFWMD to agricultural interests. More details are provided in Appendix D, Real Estate.

Comment [SFWMD11]: Delete details on crediting here (details are found in the real estate appendix) and focus on summary of land interests needed only

6.1.2.2 Flow Equalization Basin Discharge Canal

The A-2 FEB Discharge Canal runs from the STA 3/4 supply canal to the southwest corner of the A-2 FEB. There are approximately 91.25 acres required for this canal. The canal runs along the southern portions of Sections 35 and 36, Township 46 South, Range 35 East. Approximately 57.02 acres are owned by the State of Florida and will be acquired by SFWMD. The remaining 34.23 acres are owned by SFWMD and were acquired as part of the Talisman Exchange, with both Federal and State funds. The Federal funds contributed by DOI pursuant to the Farm Bill will be credited to the Federal share of the project cost. The state funds contributed by SFWMD for the acquisition of the Talisman property will be credited to SFWMD. Fee title will be the required estate for these lands. These lands are currently leased by either the State of Florida or the SFWMD to agricultural interests. More details are provided in Appendix D, Real Estate.

Comment [SFWMD12]: The acquisition requirements in this section need to be clarified.

6.1.2.3 Water Conservation Areas 3A and 3B

SFWMD owns a variety of interests in WCA 3A and WCA3B. These lands were acquired and provided for the Central and Southern Florida Project (C&SF). The SFWMD owns fee title to approximately 134,280.95 acres, a perpetual flowage easement over approximately 300,343.52 (with the fee owned by the State of Florida), a perpetual flowage easement over approximately 70,612 (with the fee owned by private parties), canal or levee easement over approximately 11,598.84 acres and a perpetual easement for surface flowage rights over approximately 73,360 acres (with fee title owned by the State). All of these lands were provided as an item of local cooperation for the C&SF Project. The rights owned by SFWMD in WCA 3A and WCA 3B have been determined to be sufficient for CEPP project purposes. The SFWMD will recertify these lands to the Federal government when required for construction or operations at no cost to CEPP. More details are provided in Appendix D, Real Estate.

The Tribe has Customary usage Rights that we should acknowledge in this section.

6.1.2.4 Uniform Relocation Assistance Act, PL91-646 as amended

There are no residential relocations entitled to Uniform Relocation Assistance Benefits associated with project implementation. There are no businesses requiring relocation as a result of this Project; therefore, there are no additional persons or businesses entitled to Uniform Relocation Assistance Benefits, Public Law (PL) 91-646, as amended. All relocation benefits were included as part of the Talisman exchange/acquisition agreement.

6.1.2.5 Facility/Utility Relocations

Florida Power and Light lines will have to be relocated or abandoned from the center of the detention area within the A-2 FEB. Florida Power and Light, and Quest Communications lines will have to be relocated where the L-29 is being removed. The removal of Old Tamiami Trail will require relocation of the Florida Power and Light line.

Comment [SFWMD13]: This location needs to be updated

6.1.3 Draft Project Operating Manual

A Draft Project Operating Manual (DPOM) was developed to control day-to-day water management functions of the project. ~~The DPOM encompasses all foreseeable conditions that may be encountered during project operation.~~ The project will be operated in accordance with the DPOM to achieve the goals, purposes, and benefits outlined in the Project Implementation Report, including the improvement of the quantity, timing, and distribution of water in the natural system. All costs associated with the physical operation of the project will be funded through OMRR&R. The DPOM is in Annex C.

Comment [SFWMD14]: Combine with Section 6.6.5

Comment [SFWMD15]: Move to OMRR&R Section

Comment [SFWMD16]: Need to include a summary here of how the project features will be operated.

It is important to note that refinements to the operating criteria and the DPOM will be made as more design details, data, operational experience and information are gained during preconstruction engineering and design, construction, and operations.

6.1.4 Adaptive Management and Monitoring Plan

The CEPP Adaptive Management (AM) and Monitoring Plan (**AM and Monitoring Plan, Annex D**) identifies the monitoring information needed to inform CEPP implementation and to document restoration progress to agencies, the public, and Congress. The overall objective of the AM and Monitoring Plan is to focus resources on continued refinement of CEPP to fine-tune performance due to inevitable uncertainties, based on existing knowledge and knowledge that will be gained through monitoring and assessment.

Items in the AM and Monitoring Plan that are not required for regulatory monitoring are subject to further prioritization and screening and are not guaranteed to be executed. As test project and pilot project results become available, as continued ecosystem monitoring data become available, and as the level of knowledge changes through time, it is likely that the number of items that need to be included in the final AM and Monitoring Plan will be reduced.

A fundamental principle of AM is that a project can be adjusted to continually achieve high performance toward the project's goals and objectives and to remain within its constraints. In particular, in AM the adjustments are not "trial and error", which can be costly and erratic, but rather they are based on a scientifically efficient and sound process of learning from data. These adjustments should be viewed as intelligently fine-tuning the project, the need for which is almost inevitable in a large-scale, long-term restoration project like CERP. Given this fundamental principle of AM, the CEPP AM and Monitoring Plan provides suggestions for adjusting certain aspects of CEPP if necessary. The suggestions are based on current experience and knowledge and are provided for discussion. The suggestions are not required actions, nor are they meant to limit agencies from considering other options. They have been analyzed under the existing NEPA analysis of CEPP in **Sections 4** and **5** and in **Appendices C.2.1** and **C.2.2**. See **Annex D** for the full AM and Monitoring Plan.

6.1.5 Exotic and Invasive Species Management Plan

An exotic and invasive vegetation management plan has been developed in conjunction with USACE policy. This policy complements the National Invasive Species Act and strives to either prevent or reduce establishment of invasive and non-native species at project sites. The primary objectives of this effort for CEPP is to establish favorable conditions suitable for the long-term maintenance control of non-native species, and the re-establishment of native flora. To achieve these goals, this plan proposes to complete both initial and long-term invasive plant control efforts necessary to achieve maintenance control levels of invasive vegetation within the project area. Specifics of the nuisance and exotic vegetation control plan are contained in **Annex D.**

6.1.6 Recreation Features

The proposed recreation facilities will increase access into the Greater Everglades and enhance users' opportunities and access within the marsh. Facilities include sufficient gravel parking with boat ramps and trail heads, dry vault toilets, shelters, and Americans with Disabilities Act compliant fishing platforms. Within the Everglades, facilities will enhance user opportunities through establishing ~~northern Canal~~the Canalairboat crossings over levees and boat accessible marsh tent camping sites. Pedestrian accessibility will be maintained along levee routes through existing and proposed water control structures. Typical activities supported are multi use trails and blue ways, hunting, fishing and wildlife viewing. Recreational features will be constructed on SFWMD fee lands, eliminating real estate expense for recreation.

Comment [SFWMD17]: Combine with Section 6.6.6

Comment [SFWMD18]: There needs to be more detail added here on the obligations to implement. Also add more information for prioritization and screening factors.

Comment [SFWMD19]: Need to add recreation associated with A-2 FEB.

Comment [dec20]: Has this been agreed to as a CEPP recreation feature? Potential water quality implications and hydrological effects would need to be assessed within the CEPP NEPA. I recognize it has been long recommended by recreational interests, including during the DPM, but was not aware of a final determination.

The Tribe has customary USUageRights which include activities such as hunting, fishing frogging, etc. for areas such as WCA 3A, Big Cypress Preserve, ~~Act~~ and addition lands.

6.2 COST ESTIMATES OF RESTORATION ELEMENTS

Comment [SFWMD21]: This table needs to include OMRR&R Costs and Adaptive Management costs

Table S-2 includes a breakdown of the estimated costs of CEPP by construction and non-construction costs for ecosystem restoration activities. Non-construction costs generally include LERR (lands, easements, rights-of-way and relocations), PED and S&A costs. Costs are estimated at Fiscal Year 2013 price levels and rounded to the nearest $1,000,000. The Federal discount rate of 3.75% and a 28-year economic period of analysis were used to amortize costs.

Table 6-~~112~~. Ecosystem Restoration Cost Estimates

Construction Item	Cost
Lands & Damages	**$ 41,000,000**
Storage and Treatment Features	**$780,000,000**
03 Reservoirs	**780,000,000**
Northern WCA 3A Features	**$509,000,000**
09 Channels & Canals	343,000,000
11 Levees	9,000,000
13 Pumping Plant	125,000,000
15 Floodway Control Structures	32,000,000
Southern WCA 3A, 3B, ENP Features	**$92,000,000**
02 Roads	11,000,000
09 Channels & Canals	1,000,000
11 Levees	39,000,000
15 Floodway Control Structures	41,000,000
Seepage Management Features	**$198,000,000**
11 Levees	70,000,000
11 Levees	20,000,000
13 Pumping Plant	108,000,000
Construction Features Sub-Total	**$1,579,000,000**
Preconstruction Engineering and Design (PED, E&D)	**$158,000,000**
Construction Management (S&A)	**$126,000,000**
Total First Cost	**$1,904,000,000**
Investment Costs	
Interest During Construction: Construction	104,000,000
Interest During Construction: Real Estate	4,000,000
Total Investment Cost	**$2,012,000,000**
Average Annual Costs	
Interest and Amortization of Initial Investment	117,000,000
OMRR&R	4,000,000
Monitoring	TBD (~1% of project cost)
Total Average Annual Costs	**$121,000,000**

Based on limited engineering and design of the TSP for this study, the average annual cost is $121,000,000.

Real Estate

Fee title will be required for the project footprint of the A-2 FEB and the FEB Discharge Canal. The estimated real estate cost for the A-2 FEB utilizing the actual acquisition costs are $31,710,058 of which approximately $30,220,406 will be credited to the Federal government since it was Federal funds contributed by DOI pursuant to the Farm Bill Section 390 of the Federal Agriculture Improvement and Reform Act of 1996 (Public Law 104-127, 110 Stat. 1022). SFWMD contributed approximately $1,366,352 to buy out the farming reservation held by the St. Joe Paper Company which will be credited to SFWMD. The remaining $123,750 is attributed to approximately 9.9 lands, SFWMD acquired from a private individual in the A-2 FEB. For the FEB Discharge Canal comprised of approximately 91.25 acres, SFWMD acquired 34.23 acres with Farm Bill and State funds. Approximately $78,801 will be credited to the Federal government and $10,246 will be credited to SFWMD. The approximately 57.02.6 acres owned by the State of Florida were valued at $712,750. SFWMD will recertify the lands in WCA 3A/3B to the Federal government when required for construction or operations at no cost to the CEPP project. Administrative costs were calculated at approximately $1,664,811. An incremental real estate cost for all the above cost was calculated at $2,509,125. Total estimated real estate costs were estimated at $36,690,000 rounded.

6.3 COST ESTIMATE FOR RECREATION ELEMENTS

The justification for incurring additional costs for recreation features is derived by utilizing a benefit to cost ratio. The tangible economic justification of the proposed project can be determined by comparing the equivalent average annual costs with the estimate of the equivalent average annual benefits, which would be realized over the period of analysis. These average annual recreation benefits and costs are summarized in Table 6-2~~Table 6-2Table 5-3~~. The federally mandated project evaluation interest rate of 3.75 percent, an economic period of analysis of 50 years and 2013 price levels were used to evaluate economic feasibility.

Table 6-223. Summary of Recreation Costs and Benefits

Total Recreation Costs**	$5,577,000
Interest During Construction	$289,000
Total Investment	$5,800,000
Amortized	$289,000
OMRR&R	$50,000
Average Annual Cost	**$339,000**
Unit Day Value	$7.26
Daily Use	200 users
Annual Use (100 users x 365 days)	73,000
Average Annual Benefit	**$529,000**
Benefit to Cost	1.6 to 1
Net Annual Benefits	$159,000

** The 50 year period of economic analysis for recreation differs from the economic period of analysis for restoration (28-years). A standard period of analysis was used for the recreation NED evaluation, while the restoration NER evaluation completed in the year 2050 to remain consist with CERP.*

***Cost includes onetime fill costs*

This analysis leads to the conclusion that there are 1.6 times the benefits than the costs. The benefit to cost ratio for the recreation features equals 1.6 to 1, with net annual benefits equaling $159,000.

6.4 COST SHARING

CEPP, as part of CERP, is 50/50 cost shared for construction features and for the OMRR&R of restoration features. Because the CEPP project uses State owned and operated facilities, The Corps will also pay 9.5 percent of the OMRR& R costs for these features. The non-federal sponsor is responsible for 100% of the OMRR&R for recreation features. The non-federal sponsor will also provide 100% of project lands. Discuss expectation of credits from other projects in the CERP program.

Comment [baf22]: Possibly discuss expectation ~~of credits from other CERP projects~~, rather than cash or work in kind.

6.5 PLAN ACCOMPLISHMENTS

6.5.1 ~~Comparison of~~ Environmental Benefits

Comment [SFWMD23]: Provide details by each of the project areas – red line. Blue line ect. There are three sentances in this write up on Florida Bay- has it been added as a project objective?

Comment [KMW24]: Need to beef up this section...This is the justification for why we are doing this project....need Patrice to help with graphics, etc...

~~While the results of the NER analysis identified Alternative 4R infrastructure as providing the greatest overall benefits with the least cost per habitat unit (Section 4), operational refinements were made to Alt 4R to address potential ecological impacts from lowered water depths in WCA 2B, and impacts to water supply levels of service in the Lake Okeechobee Service Area (LOSA) and Lower East Coast (LEC). Operational refinements were also made to address increases in low flow events to the St. Lucie Estuary, minimize reductions in freshwater flows to Biscayne Bay, and to provide improved water depths to eastern WCA 3B for purposes of improving environmental conditions within these areas. The results of the ecosystem benefits analysis indicate a reduction in alternative performance for Alternative 4R when incorporating the operational refinements; however, a similar reduction in benefit trends would be expected for any of the alternatives in the final array if these considerations were similarly applied.~~

~~Habitat unit results for Alternative 4R (Alt 4R) are displayed in Table 5-4.~~ Alt 4R.2 provides significant benefits within the project area. Based on the methodology that was used to quantify ecosystem benefits, the area beneficially affected by the project encompasses 966,122~~961,921~~ acres; an improvement of 282,540~~277,589~~ acres in comparison to the FWO project condition. The total target acreage for the project was determined to be 1,638,316 acres. Alt 4R.2 addresses the need to restore ecosystem function in the Caloosahatchee and St. Lucie Estuaries by reducing the number and severity of events where harmful amounts of freshwater from Lake Okeechobee are discharged into the estuaries. A reduction in the number of high volume freshwater discharges to the estuaries would help to moderate unnatural changes in salinity which are extremely detrimental to estuarine communities. Within the Greater Everglades, altered hydrology has led to degradation of the native vegetation communities, such as tree islands and sawgrass marsh mosaic and marl prairies, and the expansion of undesirable cattail monocultures. As habitats have been degraded, abundance, and diversity of wildlife populations have been affected as well. Restoration of sheetflow and historic hydropatterns within WCA 3 and ENP will result in beneficial shifts in vegetation communities, landscape patterns, and animal populations. Implementation of Alt 4R.2 would provide greater project benefits to those areas located in northern WCA 3A and ENP. Southern WCA 3A would remain largely unaffected by the project. Changes in hydrology of the freshwater systems have led to effects on the estuarine and marine environments of Florida Bay. Alterations in seasonal inflow deliveries to Florida Bay have resulted in extreme salinity fluctuations. Implementation of Alt 4R.2 would provide greater project benefits to ~~those areas located in the east central, central, south and western portions of~~ Florida Bay, improving the production of bay flora and fauna. Further information pertaining to the evaluation of Alt 4R.2 is described in **Appendix G (Benefits Model)**.

~~Table 5-4. Habitat Unit Results for Alt 4R~~

~~Project Region (Zone)~~	~~Habitat Units~~

	~~Existing Condition Baseline~~	~~FWO Condition~~	~~Alt 4R~~
~~Caloosahatchee Estuary (CE-1)~~	~~2,839~~	~~34,070~~	~~39,038~~
~~St Lucie Estuary (SE-1)~~	~~2,099~~	~~3,149~~	~~4,798~~
~~Total Northern Estuaries~~	~~4,938~~	~~37,219~~	~~43,836~~
~~Northeast WCA 3A (3A-NE)~~	~~44,451~~	~~29,634~~	~~92,606~~
~~WCA 3A Miami Canal (3A-MC)~~	~~32,847~~	~~27,373~~	~~54,746~~
~~Northwest WCA 3A (3A-NW)~~	~~30,970~~	~~30,266~~	~~54,198~~
~~Central WCA 3A (3A-C)~~	~~108,414~~	~~105,669~~	~~109,786~~
~~Southern WCA 3A (3A-S)~~	~~69,247~~	~~68,423~~	~~68,423~~
~~WCA 3B (3B)~~	~~55,697~~	~~48,842~~	~~58,268~~
~~Northern ENP (ENP-N)~~	~~57,557~~	~~55,054~~	~~98,847~~
~~Southern ENP (ENP-S)~~	~~124,068~~	~~126,454~~	~~169,400~~
~~Southeast ENP (ENP-SE)~~	~~79,711~~	~~81,062~~	~~85,116~~
~~Total Greater Everglades~~	~~602,962~~	~~572,777~~	~~791,390~~
~~Florida Bay West (FB-W)~~	~~23,693~~	~~20,534~~	~~39,488~~
~~Florida Bay Central (FB-C)~~	~~8,205~~	~~8,205~~	~~13,948~~
~~Florida Bay South (FB-S)~~	~~16,614~~	~~14,659~~	~~27,364~~
~~Florida Bay East Central (FB-EC)~~	~~21,984~~	~~20,225~~	~~33,416~~
~~Florida Bay North Bay (FB-NB)~~	~~2,154~~	~~2,028~~	~~2,661~~
~~Florida Bay East (FB-E)~~	~~9,440~~	~~8,685~~	~~9,818~~
~~Total Florida Bay~~	~~82,090~~	~~74,336~~	~~126,695~~
~~Total All Regions~~	~~689,990~~	~~684,332~~	~~961,921~~

6.5.2 Contribution to Achievement of Interim Goals and Interim Targets

The Water Resources Development Act of 2000 (WRDA 2000) authorized the CERP. Section 601(h)(3)(C)(III) of that act (P.L. 106-541) required that CERP promulgate Programmatic Regulations which would include the "establishment of interim goals to provide a means by which the restoration success of the Plan may be evaluated throughout the implementation process." Section 385.38 of the CERP Programmatic Regulations (33 CFR Part 385) further describes the intent and the underlying principles for establishing interim goals and a process for their development. CERP Programmatic Regulations Section 385.39 also established the requirement to develop interim targets to measure progress toward meeting other water-related needs of the south Florida region, and describes the intent, underlying principles, and the process for establishing interim targets. Recommendations for interim goals and interim targets were developed by Restoration, Coordination and Verification (RECOVER) in 2005 (RECOVER 2005). An intergovernmental agreement signed in 2007 among the USACE, DOI and SFWMD established interim goals for CERP. An agreement establishing interim targets was also signed in 2007 between the USACE and SFWMD.

Another requirement of the Programmatic Regulations was that each Project Implementation Report (PIR) for a CERP project describe how the project contributes to the achievement of interim goals and interim targets (s. 385.26(a)(3)(xv). For the purposes of this PIR, the project delivery team (PDT) utilized results from the RECOVER-approved performance measures, as well as information gained from additional ecological planning tools and best professional judgment to evaluate the progress towards the interim goals and interim targets. While many predictions towards meeting interim goals are quantitative, ~~some~~ are ~~not~~. Ecosystem restoration trajectories are not linear and may best be expressed by "trends", based on our knowledge and field experience. While computer simulation model results presented here are considered to be state of the art, they can only be approximations of reality. These tools are, however, our best predictor of the substantial benefits we may realize by the implementation of CEPP.

The interim goals analyzed here are based upon the objectives of CEPP. Interim goals for Lake Okeechobee and Biscayne Bay are not included, as these two areas of the South Florida ecosystem are considered to be "kept whole" by CEPP, not necessarily enhanced.

6.5.2.1 Progress Toward Interim Targets

PLACEHOLDER FOR SUMMARY OF INTERIM TARGETS TO BE PROVIDED BY BRENDA MILLS

6.5.2.2 Progress Toward Interim Goals

Each of the performance measures for the CEPP planning effort were derived from those approved for use in CERP by RECOVER. Detailed information about the performance measures and the methodology that was used to quantify ecosystem benefits and support plan evaluation and selection of the TSP can be found in **Appendix G (Benefit Model)**. Further information on additional ecological planning tools (e.g., Wood Stork Foraging Potential, Alligator Production Suitability, Everglades Landscape Vegetation Succession [ELVeS], Juvenile Sea Trout and Pink Shrimp) used to evaluate the environmental effects of CEPP alternatives can be found in **Appendix C.2 (Environmental Effects)**. Output from the regional hydrologic models used in plan formulation was also used to evaluate and help quantify CEPP's progress towards meeting interim goals. **Table 5-5** is a summary of the CEPP's effects on the interim goal indicators. Most analyses compare the TSP to the future without project condition (FWO). When "acre-feet" are sited, this refers to an analysis of an average-annual water budget over the 41-year period of hydrologic model simulation (1965 – 2005).

Comment [MAN25]: Doube check references to Tables below this section.

562 **Table 6-~~33~~45. Progress Towards Meeting Interim Goals**

Northern Estuaries Indicators	Interim Goals	Summary of Project Effects
1.1 American Oysters	Increase areal coverage of American oysters in the Caloosahatchee and St. Lucie estuaries	In the Caloosahatchee Estuary, while more oysters were estimated under CEPP relative to the FWO and existing conditions baseline (ECB) at Cape Coral, values were similar for CEPP and the FWO at the more downstream and saline Shell Point. Compared to the ECB, CEPP could account for a 7.6% increase in oyster density at Cape Coral compared to a 4.4% increase at Shell Point. In the St. Lucie Estuary, the predicted seasonal pattern for oysters was similar at Roosevelt (US-1) Bridge, although densities were an order of magnitude lower than in the Caloosahatchee (there are fewer oysters to start with). There were more oysters predicted under CEPP relative to the FWO with a 13.1% improvement.
1.2 Submerged Aquatic Vegetation	Increase the areal coverage and improve the functionality of submerged aquatic vegetation in the northern estuaries	The maximum number of seagrass shoots occurred in August and September in both estuaries with approximately 1.2 million shoots per acre of *Halodule wrightii* (shoal grass) at Shell Point in the Caloosahatchee and approximately 2.5 million shoots per acre of *Syringodium filiforme* (manatee grass) at Boy Scout Island near the Saint Lucie Inlet. Overall shoot densities predicted under the CEPP were greater than for either the FWO or the ECB. Compared to the FWO, increases of 8.5% and 6.6% more seagrass shoots were predicted with salinities representative of CEPP in the Caloosahatchee and St. Lucie, respectively.
1.3 Flows	Reduce high and low volume flows to the Caloosahatchee and St. Lucie estuaries	High volume flows (>2,800 cfs) to the Caloosahatchee Estuary were reduced from 81 occurrences in the FWO to 70 with CEPP; incidences of flows too low (<450 cfs) decreased slightly from 27 to 24. In the St. Lucie Estuary, high flows (>2,000 cfs) occurred 58 times in the FWO and 31 times with CEPP; flows too low (<350 cfs) went from 139 in the FWO to 151 with project.
Greater Everglades Indicators	**Interim Goals**	**Summary of Project Effects**
3.1 Water Volume	Distribute water across the ecosystem in a manner that reflects natural conditions while providing for other water-related needs of the region	Although not always quantitative, the predictions for 3.2 *Sheetflow*, 3.3 *Hydropattern*, 3.13 *Flows to northern boundaries of the water conservation areas* and 3.14 *Flows to Everglades National Park*, below help to tell this hydrologic story.
3.2 Sheetflow in Natural Areas	Establish more historic magnitudes and directions of sheetflow in the natural areas of the Everglades	Qualitatively, there is a greater magnitude of water flowing through WCA 3A, WCA 3B and ENP with CEPP. The distribution of flow relative to target indicates a 26% and 4% improvement for WCA 3A and ENP, respectively. Distribution decreases by 13% in WCA 3B.

3.3 Hydropattern	Restore the natural timing and pattern of inundation throughout the ecological communities of South Florida, including sawgrass plains, ridge and slough and marl marshes	In WCA 3A, the timing and inundation duration (length of time water was above ground) improved 26% towards target. WCA 3B showed a 16% improvement. In ENP, these conditions moved 48% towards target.
3.4 System-Wide Spatial Extent of Habitat	Increase spatial extent of natural habitat	CEPP components do not increase the spatial extent of habitat; project lands are not being converted from agricultural or urban land use into natural marsh. CEPP will, however, improve the functionality and habitat value of 277,589 acres of Everglades fresh and saltwater marshes.
3.5 Everglades Wetlands Total Phosphorus	Achieve water column phosphorus concentrations of 10 micrograms per liter in the Everglades	Water quality is not a CEPP objective.
3.6 Periphyton Mat Cover, Structure, and Composition	Restore periphyton mat cover, structure and composition that were characteristic of the spatially distinct hydroperiods (short and long hydroperiods) and low nutrient conditions in the greater Everglades wetland communities	Periphyton monitoring has shown that the continued input of above-ambient phosphorous concentrations will both increase severity of enrichment effects near canals and cause these effects to continue to cascade downstream. Increased input of water through restorative projects such as CEPP may increase periphyton development in areas formerly over-drained.
3.7 Ridge and Slough Pattern	Restore the historical ridge and slough landscape directionality and pattern	Restoration of the ridge slough pattern with CEPP may be highly geographically variable. Focusing flows to northwest WCA 3A could be advantageous from the perspective of local flow velocities. In WCA 3B, only in the area within the L-67 do restored flow lines track historical flow lines. One of the most restorable areas of the ridge-slough landscape is in southern WCA 3A, where the landscape retains high elevation variance, even though the bimodal nature of that distribution has been lost. As such, the inability to meaningfully change the hydrology in this impounded area remains problematic.
3.8 Everglades Tree Islands	Improve tree island health and maintain healthy tree islands	CEPP is protective of existing islands in northeast WCA 3A, and is highly protective of tree islands in Shark River Slough. Northwest WCA 3A and Shark River Slough (SRS) are the most probable locations for the creation of new tree islands. CEPP provides improved hydrologic conditions for tree islands over the FWO in northern WCA 3A, WCA 3B, and SRS.

3.9 Aquatic Fauna Regional Populations in Greater Everglades Wetlands	Increase the abundance of fish to levels that approximate those predicted for pre-drainage conditions	Small fishes (up to ~8 cm) are expected to increase in abundance over the FWO in the northern portion of WCA 3A, especially in the vicinity of the backfilled Miami Canal. Predictions range from ~7% to ~30% in these areas. Of two sites in WCA 3B, one shows an increased density of ~7% while the second shows a slight drying. The area with the greatest lift in ENP is in northeast Shark Slough, occurring downstream of Tamiami Trail and east of the L-67 extension, with predicted small fish density rising ~22% above the FWO. While quite small, sites in Taylor Slough show improvement also.
3.10 American Alligator	Restore more natural numbers and distribution patterns for alligators across South Florida's major freshwater and estuarine landscapes	Alligator production potential increases over the FWO from ~6-8 years (out of a 41-year period of hydrologic record) in northern WCA 3A and around the backfilled Miami Canal. Gains in other areas (e.g., WCA 3B and ENP), while positive, are fairly negligible.
3.11 System-Wide Wading bird nesting patterns	Increase the total number of nesting pairs, the percentage of wading bird pairs nesting in estuarine locations and the frequency of super colony events and establish conditions that encourage wood storks to initiate nesting earlier in winter	For the wood stork, CEPP has the greatest benefit in north eastern WCA 3A and the area of the backfilled Miami Canal. There is substantial improvement in most dates of the period of record. Northern ENP, which includes some important wood stork colonies, shows the greatest decline of all the areas. CEPP has higher water levels in NESRS by as much as 30 cm which may create conditions too deep for optimal foraging. Conversely, CEPP improves foraging suitability for the wood stork in southern ENP. When CEPP and FWO suitability scores are compared, the magnitude of the scores is very similar, however, CEPP maintains a higher score for somewhat longer into the dry season. It is predicted that southern ENP may become more suitable foraging habitat for wood storks, making it possible they would start nesting in this location once again.
3.12 Snail Kite	Increase the areal extent of suitable foraging for snail kites	In this analysis, the apple snail is used as a proxy for snail kites, due to its being virtually the exclusive food source for the kite. CEPP shows greater numbers of apple snails in most of WCA 3A and in WCA 3B and Shark Slough in ENP.
3.13 Flows to Northern Boundaries of the WCAs	Provide more natural surface water flows to the northern boundaries of the water conservation areas	CEPP reduces point source surface water discharge from S-8 by 206,000 acre-feet per year and spreads the water out to provide sheetflow through the western hydropattern restoration feature.
3.14 Flows to ENP	Provide more natural surface water flows to Everglades National Park	Overland flows are introduced into NESRS, estimated at 235,000 acre-feet per year, with CEPP features; there was no overland flow here in the FWO.

Southern Estuaries Indicators	Interim Goals	Summary of Project Effects
4.1 Salinity Patterns	Reduce the intensity, duration, frequency and spatial extent of high salinity events, reestablish low salinity conditions in mainland nearshore areas, and reduce the frequency of a rapidity of salinity fluctuations resulting from pulse releases of fresh water from canals	Salinity indices in Florida Bay result in up to a 28% and 14% improvement, respectively over the FWO; conditions generally are better during the wet season than the dry. Spatially, conditions are better in the East Central, Central, South, and West during the wet season and do improve in the East Central, South, and West during the dry season.
4.2 Submerged Aquatic Vegetation	Reestablish a diverse seagrass community with moderate plant densities and more natural seasonality, and increase the percentage of Florida Bay having suitable habitat for seagrass growth	Improved salinity regimes in the North Bay result in a stable mixed *Thalassia-Halodule-Ruppia* SAV community with a decrease in *Thalassia* and an increase in *Ruppia* densities over the FWO.
4.3 Juvenile Shrimp Densities	Increase densities of juvenile shrimp within the various basins of Florida Bay and Biscayne Bay	Improved salinity regimes in the Central and Western Florida Bay result in less than 1% increase (0.68% and 0.35%, respectively) in potential pink shrimp annual harvest over the FWO. As flows to Biscayne Bay are not a CEPP objective, there are no summarized project effects for Biscayne Bay.
4.4 American Crocodiles	Increase the frequency of salinities less than 20 parts per thousand in Florida Bay to foster optimal growth and survival of juvenile crocodiles	Improved salinity regimes in the North and Central Florida Bay result in an increase in the crocodile growth and survival index overall up to 7% and 14%, respectively and up to 4% and 28%, respectively during dry year conditions as compared to the FWO project condition
4.6 Freshwater Flows to Florida Bay	Increase freshwater flows to Florida Bay	Tidal outflows increase with CEPP by an average of 145,000 acre-feet per year.
4.7 Freshwater Flows to Biscayne Bay	Increase freshwater flows to Biscayne Bay	Flows to Biscayne Bay are not a CEPP objective.
System-Wide Water Volume Indicator	**Interim Goal**	**Summary of Project Effects**
5.1 Quantity of Freshwater Lost to Tide	Reduce the quantity of freshwater lost to tide	CEPP captures an estimated 85,000 acre-feet of water from being lost to tide in the Caloosahatchee and 43,000 acre-feet from the St. Lucie.

563

~~6.5.2 Environmental Effects~~

~~6.5.2.1 Climate~~

~~Implementation of Alt 4R would have a negligible effect on climate within the action area. Minor, localized effects to microclimate may occur as a result of redistribution of water and shifts in vegetation. Potential effects may include increases in evapotranspiration and temperature changes.~~

~~6.5.2.2 Geology and Soils~~

~~On the A-2 FEB footprint, Alt 4R would result in conversion of relatively flat, uniform agricultural lands to an FEB (4 feet maximum operating depth) with exterior levees up to 10 feet above existing grade (generally 7 to 9 feet North Atlantic Vertical Datum 1988). Alt 4R shows an increase in inundation duration over future without project (FWO/No Action Alternative) that will significantly decrease soil oxidation, subsidence and peat fires in WCA 3A. Alt 4R improves hydrologic conditions in northern WCA 3A in comparison to FWO by increasing stages and extending hydroperiods within the area (Table G-22 and Table G-24). Inundation duration for Alt 4R ranged from 76% of the period of record (POR) to 96% of the POR in northern ENP (Zone ENP-N) and from 91% to 93% in southern ENP. Inundation duration for FWO within this same region varied from 78% to 83% of the POR in northern ENP and from 86% to 91% in southern ENP. Alt 4R produced significantly deeper depths than the FWO as depicted by the normalized weekly stage duration curve for IRs 129 (Figure G-38) and IR 130 (Figure G-39); example IRs for northern and southern ENP. Alt 4R also consistently reduced the frequency and duration of dry events in NESRS in comparison to the FWO (Table G-31).~~

~~6.5.2.3 Vegetation~~

~~Negligible effects on vegetation within Lake Okeechobee, the Northern Estuaries, and EAA are anticipated due to implementation of Alt 4R. As compared with FWO, alternative 4R shows a slight performance improvement within the Northern Estuaries as indicated by fewer high volume flow months. Reduction in high flows and accompanying flow velocities would result in lower suspended solid loading, thereby allowing greater light penetration to promote growth of submerged aquatic vegetation (SAV). Refer to Section 4.1.3 for background and Appendix C.2.2 for a detailed comparison of potential effects to vegetation.~~

~~Many areas of WCA 3A, particularly within central WCA 3A, still contain good quality wetland habitat consisting of a complex of tree islands, sawgrass marshes, wet prairies, and aquatic sloughs. Vegetation and patterning in the central portion of WCA 3A resembles pre-drainage conditions most closely and represents some of the best examples of remnant Everglades habitat in south Florida. These areas remain largely unaffected by Alt 4R. Increases in depth within central WCA 3A were not as significant as increases in observed depths in northern WCA 3A; however maintenance of existing conditions within this region of the project area is desirable as ridge and slough habitat is well conserved.~~

~~The routing of flows through the marsh will likely result in the expansion of cattail vegetation in areas experiencing higher nutrient loads particularly in the northern portion of WCA 3A. Conversely, some areas directly adjacent to the Miami Canal will experience lower flows and nutrient loads under Alt 4R in comparison to the FWO condition. In southern WCA 3A, high water levels during the wet season are important in maintaining quality wet prairie and emergent slough habitat (FWS 2010). However, prolonged high water levels (i.e. during both wet and dry season) and extended hydroperiods have resulted in vegetation shifts within southern WCA 3A, negatively impacting tree islands and fragmenting sawgrass ridges, resulting in the loss of historic landscape patterning. Neither Alt 4R nor FWO would~~

~~provide significant benefits to southern WCA 3A through reduction in high water levels or duration, therefore, significant shifts in vegetation are not anticipated within this region.~~

~~Alt 4R includes conveyance features and levee removal within L 67A and C, thereby providing new point source discharges of water into WCA 3B. At the end of the dry season, there is the potential for flushing of water and remobilization of nutrients within the water column, potentially affecting vegetation within WCA 3B. As indicated for northern WCA 3A, mobilization and introduction of phosphorus are a notable concern. However, it is anticipated that Broward County Water Preserve Areas (BCWPA) CERP Project would be constructed prior to CEPP implementation, thereby reducing discharges from S 9 into L 67A. Currently, total phosphorous (TP) within L 67A ranges between 10 and 20 parts per thousand (ppt), depending upon the time of year. With completion of the BCWPA CERP Project, it is anticipated that TP loading within L 67A will be greatly reduced and therefore minimal effects to vegetation due to changes in water quality are anticipated within WCA 3B. Cattail expansion will be monitored as outlined within Annex D. Tree islands contain extraordinarily high levels of TP in their soil suggesting that they may play a major role in the biogeochemical cycles of nutrients in the Everglades (Sah 2004; Troxler and Childers 2010; Troxler et al. 2009; Wetzel 2002; Wetzel et al. 2009, 2011). Wetzel et al. (2011) found that soil TP levels within WCA 3A and WCA 3B tree islands were approximately 4 times higher than the surrounding marsh TP levels. Tree islands within WCA 3B may help to capture and focus nutrients, assisting to minimize potential effects on sawgrass and wet prairie communities within this region (Wetzel et al. 2011).~~

~~Flows through Shark River Slough (SRS) under current system compartmentalization and water management practices are greatly reduced when compared with pre drainage conditions. The result has been lower wet season depths and more frequent and severe dry downs in sloughs and reduction in extent of shallow water edges. Over drainage in the peripheral wetlands along the eastern flank of Northeast Shark River Slough (NESRS) has resulted in shifts in community composition, invasion by exotic woody species, and increased susceptibility to fire. Implementation of CEPP is expected to rehydrate much of NESRS by providing a means for redistributing flows from WCA 3A and WCA 3B to ENP. Resumption of sheetflow and related patterns of hydroperiod extension will significantly help to restore pre drainage patterns of water depths and the complex mosaic of Everglades' vegetation communities.~~

~~As compared with the FWO, Alt 4R produced significantly higher depths and inundation durations (refer to Appendix G, Figure G 38 and Figure G 39). Within northern ENP, alternative performance was similar with all alternatives reducing the number of dry events within SRS and extending average hydroperiods by 35 to 90 days depending upon location. Reduction in the number and duration of dry events and extended hydroperiods will reduce soil oxidation, decrease fire potential, promote peat accretion and aid in restoration of historic wetland vegetation communities. Improved inundation patterns produced by Alt 4R in southern ENP resulted in better suitability for slough vegetation. Although none of the alternatives met the desired dry and wet season water depths for slough vegetation in southern ENP, Alt 4R would provide benefits as compared with the FWO by increasing water depths in both the wet and dry season within this region.~~

~~Alt 4R includes increasing capacity at S 333 from 1350 cfs to 2500 cfs. With an increase in S 333 flow, there would be a potential increase in total phosphorus loading entering NESRS. The Everglades, a phosphorus limited system, historically received most inputs of phosphorus through rainfall, with average TP concentrations of less than 0.01 milligrams per liter (mg/L) (McCormick et al. 1996, Newman et al. 2004). However, more recently, areas within ENP, including NESRS, have been exposed to TP~~

Comment [GSE26]: Barbara Cintron comment: How can this be? CEPP proposes to triple the capacity of S-333, allowing for less ponding in SE WCA-3A; yet the model shows no improvement in depth/duration of adverse high water events?

Dan (5/2): Because we are adding 20% more inflows to WCA-3A (200 kAF average annual).

Comment [baf27]: Should this be parts per billion?

Comment [GSE28]: Barbara Cintron Comment: Where? In ENP? So it appears from the following sentence, but note that NESRS passes from WCA 3B to ENP.

concentrations at or in excess of 0.10 mg/L (SFWMD 2010). These concentrations and any additional inputs resulting from implementation of any of Alt 4R (refer to **Section 4.2.9,** Water Quality for details), have the potential to result in vegetation changes within NESRS. Vegetation that can assimilate nutrients directly from the water column appears to be the most sensitive to nutrient enrichment and include periphyton and floating-leaved plants, such as spatterdock and water lily (Chaing et al. 2000; Newman et al. 2004). Chaing et al, 2000 demonstrated that the periphyton *Utricularia* complex may be quite sensitive to increased phosphorus, as illustrated by the disappearance of this complex from enriched study plots after the third year. Potential effects on vegetation and species community composition within NESRS and ENP cannot fully be determined at this time. Water quality within the CEPP action area will continue to be monitored, as described in **Annex D,** to determine any associated changes.

Construction and hydrological modification under Alt 4R may likely influence the spread and establishment of invasive and native nuisance plant species within the CEPP action area. Refer to **Section 4.2.23** and **Appendix C, Section C.2.4** for additional information.

6.5.2.4 Threatened and Endangered Species

Threatened and endangered species are discussed further in **Appendix C.2.2.4** and within the USFWS Biological Assessment in **Annex A.**

6.5.2.4.1 American Crocodile

A Habitat Suitability Index (HSI) for juvenile American crocodiles (*Crocodylus acutus*) was employed to predict potential effects of the alternatives. The crocodile growth and survival index used in this analysis is one of the components of a crocodile HSI that characterizes suitable habitat for crocodiles based on habitat, location of known nest sites, salinity, and prey biomass. Results from applying the salinity data into the juvenile crocodile HSI is shown in **Figure C.2.2-27 [1st croc graphic).** The plot shows the lift (Alt 4R minus FWO) of an index of juvenile crocodile growth and survival at sites along the northern Florida Bay shoreline for all years of the model runs. For the four sites with the highest predicted growth and survival, Alt 4R improves habitat suitability for juvenile crocodiles.

6.5.2.4.2 Everglade snail kite

The snail kite has a highly specialized diet typically composed of apple snails, which are found in palustrine, emergent, long hydroperiod wetlands. As a result, the snail kite's survival is directly dependent on the hydrology and water quality of its habitat (FWS 1999). As compared to FWO, rehydration and vegetation shifts within northern WCA 3A and increased hydroperiods within WCA 3B and ENP would increase suitable habitat for apple snails, thereby increasing the spatial extent of suitable foraging opportunities for snail kites. The number of years that Alt 4R fell within USFWS recommended depth ranges substantially increased from FWO, therefore increasing habitat suitability for snail kites (See **Table C.2.2-1** in **C.2.2.4** or **Annex A).**

6.5.2.4.3 Cape Sable Seaside Sparrow (Nesting Condition and Hydroperiod)

Under FWO, current hydrologic conditions would remain the same as ECB. Implementation of Alt 4R has the potential to negatively affect hydroperiods within the marl prairies adjacent to SRS. Modeling indicates an increase in hydroperiod within CSSS-E and southern portions of CSSS-A. However, hydroperiods within northern CSSS-A are slightly reduced as compared with FWO, providing slightly better, but overall, too wet conditions for marl prairie habitat and nesting CSSS. Slight habitat improvements were seen in CSSS-F.

~~6.5.2.4.4 Wood stork~~

~~An analysis of wood stork foraging potential was performed to predict improvements to foraging habitat with CEPP implementation (South Florida Natural Resources Center 2013). Results from this analysis indicate that Alt 4R provides the greatest benefit over FWO within northern WCA 3A (CEPP zones 3A-NE and 3A-MC). When suitability scores are compared for FWO and Alt 4R, (refer to **Appendix C.2 Figure C.2.2-25**) the magnitude of the scores is very similar, however, Alt 4R maintains a higher score for somewhat longer into the season. Historically, the short hydroperiod wetlands within ENP have been important for wood stork foraging during the pre-breeding season with wood storks shifting to longer hydroperiod wetlands as the dry season progresses. Hydrological patterns that produce a maximum number of patches with high prey availability (i.e. high water levels at the end of the wet season and low water levels at the end of the dry season) are necessary for high reproductive outputs (Gawlik 2002; Gawlik et al. 2004). Depending upon the elevation and microtopography throughout WCA 3 and ENP, implementation of CEPP Alt 4R would produce a variety of wetland habitats that would support prey densities conducive to successful wading bird foraging and nesting.~~

~~6.5.2.4.5 Eastern Indigo snake~~

~~In Alt 4R, there is the potential for loss of upland habitat due to backfilling the Miami Canal in WCA 3A. However, with CEPP implementation upland mounds, along with the WCA 3B flowway levee would be constructed, which would potentially provide habitat for indigo snakes offsetting increased hydroperiods within WCA 3.~~

~~6.5.2.4.6 Florida manatee~~

~~As compared to FWO, Alt 4R would decrease damaging high volume flows to the Northern Estuaries. Decreased salinities within the Northern Estuaries that reduce stress on SAV and promote increases in seagrass shoots have the potential to increase foraging opportunities for manatees in this region. Similarly, increased freshwater flows to Florida Bay and the southwestern coastal estuaries would result in lowered salinity levels that better encompass seagrass salinity tolerance ranges. This lower salinity effect would also increase foraging opportunities for manatees. Alt 4R would provide benefits to Florida manatee as compared with the FWO (Refer to **Section C.2.1.4.6** for further information).~~

~~6.5.2.4.7 Florida Panther~~

~~Florida panthers presently inhabit lands in ENP adjacent to the Southern Glades, and Alt 4R has the potential to affect both the Primary and Secondary Zones for Florida panther habitat. Since potentially suitable habitat occurs within the action area, increased water deliveries under CEPP Alt 4R to ENP could affect Florida panther habitat. However, as lands within the CEPP action area become restored to their more historic natural values, the simultaneously improved prey base would result in greater use by the Florida panther inhabiting these areas.~~

~~6.5.2.4.8 Smalltooth Sawfish~~

~~The smalltooth sawfish resides in the Caloosahatchee River and adjacent Charlotte Harbor estuaries; and has the potential to be found in the southern estuaries where juveniles could potentially occur and feed in red mangrove wetlands. Alt 4R has the potential to benefit the smalltooth sawfish by reducing excessive freshwater flows and improving the salinity regime throughout the Caloosahatchee estuary; and by increasing freshwater flows into the coastal wetlands adjoining Florida Bay, subsequently reducing the duration and occurrence of hypersaline conditions.~~

753 **6.5.2.5 Wildlife**
754 A comparison of FWO and Alt 4R and their potential effects on wildlife within the CEPP action area are
755 summarized below. Effects on state and federally listed species are described in further detail in
756 **Appendix C.2** and **Section C.2.1.5** and **Annex A**. Changes in water quality also have the potential to
757 affect prey forage base through altering of vegetation composition or structure. Water quality will
758 continue to be monitored under CEPP; potential effects are largely uncertain at this time.
759
760 **6.5.2.5.1 Invertebrates**
761 Significant effects to the invertebrate community within Lake Okeechobee or EAA are not anticipated
762 under Alt 4R. As compared with FWO, Alt 4R shows a slight performance improvement within the
763 Northern Estuaries as indicated by fewer high volume flow months. Reductions in high volume
764 discharges and salinity fluctuations would likely benefit oysters within the Northern Estuaries. In the St.
765 Lucie Estuary increases in low flow violations during the dry season were indicated by the modeling
766 effort. Recent oyster monitoring data during extended dry conditions in the area has shown an increase
767 in oyster disease related to the duration and severity of high salinity conditions. Although these
768 extreme dry spells are rare in the SLE, unlike the CRE they can occur and therefore supplemental flows
769 during dry times may be warranted and have been accounted for in the IRLS water reservation process.
770
771 Within the Greater Everglades aquatic invertebrates would rapidly colonize newly re-hydrated areas
772 with implementation of Alt 4R, directly benefitting aquatic invertebrates within the action area.
773 Increases in stages and hydroperiods within northern WCA 3A, WCA 3B and ENP would promote
774 wetland vegetation transition through contraction of sawgrass marshes and expansion of wet prairies,
775 and in deeper regions, sloughs. Submerged aquatic plants are commonly associated with sloughs
776 providing structure for growth of periphyton, the main source of primary production within the
777 freshwater Everglades (Gunderson 1994; Powers 2005). Periphyton is a primary component of
778 invertebrate diets, including apple snails. In addition to the potential for increased foraging
779 opportunities, changes in vegetation resulting in expansion of wet prairie and increases in emergent
780 vegetation would also provide habitat structure critical for apple snail aerial respiration and egg
781 deposition (Turner 1996; Darby et al. 1999).
782
783 Crayfish are important components within the Everglades food web, serving as primary dietary
784 components of higher trophic level species including fish, amphibians, alligators, wading birds and
785 mammals such as raccoons and river otters (Kushlan and Kushlan 1979). Increases in hydroperiod
786 associated with Alt 4R would likely increase crayfish density within northern WCA 3A, WCA 3B, and ENP,
787 particularly within the marl prairies. Research by Acosta (2001) revealed that crayfish productivity
788 would increase substantially if hydroperiods within the marl prairie wetlands were extended by 3 to 4
789 months. Although Alt 4R would not extend hydroperiods within the marl prairies by 3 to 4 months,
790 CEPP implementation would increase hydroperiods within this region resulting in increased native
791 crayfish productivity.
792
793 **6.5.2.5.2 Fish**
794 Implementation of CEPP is expected to significantly improve conditions for fish species throughout
795 much of the Greater Everglades. It is predicted that with CEPP implementation the largest percent gains
796 in daily average fish density would occur within northern WCA 3A and NESRS due to rehydration. Other
797 areas within Shark River Slough are also expected to experience appreciable gains in fish density due to
798 increased flows. It is also expected that regional percent changes in fish densities would be highest in
799 SRS and southern marl prairies (17-31%) and that Taylor Slough and Florida Bay would also be expected
800 to experience positive changes as compared with FWO (Catano and Trexler 2013, **Annex E**).

Introduction or expansion of non-native fish species due to changes in water distribution and increased connectivity within WCA 3A, WCA 3B and ENP is likely to occur; however, the extent of invasion is uncertain at this time. In contrast to FWO, new access points will be created under CEPP.

6.5.2.5.3 Amphibians and Reptiles

Significant beneficial effects to amphibian and reptile communities are anticipated with CEPP implementation. Alt 4R showed improved conditions for amphibians within WCA 3 and ENP as compared with FWO. Rehydration within previously dry areas within northern WCA 3A would increase spatial extent of suitable habitat for aquatic amphibian species in this area. Similarly, increased hydroperiods within ENP would also benefit aquatic amphibian species. As hydrology improves within WCA 3A, WCA 3B and ENP, it is expected that amphibian species richness will also change. However, declines in some amphibian species will be offset by favorable habitat conditions for other species. Increase in forage prey availability (i.e. crayfish and other invertebrates, fish) in areas rehydrated by CEPP implementation will also directly benefit amphibian and reptiles species.

A keystone species within the Everglades ecosystem, the American alligator (Alligator mississippiensis) is dependent on spatial and temporal patterns of water fluctuations that affect courtship and mating, nesting, and habitat use (Brandt and Mazzotti, 2000). Due to rehydration and decreased salinity of previously drained areas, particularly in northern WCA 3A, WCA 3B, and ENP, it is anticipated that implementation of CEPP Alt 4R would improve alligator habitat suitability as compared with the FWO. Adverse effects on alligators that utilize the Miami Canal would occur due to backfilling of the Miami Canal. However, these effects are expected to be short term as alligators will expand into other areas of suitable habitat created as a result of CEPP implementation.

6.5.2.5.4 Birds

The freshwater wetlands of the Everglades are noted for their abundance and diversity of colonial wading birds. Nesting and foraging activities of resident bird species are anticipated to be significantly improved with implementation of CEPP Alt 4R. Impacts to the Cape Sable seaside sparrow, snail kite, wading birds and shore bird species are further discussed in **Section 5.5.1.4 and Appendix C.2.2.4**. Changes in water quality also have the potential to affect birds through alteration of vegetation composition or structure or impacts to their forage base. Water quality will continue to be monitored under CEPP and potential effects are largely uncertain at this time.

As predicted by the Trophic Hypothesis (RECOVER 2004) an increase in density of small fishes will directly benefit higher trophic level predators such as wading birds. Therefore, it is predicted that the alternatives that provide the greatest benefit to small fishes as described in **Section 5.5.1.5.2 and Appendix C.2.2.5**, will also perform best overall for wading birds. Crayfish are a particularly important forage resource for nesting white ibis (*Eudocimus albus*). Appropriate foraging conditions and crayfish densities within core foraging areas of nesting wading birds colonies can reduce foraging flight distance, thereby enhancing overall body condition. As indicated in **Section C.2.2.5**, Invertebrates, increases in hydroperiod associated with implementation of CEPP Alt 4R would likely increase crayfish density within northern WCA 3A, WCA 3B, and ENP, particularly within the marl prairies. Depending upon the elevation and microtopography throughout WCA 3 and ENP, implementation of CEPP Alt 4R would produce a variety of wetland habitats that would support prey densities conducive to successful wading bird foraging and nesting.

848 **6.5.2.5.5 Mammals**
849 As compared with FWO, potential beneficial effects to mammals within the CEPP action area are
850 anticipated with CEPP implementation. Small mammals including raccoons and river otters would
851 benefit from increased crayfish and small prey fish biomass in rehydrated areas within northern WCA
852 3A, WCA 3B and ENP. Effects on federally listed species are described in further detail in Section 5.2.1.4
853 and in **Section C.2.1.5** and within **Annex A.**.
854
855 Anticipated benefits of CEPP include improving the quantity, timing, and distribution of water delivered
856 to ENP. The increase in water availability and rehydration within northern WCA 3A, WCA 3B, and ENP
857 under Alt 4R will likely benefit Everglades mink (*Mustela vison evergladensis*) as a result of increased
858 prey availability (forage fish).
859
860 CEPP implementation, however, may negatively affect mammals dependent upon upland habitat. Due
861 to increased water flow and changes in water distribution it is anticipated that overdrained areas in
862 northern WCA 3A will be rehydrated, triggering a vegetation transition from upland to wetland habitat.
863 Although mammals occurring within the action area are adapted to the naturally fluctuating water levels
864 in the Everglades, there is an increased potential for this vegetation transition to negatively affect
865 mammals utilizing upland habitat. This is a particular concern for deer populations within northern WCA
866 3A that utilize tree islands. However, as discussed in **Section C.2.1.4.4**, no significant effects on tree
867 islands within WCA 3A and ENP are anticipated to occur under Alt 4R; but, lower elevation tree islands
868 within WCA 3B may be adversely affected. Deer populations that utilize the lower elevation tree islands
869 within WCA 3B may suffer from habitat loss. In addition, deer that utilize levees slated for removal (L-
870 67A, L-29, L-67 Extension) also may be adversely affected. Loss of these levees may be offset by the
871 construction of the Blue Shanty Levee in WCA 3B. Deer are highly mobile and will migrate to find
872 suitable habitat. No significant negative effects on mammals in the remainder of the CEPP action area
873 are anticipated under Alt 4R. Changes in water quality also have the potential to affect prey forage base
874 through altering of vegetation composition or structure. Water quality will continue to be monitored
875 under CEPP; potential effects are largely uncertain at this time.
876
877 **6.5.2.6 Essential Fish Habitat**
878 Alt 4R has the potential to reduce the frequency and volume of high level flows from Lake Okeechobee
879 to the Caloosahatchee River Estuary and the St. Lucie Estuary; thus reducing the potential for adverse
880 impacts on estuarine and nearshore biota associated with Essential Fish Habitat (EFH). This is a
881 significant improvement for those estuarine systems compared to a FWO project scenario. Alt 4R would
882 also improve freshwater delivery to coastal wetlands and downstream estuaries in ENP and Florida Bay.
883 Model output indicates a beneficial effect on indicator species and estuarine habitats compared to a
884 FWO scenario. Implementation of Alt 4R would increase freshwater flows to salt water wetlands and
885 nearshore bay areas and result in favorable changes to salinity levels. These changes may affect EFH,
886 although effects on the aquatic resources are anticipated to be beneficial. The TSP will have no adverse
887 effects on EFH in Lake Okeechobee, EAA, and the Greater Everglades. A more detailed analysis of the
888 EFH can be found in **Appendix C.4**.
889
890 **6.5.2.7 Hydrology**
891 A summary of the anticipated hydrologic effects of Alt 4R, which was previously described in **Section 5.1**,
892 is presented in Table 5-6. Alt 4R is compared to the FWO; similarly, the hydrologic effects of the FWO
893 are described based on comparison to the ECB. The summary of regional hydrologic differences includes
894 quantitative comparisons between the ECB and FWO and between the FWO and Alt 4R based on the
895 RSM-BN and RSM-GL CEPP modeling representations of these baselines and Alt 4R. The determination

of the directionality of hydrologic change (improvements and/or adverse hydrologic change) within each specified geographic region is principally based on the results of the ecological evaluation, where available, which are described in Section 4.5.2. Alternatives 1 through 4 are separately compared to the FWO in **Section 5.5**.

Table 5-6. Environmental Effects of Alt 4R: Hydrology

Geographic Region	Alt	Hydrology Effects
Lake Okeechobee	FWO	Moderate hydrologic change, with improvements from reducing the frequency of high lake stages and adverse effect from increasing the frequency of low lake stages. Significant stage reduction of 0.1-0.5 feet for the upper 75% of the stage duration curve. Number of days with stages above 16 feet NGVD is reduced from 870 to 696 during the 1965-2005 period of simulation.
	Alt 4R	Moderate hydrologic change, with improvements from reducing the frequency of low lake stages and adverse effect from increasing the frequency of high lake stages. Significant stage increase of 0.25-0.50 feet for the upper 60% of the stage duration curve, excluding extreme wet hydrologic conditions. Number of days with stages above 16 feet NGVD is increased from 696 to 1157 during the 1965-2005 period of simulation.
Northern Estuaries	FWO	Caloosahatchee Estuary: Major improvement. Mean monthly flows above 2800 cfs and above 4500 cfs are reduced by 13 and 10 months, respectively (14% and 23% reductions, respectively). Mean monthly flows less than 450 cfs are reduced by 89 months (77%). St. Lucie Estuary: Major improvement. Mean monthly flows above 2000 cfs and above 3000 cfs are reduced by 15 and 12 months, respectively (17% and 32% reductions, respectively).
	Alt 4R	Caloosahatchee Estuary: Moderate improvement. Mean monthly flows above 2800 cfs and 4500 cfs are reduced by 11 and 3 months, respectively (14% and 9% reductions, respectively). Mean monthly flows less than 450 cfs are reduced by 3 months (11%). St. Lucie Estuary: Moderate hydrologic change, with improvements for high volume discharges and adverse effect for low volume discharges. Mean monthly flows above 2000 cfs and 3000 cfs are reduced by 19 months and 1 month, respectively (26% and 4% reductions, respectively). Mean monthly flows less than 350 cfs are increased by 12 months (9%)
Greater Everglades: WCA-2A and WCA-2B	FWO	WCA-2A (2A-17): Minor adverse effect. Stages are increased by 0.1-0.2 feet under all hydrologic conditions. WCA-2B (2B-Y): Moderate adverse effect. Stages within WCA-2B are significantly increased by 0.25-0.50 feet under nearly all hydrologic conditions, excluding extreme wet conditions.
	Alt 4R	WCA-2A (2A-17): Moderate improvement. Stages are decreased by 0.1-0.3 feet under all hydrologic conditions. WCA-2B (2B-Y): Moderate adverse effect. Stages within WCA-2B are significantly decreased by 0.25-0.50 feet under nearly all hydrologic conditions, excluding extreme wet conditions

Comment [GSE29]: Barbara Cintron Comment: Increases in high stages is an adverse effect until HHD is fixed. There is an absolute high level of 17.25 feet which cannot be exceeded for life safety risk.

Dan (4/26): HHD remediation is assumed completed in the CEPP future without project condition, as documented in section 2 of the main PIR report. Per the 2008 LORS EIS, 17.25 is not an absolute constraint but rather a performance measure for which exceedences were identified for the LORS 2008 selected plan.

Comment [GSE30]: Barbara Cintron Comment: "minor", "major", and "moderate" should be classed as adverse or beneficial, not left hanging like this. The reader will not recall which are good and which are bad in a table like this. This comment applies to every row in this table.

Dan (4/12): In progress...Not all hydrologic changes can be characterized as adverse or beneficial, since this characterization is dependent on the ecological parameter of interest (i.e. tree islands, T&E species, vegetation, etc.). Effects can be characterized as moving toward or away from NSM or similar targets, but those targets are not in all cases the goal for CEPP. I appreciate the intent of the content and will strive to indicate trend direction where possible.

Gretchen/Melissa, please ensure this same considerations is applied throughout all applicable areas in Section 4 and 5 of the PIR, as well.

Dan (4/26): Revisions completed, based on comment from Barbara and Brooks. Text added at start of section: The determination of the directionality of hydrologic change (improvements and/or adverse hydrologic change) within each specified geographic region is principally based on the results of the ecological evaluation, where available, which are described in Section 4.5.2.

~~Geographic Region~~	~~Alt~~	~~Hydrology Effects~~
~~Greater Everglades: WCA 3A and WCA 3B~~	~~FWO~~	~~a) L-28 Triangle: Negligible effect.~~ ~~b) Northwest WCA 3A (3A-NW): Negligible effect. Stages slightly increased during the wettest 20% of conditions.~~ ~~c) Northeast WCA 3A (3A-NE): Minor to Moderate adverse effect. Stages are decreased by 0.1-0.2 feet, with no significant change during extreme wet or extreme dry conditions.~~ ~~d) East-Central WCA 3A (3A-3): Minor to Moderate adverse effect. Stages are generally decreased by 0.1-0.2 feet, with no significant change during extreme wet or extreme dry conditions.~~ ~~e) Central WCA 3A (3A-4): Minor to Moderate adverse effect. Stages are generally decreased by 0.1-0.2 feet, with no significant change during extreme wet or extreme dry conditions.~~ ~~f) Southern WCA 3A (3A-28): Moderate adverse effect. Stages are generally decreased by 0.2-0.3 feet, with no significant change during extreme wet or extreme dry conditions.~~ ~~g) WCA 3B (Site 71): Minor to Moderate adverse effect. Stages are decreased by 0.1-0.2 feet during normal to dry conditions.~~
	~~Alt 4R~~	~~a) L-28 Triangle: Negligible effect.~~ ~~b) Northwest WCA 3A (3A-NW): Major improvement. Stages are generally significantly increased by 0.6-0.8 feet.~~ ~~c) Northeast WCA 3A (3A-NE): Major improvement. Stages are increased by 0.4-0.7 feet, with no significant change during extreme wet conditions and a slight increase in stage for extreme dry conditions.~~ ~~d) East-Central WCA 3A (3A-3): Major improvement. Stages are generally increased by 0.2-0.5 feet, with no significant change during the wettest 20% of conditions.~~ ~~e) Central WCA 3A (3A-4): Minor to moderate improvement. Stages are generally increased by 0.1-0.2 feet during average to dry conditions, with a slight depth reduction during the wettest 10% of conditions and no significant change during extreme dry conditions.~~ ~~f) Southern WCA 3A (3A-28): Minor improvement. Stages are decreased by 0.1-0.2 feet during the wettest 5% of conditions and slightly decreased during normal to dry conditions.~~ ~~g) WCA 3B (Site 71): Moderate to major improvement. Stages are increased under all hydrologic conditions, including stage increases of 0.1 feet during the upper 20% of the stage duration curve (wet to extreme wet conditions), stage increases of 0.2-0.3 feet for normal to dry conditions, and a slight stage increase during extreme dry conditions.~~
~~Greater Everglades: ENP~~	~~FWO~~	~~a) Northwest ENP (NP-201): Minor improvement. Stages are increased by 0.1-0.2 feet during normal to dry conditions.~~ ~~b) Northeast ENP (NESRS-2): Minor adverse effect. Stages are slightly reduced during normal to dry conditions.~~ ~~c) Central ENP (P-33): Negligible effect.~~ ~~d) Taylor Slough: Minor to Moderate Improvement. Stages are increased by 0.1-0.3 feet during nearly all hydrologic conditions.~~
	~~Alt 4R~~	~~a) Northwest ENP (NP-201): Minor to moderate adverse effect. Stages are significantly decreased by 0.1-0.3 feet under both wet and dry hydrologic conditions; stages are slightly increased or unchanged for normal hydrologic conditions between approximately 35% and 55% on the stage duration curve.~~ ~~b) Northeast ENP (NESRS-2): Major improvement. Stages are significantly increased by 0.5-0.9 feet under all hydrologic conditions.~~ ~~c) Central ENP (P-33): Major improvement. Stages are increased by 0.2-0.4 feet under all hydrologic conditions.~~ ~~d) Taylor Slough: Minor adverse effect. Stages are slightly decreased by approximately 0.1~~

Comment [GSE31]: Barbara Cintron Comment: How does this affect the percentage of time water levels are too high in CSSS designated habitats?

Dan (4/26): Refer to Appendix C.2.2, section C.2.2.4.2 for a detailed evaluation of effects to CSSS-A, specifically IR A-2 (southern CSSS-A region).Hydrologic effect characterization, as with project benefits evaluation and performance measures, do not effectively capture impacts to T&E species – these effects are separately evaluated and described.

Geographic Region	Alt	Hydrology Effects
		feet during the wettest 20% of hydrologic conditions and slightly increased by 0.1-0.2 feet during normal to dry hydrologic conditions.
Southern Estuaries	FWO	Florida Bay: Moderate adverse effect. Combined average annual overland flows from Southern ENP to Florida Bay (Transect 23) are decreased by 14,000 acre-feet (5%).
	Alt 4R	Florida Bay: Moderate improvement. Combined average annual overland flows from Southern ENP to Florida Bay (Transect 23) are increased by 27,000 acre-feet (11%).

902
903 **6.5.2.8 Water Quality**
904 **Table 5-7. Environmental Effects of Alt 4R: Water Quality**

Water Quality (WQ)		
Geographic Regions	**Future Without Project (No Action Alternative)**	**Alt 4R**
Lake Okeechobee	WQ is expected to improve relative to present conditions as the result of implementation and enforcement of TMDLs.	Similar to FWO; slight changes to operations not expected to result in significant WQ impacts.
Northern Estuaries	Number of low salinity events reduced for both Caloosahatchee and St. Lucie relative to baseline conditions. Number of high salinity events reduced for the Caloosahatchee Estuary. Improved nutrient and dissolved oxygen conditions expected to result from reduced high flow events from Lake Okeechobee, improved Lake Okeechobee nutrient levels, and improved estuary basin runoff quality.	Similar to FWO; some slight improvement in wet season water quality within the estuaries due to reduction in high flow events.
EAA	Relative to existing conditions improvement in nutrient concentrations due to implementation of additional STAs. Slight reduction in sulfate due to additional removal in STAs as well as potential reductions from reduced farming activities and future implementation of Best Management Practices imposed for sulfate amendments. DMSTA water quality modeling indicates that SFWMD's Restoration Strategies Program is expected to result in compliance with the 2012 WQBEL for total phosphorus. However, there is risk that WQBEL will not be met without future modification of the Restoration Strategies plan.	Use of A-2 FEB lands in project will slightly reduce total basin nutrient loads. Otherwise similar to FWO. Increased flows from CEPP will result in a slight increase in the possibility that the 2012 WQBEL will not be met without future modification of the Restoration Strategies plan.
Greater Everglades	Relative to baseline conditions, expect reduction in nutrient concentrations entering Everglades Protection Area due to implementation of new STAs in EAA. Reduced sulfate load expected as a result of new controls upstream in EAA. Relative to baseline conditions, increased frequency of	Increase in TP load by 10 percent into WCA-3A relative to FWO condition. Backfilling of canal will result in enhanced marsh flow and nutrient uptake in northern WCA-3A. Nutrient loads to SRS should be reduced relative to FWO despite higher flows

Water Quality (WQ)		
Geographic Regions	Future Without Project (No Action Alternative)	Alt 4R
	meeting the water quality compliance requirements for Loxahatchee, Shark River Slough, and Taylor Slough. This is as result of construction of additional STAs in the EAA and S9 Basin as well as further progress on implementation of BMPs in developed areas adjacent to the Everglades. Mercury available for mMethylyation is likely to increase should decrease as a result of increased Hg atmospheric load from international sources. This will be moderated somewhat due to as a result the of implementation of FDEP Total Hg TMDL and implementation of new EPA Clean Air Act standards for emissions of Hg. Offshore airborne Hg load sources should also decrease.	because of enhanced uptake within WCA-3A. With increase in flow of 10 percent relative to FWO, sulfate loading to increase by 3 percent relative to FWO (based on Lake O contributing 30 percent of WCA sulfate load). Changes to pattern of mercury methylation hotspots due to shift in flow patterns and additional sulfate loading to northern end of WCA-3A. Sulfate loading to ENP should be reduced relative to FWO due to uptake in the WCA-3A marsh which should decrease methylation potential in portions of ENP. Available Hg load for ALT4-R same as for FWO.
Southern Estuaries	Relative to baseline condition, slight increase in salinities in nearshore zones due to reduced flows with FWO. Nutrient loading from upland areas not expected to change significantly relative to baseline conditions. Atmospheric Hg loading should decrease resulting is less MethylHg bioaccumulation in aquatic species.	Improved nearshore salinity conditions in southwest ENP due to additional flow to in Shark River Slough. Available Hg load for ALT4-R same as for FWO.

Comment [GSE32]: Barbara Cintron Comment: Should this not be called sulfate delivery?

905

906 **6.5.2.9 Air Quality**

907 The total increases in air pollutants are relatively minor in relation to the existing point and nonpoint
908 and mobile source emissions in Palm Beach, Broward, and Miami-Dade Counties. Impacts Effects from
909 project related emissions for Alt 4R during construction and during the operational phase of the CEPP
910 project would not significantly impact air quality within the airshed. Short term loadings of internal
911 combustion engine exhaust gasses are expected to be negligible and not pose a threat to workers or
912 local populations. The G-370 and G-372 pumps presently have air quality emissions permits. These
913 permits may need modification to account for the additional operations and emissions. An air quality
914 permit will be obtained prior to the construction of the expanded S-356 pump station. Because the
915 project is located within a designated attainment area, U.S. Environmental Protection Agency's EPA's
916 general conformity rule to implement Section 176 (c) of the Clean Air Act does not apply, and a
917 conformity statement should not be required. Detailed analysis is presented in **Appendix C.2.2.10**.
918
919 **6.5.2.10 Hazardous, Toxic and Radioactive Waste**
920
921 **Table 5-85 75-7. Environmental Effects of Alt 4R: Hazardous, Toxic and Radioactive Waste**

Hazardous, Toxic and Radioactive Waste (HTRW)		
Geographic Regions	Future Without Project (No Action Alternative)	Alt 4R
Lake Okeechobee	Increased development within basin may result in increase in new HTRW sites while existing ones should continue to be corrected.	Similar to FWO

Hazardous, Toxic and Radioactive Waste (HTRW)		
Geographic Regions	Future Without Project (No Action Alternative)	Alt 4R
Northern Estuaries	Increased development within Caloosahatchee and St. Lucie basins may result in increase in new HTRW sites while existing ones should continue to be corrected.	Similar to FWO
EAA	A2 FEB lands continue to be farmed which may result in new HTRW spills on these lands as well as additional pesticide application to cultivated areas.	A2 FEB lands are converted to aquatic habitat. This will reduce the possibility of future HTRW release on these lands.
Greater Everglades	FDEP identified HTRW sites are cleaned up and new sites are documented and eventually cleaned up. Potential for illegal waste disposal remains high.	Similar to FWO
Southern Estuaries	FDEP identified HTRW sites are cleaned up and new sites are documented and eventually cleaned up.	Similar to FWO

6.5.2.11 Noise

During construction of Alt 4R there would For all alternatives there will be minor and short term increases in noise during construction. All alternativesAlt 4R includes construction of two additional pump stations which would result in long term, localized increases in noise in comparison to FWO. Since Alt 4R adds the fewest number of pump stations (2), it would have the least effect over the FWO.

6.5.2.12 Aesthetics

Alt 4R shows a significant increase in aesthetic value over the FWO due to restoration of hydropatterns and sheetflow throughout the project area. The restoration of sheetflow would provides additional habitat for native plants and animals and increased opportunities for wildlife viewing. There will would be temporary, short term, localized effects to aesthetics during construction of all features. In the Northern Estuaries, Alt 4R would increased the aesthetic value due to decreased high flow events. Reductions in high volume discharges to the estuaries would result in lower suspended solids, increased visibility water clarity and the correct salinity envelope that maintain healthy SAV beds. These benefits could also and leads to he potentialan increase in wildlife viewing opportunities. With the EAA, wetland vegetation is anticipated to colonize the A-2 FEB increasing wildlife utilization and opportunities for wildlife viewing within the area. In the Greater Everglades, while there will would be a slight negative effect on aesthetics due to the construction of the Bblue Sshanty levee, there will would be an increase in aesthetics due to the creation of sheet flow in the Bblue Sshanty flow way. Restoration of flows within Florida Bay and the southwestern coastal estuaries that reduce extreme salinity rangeswould improve improves habitat within these regions, thereby increaseing potential opportunities for wildlife viewing as well as providing a potential for the reduction in red tide occurrences.

6.5.2.13 Land Use

The entire CEPP project area consists of lands currently under public ownership; however, the A-2 footprint is currently being leased and used for agricultural purposes.

6.5.2.13.1 Wetlands

Much of the future development within the study area is expected to occur on lands that were formerly in agricultural use. **Table 5-10** Table 5-9Table 5-8 summarizes the impactseffects to on wetlands and uplands for Alt 4R. Alt 4R shows a net increase of 14,425625 acres of wetland/upland habitat over the FWO. While tThere is some loss in wetlands due to the construction of some CEPP features, most notably the Blue Shanty levee in WCA 3B. However,, the construction of other features, including the

degradation of levees and the backfilling of canals, reconnects and adds wetland acreage and provides the needed topography for sheetflow to restore the natural system. In addition to gains in wetlands, Alt 4R shifts approximately 13,800 acres of agricultural land use with wetland soils to a higher quality wetland with the construction of the A-2 FEB. The A-2 FEB would alter the land use from agriculture to an FEB that includes wetland habitat. The WCA 3B flow way achieves a central goal of CERP and of CEPP: restoration of continuous sheet flow, over long distances, and in the original flow directionality. The creation of a new levee in Alt 4R makes it possible to remove a similar length of existing levee (L-67C). A detailed description of the differences in wetland/upland acres is provided in **Appendix C.2.**

Table 5-95-85-8. Impacts Effects to on Wetlands (acres) for Alt 4R

Project Feature	Alt 4R Acres of Wetland Gain (Loss) (ac) over FWO
A-2 FEB	13,800
L-4 Degrade	35
Miami Canal Backfill	417
Miami Canal Spoil Mounds	45
L-67A Culverts	(13.5)
L-67C Gaps	9
L-67C Flow Way Degrade	64
L-29 Degrade	46
Blue Shanty Levee	(113)
L-67 Extension Backfill	104
Old Tamiami Trail Road Degrade	31
Total Net Change	14,425225

Comment [GSE33]: Barbara Cintron Comment: Since when is a shallow reservoir a wetland? This is a little disingenuous.

6.5.2.13.2 Agriculture

For Alt 4R, 14,000 acres of public land currently leased for agricultural use will be converted into a FEB. As described in **Section 4.x.x2.7**, negligible changes were noted for water stages within the South Dade Conveyance System (SDCS); therefore no indirect effects to on agriculture within this region are anticipated. All of the agricultural acreage is considered unique farmland (not subject to frost). Coordination with the United States Department of Agriculture (USDA) and National Resources Conservation Service (NRCS) to meet the requirements of the Farmland Protection Policy Act, is ongoing. When detailed design information that locates each of the plan components is completed, it can then be determined how many acres of unique farmland would be affected by the Project See **Appendix C.4.33** for more information.

Comment [dec34]: Section 5.5.1.14.2 indicates moderate affects to SDCS stages within LECSA-3. Please ensure consistency of agricultural assessment with WS/FC assessment. Savings Clause evaluation conclusions should also be integrated here, when available.

6.5.2.14 Socioeconomics

6.5.2.14.1 Population

The CEPP study area population is expected to increase by 18 percent from 2010 to 2030 with Palm Beach and Miami-Dade counties attracting the greatest number of new residents. Monroe County is expected to experience a small reduction in permanent residents over the next 20 years. When aggregated, the total population is projected to increase by 1 million people. This is a slower rate of growth than projected previously in CERP planning efforts. Population projections are not anticipated to differ between the FWO and alternative Alt 4R conditions.

Comment [baf35]: Reviewer using track changes expect increase rather than decrease

6.5.2.14.2 Water Supply and Flood Control

This assessmentA summary of the anticipated effects to on water supply and flood control evaluates the anticipated environmental effects of the the alternative actions described in **Section 3.0**FWO and Alt 4R is presented in Table 5-10. Alt 4R is compared to the FWO; similarly, Since the final array of alternatives contained a FWO (the FWO), the other action alternatives were compared to and evaluated against the FWO to describe changes to existing conditions with implementation of each CEPP action alternative (**Table 5-5**). Tthe effects of the FWO are described based on comparison to the Existing Condition Baseline (ECB), and Alt 4R is compared to the FWO, in this section, with Alternatives 1 through 4 are separately compared to the FWO in **Section 4.1.14.2**. Similarly, the hydrologic effects of the FWO are described based on comparison to the Existing Condition Baseline (ECB). The summary of regional hydrologic performance differences includes quantitative comparisons with between the CEPP ECB (forand the FWO) orand between the CEPP FWO and (for Alt 4R) based on the RSM-BN and RSM-GL CEPP modeling representations of these baselines. Alternatives 1 through 4 are separately compared to the FWO in **Section 4.1.15.2**.

Table 5-105-95-9. Environmental Effects of Alt 4R; Water Supply and Flood Control

Geographic Region	Alts	Water supply and flood control
Lake Okeechobee	FWO	Moderate. Compared to the ECB, mean annual Lake Okeechobee Service Area (LOSA) water supply demands not met are increased from 7% to 8%. LOSA water supply cutback percentage is increased for 3 of the 8 years with the largest water supply cutbacks.
	Alt 4R	Moderate. Compared to the FWO, mean annual LOSA water supply demands not met are decreased from 8% to 6%. LOSA water supply cutback percentage is increased for 2 of the 8 years with the largest water supply cutbacks.
Greater Everglades	FWO	Major improvement. Beneficial effect. Compared to the existing condition baselineECB, the frequency of WCA 3A stages within Zone A of the Regulation Schedule is significantly reduced from 32% to 18% of the 1965-2005 period of simulation.
	Alt 4R	Moderate improvement. Compared to the FWO, the frequency of WCA 3A stages within Zone A of the Regulation Schedule is moderately increased from 18% to 21.5% of the 1965-2005 period of simulation. Stages within the wettest 10% of hydrologic conditions, however, are generally reduced by 0.2-0.3 feet.
Lower East Coast Service Area 1 (Palm Beach)	FWO	Moderately adverse compared to ECBadverse effectModerate. 3 additional water years with 3 or more consecutive months with restrictions, which result from lower Lake Okeechobee stages and not local groundwater conditions. Local groundwater stages east of WCA-1 reduced by 0.2-0.5 feet for the driest 10% of hydrologic conditions. Local groundwater stages south of the Site 1 CERP project reduced by 0.2 feet for normal to dry conditions and by up to 1.0 feet during extreme dry conditions.
	Alt 4R	Minor improvement over FWO. 2 fewer water years with 3 or more consecutive months with restrictions. No significant changes to local groundwater stages.
Lower East Coast Service Area 2 (Broward)	FWO	Minor worsening of dry conditionsadverse effectMinor. 1 additional water year with 3 or more consecutive months with restrictions which results from lower Lake Okeechobee stages and not local groundwater conditions. Local groundwater stages slightly reduced by for the driest 10% of hydrologic conditions.
	Alt 4R	Minor adverse effect. No change in the number of water years with 3 or more consecutive months with restrictions. No significant changes to local groundwater stages which are prevalent through normal to dry hydrologic conditions. Reduced stages are indicated during the driest 5-10% of hydrologic conditions for some monitoring gages located east of WCA-2A and WCA-2B.

Comment [baf36]: ??. Edit the entire paragraph?

Comment [baf37]: Is it beneficial or adverse? Tell us for each row in table.

Comment [GSE38]: Barbara Cintron Comment: Zone A is the "flood control zone." This is not a good effect, unless durations decrease. It strains the containing levees and existing gates.

Dan (4/26): Please refer to the CEPP PIR EN Appendix A (specifically Annex A-2) for a detailed USACE EN assessment of the high water criteria for WCA-3A. Based on consideration of magnitude, duration, and timing, the EN assessment does not identify cause for high water concern.

Lower East Coast Service Area 3 (Miami-Dade)	FWO	Moderate to major adverse effects. a) 3 additional water years with 3 or more consecutive months with restrictions, which result from lower Lake Okeechobee stages and not local groundwater conditions. b) L-30 canal stages are reduced by 0.2-0.4 feet for normal to extreme dry conditions. c) L-31N canal stages are slightly reduced by 0.1-0.2 feet for extreme dry conditions. Slight increase to in flood control stages within the wettest 10% of hydrologic conditions. d) C-111 canal stages between S-176 and S-18C are generally lowered by 0.2-0.5 feet for normal to extreme dry conditions.
	Alt 4R	Moderate change, with no anticipated adverse effects. a) Decrease of 3 water years with 3 or more consecutive months with restrictions. b) L-30 Canal stages are increased by 0.1-0.6 feet for normal to extreme dry conditions; moderate reduction of 0.1-0.2 feet for flood control stages within the wettest 10% of hydrologic conditions, with no significant change observed for the upper 1% of the stage duration curve. c) L-31N canal stages are increased by 0.1-0.2 during dry conditions; significant reduction to flood control stages within the wettest 5% of hydrologic conditions. d) No significant change to C-111 canal stages between S-176 and S-118C during normal to dry hydrologic conditions, with a 0.1-0.2 ft increase during normal hydrologic conditions; no significant change for flood control stages within the upper 10% of the stage duration curve.

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1004 **6.5.2.14.3 Recreation**
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Table 5-115-105-10. Environmental Effects of Alt 4R: Recreation

Recreation		
Geographic Regions	**Future Without Project (FWO)**	**Alt 4R**
Lake Okeechobee	No Effect	No Effect
Northern Estuaries	No Effect	Reductions in high flows to the estuaries would enhance fish populations and subsequently improve related recreational opportunities such as fishing, boating and kayaking. No Effect
EAA	No EffectCurrently no recreation exists on the project site.	Currently no recreation exists on the project site so any effects would be positive for public accessThe FEB feature will add approximately 15,000 acres of recreational opportunities and recreation features similar to those in the Greater Everglades.
Greater Everglades	Recreational hunting and fishing would be affected little if at all. Hiking, Biking and Camping will not be affected directly. Any changes in recreation would be due to degraded quality of wetlands and the aesthetic values could decrease as wildlife viewing and nature study would be degraded.	Recreational fishing by boat will be negatively impacted by back filling the Miami canal and restricting L-67C canal access. Bank fishing opportunities could be positively increased by addition of access points around proposed structures. Access for furbearer hunting (deer, hog, rabbit, etc.) could be affected negatively by increased depth, however could benefit due to fewer closures due to dry conditions. Table 5.11 contains the number of closure events for both wet and dry conditions. Waterfowl hunting and bird watching should improve with better hydration throughout the greater everglades during the early part of the dry season. Improved access and designation of blue and greenway trails will be positive.Improved hydrology will enhance wildlife populations through improved survival

Recreation		
Geographic Regions	Future Without Project (FWO)	Alt 4R
		and reproduction, subsequently resulting in greater outdoor recreation opportunities. Proposed facilities will enhance the public's ability to access into and within the Greater Everglades. Hunting (deer, hog, rabbit, etc.) could be affected negatively in the short term by increased hydration in the very northern WCA 3A areas that have been dryer. Alt 4R incorporates the least negative effect on N. WCA 3A furbearer hunting opportunities. In these northern dry areas public access is often limited to track vehicles; rehydration will increase public access through improved conditions favorable to airboats. Access to recreational fishing by power boat will be negatively impacted by backfilling the Miami canal. Fishing opportunities throughout the Greater Everglades will be positively increased by the improvements in boat access and the addition of access points around proposed structures. The removal of the L 29 levee will create a marsh connection to L 29 canal and enhance fishing in this canal. Improved trail heads for access and designation of blue and greenway trails will be positive. The Blue Shanty Levee will bisect L 67C and cause prop boat operators to lose access into the L67C north of the Blue Shanty Levee. Recreational fishing by boat to the northern end of L67C canal would continue to be available to airboats and boats that portage. The Blue Shanty levee will have an airboat crossing, at full height, so as to not bisect the airboat use within WCA 3B. A boat ramp will be added near S 333 to provide access to the L 298 canal so the L 289 divide structure does not prevent boat access. The L 298 divide structure will also serve as a pedestrian and vehicle access to the remaining L 298. The Blue Shanty Levee will serves as reroute connection for greenways trail users when the L 298 levee is removed to ensure contiguous connection east to west between S333 and S334.
Southern Estuaries	No Effect	Access to the Southern Estuaries would not change based on CEPP, however, increase in flows to Florida Bay would enhance fish populations and subsequently improve related recreational opportunities such as fishing, boating and kayaking impacts to existing quality of recreation will vary depending on location and changes to fish habitat.

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~~5-125-115-11 High and low stage closures for WCA 3B~~

	High Stage Closures			Fire Closures		
Scenario	Percent of Days Closed	No. Events	Avg. Duration	Percent of Days Closed	No. Events	Avg. Duration
ECB	3.4	15	34.1	2.5	12	31.8
FWO	2.9	12	36.8	2.8	16	26.4
Alt4R	4.0	17	35.6	1.3	9	22.4

~~6.5.2.15 Cultural Resources~~

~~The determination of potential effects on cultural resources listed below (Table 5-13) have not been subject to formal consultation and therefore should not be considered final. Consultation with the State Historic Preservation Office, Advisory Council on Historic Preservation, Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida is currently ongoing (Appendix C.5). The use of the term cultural resources includes culturally significant sites and historic properties. Full preliminary analysis, including descriptions of terms is discussed in Appendix C.3.2.~~

~~Table 5-13. Environmental Effects of Alt 4R: Cultural Resources~~

~~Cultural Resources~~		
~~Geographic Regions~~	~~Future Without Project (No Action Alternative)~~	~~Alt 4R~~
~~Lake Okeechobee~~	~~No Effect~~	~~No Effect~~
~~Northern Estuaries~~	~~No effect~~	~~No effect~~
~~EAA, including Associated Canals and Structures~~	~~Unknown~~	~~Unknown, survey Neededneeded~~
~~L-4 Spreader Feature~~	~~No effect~~	~~No Effect~~
~~S-8 Pump Complex (G-357, G-404, L-5 Bridge, S-8 Crane System, S-8 Pump Station)~~	~~No effect~~	~~Major long-term adverse effect (adverse?). Potentially mitigated down to no effect.~~
~~L-5 Deepening/Widening~~	~~No effect~~	~~Unknown, survey needed~~
~~L-6 Deepening/Widening~~	~~No effect~~	~~Unknown, survey needed~~
~~Miami Canal~~	~~No effect~~	~~Major Long-term adverse effect. Mitigation unknown.~~
~~L-67A Levee and Canal~~	~~No effect~~	~~Potential major long-term adverse effect. Potentially mitigated down to no effect.~~
~~L-67 C Levee and Canal~~	~~No effect~~	~~No Effect~~
~~L-29 Levee~~	~~No effect~~	~~Potential Major long-term adverse effect. Potentially mitigated down to no effect.~~
~~S-333~~	~~No effect~~	~~Potential major long-term adverse effect. Potential mitigation down to no effect.~~
~~New Levee/Flow-way~~	~~No effect~~	~~Potential major long-term adverse effect/Unknown, survey needed. Mitigation unknown.~~

~~Cultural Resources~~		
~~Geographic Regions~~	~~Future Without Project (No Action Alternative)~~	~~Alt 4R~~
~~Old Tamiami Trail~~	~~No effect~~	~~Major long-term adverse effect. Potential mitigation down to no effect.~~
~~L-67 Ext. Levee~~	~~No effect~~	~~No effect~~
~~L-31N~~	~~No effect~~	~~Potential Major long-term adverse effect. Potential mitigation down to no effect.~~
~~S-356~~	~~No effect~~	~~No effect~~
~~L-28~~	~~No effect~~	~~Unknown, survey needed~~
~~G-211 Operational Refinements~~	~~No effect~~	~~No effect~~
~~S-334 to S335 Seepage Barrier~~	~~No effect~~	~~Not ApplicableNo effect~~
~~Draft Preliminary Operations Plan~~	~~Unknown~~	~~Unknown~~

~~**6.5.2.16 Native Americans *** Section Incomplete for DQC***~~

~~The Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida rely upon upon the Everglades in its natural state to support their religious, subsistence, and commercial activities. The Tribes' Federal Reservation lands are either partially situated or immediately adjacent to WCA-3A (Figure C.1-14). In addition, the Miccosukee Tribe holds a perpetual lease from the State of Florida over a large portion of the WCA-3A. Subsistence activities for both Tribes include gathering of materials, hunting and fishing; while the Miccosukee Tribe's commercial activities include frogging, airboat and other guided tours, and providing recreational and tourism facilities within the Everglades. The Miccosukee Tribe's perspective on southern WCA-3A water stages is that flooding and degrading of tree islands was an issue prior to ERTP, which has threatened the health and safety of the Tribe (Miccosukee Tribe of Indians of Florida CEPP NEPA Response Letter 20 January 2012).~~

Comment [baf39]: Native Americans *** Section Incomplete

why removed?

~~**Table 5-5-135-13. Environmental Effects of Alt 4R: Native Americans**~~

~~Native Americans~~		
~~Geographic Regions~~	~~Future Without Project (No Action Alternative)~~	~~Alt 4R~~
~~Lake Okeechobee~~		
~~Northern Estuaries~~		
~~EAA~~		
~~Greater Everglades~~		
~~Southern Estuaries~~		

Comment [CT40]: No need for table. These effects are addressed in the text.

a table that fully analyzes the impacts on the Tribe would be helpful.

~~**6.5.2.17 Invasive Species**~~

~~Alt 4R has the potential and likelihood for establishment and spread of non-native invasive and native nuisance species (Table 5-13). Proposed restoration activities may affect ecosystem drivers that directly or indirectly influence the invasiveness of non-native species. These factors may affect invasive species positively or negatively, depending on the unique characteristics of individual species and the environmental conditions for a given biological invasion (Doren et al. 2009). For example, shortened surface water drawdowns may reduce the recolonization rates of melaleuca in sawgrass marsh while increasing habitat suitability for Old World climbing fern in tree islands. Many of the areas where features are proposed are currently inhabited by non-native invasive and native nuisance species. Construction of the proposed features has the potential to spread the existing non-native invasive and native nuisance species on site as well as introduce new invasive species via contaminated equipment.~~

Disturbed areas resulting from construction are likely to become established with non-native invasive and native nuisance species. New flows created by operations of the proposed features may serve as vectors to spread invasive and native nuisance species into new areas. The large number of existing and potential invasive plant and animal species and the often incomplete knowledge of invasive mechanisms for each species create moderate to high uncertainty in this evaluation. Long-term monitoring in an adaptive management framework is critical to ensure efficient management of the most threatening non-native invasive species in the restoration footprint. A more detailed description of the affects potential effects of each feature is provided in Appendix C.2.19.

Table 5-145-145-14. Environmental Effects of Alt 4R: Invasive Species

Invasive Species		
Feature	**Future Without Project (No Action Alternative)**	**Alt 4R**
Lake Okeechobee and Northern Estuaries	Actively managed invasive and nuisance species persist at baseline levels or decrease; Uncontrolled species expand; Invasion pathway to/from lake and estuaries.	Same as FWO.
A-2 Flow Equalization Basin	Actively managed invasive and nuisance species persist at baseline levels or decrease; Uncontrolled species expand; Vegetation management challenges in downstream STA's from continued stormwater pulses.	Invasive and nuisance plant and fish species thrive in FEB; Management options limited to mitigating impacts to FEB operations; Potential invasion pathway to WCA's.
Diversion of L-6 Flows and L-5 Improvements	Invasive and nuisance vegetation and non-native fish species persist at baseline levels	Potential reduction of SAV; Habitat improved for non-native tropical fish species.
L-4/L-5 Spreader Canal and Levee Degradation	Moderate to high recruitment of existing invasive species in WCA 3A. O&MQMRR&R of canal/levee minimize colonization of certain invasive species.	Recruitment of some invasive and nuisance species minimally reduced; Expansion of obligate wetland invasive species in spreader canal and south of spreader canal; Spreader canal potential invasion pathway for aquatic species; Portions of remaining levee habitat for Burmese pythons.
L-28 Degradation and Backfill	Actively managed invasive and nuisance species persist in adjacent natural areas at baseline levels or decrease; Uncontrolled species expand; O&MQMRR&R of canal levee will minimize colonization of certain invasive species.	Actively managed invasive and nuisance species persist at baseline levels or decrease; Uncontrolled species expand. Lack of O&MQMRR&R on remaining levee will promote colonization of certain invasive species.
Increase Capacity of S-333	Actively managed invasive and nuisance species persist at baseline levels or decrease; Invasion pathway for aquatic invasive species downstream.	Same as FWO.

Comment [baf41]: Please consider whether these three replacements are correct.

Invasive Species		
Feature	Future Without Project (No Action Alternative)	Alt 4R
L-67A Gated Structures / Spoil Removal and L-67C Degradation	Actively managed invasive and nuisance species persist or decrease; Uncontrolled species expand; Invasion pathway for aquatic invasive species downstream.	New invasion pathway for aquatic plant and animal species between WCA 3A and 3B; Increased cattail downstream of structures; plant and animal habitat reduced by spoil removal. Isolated remnants of L-67C will create invasive plant and animal habitat.
Outflow Structures out of WCA 3B	Invasive and nuisance species persist; barriers for water surface connectivity are present.	New invasion pathway for aquatic plant and animal species between WCA 3B and ENP.
L-67 Extension Levee Degrade/Backfill	Invasive and nuisance species persist on levee and in canal; continued cattail expansion west of L-67 Extension.	Reduced habitat for some invasive plants, fish and reptiles by levee removal and canal backfill; Improved habitat for obligate wetland invasive species.
G-211 Operational Modifications / Coastal Canals Conveyance	Actively managed invasive and nuisance species persist or decrease; Uncontrolled species expand; Invasion pathway for aquatic invasive species downstream.	Same as FWO.
Increase S-356 Capacity to 1,000 cfs	Actively managed invasive and nuisance species persist at baseline levels or decrease; Uncontrolled species expand.	Minimal reduction in invasive plant recruitment, improved conditions for obligate wetland invasive species, and potential expansion of cattail in northern ENP.
Miami Backfill S-8 to I-75	Actively managed invasive and nuisance species persist at baseline levels or decrease; Uncontrolled species expand.	Spoil mound removal/canal backfill reduces habitat for some invasive species; Tree islands vulnerable to invasive plant and animal colonization; Expansion of obligate wetland invasive species in backfill area.
Build North South Levee in WCA 3B	Actively managed invasive and nuisance species persist at baseline levels or decrease; Uncontrolled species expand.	Potential increased invasive species due to levee construction; Increased cattail along levee in WCA 3B.
L-29 degradation	Invasive and nuisance species persist; Invasion pathway for aquatic invasive species into ENP.	New invasion pathway for aquatic plant and animal species between L-29 and WCA 3B.
Divide Structure on L-29	Actively managed invasive and nuisance species persist at baseline levels or decrease; Uncontrolled species expand.	Increased O&MOMRR&R management of aquatic invasive and nuisance plants.
Remove Old Tamiami Trail	Actively managed invasive and nuisance species persist at baseline levels or decrease; Uncontrolled species expand.	Habitat removal for many established invasive plant and animal species; expansion of obligate wetland invasive species from canal into ENP.
Penetrating Seepage Barrier	Actively managed invasive and nuisance species persist at baseline levels or decrease; Uncontrolled species expand.	Moderate reduction in invasive plant recruitment; improved conditions for obligate wetland invasive species.

Comment [baf42]: Please consider whether this change is correct

6.5.3 Water Quality

Comment [baf43]: Add water quality text

MARK TO PROVIDE – MARK PLEASE ALSO REVIEW THE CUMULATIVE EFFECTS LANGUAGE WITH RESPECT TO WATER QUALITY IN TABLE 6-5 AS WELL AS ADD ANY INFORMATION IF NEED BE TO SECTION 6.5.7 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS.

6.5.4 Sea Level Change

MARK TO PROVIDE

6.5.5 Cumulative Effects

~~Cumulative effects are defined in 40 CFR 1508.7 as those effects that result from:~~

> ~~*"...the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time".*~~

Cumulative effects for the proposed action were assessed in accordance with guidance provided by the President's Council on Environmental Quality (CEQ). The primary goal of cumulative effects analysis is to determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative effects of other past, present, and future actions. ~~The following summarizes past, present, and projected USACE efforts that cumulatively affect the regional environment of south Florida (Table 5-14). In addition, there are efforts underway by other Federal, State, and local agencies, as well as non-governmental organizations, that are too numerous to mention, that are all working towards similar restoration goals.~~ **Table 5-1~~6~~5** shows the net cumulative effects of the various resources which are directly or indirectly impacted. CEPP is expected to contribute to a net beneficial cumulative impact on the regional ecosystem. Further information on cumulative effects can be found in Section C.2.2.2 (Cumulative Effects of TSP) in Appendix C.2.

~~6.5.5.1 Past, Present, and Reasonably Foreseeable Actions Affecting Resources within the Project Area~~

~~Prior to drainage and compartmentalization, the Everglades were a shallow wetland conveying water from Lake Okeechobee to the southern coast of Florida. The Everglades Drainage District, encompassing 7,150 square miles, was created in 1907 by Florida Governor Napoleon Bonaparte Broward for the purpose of drainage and reclamation of the Everglades (Light and Dineen 1994). In the early 1900s, the Everglades Drainage District constructed several canals that impacted Lake Okeechobee and the Greater Everglades. By 1917, the West Palm Beach, Hillsboro, North New River and Miami Canals had been constructed (Allison et al., 1948). By 1931, the outlet from Lake Okeechobee to the Caloosahatchee River was improved, and the completion of the St. Lucie Canal east to the Atlantic Ocean provided another way of controlling lake levels. The Bolles and Cross canals became connectors to the four major canals south of Lake Okeechobee bringing the total miles of canal excavated to 440 (Light and Dineen 1994). The Everglades Drainage District also constructed 47 miles of levees around the southern rim of Lake Okeechobee during this time (Allison et al., 1948). Within a similar time frame (1915-1928) the construction of Tamiami Trail was completed which linked Miami with Naples on the west coast. Hurricanes in 1926 and 1928 shifted attention from Everglades drainage to controlling flooding around Lake Okeechobee. In 1930, the USACE became a major participant with the state (i.e., Okeechobee Flood Control District) in controlling flooding around Lake Okeechobee. Florida agreed to share a portion of the costs to increase discharges from the lake, improve canal works, and reconstruct and enlarge the levees around it (Light and Dineen 1994). The effect of levees on the agricultural area south of Lake Okeechobee was dramatic and sugarcane production was doubled in 10 years between 1931 and 1941 (Clarke, 1977). Drainage of the Everglades and the linkage of the east and west coast, promoted urban growth in south Florida and the population escalated from 22,961 in 1900 to 228,454 by 1930 (Dietrich 1978). During the 1930s and into the 1940s, construction was abandoned and maintenance ceased on Everglades Drainage District works (Light and Dineen 1994).~~

Comment [baf44]: Summarize sea level change

Comment [MAN45]: Section reduce per Eric Bush.

~~Although modifications to Lake Okeechobee and the Everglades began in the early 1900s, the greatest influence on the alteration of flow was the C&SF Flood Control Project, which was originally authorized by Congress in 1948. The C&SF project was designed to lower water levels east of the eastern protective levee by 4 to 5 feet (Light and Dineen 1994). Increased flood protection coupled with lowering of the water table east of the levee had a dramatic effect on urbanization and development and acted as a catalyst for a population explosion in south Florida. Between 1952 and 1954 the eastern perimeter levee along the WCAs was constructed from Palm Beach to Dade County in order to stop sheet flow from the Everglades toward the urbanizing eastern coastal areas (Light and Dineen 1994). Between 1954 and 1959 additional levees (L 1, L 2, L 3, L 4, L 5, L 6, and L 7) were constructed to partition the EAA from the remainder of the Everglades and the old Everglades Drainage District Canals (West Palm Beach, Hillsboro, North New River, and Miami) were deepened within the EAA to provide better flood conveyance from the agricultural area into the WCAs (Light and Dineen 1994).~~

~~Between 1960 to 1963 substantial portions of the C&SF Flood Control project were completed. Construction of the levees surrounding WCA 3 was completed by 1963 with the L 67A levee dividing WCA 3 into two compartments, WCA 3A and WCA 3B (Light and Dineen 1994). The L 67A levee (completed 1962) and the parallel L 67C levee (completed 1966) were originally constructed for several reasons, including as a step down system to reduce seepage to the east to allow for urban and agricultural developments in Miami Dade County, and to increase storage of water in WCA 3A to provide water supply to an expanding urban population to the east. S 151 and S 31 were also constructed during this time period. These two structures improved the discharge capacity of the Miami Canal to coastal communities (Cooper and Roy, 1991), further exacerbating the unnatural drainage of northern WCA 3A. In an attempt to remedy excessive drainage caused by the Miami Canal, two structures, S 339 and S 340, were built across the Miami Canal in 1980 to block water from flowing directly down the canal, except at times of extreme high water or when increased conveyance capacity is needed to deliver water for the ENP and/or the LEC. Upstream from each structure, water was expected to flow laterally from the canal into the marsh through 100 foot gaps that had been left at 500 foot intervals along the Miami Canal sidecast spoil material. In combination with the northern levees of WCA 3A (L 4 and L 5), the Miami Canal has substantially impacted historical sheetflow and natural wetland hydroperiods. As a result, during wet periods, the natural capability of WCA 3A to store water is lost and the Miami Canal effectively over drains the area. These hydrologic changes have increased the frequency of severe peat fires and have also resulted in the loss of ridge and slough topography that was once characteristic of the area. Northern WCA 3A has become largely dominated by sawgrass, cattail and scattered shrubs and lacks the structural diversity of plant communities seen in central and western WCA 3A.~~

~~Completion of the L 29 levee in 1962 led to ponding in the southern portions of WCA 3A. Exacerbating this problem were the major canal systems (i.e. Miami Canal, L 67A) which accelerate the flow of water from north to south within WCA 3A, drying the north while further ponding the south (Zaffke 1983), especially along the L 67A and L 29. As a result of this ponding, extended hydroperiods and increased water depths led to changes in vegetation communities in which wet prairies were displaced by aquatic slough communities (Zaffke 1983, Tanner et al. 1987). In addition, many tree islands within southern WCA 3A were lost due to increased water depths (Craighead 1971), with many of the remaining islands showing signs of stress. Wood and Tanner (1990) documented the trend in southern WCA 3A toward deep water lily dominated sloughs due to impoundment within the southern end of WCA 3A.~~

~~Four control structures located along the L 29 were constructed between 1960 and 1963 (S 12A, S 12B, S 12C, and S 12 D). These structures were used to regulate discharge from WCA 3A to the western part~~

of Shark River Slough (Light and Dineen 1994). Construction of the L-67 Extension levee, extending 8 miles south of Tamiami Trail, was completed in 1967 in order to facilitate water delivery from WCA 3A to ENP. Completion of the L-67A and L-67C canal and levee system intercepted water that would otherwise flow to WCA 3B. With its impoundment, WCA 3B became isolated from the rest of the Everglades with inflows and outflows limited to rainfall and levee seepage. Within WCA 3B, the ridge and slough landscape has become severely compromised by the virtual elimination of overland sheetflow and has largely turned into a sawgrass monoculture where relatively few sloughs or tree islands remain. Loss of sheetflow to WCA 3B has also accelerated soil loss reducing elevations of the remaining tree islands in WCA 3B, making them vulnerable to high water stages. With the construction of WCA 3A, WCA 3B and the L-67 Extension Levee, flows to ENP became subject to water supply deficits during the dry season and excesses during the wet season, resulting in a decline in ecological quality.

Among the first Congressional actions to offset adverse impacts to ENP by improving the supply and distribution of water, the Flood Control Act of 1968 provided for modifications to the C&SF Project through the implementation of the ENP South Dade Conveyance System (SDCS). Additional Congressional actions ensued, including the ENP Protection and Expansion Act of 1989, which expanded ENP to incorporate NESRS and the East Everglades into the Park's boundary for protection and restoration of the natural hydrologic conditions within ENP. This Act also provided authorization for development of the Modified Water Deliveries (MWD) to ENP project. The goal of the MWD Project was to improve water deliveries into ENP and, to the extent practicable, take steps to restore the natural hydrologic conditions within ENP. The Water Resources Development Act (WRDA) of 2000 established CERP to provide for the restoration, protection and preservation of the water resources of central and southern Florida, including the Everglades and Florida Bay (USACE 1999).

CERP contains 68 components that include approximately 217,000 acres of new reservoirs and wetlands based water treatment areas. A number of operational components have also been identified in CERP and will, in most cases, occur in conjunction with related construction features. The operational features in CERP include: a modified Lake Okeechobee regulation schedule; environmental water supply deliveries to the Caloosahatchee and St. Lucie Estuaries; modifications to the regulation schedules for WCAs 2A, 2B, 3A, 3B, and the current rainfall delivery formula for ENP to implement rain-driven operations; modified Holey Land Wildlife Management Area Operation Plan; Modified Rotenberger Wildlife Management Area Operations Plan; a modification for coastal well field operations in the Lower East Coast (LEC); LEC utility water conservation; and operational modifications to the southern portion of L-31 and C-111.

CERP projects would increase the supply of freshwater for the Everglades and south Florida ecosystem. Large areas within the study area would be used to increase water storage resulting from CERP Projects for the overall gain and long term benefit of the regional system. These project features would provide important storage functions and are essential to the overall restoration of the freshwater marshes and the estuaries of the greater Everglades ecosystem. Project components in the area, especially storage, seepage control, and redirection of point source canal flows to overland flow will act to restore more natural freshwater flows to the northern and southern estuaries, reduce seepage losses from the Everglades, improve recharge of the Biscayne aquifer, and should result in other beneficial environmental effects.

Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Indian River Lagoon South Project, the Picayune Strand Restoration Project, and the Site 1 Impoundment Project. The second generation of CERP projects for Congressional

~~authorization includes the Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, the Caloosahatchee River (C-43) West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. These projects will result in significant environmental benefits to the CERP project area, improving the quantity, quality, timing and delivery of water to the natural system. Further information on the above mentioned CERP projects assumed to be in the future without project conditions are provided in **Section 2 (Existing and Future Without Project Conditions)**.~~

~~Non-CERP projects assumed to be in the future without project condition for CEPP, which incorporate similar restoration goals of improving flow and water quality to the Everglades, include the DOI Tamiami Trail Modifications Next Steps (TTMNS) Project and the Restoration Strategies Regional Water Quality Preliminary Plan (SFWMD 2012). The DOI through the National Park Service (NPS) and ENP completed a study to evaluate the feasibility of additional Tamiami Trail bridge length, beyond that to be constructed pursuant to the MWD Project, to restore more natural water flow to ENP and Florida Bay and for the purpose of restoring habitat within the ENP. The TTMNS project was authorized by Congress in the Consolidated Appropriations Act, 2012. The Restoration Strategies Regional Water Quality Preliminary Plan describes resulting projects developed to address water quality concerns associated with existing flows to the Everglades Protection Area (EPA) to achieve water quality standards established for the Everglades. The SFWMD is implementing a technical plan to complete six projects that will create more than 6,500 acres of new STAs and 110,000 acre feet of additional water storage through construction of FEBs.~~

~~The C&SF Project has numerous water management structures consisting of culverts, spillways, and pump stations that have specified operating criteria for managing or regulating water levels for Congressionally authorized project purposes. Regulation schedules have been, and will continue to be, designed to balance multiple, and often competing, project purposes and objectives. Managing for better performance of one objective often lessens the effectiveness of performance of competing objectives. For example, for Lake Okeechobee, higher regulation schedules tend to benefit water supply, but may increase the risk to public health and safety, and can harm the ecology of the lake. By contrast, lower lake schedules may produce lake levels more desirable for the lake ecology and improved flood protection, but reduce water supply potential.~~

~~Since April 2008, Lake Okeechobee has been operated in accordance with the 2008 Lake Okeechobee Regulation Schedule (2008 LORS). Prior to the 2008 LORS, Lake Okeechobee operations were managed under the "Water Supply and Environment (WSE) Regulation Schedule" since July 2000. The 2008 LORS operational study was initiated to address high lake levels, high estuarine discharges, estuary ecosystem conditions, and lake ecology conditions that occurred during the 2003 to 2005 time period. The study considered the back to back historically significant 2004 and 2005 hurricane seasons' effects on the recognized structural integrity issues of HHD along with effects to other project purposes. The 2008 LORS was identified to be effective at decreasing the risk to public health and safety, reducing the number of high volume discharges to the estuaries, and providing critical flexibility to perform water management operations. When it was approved, LORS 2008 was identified as an interim schedule. The USACE expected to operate under the interim schedule until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system wide operations to accommodate early CERP projects (Band 1 projects) or (2) completion of the modifications to HHD.~~

~~In addition to CERP and non-CERP projects previously specified, the CEPP future without project condition includes implementation of the Everglades Restoration Transition Plan (ERTP) for WCA 3A, ENP, and the SDCS, which replaced the Interim Operational Plan (IOP) for Protection of the Cape Sable~~

~~Seaside Sparrow. From July 2002 through October 2012, WCA 3A was regulated according to a seasonally varying 8.75 to 10.75 feet, NGVD regulation schedule and the Rainfall Plan (initiated in 1985), as per IOP. The primary objective in implementing IOP was to adhere to a 1999 FWS Jeopardy Opinion to reduce damaging high water levels within CSSS habitat west of SR5 (i.e. CSSS-A). The purpose of IOP was to provide an improved opportunity for CSSS nesting by maintaining water levels below ground level for a minimum of 60 consecutive days between March 1 and July 15, corresponding to the CSSS breeding season. In addition, a secondary purpose of IOP was to allow CSSS habitat to recover from prolonged flooding during the mid-1990s. The ERTP superseded the IOP in October 2012 and is intended to define water management operating criteria for the C&SF project features and constructed features of the MWD and Canal 111 South Dade Projects (C-111SD) until a Combined Operational Plan (COP) is implemented following completion of the MWD and C-111SD projects. ERTP objectives include improving conditions in WCA 3A for the endangered Everglade snail kite, wood stork and wading bird species while maintaining protection for the endangered Cape Sable seaside sparrow (CSSS) and Congressionally authorized purposes of the C&SF Project.~~

Comment [dec46]: This text may need to be revisited based on the final determination regarding completion of the MWD project and the associated timing/authority for the next operational plan.

Table 5-155-15. Past, Present, and Reasonably Foreseeable Actions and Plans Affecting the Action Area

	Past Actions/Authorized Plans	Current Actions and Operating Plans	Reasonably Foreseeable Future Actions and Plans
Status of Non-CERP Projects	- C&SF Project (1948) - ENP Protection and Expansion Act (1989) - Modified Water Deliveries (MWD) General Design Memorandum (GDM) and Final Environmental Impact Statement (1992) - C-111 South Dade Project	- MWD 8.5 Square Mile Area General Reevaluation Report (2000) - MWD Tamiami Trail Modifications Limited Reevaluation Report (2008) - MWD 8.5 Square Mile Area Interim Operating Criteria Environmental Assessment (2011) Seepage Barrier near the L-31 N Levee (Miami-Dade Limestone Products Association)	- Tamiami Trail Modifications - Next Steps (TTMNS) Project - SFWMD Restoration Strategies Project MWD Closeout - Seepage Barrier near the L-31 N Levee (Miami-Dade Limestone Products Association) -
Operations Plan for Lake Okeechobee, WCA-3A, ENP and the South Dade Conveyance System	- Water Supply and Environment (WSE) Lake Okeechobee Regulation Schedule (20001999) - IOP 2002 to Present - Water Control Operations: WCA-3A Water Management Plan.	- Lake Okeechobee Regulation Schedule (LORS 2008) - SFWMD LEC Regional Water Supply Interim Plan - IOP to be replaced by Everglades Restoration Transition Plan (ERTP) October 2012 to present - IOP 2002 to Present	- LORS 2008 to be replaced by revised Lake Okeechobee Regulation Schedule - SFWMD periodically revises the LEC Regional Water Supply Interim Plan - IOP to be replaced by Everglades Restoration Transition Plan (ERTP) - ERTP to be replaced by Combined Operational Plan to be completed to include MWD and C-111 components.
CERP Projects		**Awaiting Authorization by Congress:** - Biscayne Bay Coastal Wetlands Project - Broward County Water Preserve Areas Project - Caloosahatchee River (C-43) West Basin Storage Reservoir - C-111 Spreader Canal Western Project. **Congressional Authorization Received and Construction in Progress:** - Indian River Lagoon-South Project - Picayune Strand Restoration Project - Site 1 Impoundment Project Indian River Lagoon-South Project	- Future CERP Projects

Comment [dec47]: Placeholder to MWD closeout details, once guidance is provided.

Comment [dec48]: Update with final MWD guidance.

Table 6-~~445165-16~~. Summary of Cumulative Effects

Hydrology	
Past Actions	Flood and water control projects have greatly altered the natural hydrology.
Present Actions	Federal and state agencies are coordinating on and implementing projects to improve hydrology.
Proposed Action	Reductions in high discharge events from Lake Okeechobee to the Northern Estuaries. Significant beneficial hydrologic effects are anticipated within the Greater Everglades through restoration of sheetflow and rehydration of previously drained areas. Improved hydrologic conditions will result from increasing depths and extending hydroperiods in WCA 3A, WCA 3B, and ENP.
Future Actions	Additional CERP projects propose to restore hydrology to more natural conditions.
Cumulative Effect	Although it is unlikely that natural hydrologic conditions would be fully restored to pre-drainage conditions, improved hydrology would occur. CERP is expected to improve the quantity, quality, timing and distribution of freshwater flow.
Threatened and Endangered Species	
Past Actions	Water management practices and urbanization have resulted in the degradation of existing habitat function and direct habitat loss leading to negative population trends of threatened and endangered species.
Present Actions	Ongoing efforts have been made by Federal and state agencies to implement projects to improve hydrology within the project area. Ongoing projects have been implemented to maintain CSSS populations. The FWS recovery plan is used as a management tool.
Proposed Action	No effect on Audubon's Crested Caracara. May affect the eastern indigo snake, Florida panther, wood stork, Everglade snail kite, Everglade snail kite critical habitat, Florida manatee, Florida crocodile, CSSS, CSSS critical habitat, and Florida Manatee.
Future Actions	Ongoing projects would be implemented to maintain threatened and endangered species within the project area. ERTP implementation represents a paradigm shift from single species to multi-species management. ERTP includes performance measures specifically directed at managing water levels and releases for the protection of multiple species and their habitats within the project area.
Cumulative Effect	Habitat improvement, monitoring and management of threatened and endangered species are anticipated to allow populations to be maintained. Improvement of degraded populations is expected to be facilitated by the restoration and enhancement of suitable habitat through efforts to restore more natural hydrologic conditions within the project area.
Fish and Wildlife Resources	
Past Actions	Water management practices have resulted in aquatic vegetation community changes and a resultant disruption of aquatic productivity and function that has had repercussions through the food web, including effects on wading birds, large predatory fishes, reptiles and mammals.
Present Actions	Ongoing efforts have been made by Federal and state agencies to implement projects to improve hydrology within the project area to restore habitat conditions for fish and wildlife resources.
Proposed Action	Negligible effects to fish and wildlife resources within Lake Okeechobee, and the EAA. Reductions in the number of high discharge events to the Northern Estuaries are anticipated to improve suitable habitat for key indicator species such as oysters. Significant beneficial effects are anticipated within the Greater Everglades. Rehydration within previously dry areas of WCA 3A, 3B, and ENP would increase the spatial extent of suitable habitat. Increases in forage prey availability (crayfish, other invertebrates, and fish) would directly benefit amphibian, reptile, small mammal, and wading bird species. Nesting and foraging activities of resident bird species are anticipated to be significantly improved. Increased freshwater flows to Florida Bay

	would aid in improving suitable habitat for pink shrimp, juvenile spotted seatrout, sea turtles, manatee and crocodiles among other species.
Future Actions	Some level of improvement to fish and wildlife resources is expected to occur as a result of implementation of projects with the capability of improving the timing, quantity, quality and distribution of freshwater flow to the study area. Hydrologic restoration planned as part of CERP would further improve fish and wildlife habitat.
Cumulative Effect	Habitat improvement efforts are anticipated to benefit fish and wildlife resources.
	Vegetation and Wetlands
Past Actions	Drainage of Florida's interior wetlands, conversion of wetlands to agriculture, and urban development has reduced the spatial extent and quality of wetland resources.
Present Actions	Efforts are being taken by state and Federal regulatory agencies to reduce wetland losses.
Proposed Action	Negligible effects to vegetation within Lake Okeechobee and the EAA are anticipated. Reductions in the number of high discharge events to the Northern Estuaries are anticipated to improve conditions for seagrass beds. Significant beneficial effects are anticipated within the Greater Everglades. Improved hydroperiods and sheetflow within WCA 3A, 3B and ENP would result in reduced soil oxidation, promoting peat accretion necessary to rebuild the complex mosaic of habitats across the landscape. Increased freshwater flows to Florida Bay would aid to lower salinity levels, benefiting mangrove communities and seagrass beds.
Future Actions	Some level of improvement to vegetative communities is expected to occur as a result of implementation of projects with the capability of improving the timing, quantity, quality and distribution of freshwater flow to the study area. More natural hydrology as part of the CERP would assist in restoring natural plant communities.
Cumulative Effect	While the spatial extent of natural plant communities would not be restored to historic proportions, the quality of vegetative communities would be improved.
	Cultural Resources
Past Actions	Flood and water control projects, conversion of wetlands into agriculture and urban development have had adverse unmitigated effects to cultural resources either directly or indirectly.
Present Actions	Ongoing efforts have been made by Federal and state agencies to implement projects to improve hydrology within the project area, thereby stabilizing the tree islands which are known to have a high potential for cultural resources.
Proposed Action	While effects of the proposed action have been evaluated, a final determination of effects on cultural resources is not complete. Consultation with stakeholders, including the State Historic Preservation Office, Advisory Council on Historic Preservation, Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida is currently ongoing.
Future Actions	Continued improvement to hydroperiods and sheetflow within WCA 3A, 3B and ENP could reduce soil oxidation, which could stabilize the environment, and this in turn could stabilize tree islands containing cultural resources. Investigations mandated in the Programmatic Agreement for ERTP are in the process of being completed and will determine the effects of fluctuating water on subsurface historic properties.
Cumulative Effect	Cumulative effects to historic properties and culturally significant sites will be potentially major long-term adverse effects. Mitigation measures for effects to historic properties could reduce the cumulative effect to be minor long-term adverse effects.
	Water Quality
Past Actions	Water quality has been degraded from development and agriculture.

— could get more ad both benefit w/ incorporation of addl water to STDF BCR Crit. Proj.

Comment [MAN49]: Mark Shafer to review and edit.

Present Actions	Efforts to improve water quality from agricultural areas are ongoing. Federal and state projects would temporarily elevate localized levels of suspended solids and turbidity.
Proposed Action	Implementation of the proposed action would likely result in no additional exceedances of the Everglades Settlement Agreement as compared with the current operational plan. Water quality changes potentially affects fish and wildlife resources by altering vegetation composition or structure.
Future Actions	~~Aggressive actions by the State of Florida would decrease~~ pollutant concentration and loadings to the project area. If authorized in the next Water Resources Development Act (WRDA), the Broward County WPA Project, (report approved in 2007) would reduce storm runoff deliveries to WCA 3 and improve water quality coming across Tamiami Trail.
Cumulative Effect	While anthropogenic effects on water quality are unlikely to be ~~eliminated,~~ water quality is expected to slowly improve over existing and recent past conditions.

Water Supply/Flood Control	
Past Actions	Water supply and flood control for agricultural and urban users has benefited from construction and operation of the C&SF project.
Present Actions	Availability of water from Lake Okeechobee for agricultural users were recently diminished through implementation of LORS 2008. Availability of water for urban users were recently diminished through implementation of ERTP.
Proposed Action	Implementation of ALT 4R2 would likely have no effect on water supplies to agricultural users dependent on Lake Okeechobee. A portion of the urban users, namely LECSA 2 and 3, future supplies would increase slightly.
Future Actions	Future supplies would not change in the future unless additional storage or hydrologic improvements to the Everglades are implemented and increase water availability.
Cumulative Effect	While effects on water supplies are unlikely to improve, water supplies available for agricultural and urban users is expected to remain stable.

The Tribe has the capacity to accomadate & store excess waters on its lands particularly in times of flooding. If the Corps would consider analyzing ~~this~~ CEPP together with the broader restoration landscape these efficiencies could be recognized and the Tribe could be a partner in helping the ~~[illegible]~~ prevent ~~water~~ fresh water being released to tide we believe modeling on these efficiencies is essential.

6.5.6 Incomplete or Unavailable Information

The analyses provided in this document are based upon current knowledge of the physical and biological conditions in the action area and on projections of the most probable future conditions, as indicated by hydrologic models. It is recognized that new technical information or models may be developed as the selected plan is implemented and that the observed results may differ from predicted results. Considering this, it may be necessary to adjust operations to address the new information or observed results to ~~achieve better performance for~~ environmental restoration and protection to ensure the health, safety, and well-being of the general public and affected individuals. Using an AM approach during implementation of CEPP, as documented in **Annex D (Adaptive Management and Monitoring Plan)**, would provide new information to address uncertainties and risks over time, decrease the potential for costly mistakes, and ultimately support fulfillment of CEPPs restoration goals and objectives.

6.5.7 Unavoidable Adverse Environmental Effects

As discussed under each resource in **Section 5.~~5.~~32 (Environmental Effects of Operational Refinements of the TSP)** adverse effects associated with implementing Alt 4R2 are expected to be minimal to moderate. Unavoidable potentially adverse impacts that would result from implementation of Alt 4R2 include effects to the CSSS and temporary, short term impacts to air quality, the noise environment, and aesthetic resources from operation of construction equipment through lands designated for staging, access and construction. Temporary disturbances to and displacement of fish and wildlife resources to other nearby habitat would occur during construction. Vegetation would be lost during construction that currently exists on levees and spoil mounds that would be degraded and/or in areas where project features would be constructed.

Significant beneficial effects to fish and wildlife resources are anticipated under Alt 4R2. Adverse effects to alligators that utilize the Miami Canal would occur due to backfilling of the Miami Canal within northern WCA 3A. These effects are expected to be short-term as alligators would expand into other areas of suitable habitat created as a result of CEPP implementation. Due to increased water flow and changes in water distribution, it is anticipated that overdrained areas in northern WCA 3A will be rehydrated, triggering a vegetation transition from upland to wetland habitat. Although mammals occurring within the action area are adapted to the naturally fluctuating water levels in the Everglades, there is an increased potential for this vegetation transition to negatively affect mammals utilizing upland habitat. Changes in water quality also have the potential to affect prey forage base through altering of vegetation composition or structure. Water quality will continue to be monitored under CEPP.

Non-native and invasive plant infestations in the project area may be exacerbated by soil disturbance during construction and hydrological modification. Many non-native and invasive species are flourishing in a variety of habitats and are negatively affecting the ecology throughout the Everglades. Introduction or expansion of non-native fish species due to changes in water distribution and increased connectivity between WCA 3A, WCA 3B and ENP is likely to occur; however, the extent of is uncertain at this time.

Publically owned lands are being utilized for Alt 4R2. Portions of the A-2 footprint are currently leased for purposes of agricultural production, including sugar cane. Potential adverse impacts on prime and unique farmland will be assessed during detailed design. Adverse impacts on wetland acreage would occur within WCA 3B with implementation of Alt 4R2 as a result of the construction of the Blue Shanty levee (L-67 D). This loss would be offset by improved conditions to wetland acreage elsewhere within the region. -Section **5.~~5.3.13~~2.14.1 (~~Land Use~~Wetlands)** evaluates increases in wetland acreage directly

associated with implementation of Alt 4R2. Alt 4R2 provides a net gain of wetland acreage as a result of the construction of other project features including ~~(i.e.~~ construction of the A-2 FEB, degradation of the L-4 levee, backfill of the Miami Canal, construction of gaps in the L-67 C levee, degradation of the L-29 levee and L-67 extension, and removal of Old Tamiami Trail~~)~~.

~~Unavoidable potentially adverse impacts on water quality could occur with implementation of Alt 4R. Until water quality is improved, there are few opportunities to move water within the greater Everglades system to achieve restoration goals. As discussed within **Section 4.1.8** and **Section 5.5.3.8 (Water Quality)**, USACE conducted a detailed water quality analysis of CEPP alternatives to determine the potential impacts of the proposed action to FWM TP concentrations and loads to SRS. Phosphorous is the primary nutrient concern for the Everglades, which historically has been a phosphorous limited system. The analysis evaluated potential changes to phosphorous loading, shift of loading, and exceedances of the Settlement Agreement Consent Decree flow weighted annual mean long term target for Shark River Slough. Based on the results of this analysis, it appears that it is likely that Alt 4R will provide lower TP concentrations for flows delivered to Shark River Slough as compared to the FWO or the existing condition. It is possible that exceedances of the Settlement Agreement SRS Long Term Limit (LTL) will still occur since the LTL is lower with Alt 4R than without it as a result of the additional flow into SRS.~~

6.5.8 Irreversible and Irretrievable Commitment of Resources

An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. Construction of the proposed project will include many features considered permanent as well as modifications to existing C&SF project features, which may be deemed irreversible. This would include project features in the EAA for storage and features in the WCAs and ENP that would change the distribution and conveyance (location, direction, depth, volume, and/or timing) of the available water. The proposed project would also include features necessary to control resulting increased seepage along the eastern boundary of WCA 3B and ENP. Such construction and structural modifications are proposed on such a large scale that these features represent an irreversible and irretrievable commitment of resources. Resources to be committed if the project is approved include expenditure of state and Federal funding, labor, energy and project materials to build, operate and maintain the proposed project.

6.5.9 Environmental Commitments

The USACE commits to avoiding, minimizing or mitigating for adverse effects during construction activities by including the following commitments in the contract specifications:

1. The contractor would be required to keep construction activities under surveillance, management, and control to avoid pollution of surface, ground waters, and wetlands. The contract specifications would require the contractor to employ best management practices (BMPs) with regard to erosion and turbidity control.

2. The contractor would be required to prevent oil, fuel, or other hazardous substances from entering the air, ground, drainage, local bodies of water, or wetlands. The contract specifications would require that the contractor adopt safe and sanitary measures for the disposal of solid wastes and would require a spill prevention plan. The contractor would also be required to transport and dispose of any construction and demolition debris in accordance with applicable requirements.

3. The contractor would be required to keep construction activities under surveillance and control to minimize damage to the environment by noise and pollution of air resources.

4. The contractor would be required to keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife. The contractor would be required to inform the construction team of the potential presence of ~~threatened and endangered species~~ in the ~~work area, the need~~ for construction conservation measures, and any requirements resulting from Endangered Species Act (ESA) Section 7 consultation.

5. The contractor would be required to take appropriate measures to protect historic, archeological and cultural resources within the work area.

6. The contractor would be required to keep construction activities under surveillance, management, and control to prevent the transfer and spread of invasive species due to construction activities. The contract specifications would require the contractor to employ BMPs and measures to prevent the transfer and spread of invasive species.

In addition, as required under WRDA 2000, the CERP Programmatic Regulations, and current USACE policy, the PDT has taken the following actions:

1. The PDT has identified water to be reserved or allocated for the natural system. This requirement is addressed in **Annex B (Analysis Required by WRDA 2000 & State Law)** of this report.

2. The Selected Plan has been evaluated in light of its potential effects on existing legal sources of water and the level of service for flood protection. This requirement is addressed **Annex B (Analysis Required by WRDA 2000 & State Law)** of this report.

3. WRDA 2000, the authorizing legislation for CERP, has now made a formal monitoring plan a requirement for all CERP restoration projects. The Selected Plan includes adaptive management, water quality, hydrometeorologic, and ecological monitoring activities to ensure that the intended purposes of the project would be achieved through long term operations. This requirement is addressed in **Annex D (Adaptive Management and Monitoring Plan)** of this report.

4. In addition to the project level monitoring plan, the PDT has developed a nuisance and exotic vegetation control plan which strives to either prevent or reduce the establishment of invasive and non-native species within the project area. This requirement is addressed in **Annex D (Adaptive Management and Monitoring Plan)** of this report.

5. USACE guidance interpreting the WRDA of 2007 (Section 2039), requires preparation of an adaptive management plan for all ecosystem restoration projects. Adaptive management is a formal process for continually improving management policies and practices by learning from their outcomes. In the context of CEPP, the adaptive management plan provides an approach for addressing project uncertainties by testing hypotheses, linking science to decision making, and adjusting implementation of the project as necessary, to improve the probability of restoration success. This requirement is addressed in **Annex D (Adaptive Management and Monitoring Plan)** of this report.

6.6 PLAN IMPLEMENTATION

Implementation of CEPP will occur over many years and include many actions by USACE and SFWMD. This subsection discusses the major implementation steps that occur after Congressional authorization and apprioriateion of funding for Project construction. The Tentatively Selected Plan is composed of features which can be grouped into separable elements. These separable elements are physically separate from other portions of the Project and which either 1) achieves independent hydrologic benefits or 2) produces independent environmental or economic benefits that are separately identifiable from those produced by other separable Project elements. CEPP will be designed and constructed in phases, which each construction phase containing one or more separable elements as set forth in Section . This approach gives the USACE and the SFWMD maximum flexibility to develop and implement separable elements as agreed to by the parties. The approach incorporates the adaptive management process, maximizing the opportunity to realize incremental restoration benefits by initially building features that utilized existing water in the system which meets State water quality standards. The USACE and the Corps wil select particular separable elements and the sequence of such separable elements to maximize benefits to the extent practicable and consistent with the Adaptive Management and Monitoring Plan (See Annex D) Table 6-5 identifies one example of key project feature dependencies to be as part of each separable element. Figure 6-1 provides a Gantt Chart illustrates one possible example pf a sequencing plan for implementation of separable elements. Individual Project Partnership Agreements, or amendments to existing PPAs, will be executed prior to construction for each implementation phase for one or more separable elements. ~~The first task is for USACE and SFWMD to prepare the Final PIR/EIS. After all approvals are attained, the project would be submitted to Congress for authorization. After authorization, USACE would begin preconstruction engineering and design (PED). Once sufficient details of design are available, the SFWMD and USACE would execute a legally binding Project Partnership Agreement (PPA). It is possible that multiple PPAs will be executed to match phasing of construction (see below). SFWMD would obtain the lands, easements, rights of way and relocations (LERR). Before the end completion of PED and before prior to the issuing issuance of any project construction contracts, SFWMD would and certify the LERR to USACE., and the SFWMD and USACE would execute a legally binding Project Partnership Agreement (PPA).~~

~~The PPA is a binding agreement between the agencies and the required contents of a PPA are detailed in the CERP Master Agreement. It is possible the project will be split into multiple PPAs.~~

~~After execution of a PPA and certification of LERR, the USACE would advertise and issue contracts for construction of project features. An operational testing and monitoring period (OTMP) would occur prior to the end of construction of each feature or set of features. Upon completion of the OTMP, the feature(s) would be transferred to SFWMD for operation and maintenance. [Add a sentence here on invasive species / vegetation management.] Regional ecosystem monitoring would be performed as part of the CERP Adaptive Assessment and Management Program implemented by RECOVER. Project specific monitoring would be funded through O&MOMRR&R.~~

~~Most of the major steps are discussed further in the following subsections.~~

6.6.1 Preconstruction Engineering and Design

Preconstruction Engineering and Design (PED) of CEPP would begin after Congressional authorization ~~of CEPP~~ and upon SFWMD's concurrence and will be implemented in a phased approach with each phase consisting of one or more separable elements. PED would include site-specific surveys and geotechnical investigations. During the design phase, detailed analyses, subsurface and site investigations will be

a more holistic approach to the greater restrat landscape would ~~be~~ allow for greater efficiencie in the system And better ensure that the projects functional value is fully realized. We also believe that the Corps should analyze & provide modeling on the projects impact to the western Basins.

conducted to prepare construction documents. See **Section 5.1** for a list of plan features to be constructed. See **Appendix A** and **Annex C-2 of Appendix A** for conceptual design plates.

~~PED activities will be in accordance with USACE construction standards, including cultural resources compliance.~~ Preliminary design activities~~, which include survey and geotechnical investigations as well as cultural resources compliance,~~ will commence upon authorization and with SFWMD approval. The Engineering Appendix (**Appendix A**) represents ~~less than 30 percent~~a limited level of design, but includes documentation of all engineering assumptions and conceptual designs and OMRR&R cost share for State owned/ State operated facilities identified to date in support of cost estimate development for ~~costing~~ the TSP. Upon project authorization and SFWMD approval, USACE will prepare an Engineering Design Report updating the conceptual design and~~;~~ prepare initial, intermediate and final plans and specifications for ~~multiple construction contract awards~~each phase of construction. All work would be coordinated ~~and reviewed~~ with SFWMD and reviewed and approved to ensure that the work meets USACE standards and regulations and incorporates SFWMD design guidance, as applicable.

Comment [dec50]: Text was previously stated in the prior paragraph.

Comment [dec51]: Approval of what? Please specify.

Comment [baf52]: Spell out EDR

6.6.2 Construction

It is envisioned that the project will be constructed using conventional means and methods. Multiple contracts will be awarded in a sequenced and phased approach. The project features ~~were~~will be conceptually sequenced and conceptually placed in contracts that maximize opportunities to realize benefits with ~~clean water already in the existing system~~exisitn water that meets State water quality standards, capitalize on use of onsite material, reduce multiple handling scenarios, and maintain flood control operations of existing features. Adaptive Management will help with future development of the implementation and sequencing.

6.6.3 Construction Sequencing and Implementation Plan

~~Certain a~~Assumptions are made to conduct any planning effort as to what the future condition of the study area may look like if no action is taken, referred to as the FWO project condition. It is a best guess prediction of what is likely to occur in the study area in the future. The CEPP FWO project condition assumed that certain CERP projects that are currently under construction, as well as those CERP projects which have completed the planning process and are awaiting Congressional authorization, would be undertaken. This is a projection of what the configuration of the system would be without a CEPP project. With the identification of a tentatively selected plan for CEPP, the next step is to consider how CEPP features would be implemented in the future (with-plan condition).

In development of construction sequencing, a number of non- CEPP projects must be in place before implementing any CEPP features. Additionally, certain non- CEPP project features must be integrated into the sequencing of CEPP to avoid unintended adverse consequences as set forth in Table 6-5 below. Several basic principles were considered in development of an implementation plan for CEPP features which include the following:

1. All features of the State's Restoration Strategies must be completed and meet state water quality standards prior to initiating construction of most CEPP project features;
2. Construction of CEPP Project features cannot proceed until it is determined that construction and operation of the feature:
   a. Will not cause or contribute to a violation of State water quality standards; and
   b. Will not cause or contribute to a violation of any applicable water quality permit discharge limits or specific permit conditions ; and

c. Reasonable assurances exist that demonstrate adverse impacts on flora and fauna in the area influenced by the Project features will not occur.

3. Appendix A water quality compliance must be addressed for new Project water entering Everglades National Park
4. Additional CEPP water quality treatment features, including operational and structural modifications, may need to be constructed if State water quality standards are not met upon operation of CEPP project features
5. Sequencing for the earliest opportunity to realize benefits, including the features that can provide benefits that utilize existing water meeting State water quality standards.
6. Additional outlet capacity from WCA 3A must be provided before new Project water from Lake Okeechobee is released into the system
~~1.~~7. Location of the sources needed for Miami canal backfilling and the blue Shanty Levee to minimize costs associated with double handling and stockpiling of materials

Comment [SFWMD53]: Add additional Water Quality Language once negotiations between the State and Federal Governments are complete on this issue.

~~Four basic principlesals were considered in development of an implementation plan for CEPP features: 1) Cconsideration of the sequencing for construction of features that provide the earliest opportunity to realize benefits, includingi.e. features that could provide benefits with the existing volumes of water inflows prior to bringing additional water from Lake Okeechobee; 2) cConsideration of any aspects of the FWO condition that must be in place before implementing any CEPP features to avoid any detrimental or un-intended adverse consequences. A (a summary of the relationship of CEPP features to other projects is provided in Table 5-17); 3) Rrecognition that additional outlet capacity from WCA 3A must be provided before bringing in additional water from Lake Okeechobee; 4) Cconsideration of the sources of fill needed for the Miami Canal backfilling and the Blue Shanty levee and sequencing the construction of these features to minimize additional costs associated with stockpiling material and double handling.~~

Table 6-~~556175-175-16~~. Project Dependencies

Project	Dependency of CEPP Features
~~A-1 FEB State Restoration Strategies~~	Required prior to implementation of northern WCA-3A distribution features (L-4 degrade, new divide structure, S-8 Modifications, L-5 and L-6 improvements, Miami Canal Backfilling) to ensure adequate water quality treatment of inflows
C-111 South Dade	Extension of the detention area levees to connect with 8.5 Square Mile Area (SMA) required prior to significantly increasing flows to NESRS to enable operation of S-357 pump station to provide seepage management to 8.5 SMA
MWD 1-Mile Bridge & Road Raising	Required prior to implementation of WCA-3B inflow structures along the L-67A&C levees or increasing flows through existing S-333 to NESRS to ensure adequate road protection to allow for increased stages in L-29 canal
BCWPA C-11 Impoundment	Required prior to increasing flow through S-333 or implementation of WCA-3B inflow structures along the L-67A&C levees to ensure adequate water quality of inflows to NESRS
Tamiami Trail Next Steps Bridging and Road Raising	Required prior to increasing capacities ~~of~~ ~~at~~ S-333 and S-356 and implementation of WCA-3B inflow structures along the L-67A~~&C~~ levees, gaps in L-67C levee and Blue Shanty flowway (L-67C removal, L-29 levee removal)
IRL-S C-44 reservoir	Required prior to re-directing the full 200,000 ac-ft/yr from Lake Okeechobee south to the FEB to avoid reduction in low flows to the St. Lucie Estuary

The Tribe has capacity to receive ~~water~~ water released from Lake Okeechobee and believes modeling on this issue is critical. Please see overall notes regarding a more holistic NEPA analysis for the dependency of CEPP features.

Also we would recommend that Corps consider the efficiencies that could be created when the Tribes Critical Project is completed & how this could help from an availability of storage perspective.

To begin realizing benefits from CEPP as early as possible, the first features that could be implemented are the hydropattern restoration features in northern WCA 3A and the backfilling of the Miami Canal. Construction of these features that re-distribute inflows into WCA 3A would begin to provide the benefits identified in the TSP associated with restoration of hydroperiods in northern WCA 3A, associated reduction ine the risk of muck fires, and ~~the~~ restoration of more natural sheetflow throughout WCA-3A. These benefits could be realized through re-distribution of existing inflows prior to bringing in ~~any~~ additional water from Lake Okeechobee. Implementation of these features would only occur ~~once~~ after the State has completed construction of the A-1 FEB, associated with the State's Restoration Strategy for the Central Flowpath to ensure adequate water quality treatment of inflows. The specific features of the TSP to be implemented first would include the L-4 levee degrade and divide structure, the S-8 pump station modifications, the L-6 improvements, the L-5 canal improvements, ~~the L-6 improvements~~ and the backfilling of the Miami Canal. **Figure 5-4** illustrates the construction sequencing of these features. It is important to note that the L-4 levee degrade ~~of the L-4 levee~~ and the L-5 canal improvements ~~fill~~ generate~~d from L-5 canal improvements are a significant~~ the primary source of fill for ~~the~~ backfilling ~~of~~ the Miami Canal, ~~and is~~providing the rationale for why these features are grouped together for implementation to avoid additional costs associated with ~~having to~~ stockpilinge fill and double handling ~~of the~~ fill material.

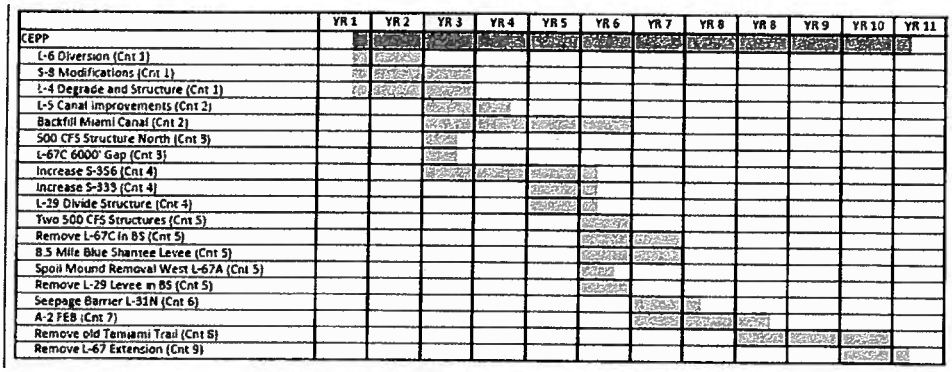


Figure 6-~~1~~14. Sequence of Construction Features

Comment [mrd54]: Wrong figure, spoil removal is moved up with Two structures, L-29 is separate contract. Will replace with correct figure.

Increasing water flow to NESRS and introducing water flow into WCA 3B could occur once the Broward Water Preserve Area C-11 impoundment is in-place to reduce S-9 discharges to the L67-A canal, which contributes to phosphorus loads into ENP through S-333. Construction of the northern most gated-culvert structure on L-67A and the associated 6,000-ft degrade of L-67C would allow for introducing additional inflow to WCA-3B to begin restoration of hydroperiod and reduce continued degradation and soil oxidation in 3B. Implementation of these~~is~~ features to provide inflows to WCA 3B will provide the opportunity to evaluate water movement within WCA 3B, determine to what extent inflows will move south to the S-355 outlet structures on the L-29 levee or east where it would move out of 3B via seepage through L-30, and provide information on seepage out of WCA 3B. This implementation approach is consistent with the adaptive management approach envisioned for CERP and the incremental adaptive restoration approach~~,~~ identified by the National Academy of Sciences, to incorporate opportunities to learn and reduce uncertainties and provide incremental restoration benefits as early as possible and minimize the continued degradation of the ecosystem. Implementation of ~~this~~ these features will require use of the existing S-356 pump station (500 cfs capacity) to manage additional seepage from

WCA 3B ~~which requires~~and completion of the MWD ~~Project 1-Mile Bridge and road raising~~Tamiami Trail Modifications.

Comment [baf55]: Edit this sentence.

Similarly, ~~some~~ an increase in flows to NESRS could be realized utilizing the existing S-333 and the existing S-356 pump station once the MWD ~~Project 1-mile Tamiami Trail Bridge and road raising~~Tamiami Trail Modifications project is completed, which thereby allows for the maximum operating stages in the ~~L-29~~ eCanal to be raised from 7.5-ft to 8.5-ft NGVD.

Increasing the capacities of the S-356 pump ~~capacity~~ station and ~~increasing capacity of~~ the S-333 structure as part of the CEPP TSP implementation would enable further increases in water flow to NESRS ~~once~~ following completion of the DOI Tamiami Trail Next Steps bBridging and rRoadway modifications ~~Raising is completed~~. Significant benefit from these facilities could be realized within~~to~~ WCA 3A and NESRS from the added outlet capacity to move water out of WCA 3A to NESRS, ~~including prior to the completion of the CEPP A-2 FEB coming on-line that will provide for additional inflows to the Everglades system from Lake Okeechobee~~. Construction of these CEPP features will also ready the system for the additional inflows from Lake Okeechobee by providing a portion of the necessary additional outlet capacity from WCA 3A. Once the increase in S-356 capacity is on-line to provide requisite seepage management, construction of the Blue Shanty Flowway could be undertaken to complete the WCA 3A outlet capacity needed prior to ~~bring in~~introduction of additional water from Lake Okeechobee.

The next features to be constructed would be the A-2 FEB and the seepage barrier along L-31N, with the seepage barrier to ensure adequate seepage management would be in-place prior to moving the additional inflows from Lake Okeechobee provided by the A-2 FEB. This construction sequence would allow time for consideration of information being gathered from~~or~~ the 2-mile seepage barrier along the L-31N that was constructed by the Rock Miners, as well as any additional investigations that may be undertaken to develop detailed design for the seepage barrier feature. It should be noted that the seepage barrier feature may be constructed as part of Lake belt Mitigation prior to the implementation of CEPP. It will also allow time for completion of the Indian River Lagoon, South (IRL-S) C-44 reservoir, ~~to be implemented~~ to ensure there will not be any adverse effects to low flows to the Saint Lucie Estuary from re-directing water south to the FEB.

In this opetion, removal of the L-67 extension levee and modifications to the old tamiami trail are proposed as the final implementationincrement. Other options include removal of the L-67 Extension after completion of the Tamiami Trail Next Steps Bridging and Road Raising and removal of a portion of Old Tamiami trail at any time during implementation. ~~Removal of the L-67 Extension levee and modifications to the old Tamiami Trail could be constructed upon completion of the seepage barrier~~are proposed as the final implementation increment.

Comment [dec56]: Not contingent on the seepage barrier, but would be dependent on the TTNS completion. The old roadway could be removed at any time during implementation.

6.6.4 Operational Testing and Monitoring Period

As defined in the CERP Master Agreement, the term "Operational Testing and Monitoring Period" (OTMP) shall mean a reasonable, limited period of time within the period of construction, after physical construction has been completed, during which the authorized CERP Project or a functional portion of the authorized CERP Project is operated, tested and monitored to verify that the constructed features perform as designed, and to allow for any adjustments to such features as may be necessary so that such features perform as designed.

Prior to initiating OTMP, each major operational component will undergo a short period of testing and commissioning. During this period, functional performance tests will be conducted on all features. Tests

will replicate all modes of operation and will verify all other relevant contract requirements. Following the testing and commissioning, operational testing and monitoring will be conducted for one full wet season (i.e. June 1 to November 30). If the OTMP begins after the start of a wet season, the OTMP should be extended as needed to encompass a full wet season. Contractor services to be provided during the OTMP will include, but will not be limited to, the following: vegetation management including control of exotics, answering questions on equipment operation; contacting the appropriate ~~vendor/manufacture for response or site visits; arranging and officiating supplemental~~ owner training sessions; and assisting in resolution of functionality issues. The operational testing and monitoring period activities of the construction contractor will be separate from and supplemental to the warranty requirements of the contract. The ~~Corps~~USACE and SFWMD will share in the responsibilities for conducting water management operations during OTMP.

During OTMP the Federal Government and the non-Federal sponsor will work together closely to identify any features ~~which~~ that are not operating as designed. Any features ~~which~~ that are not operating as designed will be identified in writing to the District Engineer and the non-Federal sponsor. At the conclusion of OTMP, the District Engineer and the non-Federal sponsor will make a determination as to whether the Project is "operational" as defined in the CERP Master Agreement. Upon completion of the OTMP, the feature(s) will be transferred to SFWMD for OMRR&R. Regional exosystem monitoring wil be performed as part of the CERP Adaptive Assessment and Management program implemented by RECOVER. Project specific monitoring and vegetation maintenance will be funded through OMRR&R ~~After this determination, the non-Federal sponsor shall operate, maintain, repair, replace, and rehabilitate the Project.~~

Comment [SFWMD57]: Move this sentence to OMRR&R funding section

Comment [dec58]: Is this level of detail needed for the PIR, as it seems more suited for the PPA.

6.6.5 Project Operations

A ~~Draft~~ draft Project Operating Manual (POM) has been prepared and is included in **Annex C** of this PIR/EIS. Development of the POM will involve an iterative process that will continue throughout the life of the Project. The ~~Draft~~ draft POM includes operating criteria based on the initial operating regime (IOR) and generally discusses the transitions to operations during the ~~C~~construction ~~P~~phase, the ~~Operational Testing and Monitoring Phase~~~~Period~~OTMP, and the ~~Long~~long-term Operations and Maintenance (O&M) ~~P~~phase. Refinements to the operating criteria will be made as more design details, data, operational experience and information ~~is~~ are gained during these phases. A ~~Preliminary~~ preliminary POM will be prepared and approved for the ~~Operational Testing and Monitoring Phase~~OTMP. This will be followed by a ~~Final~~ final POM that will be prepared and approved for the ~~Long~~long-term ~~Operations and Maintenance~~O&M phase. After the ~~Final~~ final POM is completed and the ~~Long~~long-term ~~Operations and Maintenance~~O&M p~~P~~hase is underway, the ~~Final~~ final POM and the system operating manual (SOM) will continue to be revised based on additional scientific information, new CERP or non-CERP activities being implemented, and new CERP updates. The ~~Corps~~USACE and SFWMD will share in the responsibilities for conducting water management operations during the ~~Operational Testing and Monitoring Period~~OTMP.

Comment [dec59]: Ensure consistency in this section, the POM, and the main PIR regarding the IOR terminology; the IOR has not been otherwise explained in this PIR, so more background may be needed here.

6.6.6 Adaptive Management and Monitoring

The CEPP AM and Monitoring Plan **(Annex D)** identifies the monitoring information needed to inform CEPP implementation and restoration progress to agencies, the public, and Congress. The overall objective of the AM and Monitoring Plan is to focus resources on continued refinement of CEPP to fine-tune performance in the face of inevitable uncertainties, based on existing knowledge and knowledge that will be gained through monitoring and assessment.

A fundamental principle of AM is that a project can be adjusted to continually achieve high performance toward the project's goals and objectives and reduce or eliminate unintended consequences. ~~to remain within its constraints~~. In particular, in AM the adjustments are not "trial and error", which can be costly and erratic, but rather they are based on a scientifically efficient and sound process of learning from data. These adjustments should be viewed as intelligently fine-tuning the project elements, design and the implementation sequencing plan., the need for which is almost inevitable in a large-scale, long-term ~~restoration projects in CERP; this is one reason why adaptive management plans are a required PIR~~ element for CERP projects. Given this fundamental principle of AM, the CEPP AM and Monitoring Plan provides suggestions for adjusting CEPP if feasible and necessary. The suggestions are based on current experience and knowledge and are provided for discussion: they are not required actions, nor are they meant to limit agencies from considering other options.

The CEPP selected plan will be designed and constructed in phases with each construction phase containing one or more separable elements. This adaptively managed implementation approach will maximize opportunities to realize incremental ecosystem restoration benefits and minimize or eliminate unintended consequences. The CEPP Selected Plan provides the USACE and the SFWMD with macimum flexibility to develop and implement separable elements as agreed to by the parties. The USACE and SFWMD will select particular separable elements and the sequencting of such separable elements to maximize benefits to the extent practicable and consistent with the Adaptive Management and Monitoring Plan.

During formulation of the CEPP Adaptive Management Plan **(Annex D)**, several potential management actions designed to address CEPP uncertainties were developed. Potential environmental effects of implementation of the majority of the AM management options were analyzed within **Sections 4.1 and 5.1** and in **Appendices C.2.1 and C.2.2** of this document. However, the seven adaptive management actions described below, if they are to be implemented to address CEPP uncertainties, require additional NEPA analysis. Potential environmental considerations of these management actions are described in detail below.

AM Action: Design hydropattern restoration feature to allow testing of restoration potential and degree of success with and without vegetation management downstream of structure.

Design of the hydropatterns restoration feature in northwest WCA 3A provides an opportunity to utilize adaptive management to address the uncertainties regarding restoration of water flows and levels throughout WCA - #A. Environmental Considerations: Experimental design to include vegetation management downstream of 1-mile section of Hydropattern Restoration Feature (HRF) to improve sheetflow and getaway capacity;; vegetation management will not be employed downstream of the remaining 1-mile section. Vegetation management downstream of the hydropatterns restoration feature in northwest WCA 3A may include burning, herbicide treatment or scarring of existing vegetation. Burning could have potential effects on water quality due to potential increase or mobilization of nutrients. –Mobilization of nutrients may result in short-term increases in primary productivity directly benefitting foraging fish and invertebrates, followed by increased foraging opportunities for higher trophic levels. The loss of woody vegetation within the managed area would result in loss of perch sites for foraging birds; however, perch sites would likely be available in the unmanaged area. Removal of woody vegetation in northwest WCA 3A coud promote water flow southwest, providing sheetflow south and west of the Miami Canal and minimize water depths and durations that are potentially too deep for the Sawgrass plains in northeastern WCA 3A.~~would facilitate sheetflow, thereby increasing water depths and durations within downstream areas and~~ providing benefits as described within **Sections 4.1.3 and 4.1.5**. Nuisance vegetation management would also aid

Comment [dec60]: Additional analysis. Please add clarity whether this section is intended to provide NEPA assessment or whether this would be conducted as a separate effort.

~~Comment [dec61]:~~ ~~Text is duplicative from section 5.1.4. Recommend condensing here and referencing the prior section as appropriate.~~

we believe that these management actions would require additional NEPA analysis and that more holistic NEPA analysis of upstream & downstream flows is required

to reduce monocultures, provides foraging, resting and shelter for native wildlife and removes competition for resources with native flora and fauna.

AM Action: Partial Removal of the Remaining Length of the L-67 Extension Levee and/or Canal System; also Old Tamiami Trail Removal to see how much it affects flow and hydroperiod goals.

Environmental considerations: Removal of Old Tamiami Trail and L-67 Extension Levee and Canal ~~will~~ would ~~require~~ USACE to perform an analysis in accordance with Section 404 (b)(1) guidelines for CEPP.~~a 404B permit due to work and fill within wetlands~~. If this AM action was to be employed, all necessary ~~permits~~ analysis would be acquired prior to implementation of the action. ~~–~~In addition, the Old Tamiami Trail is a cultural resource and as such coordination with State Hi~~H~~istoric Preservation Office will be required. While operational changes associated with this feature are covered by CEPP modeling, the model does not "see" Old Tamiaimi Trail as a barrier to sheetflow; however, benefits not captured by the modeling will be provided in the form of enhanced sheetflow and rehydration of areas south of Old Tamiami Trail. These benefits are similar to those already outlined in **Section 4.1.7.** Removal of L-67 Extension will provide benefits to CSSS-A by removing barriers to flow south of the S-12s directing water eastward and away from the western marl prairies (**Section 4.1.4**).

AM Action: To increase flows out of WCA 3B, dig a shallow canal to connect to remnant agricultural ditch.

Environmental Considerations: USACE will need to perform an analysis in accordance with Section 404 (b)(1) guidelines for CEPP. ~~A 404B permit for dredge and fill within wetlands would be required.~~ If this AM action was to be employed, all necessary ~~permits~~ analysis would be acquired prior to implementation of the action. ~~–~~Collector canals would improve the ability of S-355A and S-355BB to convey water from WCA 3B to NESRS, which would assist in reducing potential ponding and inundation of lower elevation tree islands. This would also reduce potential effects to cultural resources and wildlife dependent upon upland habitats within WCA 3B. During construction, temporary short-term affects to water quality will be managed with implementation of best management practices (BMPs) as required by Florida Department of Environmental Protection (FDEP). Upon completion of construction, it is anticipated that water quality entering SRS will improve as a result of flow through WCA 3B marshes. This may assist with reducing TP loads.

AM Action: Modify the agricultural canals in the flowway.

Removing the spoil mounds and backfilling the Blue shanty (north south) canal would increase project benefits by removing barriers to sheetflow, and would provide water quality benefits by allowing water to flow through the marsh eliminating any short circuiting/drainage through the north south canal. Additionally, removing the agricultural canals could help offset some of the environmental effects from the proposed new levee in WCA 3B.

Environmental Considerations: USACE will need to perform an analysis in accordance with Section 404 (b)(1) guidelines for CEPP~~A 404B permit for dredge and fill within wetlands would be required~~. If this AM action was to be employed, all necessary ~~permits~~ analysis would be acquired prior to implementation of the action. ~~–~~Improving agricultural canals will improve the ability of S-355A and S-355BB to convey water from WCA 3B to NESRS, which would assist in reducing potential ponding and inundation of lower elevation tree islands. This would also reduce potential effects to cultural resources and wildlife dependent upon upland habitats within WCA 3B. During construction, temporary short-term affects to water quality will be managed with implementation of best management practices (BMPs) as required by Florida Department of Environmental Protection (FDEP). ~~–~~Upon completion of

construction, it is anticipated that water quality entering SRS will improve as a result of flow through WCA 3B marshes. This may assist with reducing TP

AM Action: Extend Decompartmentalization Physical Model (DPM) test 4 more years.
Environmental Considerations: Coordination with FDEP would be required. Environmental effects are detailed in the DPM EA (**USACE 2010) and are hereby incorporated** ~~http://www.evergladesplan.org/pm/projects/docs_12_wca3_dpm_ea.aspx.~~ **Based on previous Section 106 consultation on DPM, these features were not described to last over two years. Therefore, Section 106 consultation would need to be re-initiated for this feature.**

Comment [CT62]: As required by CFR 800

AM Action: ***Use vegetation management to reduce vegetative resistance to water flow downstream of L-67A new structures S-345D & G.***
Environmental Considerations: Vegetation management may include burning, herbicide treatment or scarring of existing vegetation. Burning could have potential effects on water quality due to potential increase or mobilization of nutrients. -Mobilization of nutrients may result in short-term increases in primary productivity directly benefitting foraging fish and invertebrates, followed by increased foraging opportunities for higher trophic levels. The loss of woody vegetation within the managed area would result in loss of perch sites for foraging birds; however, perch sites would likely be available in the unmanaged area. Removal of woody vegetation would facilitate sheetflow, thereby increasing water depths and durations within downstream areas and providing benefits as described within **Sections 4.1.3 and 4.1.5**. Nuisance vegetation management would also aid to reduce monocultures, provides foraging, resting and shelter for native wildlife and removes competition for resources with native flora and fauna.

AM Action: C-11 Extension gapping.
100 ft gaps will be made North and South of the C-11 canal by pushing spoil into canal every 1000 ft.
Environmental Considerations: USACE will need to perform an analysis in accordance with Section 404 (b)(1) guidelines for CEPP~~A 404B permit for dredge and fill within wetlands would be required~~. If this AM action was to be employed, all necessary ~~permits~~ analysis would be acquired prior to implementation of the action. -Burning could have potential effects on water quality due to potential increase or mobilization of nutrients. Mobilization of nutrients may result in short-term increases in primary productivity directly benefitting foraging fish and invertebrates, followed by increased foraging opportunities for higher trophic levels. The loss of woody vegetation within the managed area would result in loss of perch sites for foraging birds; however, perch sites would likely be available in the unmanaged area. Removal of woody vegetation would facilitate sheetflow, thereby increasing water depths and durations within downstream areas and providing benefits as described within **Sections 4.1.3 and 4.1.5**. Nuisance vegetation management would also aid to reduce monocultures, provides foraging, resting and shelter for native wildlife and removes competition for resources with native flora and fauna

6.6.7 Flood Plain Management and Flood Insurance Programs Compliance

The Non-Federal Sponsor agrees to participate in and comply with applicable Federal floodplain management and flood insurance programs consistent with its statutory authority.

Not less than once each year, the Non-Federal Sponsor shall inform affected interests of the extent of protection afforded by the authorized CERP Project.

The Non-Federal Sponsor shall publicize flood plain information in the area concerned and shall provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the flood plain and in adopting such regulations as may be necessary to prevent unwise future development and to ensure compatibility with protection levels provided by the authorized CERP Project.

The Non-Federal ~~Sponsor shall comply with Section~~ 402 of ~~WRDA 1986, as amended~~ (33 U.S. C. 701b-12), which requires a non-Federal interest to have prepared, within one year after the date of signing a Project Partnership Agreement for the authorized CERP Project, a floodplain management plan. The plan shall be designed to reduce the impacts of future flood events in the Project area, including but not limited to, addressing those measures to be undertaken by non-Federal interests to preserve the level of flood protection provided by the authorized CERP Project. As required by Section 402, as amended, the non-Federal interest shall implement such plan not later than one year after completion of construction of the authorized CERP Project. The Non-Federal Sponsor shall provide an information copy of the plan to the Government upon it preparation.

The Non-Federal Sponsor shall prescribe and enforce regulation to prevent obstruction of or encroachment on the authorized CERP Project or on the lands, easements, and rights-of-way determined by the Government to be required for the construction, operation, maintenance, repair, replacement, and rehabilitation of the authorized CERP Project, that could reduce the level of protection the authorized CERP Project affords, hinder operation or maintenance of the authorized CERP Project, or interfere with the authorized CERP Project's proper function.

6.7 PROJECT ASSURANCES SUMMARY

Congress enacted the Water Resources Development Act of 2000, Section 601, Comprehensive Everglades Restoration Plan (WRDA 2000). Section 601(h) of WRDA 2000, entitled "Assurance of Project Benefits" establishes project-specific assurances to be addressed as part of CERP implementation.

Savings Clause Analyses

The Savings Clause analysis is listed in WRDA 2000 as a means to assure project benefits. Specifically, Section 601(h)(5) of WRDA 2000, entitled "Savings Clause", requires an analysis of each project's effects on legal sources of water that were in existence on the date of enactment of WRDA 2000 (i.e., December 2000) and effects on levels of service of flood protection in existence on the date of enactment of WRDA 2000. Specifically, Section 601(h) (5) of WRDA 2000 identifies water for the following uses to be evaluated:

- an agricultural or urban water supply;
- allocation or entitlement to the Seminole Indian Tribe of Florida under section 7 of the Seminole Indian Land Claims Settlement Act of 1987 (25 U.S.C. 1772e);
- the Miccosukee Tribe of Indians of Florida;
- water supply for Everglades National Park; or
- water supply for fish and wildlife.

It also requires evaluation of flood protection to ensure that implementation of the Plan shall not reduce levels of service for flood protection that are in existence on the date of enactment of this Act; and in accordance with applicable law.

Project Assurances

Section 601(h) (4) (A) of WRDA 2000, entitled "Project-Specific Assurances", requires project implementation reports among other items to:

- identify the appropriate quantity, timing, and distribution of water dedicated and managed for the natural system
- identify the amount of water to be reserved or allocated for the natural system necessary to implement under State law

Following analysis of the model results, the results and conclusions will be reported in this section.

Contribution to interim goals and targets may be in this section (or moved to Plan Accomplishments)

6.8 VIEWS OF NON-FEDERAL SPONSOR

6.9 PROJECT CONCERNS AND CONTROVERSERIES

ADAPTIVE MGT AS A WAY TO ALLEVIATE CONCERNS NEEDS TO BE LEAD IN HERE

- **Incremental Restoration and Future Water Resources Opportunities.**

The National Academy of Sciences has recommended the implementation of CERP through an incremental adaptive restoration (IAR) process. CEPP has adopted that recommendation and has formulated a solution for an increment of overall restoration of the South Florida ecosystem. Incidentally, there are problems and opportunities remaining. CEPP is not meeting all targets of the pre-drainage Everglades, however does provide for significant and substantial restoration of ecosystem and achieves approximately 2/3 of the additional water flow that CERP envisioned~~:~~.

~~**6.8.1.1 Northern Estuaries**~~
~~**6.8.1.2 Florida Bay**~~
~~**6.8.1.3 Water Supply**~~

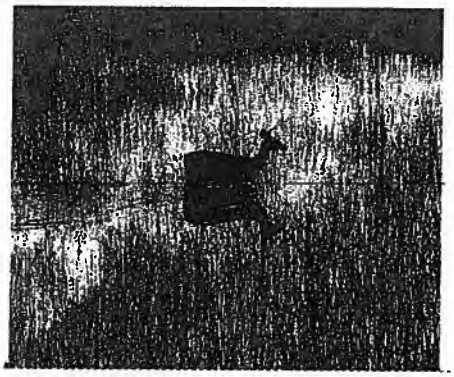
- **Water Levels in ~~Water Conservation Area 3A.~~WCA 3A**

Raising water levels in and distributing water across Northern WCA 3A is paramount to reestablishing a 500,000-acre flowing system through the northern most extent of the remnant Everglades, however; adverse impacts to mammals dependent upon upland habitat could occur due to increased water stages and changes in water distribution in northern WCA 3A.

~~White-tailed deer occur widely in Florida; they are found in every county where suitable habitat occurs. They are Florida's most important game species, from a perspective of both economics and a cultural tradition. Compared to other areas of Florida, the Everglades WMAs are not considered to be prime deer habitat and support relatively low deer population numbers and recreational opportunities. However, there is a large contingent of sportsmen that hunt deer in the area and have publicly voiced concern over impacts to the deer herd in Northern WCA 3A from raised water levels due to CEPP. In addition to concerns over deer impacts, questions have been raised over potential impacts from higher water levels on accessibility in WCA 3A resulting from vehicle and airboat closures and to existing leased hunt camps.~~

Comment [SFWMD63]: Need to reword this section to more fully address the restoration benefits of this area.

The Tribe will need an opportunity to analyze this modeling and provide additional comments.



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~~History:~~

~~The initial operating schedule and configuration of structures of the Central and Southern Florida Project for Flood Control and Other Purposes over-drained the northern portion of WCA 3A and led to the loss of ridge and slough habitat, the thinning of sawgrass stands, and the domination and/or replacement of these habitats by woody vegetation. The resulting landscape and vegetation changes have enabled larger than historical deer populations to flourish in the drained wetlands of the Everglades, while ducks have been driven out. The carrying capacity of the deer population is influenced by factors that determine the quality and quantity of food. The spatial extent of higher ground and the amount of nutritious forage on those areas largely influence the carrying capacity of the Everglades deer herd. If the environment can no longer sustain the population, the habitat degrades, herd health declines, and the population suffers. The current dry hydrologic pattern in WCA 3A has enabled the deer herd to flourish during dryer conditions and exceed the wet period carrying capacity of Northern WCA 3A, and when wet cycles returned large deer mortalities resulted.~~

~~Historically, deer would utilize tree islands as places of refuge during higher water events, but prolonged low-water levels in the northern WCA 3A resulted in tree island destruction (see Table) through fires that removed~~	~~Number of Tree Islands~~	~~Acres of Tree Islands~~

substantial volume of peat and leafy vegetation that typically would not burn when water levels are higher. Coverage			656 657 658 659 660 661 662 663 664 665
1940	1,251	24,795	666
1995	576	8,604	667
			668

The loss of peat and lower ground surface elevation on the tree islands resulted in water depths that are too deep for shrub and tree recolonization when higher water levels prevailed, and a majority of the tree islands in Northern WCA 3A have been lost. In lieu of suitable refuge on tree islands, deer have adapted to occupying the higher elevation and foraging on the less nutrient rich vegetation of the levees and spoil mounds as places of refuge during high water events. When high water conditions are sustained for extended times, forage is substantially reduced and deer feed upon plants of lower nutritional value. Deer die offs occasionally occurred under these conditions. Historical estimates show that starvation losses could be in excess of 30% of the herd.

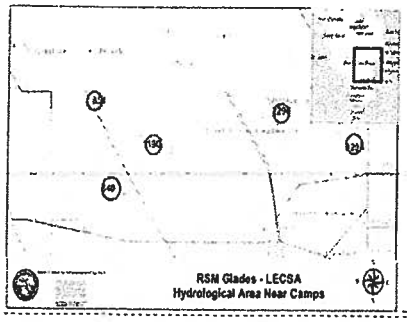
In the early 1980's a particularly high water event prompted a "mercy kill" of almost 1,000 deer from the 5,500 strong deer herd that existed in the Everglades. Public outcry over the event led to substantial changes in deer management when Governor Graham resolved that the deer herd would be managed in a manner that prevents the herd from rapidly expanding during extended low water conditions. Consequently, when a mid 1990's water event exceeded that of the 1980's event, a smaller deer herd managed in accordance with the carrying capacity of the Everglades required supplemental feeding but there was no "mercy kill" or catastrophic deer die off.

Table Error! No text of specified style in document. 1: Tree Islands of WCA3 1940-1995 Totals

Project Effects:

While the carrying capacity is extremely difficult to estimate and variable from area to area and year to year, the hydrologic changes resulting from CEPP is anticipated to reduce the overall population of deer in WCA 3A. Decreased recreational access due to more frequent and extended high water events is expected to result as deer management protocols are implemented that restrict access to Northern WCA 3A. Conversely, greater access will be provided due to reduced fire hazards caused by extreme dry conditions that currently limit access to Northern WCA 3A that will be alleviated with CEPP.
Specific CEPP impacts to deer populations and recreational opportunity include:

Increase the depth of water and duration of water above ground in Northern WCA 3A



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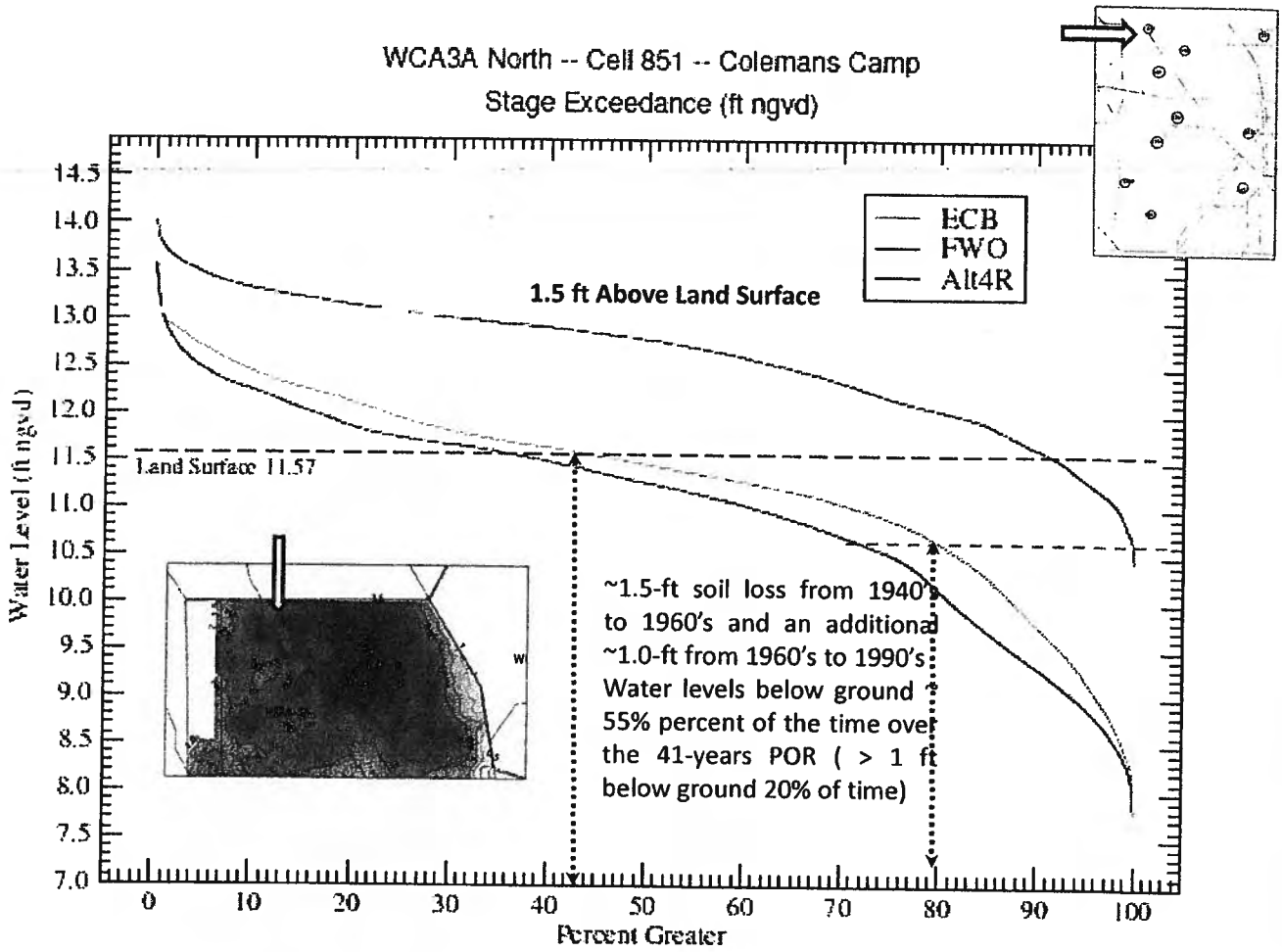
~~DELETE BELOW TABLE. INCLUDE COUNTS WITH ABOVE TABLE, FIX GRAPHIC TO REMOVE CELLS IN 2A. ADD HYDROGRAPHS OR EVERVIEW INSTEAD OF BELOW TABLE~~



~~• Maintains average dry and wet seasons stages and durations in WCA 3A south of I-75~~

~~• DELETE BELOW TABLE. INCLUDE COUNTS WITH ABOVE TABLE. FIX GRAPHIC TO REMOVE CELLS IN 2A. ADD HYDROGRAPHS OR EVERVIEW INSTEAD OF BELOW TABLE~~

	~~Dry Season (Nov-May)~~	~~Wet Season (Jun-Oct)~~

~~Cell Location~~	~~Min Water Level~~	~~Average Months Below Ground~~	~~Monthly Average Max Water Level~~	~~Average Months Above Ground~~
~~WCA-3A Central~~				
~~1365 FWO~~	~~-0.2 ft~~	~~3~~	~~1.0 ft~~	~~5~~
~~1365 Alt4R~~	~~-0.2 ft~~	~~0~~	~~1.1 ft~~	~~5~~
~~WCA-3A Central~~				
~~1164 FWO~~	~~0.3 ft~~	~~0~~	~~1.7 ft~~	~~5~~
~~1164 Alt4R~~	~~0.6 ft~~	~~0~~	~~1.8 ft~~	~~5~~
~~WCA-3A Central~~				
~~1060 FWO~~	~~0.4 ft~~	~~0~~	~~1.8 ft~~	~~5~~
~~1060 Alt4R~~	~~0.5 ft~~	~~0~~	~~1.9 ft~~	~~5~~
~~WCA-3A South Central~~				
~~1443 FWO~~	~~0.5 ft~~	~~0~~	~~2.1 ft~~	~~5~~
~~1443 Alt4R~~	~~0.6 ft~~	~~0~~	~~2.0 ft~~	~~5~~

- ~~Reduces the total number of days of closures to WCA 3A over the (41 year) period of record~~
- ~~807 days with the project vs. 892 days based on current conditions~~

Comment [baf64]: this bullet and table should be retained in the PIR.

~~Scenario~~	~~High Stage Closures~~			~~Fire Closures~~		
	~~Percent of Days Closed~~	~~No. Events~~	~~Avg. Duration~~	~~Percent of Days Closed~~	~~No. Events~~	~~Avg. Duration~~
~~ECB~~	~~3.4~~	~~15~~	~~34.1~~	~~2.5~~	~~12~~	~~31.8~~
~~FWO~~	~~2.9~~	~~12~~	~~36.8~~	~~2.8~~	~~16~~	~~26.4~~
~~Alt4R~~	~~4.0~~	~~17~~	~~35.6~~	~~1.3~~	~~9~~	~~22.4~~

- ~~Provides expanded wildlife terrain by eliminating the landscape barrier the Miami Canal imposes in Northern WCA 3A~~
- ~~Retains 49 of the 348 acres of higher ground deer refuge from Miami Canal spoil:~~
  - ~~Conserves 32 acres of the highest functioning FWC planted spoil mounds between I-75 and S-339 out of the 75 total planted spoil acres~~
  - ~~Creates 17 acres of artificial tree islands north of S-339~~
- ~~Increasing year-round water levels in the Everglades would provide more ideal habitat for waterfowl. It would also induce a shift in hunting patterns in these areas from primarily deer hunting to primarily duck hunting, as seen in Holey Land WMA after its restoration. The Everglades occupy the western portion of the Atlantic Flyway in Florida.~~
  - ~~Leased hunt camp locations~~

Comment [baf65]: Not a controversy. Should be in the larger "NEPA effects" section

- **Blue Shanty Levee**

The Blue Shanty flow-way achieves a central goal of CERP and of CEPP: restoration of continuous sheet-flow in the historical direction and re-connection of a portion of WCA 3B to Everglades National Park. Concerns expressed that advancing Everglades restoration through construction of an additional levee appears counterintuitive to decompartmentalization goals. Although the levee is

controversial, it is necessary to ensure the functioning of a whole levee system in the WCA 3B area and to create the flow-way.

6.10 RISK AND UNCERTAINTY

Issues of risk and uncertainty are inherent in the planning, design and implementation of the CEPP ~~recommended~~ plan. ~~An overview of~~ feasibility, ~~forecasting~~, and implementation issues is presented in this section. The role of the adaptive assessment strategy in addressing risk and uncertainty is discussed in the following sections.

Comment [dec66]: Cite the specific section for AM information.

Monitoring and adaptive assessment strategies will continue to evaluate and address issues pertaining to construction sequencing, connectivity, and potential for early restoration benefits. Such evaluations will continue to reduce uncertainties and increase the likelihood for overall success.

6.10.1 Planning

Two primary areas of focus for this risk and uncertainty evaluation are simulation model confidence, and project performance. This analysis addresses the reliability and accuracy of the assumptions and tools used to forecast with- and without-project conditions are evaluated.

6.10.1.1 Hydrologic Simulation Tools

The RSM-GL and RSM-BN regional models and DMSTA were approved for use through the current USACE Engineering software validation process. The validation reviews were conducted by qualified senior USACE engineers with support from technical experts, and USACE approval indicates that that software is technically/theoretically sound and approved for use by knowledgeable and trained staff for purposes consistent with the software's purposes and limitations. These modeling tools were used to evaluate the effects of the final array of alternatives.

Model building/generic software tools (STELLA, Excel, etc.) are generally allowed for use under the validation process, but these tools are not pre-validated and additional USACE Agency Technical Review (ATR) of the inner workings of the model is required. ATR is conducted by a qualified senior team from a separate USACE District than involved in the project. All other CEPP modeling tools, which were applied during preliminary screening efforts, were approved for use in CEPP through the ATR process.

The CEPP modeling strategy identified these tools as the best models available for assessment of the hydrologic and water quality effects of CEPP within the Everglades system. Additional information on the USACE model review process and the CEPP modeling strategy is provided in the Engineering Appendix (Appendix A).

6.10.1.2 Uncertainty of Project Benefits

Comment [MAN67]: Section reduced per Eric Bush.

There is no standardized methodology for predicting ecosystem benefits that result from habitat restoration projects. For the Corps planning process, the most apparent adverse risks of employing a given benefit estimation methodology are: 1) the most effective project alternative is not selected for implementation, 2) the selected project provides significantly fewer benefits than estimated, or 3) the selected project significantly harms the resource. An uncertainty analysis is typically used to reduce the likelihood of the adverse outcomes listed above. The CEPP team has reviewed the CEPP planning model to document qualitatively and, where possible, quantitatively assessments of how well the CEPP planning model represents the anticipated ecosystem benefits of the alternatives. This was conducted

to ensure that decision-makers are informed about uncertainties that affect interpretation of planning model outputs.

For CEPP, the two most apparent sources of uncertainty in the overall benefits quantification arise from the use of regional hydrologic models for the prediction of changes in hydrology and the use of performance measures to represent the ecological significance of the predicted change in hydrologic conditions. The CEPP Planning Model underwent peer review per EC 1105-2-412, 31 May 2007 (Assuring Quality of Planning Models) and was approved for one time use by the National Ecosystem Restoration Planning Center of Expertise (ECO-PCX). During review of the application of the model a recommendation was received to develop a possible range of potential outcomes (i.e. Habitat Units) and associated frequencies of producing those outcomes to establish confidence limits. Development of confidence limits was not included in the CEPP planning model. Additional analyses were conducted to specifically evaluate how error in the hydrologic model could reflect alternative results' reliability. Inclusion of these additional analyses in **Appendix G (Benefit Model)** did not influence the overall rank of alternative performance, indicating that the developed methodology is robust. Additional analyses documenting the capabilities and limitations of the CEPP planning model are found in **Appendix G (Benefit Model)**.

6.10.1.3 Socioeconomic Considerations

Socioeconomic impacts are anticipated to be positive. Primary impact categories identified include recreational and commercial fishing and tourism. A quantitative determination of impacts on commercial and recreational fishing is precluded for several reasons. Such a determination requires greater understanding of the impacts of regulatory releases and runoff; short- and long-term ecological effects of the releases; impacts attributable to variations in the levels of releases and salinity levels. Nonetheless, this incrementof restoration of the Northern Estuaries is anticipated to help incrementally restore habitat necessary for ecological diversity. The dynamic nature of tourism makes it difficult to accurately forecast impacts. Despite the uncertainties in quantifying the socioeconomic impacts, the project is anticipated to have positive and significant local and regional impacts. An ecosystem services analysis was conducted on the Selected Plan that begins to quantify those benefits

Comment [dec68]: Please confirm assumed intent is correct. If applicable, add southern coastal estuaries as well.

6.10.2 Design and Implementation

The feasibility assessment includes evaluations of design and construction issues, such as project scheduling, technology, construction cost estimate contingencies, land availability, and hazardous or toxic waste.

6.10.2.1 Rock Miners Wall

6.10.2.2 Blue Shanty Levee

6.10.2.3 S-356

6.10.2.4 Project Schedules

Additional design work will be required to go from planning-based design assumptions to plans and specifications-based design assumptions. There is also the possibility that an additional risk-based analysis or additional survey and mapping data will be required. Additional time will be required to complete detailed design. However, it is anticipated that these new tasks will not increase the overall project delivery dates. Most of the additional work can be accomplished in parallel with other work that was already scheduled. The net impact to the overall project schedules is expected to be negligible.

Comment [dec69]: This section needs to be reviewed by Murika. CEPP does not have an implementation schedule, although this section seems to imply otherwise. Recommend edits to improve clarity. If suitable, add reference to the preliminary proposed implementation and sequencing schedule in the PIR.

820 **6.10.2.5 Construction Cost Estimate Contingencies**
821 A statistical analysis of cost risk was performed. (we will add a few sentences here to describe the risks
822 identified and describe the contingency applied to the estimate).

Comment [baf70]: Complete this section on Cost risks

823
824 **6.10.2.6 Land Availability and Acquisition Issues**
825 Most land required for the project was previously provided under the C&SF Project. Most of the new
826 lands required for the project, but not already included in the C&SF project are already owned by the
827 SFWMD – the 14,521 acre A-2 site in the EAA. An additional 146 acres owned by the State of Florida
828 and SFWMD is needed for a canal to connect the Miami Canal to the A-2 site.
829
830 Uncertainties surrounding land acquisition include keeping on schedule to complete acquisition of
831 estates in order to meet construction schedules; the potential for any unknown utility relocations not
832 identified during the study; the potential presence of minerals and mineral rights on lands to be
833 acquired; the potential for hazardous, radioactive, or toxic materials on the lands to be acquired.
834
835 **6.10.2.7 Residual Agricultural Chemicals and Hazardous or Toxic Waste**

Comment [SFWMD71]: Check against new HTRW section

836 The 14,521 acre A-2 site that is proposed for a FEB was surveyed for hazardous, toxic, and radioactive
837 waste (HTRW). Levels of xx were found on several locations in the project area, primarily due to
838 agricultural activities on the land (report and summary expected early May 2013). These materials could
839 pose a risk to small mammals, birds, and invertebrates. Corrective actions will be completed before
840 these areas are rehydrated. Since the lands continue to be leased for agricultural activities, there is the
841 potential that HTRW spills or pesticide application to occur or to have occurred after the date of the
842 survey. (Add a statement that the non-Federal sponsor understands and accepts its responsibility to
complete any required remediation prior to turning lands over to the Government for the project.)

Comment [baf72]: Complete this section on Ag Chem

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7 ENVIRONMENTAL COMPLIANCE

7.1 PUBLIC INVOLVEMENT

7.1.1 Scoping

A National Environmental Policy Act (NEPA) scoping letter dated November 23, 2011 was used to invite comments from Federal, State, and local agencies, affected Indian Tribes, and other interested private organizations and individuals. Scoping comments were accepted through January 20, 2012. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the Central Everglades Planning Project (CEPP) was published in the Federal Register (FR Volume 76, Number 232) December 2, 2011. Public scoping meetings were held December 14, 2011 in Plantation, Florida and December 15, 2011 in Clewiston, Florida. A copy of the scoping letter, NOI, scoping letters received and a comment response matrix, are located in **Appendix C.3**. Five NEPA public workshops were also held December 10, 2012 in Estero, Florida, December 11, 2012 in Homestead, Florida, December 12, 2012 in Clewiston, Florida, December 13, 2012 in Stuart, Florida and December 18, 2012 in Coconut Creek, Florida to present the preliminary final array of alternatives.

7.1.2 Agency Coordination and Public Involvement

Project Delivery Team (PDT) membership consists of those individuals designated by USACE and South Florida Water Management District (SFWMD), the implementing agencies, and representatives designated by other governmental agencies or Tribes. Interagency participation is encouraged to take advantage of technical skills and knowledge of other agencies. Several Federal, Tribal and state agencies are active members of the PDT. Participants include United States Environmental Protection Agency (USEPA), Unites States Fish and Wildlife Service (USFWS), United States Geological Survey (USGS), National Park Service (NPS), Miccosukee Tribe of Indians of Florida, Seminole Tribe of Florida, Florida Fish and Wildlife Conservation Commission (FWC) and Florida Department of Environmental Protection (FDEP). Representatives from Okeechobee, Glades, Martin, Palm Beach, Broward, Miami-Dade, and Monroe Counties are also active participates. Designated public comment periods provide opportunities for public participation during PDT meetings.

~~***Brooks – Please review this paragraph for FACA.~~ Public outreach efforts for CEPP began early in the planning process. Due to intense public, political, and media interest in restoration of the south Florida ecosystem, public participation is a critical component of the development of this Project Implementation Report (PIR). ~~The U.S. Department of the Interior (DOI) Office of Everglades Restoration Initiatives South Florida Ecosystem Restoration Task Force (Task Force) Working Group (WG) hosted a series of public participation workshops to enhance public input during CEPP planning process. The Task Force's Working Group sponsored 15 public workshops to receive input from the public and keep them informed and engaged as active participants. This enhanced public participation served to augment the regular suite of public meetings required for USACE planning efforts and provided members of the public opportunities to engage in two-way dialogue at a more technical and detailed level.~~ Workshops were held at key phases of CEPP planning process during the formulation of project objectives, management measures, and evaluation of alternatives (See **Appendix C.3** for a complete list of meetings).

The U.S. Department of the Interior (DOI) Office of Everglades Restoration Initiatives South Florida Ecosystem Restoration Task Force (Task Force) Working Group (WG) hosted a series of public ~~participation workshops to enhance public input during CEPP planning process. The Task Force's Working Group sponsored 15 public workshops to receive input from the public and keep them informed and engaged as active participants. This enhanced public participation served to augment the~~

~~regular suite of public meetings required for USACE planning efforts and provided members of the public opportunities to engage in two-way dialogue at a more technical and detailed level~~and provided input to USACE. Workshops have also been held by the Task Force's other advisory bodies including the Science Coordination Group (SCG) and Water Resources Advisory Commission (WRAC). Presentations have also been provided to SFWMD Governing Board, the South Florida Ecosystem Restoration Task Force, and the South Florida Ecosystem Restoration Task Force Joint Working Group and Science Coordination Group, Water Resources Advisory Council, Committee on Independent Scientific Review of Everglades Restoration Progress, Ten County Coalition Meeting, and Biscayne Bay Regional Restoration Coordination Team Meetings.

Table C.3-2 in **Appendix C.3** provides a list of interagency coordination and public presentations conducted throughout the planning process for CEPP.

A summary of public participation as required by NEPA is described in Section 6.1.1 above. In addition to NEPA, coordination with agencies as required by other Federal laws, statues, and Executive Orders has been conducted. See **Section 6.3** and **Appendix C.3** for agency coordination with the FDEP, National Marine Fisheries Service, State Historic Preservation Officer, United States Department of Agriculture, Natural Resources Conservation Service, and USFWS.

7.1.3 Comments and Responses

A comment response matrix detailing comments received during NEPA scoping process (**Table C.3-1**) and other public comments received during the planning process (**Table C.3-3**) along with USACE responses are included within Appendix C.3. **Table C.3-2** provides a summary of specific concerns raised by stakeholders throughout the planning process through emails to the Task Force. Videos of each of the South Florida Ecosystem Restoration Task Force (Task Force) Working Group (WG) sponsored workshops are posted on and the dialogue with the public can be viewed:
http://www.sfrestore.org/cepp/cepp.html

7.1.4 Statement Recipients

Copies of the November 23, 2011 scoping letter and Notice of Availability (NOA) of the Draft EIS were mailed to the parties listed in **Table C.3-4** in **Appendix C.3**. Recipients included Federal, State, and local agencies, affected Indian Tribes, and other interested private organizations and individuals. A complete mailing list is available upon request. A copy of the Draft EIS was also posted on the USACE Jacksonville District website at the following address:

Add Everglades Plan.org link

http://www.saj.usace.army.mil/About/DivisionsOffices/Planning/EnvironmentalBranch.aspx

The Draft EIS was filed in accordance with ER-FRL-8994-7, Amended Environmental Impact Statement Filing System Guidance for Implementing 40 CFR 1506.9 and 1506.10 of the Council on Environmental Quality's Regulations Implementing the National Environmental Policy Act. The Draft EIS will be circulated for 45 days.

Comment [GSE1]: What are we citing to?

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7.2 COMPLIANCE WITH ENVIRONMENTAL LAWS, STATUTES AND EXECUTIVE ORDERS

The following documents required compliance with specific Federal acts, Executive Orders (E.O.) and other applicable environmental laws. Table 7-1~~Table 7-1~~~~Table 6-1~~ provides a summary of environmental

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compliance with each act, E.O. or applicable law. Detailed descriptions indicating the coordination completed to date and the status of any ongoing or compliance issues are located in **Appendix C.4**.

Table 7-1: Compliance with Environmental Laws, Regulations, and Executive Orders: Tentatively Selected Plan

Law, Policy and Regulations	Status	Comments
Anadromous Fish Conservation Act	In compliance with this Act ~~upon review of this document by the NMFS~~.	Proposed action would not adversely affect anadromous fish species.
Bald and Golden Eagle Protection Act	In compliance with this Act ~~upon review of this document and associated BA by the USFWS~~.	Proposed action would not adversely affect the Bald eagle. No permits for takes are required.
Clean Air Act of 1972	In compliance with this Act, will obtain ~~upon review of this document and issuance of~~ any required permits.	Potential for permanent sources of air emissions. Air emissions permit may be required for large diesel pumps.
Clean Water Act of 1972	In compliance with this Act and will obtain Water Quality Certification (WQC) from the State of Florida and any required NPDES permits. ~~In compliance with this Act upon review of this document and issuance of Water Quality Certification (WQC) by the State of Florida.~~	In accordance with the Clean Water Act, a Section 404(B)(1) Evaluation has been completed and is contained within **Appendix C.4, Section C.4.32.** Comprehensive Everglades Restoration Plan Regulation Act (CERPRA) permit would be sought from State of Florida for WQC.
Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990	This project falls within an exception to these acts. ~~These Acts are not applicable~~.	There are no designated coastal barrier resources in the project area that would be affected by this project.
Coastal Zone Management Act of 1972	In compliance with this Act and obtaining concurrence by the State of Florida. ~~In compliance with this Act upon review of this document and issuance of WQC by the State of Florida.~~	Florida Coastal Zone Consistency Determination has been prepared in accordance with the provisions of 15 CFR 930 and is located in Appendix C.4, section C.4.32. The USACE has determined that the proposed action is consistent to the maximum extent practicable with the enforceable policies of Florida's approved Coastal Zone management program.
Endangered Species Act of 1973	In compliance with this Act and consulting with NMFS and USFWS as appropriate. ~~In compliance with this Act upon review of this document by NMFS and USFWS.~~	Formal consultation initiated with USFWS on April 1, 2013 with completion of BA. BO expected on August 14, 2013. USFWS determined that implementation of the proposed action is [INSERT SPECIES DETERMINATIONS]. A programmatic Endangered Species Act Section 7 consultation for the Comprehensive Everglades Restoration Plan (CERP) was prepared on March 15, 2013 to evaluate potential effects of CERP on listed species and designated critical habitat under the NMFS' purview.
Estuary Protection Act of 1968	In compliance with ~~goals of~~ this Act.	The objectives of the proposed action are focused on environmental protection. The proposed action provides increased opportunities to redirect water that is currently discharged to the Caloosahatchee and St.

Comment [GSE2]: Brooks comment: We don't need Section 176 consistency, do we? Any nonattainment areas?

Comment [GSE3]: Brooks Comment: What about Biscayne Bay? Double check coastal barrier resource maps. Looks to me like we have resources in the project area.

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Law, Policy and Regulations	Status	Comments
		Lucie Estuaries at undesirable times or in undesirable quantities for flood control purposes, allowing for the re-establishment of oyster and sea grass populations that are important for providing water quality and habitat functions within the northern estuaries. The proposed project would increase flows from Southern Everglades National Park to Florida Bay and result in favorable changes to salinity levels to improve conditions for key species such as seagrasses, seatrout, pink shrimp, and crocodiles
Federal Water Project Recreation Act/Land and Water Conservation Fund Act	In compliance with ~~goals of~~ this Act.	Effects of proposed action on outdoor recreation have been considered in [INSERT REFERENCE TO SECTION/APPENDIX]. Proposed action would not adversely affect existing recreational opportunities. Recreational opportunities have been considered..
Fish and Wildlife Coordination Act of 1958, as amended.	In compliance with ~~goals of~~ this Act.	Proposed action has been coordinated with USFWS. PALs received. USFWS active participant of CEPP team and has provided information on fish and wildlife elements on project. FWCA received on [INSERT DATE].
Farmland Protection Policy Act of 1981	In compliance with this Act. Coordination ongoing. ~~In compliance with goals of this Act.~~	Coordination with USDA/NRCS ~~is~~ to meet the requirements of the Farmland Protection Act is ongoing. When detailed design information that locates each of the plan components is completed, it can then be determined how many acres of unique farmland would be affected by the Project. Refer to Appendix C.4 for more information.
Magnuson-Stevens Fishery Conservation and Management Act	In compliance with ~~goals of~~ this Act.	An Essential Fish Habitat (EFH) assessment has been prepared and coordinated with the NMFS on February 20, 2013. Due to the restoration opportunities provided by the proposed project, the USACE anticipates concurrence with the determination that the CEPP should benefit EFH.
Marine Mammal Protection Act of 1972	In compliance with this Act upon review of this document by USFWS.	Project sites are accessible to West Indian Manatees. Incorporation of safeguards to protect threatened and endangered species during construction would protect marine mammals in the area. No take is anticipated.
Marine Protection, Research and Sanctuaries Act	This Act is not applicable.	Term "dumping" as defined in the Act does not apply to this project. Proposed action does not consider ocean disposal of dredged material.
National Environmental Policy Act of 1969	In compliance with this Act upon public and agency review of this document, preparation of Final EIS and signing of Record of Decision.	Initial public coordination for this project began with the distribution of a scoping letter dated November 23, 2011 announcing the preparation of the Draft EIS and inviting public and agency comment (Appendix C.3). On December 2, 2011 a NOI to prepare an EIS was published in the Federal Register (FR Volume 76, Number 232). Public scoping meetings were held on December 14 and 15, 2011. A Notice of Availability for this Draft EIS will

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Law, Policy and Regulations	Status	Comments
		be published in the Federal Register, and the Draft EIS will be circulated for a period of 45 days. Public meetings are planned during the comment period for the Draft EIS.
National Historic Preservation Act of 1966 (Inter Alia)	In compliance with this Act and coordinating with the State Historic Preservation Office. ~~In compliance with this Act upon review of this document by the State Historic Preservation Office.~~	Significant cultural resources are known to exist within the vicinity of the project area. Cultural resources survey currently being conducted.
Resource Conservation and Recovery Act, as Amended by the Hazardous and Soils Waste Amendments of 1984, CERCLA as Amended by the 5.26.21 Superfund Amendments and Reauthorization Act of 1996, Toxic Substances Control Act of 1976.	In compliance with this Act upon review of this document by the FDEP.	No items regulated under these laws or other laws related to hazardous, toxic, or radioactive waste substances have been discovered through previous Phase 1 HTRW assessments of the project area. If any items regulated under these laws are discovered, the Corps will comply with applicable requirements. ~~.~~
Rivers and Harbors Act of 1899	In compliance with ~~the goals of~~ this Act.	Proposed action would not obstruct navigable waters of the United States.
Submerged Lands of 1953	In compliance with the goals of this Act. ~~This Act is not applicable.~~	The proposed project would reduce freshwater flows to the Caloosahatchee Estuary and the St. Lucie Estuary and provide freshwater overland flow to Florida Bay that will ultimately benefit the ecological habitats that occur on submerged lands of the State of Florida. The proposed project does not occur on submerged lands and no construction is expected on submerged lands. ~~Proposed action would not occur on submerged lands in the State of Florida.~~
Wild and Scenic River Act of 1968	This Act is not applicable.	No designated wild and scenic rivers are located within project area.
E.O. 11514, Protection of the Environment.	In compliance with ~~the goals of~~ this E.O	The objectives of the proposed action are focused on environmental protection.
E.O. 11988 Flood Plain Management	In compliance with ~~the goals of~~ this E.O.	Purpose of E.O. is to discourage Federally induced development of floodplains. Commitment of lands to restoration precludes such development.
E.O. 11990	In compliance with ~~the goals of~~ this E.O.	Areas proposed for restoration are considered freshwater wetlands. The

Law, Policy and Regulations	Status	Comments
Protection of Wetlands		objectives of the proposed action are focused on environmental protection.
E.O. 12962, Recreational Fisheries	In compliance with ~~goals of~~ this E.O.	Proposed action would have an adverse affect on recreational fisheries in Water Conservation Area 3 with the backfilling of the Miami Canal, but is expected to have a beneficial affect with improved recreational fisheries in Florida Bay and slight improvements in the Caloosahatchee and St. Lucie Estuaries, the Blue Shanty flow way and the rehydration of northern WCA 3A.
E.O. 12898 Environmental Justice	In compliance with ~~goals of~~ this E.O.	Proposed action would benefit all population groups in Okeechobee, Glades, Martin, Palm Beach, Broward, Miami-Dade and Monroe Counties by providing restoration of wetlands and other natural resources within the project area.
E.O. 13045 Protection of Children	In compliance with ~~goals of~~ this E.O.	Proposed action is not expected to have environmental or safety risks that may disproportionately affect children.
E.O. 13089 Coral Reef Protection	This E.O. is not applicable	Coral reefs are not affected~~No coral reefs are located within project area~~.
E.O. 13122 Invasive Species	In compliance with goals of this E.O.	A nuisance and exotic vegetation control plan has been prepared to prevent or reduce establishment of invasive and non-native species within the project area. Control plan is located in Annex D.
E.O. 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	In compliance with goals of this E.O.	Proposed action would not adversely affect migratory bird species. Proposed action is expected to benefit species by improving habitat and increasing availability of foraging opportunities.
Memorandum on Government to Government Regulations with Native American Tribal Governments	In compliance with this Memorandum.	The USACE has consulted with the Miccosukee Tribe of Indians of Florida and Seminole Tribe of Florida throughout CEPP planning process.

Comment [GSE4]: Cindy Comment: For Cultural Resources - See appendix C.5. References to the appendix will be added throughout the text.

Comment [GSE5]: Brooks comment: What have we done? I haven't seen details anywhere in this report concerning consultation.

lease add Seminole Indian Lands Claim Settlement act of 1987 (25 U.S.C. 1772e) Chapter 285, Florida Statutes

7.3 COMPLIANCE WITH USACE CERP AGRICULTURAL CHEMICAL POLICY (TO BE EDITED BY SHAFER IN MARCH)

The USACE HTRW policy (ER 1165-2-132) directs that Construction of Civil Works projects in HTRW-contaminated areas should be avoided where practicable. In September 2011, the ASA(CW) provided clarification to this HTRW policy for CERP Projects (Memorandum for Deputy Commanding General for Civil and Emergency Operations, Subject: Comprehensive Everglades Restoration Plan (CERP) – Residual Agricultural Chemicals, Dated September 14, 2011). A copy of this policy is included in **Appendix C.4.** If specific criteria are met, this policy memorandum allows residual agrichemicals to remain on project lands and allows the USACE to integrate response actions directly into the construction plan. The SFWMD has requested application of the policy to the A-2 FEB lands. A copy of the letter from the SFWMD is included in **Appendix C.4.**

The Ag-Chem section of **Appendix C.2** of the PIR partially fulfills the requirements established in the aforementioned policy for the A-2 FEB portion of the CEPP. Pursuant to paragraph 4 of the policy and prior to beginning construction, the Jacksonville District will obtain written documentation of regulatory approval(s) for all response actions from SFWMD, and enter into an agreement with the SFWMD wherein the USACE accepts and expends funds, contributed by the SFWMD, for performance of the approved response action(s).

7.3.1 Recommendation

Approximately 4,000 acres within the A-2 FEB 14,408 acre site contain low concentrations of residual copper and other agricultural chemicals. These chemicals detected on-site are active ingredients found in commercially available products registered under the FIFRA. Based on the sampling, it is reasonable to surmise that the chemical concentrations are indicative of the lawful application of commercially available products intended to enhance agricultural production. The A-2 FEB project feature requires the land conversion from agricultural production to aquatic restoration which inundates the land with water. The project site was selected to avoid significant adverse impacts to wetland communities. Site alternatives either presented an adverse impact to wetlands or contained residual agricultural chemicals; therefore, the avoidance of lands containing residual agricultural chemicals is not practicable.

The SFWMD is taking steps to obtain regulatory approval of the use of A-2 FEB lands for siting a water storage reservoir. If corrective action is required by FDEP and USFWS it is likely that these actions will be directly incorporated into the overall A-2 FEB design developed by the USACE. Prior to project construction, the SFWMD will provide the Jacksonville District with written documentation of regulatory approval for any response action and for the soils containing residual agricultural chemicals remaining on project lands. CESAJ will provide this information to the EMCX (Environmental Munitions Center of Expertise) for review and to HQUSACE for concurrence prior to initiating construction of the A-2 FEB.

Soils from the project lands were tested and determined not to exhibit any hazardous waste characteristic under the RCRA. ~~Furthermore, the SFWMD agrees to be 100% responsible for the cost of all actions taken due to the presence of residual agricultural chemicals at no expense to the Federal Government.~~

NFS Responsibility:

The NFS ~~is~~ will be 100% responsible for the cost of actions taken due to the presence of residual agricultural chemicals, at no expense to the Federal Government. ~~and that a~~Any future costs associated

Comment [GSE6]: Brooks Comment: Is this section intended to show compliance with policy? I think we want everything in the PIR to demonstrate compliance.

Comment [GSE7]: Brooks Comment: What alternatives? How do we know? Were they similar to A2? Did we ever discuss alternative sites?

Comment [GSE8]: Brooks Comment: This is unsubstantiated and very conclusory, especially in light of the fact that we didn't look beyond lands owned b y the sponsor.

Comment [GSE9]: Brooks Comment: Missing: Cost Comparison for Soils Containing Ag Chem Remaining on Project Lands; Cost Comparison for USACE as construction agency for non-RCRA response Action; Engineering and other risks.

Comment [GSE10]: Brooks Comment: Did we test? Did SFWMD test? Was there adequate testing?

with the presence of residual agricultural chemicals at the Federal project site will be 100% NFS cost and responsibility. The costs for characterization of the project lands in preparation for conducting a response action for the residual agricultural chemicals and removal of soils that are hazardous waste will be included as 100% NFS responsibility. The Jacksonville District shall not conduct actions to address residual agricultural chemicals for the SFWMD during the operation and maintenance, repair, replacement and rehabilitation (OMRR&R) phase of the project.

7.4 COMPLIANCE WITH FLORIDA STATUTES

~~(Update with reference to section/appendix describing analyses required by WRDA 2000 and State Law. Appendix/Annex should contain 1. Florida Coastal Zone Management Program Federal Consistency Evaluation 2. Section 404(b)(1) 3. Project Assurance and Savings Clause Requirements and 4. State Compliance Report)~~

The State of Florida has enacted several laws pertaining to implementation of CERP projects. These include amendments to Section 373.026 (8), Florida Stature (F.S.), which establishes a requirement for the SFWMD to submit a report for review and approval by FDEP prior to formal submission of a request for authorization from Congress and prior to receiving an appropriation of state funds for construction and other implementation activities (except the purchase of lands from willing sellers); the enactment of Section 373.1501 F.S., which establishes the intent of the Florida Legislature with respect to CERP and the criteria for FDEP approval and the procedures to be followed by the SFWMD and FDEP for submitting and reviewing requests for approval; the enactment of Section 373.1502 F.S., which establishes permitting requirements and a process for the submittal, review, and issuance of certain regulatory permits for CERP projects; and the enactment of Section 373.470 and Section 373.472 F.S., establishing the "Save Our Everglades Trust Fund," funding and reporting requirements, and procedures for distributions from the trust fund.

The SFWMD's State Compliance Report addressing the criteria for approval listed in Section 373.1501 F.S. is included in **Annex B**. In addition to the above-described statutory requirements, other sections of Chapters 373 (Water Resources) and 403 (Environmental Control) of the Florida Statutes include requirements that may apply to various aspects of CERP project planning and implementation. In particular, Chapter 403 F.S. and the administrative laws adopted in accordance with Chapters 373 and 403 F.S., contain the requirements for facilities that involve the discharge or potential discharge of pollutants to surface and groundwaters, and the discharge of air pollutants, including facilities regulated under the Federal Clean Water and Safe Drinking Water Acts and the Federal Clean Air Act. Based on the information contained in this PIR, the Tentatively Selected Plan complies with the applicable provisions of the Florida Statutes. A detailed explanation of how the project complies with the applicable requirements for CERP projects contained in the Florida Statutes can be found in **Annex B**.

7.4.1 Permits, Entitlements and Certifications

Comment [GSE11]: Brooks Comment: What do we mean?

Construction activities for CEPP are scheduled to begin [INSERT DATE]. The USACE will obtain WQC prior to advertising the construction contract. Section 402 of the National Pollutant Discharge Elimination System (NPDES) permits required under the Clean Water Act may be necessary for the construction (non-point source runoff) of project features depending on means and methods of construction. This program has been delegated by the USEPA for implementation to the State of Florida (FDEP). At this time, a NPDES permit would not be required for the operation of CEPP features, as the project does not involve the discharge of pollutant. All required permits and/or modifications to existing permits would be acquired prior to construction activities.

7.4.2 Compliance with Applicable Water Quality Standards and Permitting Requirements

The CEPP complies with water quality standards applicable to the project and adjacent waters. The Selected Plan's features are located in and adjacent to waters designated as Class III by the State of Florida. In accordance with Florida Administrative Code (F.A.C.) Rule 62-302 ("Surface Water Quality Standards"), the use classification of Class III waters is "Recreation, Propagation, and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife." In addition to the minimum and general criteria for surface waters found in Section 62-302.500(1) F.A.C., there are numerous water quality criteria for specific parameters for Class III waters listed in Section 62-302.530, F.A.C. Although the Tentatively Selected Plan for CEPP is not expected to affect most of the parameters listed in this rule, certain parameters (e.g., turbidity, dissolved oxygen and nutrients) listed in the criteria may be affected by construction and operations activities.

In general, any short-term impacts to water quality associated with construction of the Tentatively Selected Plan would be ameliorated by construction sequencing, best management practices for erosion and sedimentation control and monitoring during construction. If potentially adverse effects are observed or predicted, longer-term impacts to water quality associated with the operation of project features would be addressed through operational monitoring and adaptive management actions.

Summary of water quality analysis and reference full analysis in Appendix C.4. [INSERT CONCLUSION OF WATER QUALITY ANALYSIS]

Comment [GSE12]: Brooks Comment: What about the increased risk of Consent Decree exceedances?!?!?

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8.0 DISTRICT ENGINEER'S RECOMMENDATIONS

The Central Everglades Planning Project (CEPP) will redirect some of the undesired high regulatory discharge of freshwater from Lake Okeechobee to the Northern Estuaries (Caloosahatchee and St. Lucie) and deliver this water southward through the storage and treatment facilities within the Everglades Agricultural Area (EAA), then deliver this water to Water Conservation Area 3 (WCA 3), Everglades National Park (ENP), and Florida Bay. Reducing high discharges to the Northern Estuaries will improve salinity and turbidity conditions and benefit seagrass beds and the animals that inhabit them. The environmentally beneficial releases from Lake Okeechobee to WCA 3, ENP, and Florida Bay will restore a more natural mosaic of habitat conditions in these areas by improving the quality, quantity, timing, and distribution of flows to the Central Everglades system.

The specific components of CEPP are increments of several components of the Comprehensive Everglades Restoration Plan (CERP), and the CEPP plan represents a first increment of restoration in the central Everglades system. This plan is compatible with other CERP components and does not preclude future increments of restoration.

The Project is integral to achieving restoration in the central Everglades and plays an important role in meeting CERP system-wide ecosystem goals and objectives. The Project will enhance 3,190,660 acres (~4,985 square miles) of freshwater and estuarine habitats. The Project will deliver an average of 200,000 acre-feet/year of additional water from Lake Okeechobee to the central Everglades.

I find that CEPP, located in Palm Beach, Broward, and Miami-Dade counties, is an integral part of CERP. The CEPP plan includes:

EAA: 14,000 acre A-2 flow equalization basin (FEB) and associated distribution, inlet, and outlet structures. Operation of the A-2 FEB would be integrated with the operation of the A-1 FEB, a state-funded and state-constructed FEB.

Comment [mrd1]: I think this should match section5 with the structure names. The description in 5 has been updated.

WCA 2A and Northern WCA 3A: gated spillway to deliver water from the L-6 Canal to the L-5 Canal; gated spillway to deliver water from STA 3/4 to the L-5 Canal; enlargement of approximately 13.6 miles of the L-5 Canal; degradation of approximately 2.9 miles of the southern L-4 Levee; 200 cfs pump station to move water within the L-4 Canal to maintain Tribal water supply deliveries west of the L-4 Canal; gated culverts to deliver water from the Miami Canal (south of the S-8 Pump Station) and the L-5 Canal to the L-4 Canal; and backfill approximately 13.5 miles of the Miami Canal and include upland mounds between a point 1.5 miles south of the S-8 Pump Station and Interstate Highway I-75.

Southern WCA 3A, WCA 3B, and the Northern edge of ENP: 1,150 cfs gated spillway adjacent to S-333; 500 cfs gated culvert in L-67A Levee and an associated 6,000 foot gap in L-67C Levee; flowway through the western end of WCA 3B (2 gated culverts in L-67A Levee; removal of approximately 8 miles of L-67C Levee; removal of approximately 4.3 miles of L-29 Levee; construction of new approximately 8.5 mile levee); gated spillway in L-29 Canal; remove ~5.5 miles of the L-67 Extension Levee; removal of approximately 6 miles of Old Tamiami Trail, and removal of spoil mounds along the northwestern side of the L-67A Canal.

Eastern edge of ENP: 1,000 cfs pump station; approximately 4 mile long, 35 feet deep tapering seepage barrier cutoff wall along the L-31N Levee just south of Tamiami Trail.

Therefore, I recommend that the CEPP as described in the section of the report entitled "The Selected Plan", with such modifications that may be deemed advisable at the discretion of the Chief of Engineers, be authorized for construction. The total estimated first cost for the CEPP is $1,904,000,000 (Fiscal Year (FY) 2013 price level), with an estimated Federal cost of $952,000,000 and an estimated non-Federal cost of $952,000,000. The Plan includes a separate additional cost for recreation features totaling $5,577,000 (FY 2013 price level), with an estimated Federal cost of $2,788,500 and an estimated non-Federal cost of $2,788,500. The estimated total annual cost of operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) the ecosystem restoration elements is $4,000,000 with an estimated Federal annual OMRR&R cost of $2,000,000 and an estimated non-Federal OMRR&R cost of $2,000,000. The estimated cost for OMRR&R of the recreation elements is $50,000 which is 100 percent non-Federal.

Comment [mrd2]: Updated to match revisions in Section 5

The above recommendations are made with the provision that the non-Federal sponsor and the Secretary of the Army shall enter into a binding agreement defining the terms and conditions of cooperation for implementing the Project, and that the non-Federal sponsor agrees to perform the following items of local cooperation:

a. Provide 50 percent of total project costs consistent with the provisions of Section 601(e) of the Water Resources Development Act (WRDA) of 2000, as amended, including authority to perform design and construction of project features consistent with Federal law and regulation;

b. Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform or assure the performance of all relocations that the Government and the Non-Federal Sponsor jointly determine to be necessary for the construction, operation, maintenance, repair, replacement and rehabilitation of the Project and valuation will be in accordance with the Master Agreement;

c. Shall not use the ecosystem restoration features or lands, easements, and rights-of way required for such features as a wetlands bank or mitigation credit for any other Non-CERP projects;

d. Give the Government a right to enter, at reasonable times and in a reasonable manner, upon land that the non-Federal sponsor owns or controls for access to the Project for the purpose of inspection, and, if necessary, for the purpose of constructing, completing, operating, maintaining, repairing, replacing, or rehabilitating the Project;

e. Assume responsibility for OMRR&R of the Project or completed functional portions of the Project, including mitigation features, in a manner compatible with the Project's authorized purposes and in accordance with applicable Federal and State laws and specific directions prescribed in the OMRR&R manuals and any subsequent amendments thereto. Cost sharing for OMRR&R will be in accordance with Section 601 of WRDA 2000, as amended;

f. Assume responsibility for OMRR&R of the recreation features of the Project with responsibility for 100 percent of the cost;

g. Keep the recreation features, and access roads, parking areas, and other associated public use facilities, open and available to all on equal terms;

h. Unless otherwise provided for in the statutory authorization for this Project, comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 103 of the WRDA of 1986, Public Law 99-662, as amended, which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the Project or separable element;

i. Hold and save the Government free from all damages arising from construction, operation, maintenance, repair, replacement and rehabilitation of the Project and any project-related betterments, except for damages due to the fault or negligence of the Government or the Government's contractors;

j. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the Project to the extent and in such detail as will properly reflect total project costs in accordance with the Master Agreement;

Comment [baf3]: BBCW has added text describing the CERP master agreement: "... CERP Master Agreement between the Department of Army and the South Florida Water Management District for Cooperation in Constructing and Operating, Maintaining, Repairing, Replacing, and Rehabilitating Projects Authorized to be Undertaken Pursuant to the Comprehensive Everglades Restoration Plan, executed on August 13, 2009, including Article XI Maintenance of Records and Audit :

k. Perform, or cause to be performed, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601-9675, that may exist in, on, or under lands, easements or rights-of-way necessary for the construction, operation, and maintenance of the Project; except that the non-Federal sponsor shall not perform such investigations on lands, easements, or rights-of-way that the Government determines to be subject to the navigation servitude without prior specific written direction by the Government;

l. Assume complete financial responsibility for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-ways that the Government determines necessary for construction, operation, maintenance, repair, replacement and rehabilitation;

m. As between the Government and the non-Federal Sponsor, the non-Federal Sponsor shall be considered the operator of the Project for purposes of CERCLA liability. To the maximum extent practicable, the non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will not cause liability to arise under CERCLA;

n. Prevent obstructions or encroachments on the Project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) such as any new developments on Project lands, easements, and rights-of-way or the addition of facilities which might reduce the outputs produced by the ecosystem restoration features, hinder operation and maintenance of the Project, or interfere with the Project's proper function;

o. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public law 91-646, as amended by title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR part 24, in acquiring lands, easements, and rights-of-

way, and performing relocations for construction, operation, and maintenance of the Project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;

p. Comply with all applicable Federal and State laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army;" and all applicable Federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 [revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)];

q. Comply with Section 106 of the National Historic Preservation Act in completion of all consultation with the Florida State Historic Preservation Officer, and as necessary, the Advisory Council on Historic Preservation, prior to construction as part of the preconstruction engineering and design phase of the Project;

r. Provide 50 percent of that portion of total cultural resource preservation mitigation and data recovery costs attributable to the Project that are in excess of one percent of the total amount authorized to be appropriated for the Project;

s. Do not use Federal funds to meet the non-Federal sponsor's share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized and in accordance with Section 601 (e)(3) of the WRDA of 2000, as amended, and in accordance with the Master Agreement;

t. The Non-Federal Sponsor agrees to participate in and comply with applicable Federal floodplain management and flood insurance programs consistent with its statutory authority:

1. Not less than once each year the Non-Federal Sponsor shall inform affected interests of the extent of protection afforded by the Project;

2. The Non-Federal Sponsor shall publicize flood plain information in the area concerned and shall provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the flood plain and in adopting such regulations as may be necessary to prevent unwise future development and to ensure compatibility with protection levels provided by the Project;

3. The Non-Federal Sponsor shall comply with Section 402 of WRDA 1986, as amended (33 U.S.C. 701b-12), which requires a non-Federal interest to have prepared, within one year after the date of signing a Project Partnership Agreement (PPA) for the Project, a floodplain management plan. The plan shall be designed to reduce the impacts of future flood events in the project area, including but not limited to, addressing those measures to be undertaken by non-Federal interests to preserve the level of flood protection provided by the Project. As required by Section 402, as amended, the non-Federal

interest shall implement such plan not later than one year after completion of construction of the Project. The Non-Federal Sponsor shall provide an information copy of the plan to the Government upon its preparation;

4. The Non-Federal Sponsor shall prescribe and enforce regulations to prevent obstruction of or encroachment on the Project or on the lands, easements, and rights-of-way determined by the Government to be required for the construction, operation, maintenance, repair, replacement, and rehabilitation of the Project, that could reduce the level of protection the Project affords, hinder operation or maintenance of the Project, or interfere with the Project's proper function.

u. The non-Federal sponsor shall execute under State law the reservation or allocation of water for the natural system as identified in the PIR for this authorized CERP Project as required by Section 601(h)(4)(B)(ii) of WRDA 2000 and the non-Federal sponsor shall provide information to the Government regarding such execution. In compliance with 33 CFR 385, the District Engineer will verify such reservation or allocation in writing. Any change to such reservation or allocation of water shall require an amendment to the PPA after the District Engineer verifies in writing in compliance with 33 CFR 385 that the revised reservation or allocation continues to provide for an appropriate quantity, timing, and distribution of water dedicated and managed for the natural system after considering any changed circumstances or new information since completion of the PIR for the authorized CERP Project.

Therefore, I recommend that .....(May need to add additional recommendations to reflect the resolution of currently unresolved policy items, as of 15 March 2013 such as water quality, cost sharing of O&M of A-1 FEB and STA 3/4, cost of L-67A culverts, and/or apply CERP-specific HTRW AgChem policies.)

The recommendations contained herein reflect the information available at this time and current Departmental policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are transmitted to the Congress as proposals for authorization and implementation funding. However, prior to transmittal to the Congress, the Sponsor, the State, interested Federal agencies, and other parties will be advised of any modifications and will be afforded an opportunity to comment further.

Alan M. Dodd
Colonel, Corps of Engineers
District Engineer

we recomend a more holistic analysis of A-1 Feb, CEPP and non CEPP projects that CEPP features are dependant on to ensure that CEPP reaches its full functional potential

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

MARJORY STONEMAN DOUGLAS BUILDING
3900 COMMONWEALTH BOULEVARD
TALLAHASSEE, FLORIDA 32399-3000

RICK SCOTT
GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

October 11, 2013

Mr. Eric P. Summa, Chief
Environmental Branch, Jacksonville District
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, FL 32232-0019

RE: Department of the Army, Jacksonville District Corps of Engineers – Draft Integrated Project Implementation Report and Environmental Impact Statement, Central Everglades Planning Project (CEPP) – South Florida. SAI # FL201308286704C (Reference Prior SAI # FL201112066056)

Dear Mr. Summa:

The Florida State Clearinghouse has coordinated a review of the U.S. Army Corps of Engineers' (USACE) Draft Integrated Project Implementation Report and Environmental Impact Statement (PIR/EIS) for the CEPP under the following authorities: Presidential Executive Order 12372; § 403.061(42), *Florida Statutes*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The following agencies submitted comments, concerns and recommendations regarding the Draft PIR/EIS, all of which (letters, memoranda or Clearinghouse database entries) are attached hereto, incorporated herein by this reference and made an integral part of this letter:

- Florida Department of Environmental Protection
- South Florida Water Management District
- Florida Department of Agriculture and Consumer Services
- Florida Fish and Wildlife Conservation Commission
- Florida Department of Transportation
- Florida Department of State, Division of Historical Resources
- Treasure Coast Regional Planning Council

Based on the information contained in the submittal and enclosed agency comments, the state has determined that the USACE's Draft PIR/EIS for the CEPP is consistent with the Florida Coastal Management Program (FCMP). To ensure the project's continued consistency with the FCMP, the concerns identified by the reviewing agencies must be addressed prior to project

implementation. The state's continued concurrence will be based on the activities' compliance with FCMP authorities, including federal and state monitoring of the activities to ensure their continued conformance, and the adequate resolution of issues identified during this and subsequent regulatory reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the state's environmental permitting process, in accordance with Section 373.428, *Florida Statutes*.

Please refer to the attached letters, memoranda and online Clearinghouse database entries for all agency comments, concerns and recommendations regarding the above-captioned project. Should you have any questions or require additional information, please don't hesitate to contact me at (850) 245-2170 or Lauren.Milligan@dep.state.fl.us.

Yours sincerely,

Lauren P. Milligan

Lauren P. Milligan, Coordinator
Florida State Clearinghouse
Office of Intergovernmental Programs

Enclosures

ec: Gretchen Ehlinger, USACE-SAJ
Ernie Marks, DEP, OEP
Chad Kennedy, DEP, OEP WPB
John Morgan, SFWMD
Ray Scott, FDACS
Scott Sanders, FWC
Martin Markovich, FDOT
Timothy Parsons, DOS
Stephanie Heidt, TCRPC

Project Information	
Project:	FL201308286704C
Comments Due:	10/01/2013
Letter Due:	10/13/2013
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - DRAFT INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT, CENTRAL EVERGLADES PLANNING PROJECT (CEPP) - SOUTH FLORIDA.
Keywords:	ACOE - DEIS, CENTRAL EVERGLADES PLANNING PROJECT, CERP PROJECTS - SOUTH FLORIDA
CFDA #:	12.104

Agency Comments:

AGRICULTURE - FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

FDACS staff notes that, as recognized in the draft PIR/EIS, implementation of the CERP components included in the CEPP is constrained by the WRDA 2000 Savings Clause. Completion of the C-44 Reservoir (IRL-S) and connection to the C-23 Canal, as well as modification of the Lake Okeechobee Regulation Schedule, must occur in order satisfy the requirements of the Savings Clause. There is certainly value in recognizing these future constraints, but FDACS believes their resolution should occur within the context of PIRs prepared for implementing the CERP components that are subject to such constraints. Water quality considerations also constitute a significant barrier to implementing the CERP components included in the CEPP. The draft PIR/EIS identifies a number of "project dependencies," projects that must be completed and operational, or conditions that must exist, prior to implementation of the CERP components included in the CEPP. In regard to water quality the draft PIR/EIS provides, "All features of the State's Restoration Strategies must be completed and meet state water quality standards prior to initiating construction of most CEPP project features," (Pp. 6-38). If those water quality improvement features are completed and operational by 2029 as currently anticipated, there would still need to be a determination that the CERP components included in the CEPP would not cause or contribute to a violation of State water quality standards. Again, an issue that staff believes would best be addressed when the detailed project planning occurs for the affected CERP components. The recommended plan resulting from the CEPP provides a blueprint for the future implementation of a suite of related CERP components, and should be viewed as provisional. Project dependencies associated with the plan are substantial, and experience suggests that conditions may be very different by the time any of these components are implemented.

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The DEP provided comments on the scoping notice through the Florida State Clearinghouse in January 2012 and has actively participated throughout the planning process. DEP outlined a number of issues significant to the State of Florida to be addressed during the planning process, including requirements related to water quality, planning assumptions, cost-share, and building upon our existing investment in lands already acquired for CERP. While we have made significant progress on these issues, the comments below should be considered carefully prior to finalizing the PIR and throughout the implementation of CEPP. The comments provided in the attached memorandum do not constitute the State's formal review of CERP project components, as required by State law under Sections 373.1501 and 373.026, F.S. This approval is needed before the recommended plan can be submitted to Congress for authorization, or receives an appropriation of state funds. The DEP is concurrently reviewing an informal draft of the State Compliance Report submitted by the SFWMD. The draft was not included in the published draft of the PIR. Please coordinate with the SFWMD to ensure that sufficient and timely information is provided and that the report is included in the final PIR. For further specific comments, concerns and recommendations, please refer to the enclosed DEP memorandum.

TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION

FDOT District 6 staff notes that the Tentative Selected Plan (Alternative 4R2) could potentially impact the Tamiami Trail roadway base by raising the L-29 max stages to 9.7 ft. Though the report does not define the duration that the peak stages will be maintained, the flood duration is critical in determining if the portions of the Tamiami Trail will be required to be raised. The document should account for the cost associated with raising portions of Tamiami Trail, since raising the L-29 canal elevation to 9.7 ft. NGVD will require raising portions of this roadway. It is not clear in the CEPP Draft PIR/EIS

documentation what the anticipated stages in the area of Tamiami Trail from Structure S-343 to Structure S-12A/S-14 are. If the stage in this area is also anticipated to be raised to 9.7 ft. NGVD, approximately 2.5 miles of Tamiami Trail in this area will be have to be raised for roadway base protection. District 4 also advises that it has several transportation structures within the CEPP planning area including, but not limited to, I-75 (SR 93), US 27 (SR 25), and US 441 (SR 80/SR15). Proposed increases in water flow need to be evaluated in terms of roadway engineering and safety. The report highlights the need to maintain levels of flood protection for the urban and agricultural areas east of the WCAs and Everglades National Park. However, little discussion, other than Tamiami Trail, is included regarding the potential impacts to current and future transportation structures (roadways, rail and bridges). The District requests further information regarding how CEPP will integrate transportation infrastructure within its planning framework.
TREASURE COAST RPC - TREASURE COAST REGIONAL PLANNING COUNCIL
Implementation of the recommended plan for the CEPP will assist in reducing harmful discharges of freshwater from Lake Okeechobee. This will have a beneficial effect on major water bodies in the region, including the St. Lucie River Estuary, Indian River Lagoon, and Lake Worth Lagoon, which also is impacted by discharges from Lake Okeechobee. Although the recommended plan provides a significant increase in freshwater needed for the restoration of the central Everglades, additional actions are needed to further reduce harmful discharges of freshwater from Lake Okeechobee. Therefore, it is important for the CEPP to proceed in a way that complements other components of CERP currently underway in the region. Approval of the CEPP should not delay or interrupt implementation of other approved CERP projects. The CEPP recommended plan is consistent with the Strategic Regional Policy Plan. Specifically, the recommended plan furthers the policies in the following goal areas: Regional Goal 6.2: A regional water supply managed to provide for all recognized needs on a sustainable basis. Regional Goal 6.3: Protection of water quality and quantity. Regional Goal 6.5: Protection of estuarine resources. Regional Goal 6.6: Protection of wetlands and deep water habitats. Regional Goal 6.8: Protection of endangered and potentially endangered species. Regional Goal 6.9: Protection and sustainability of the Everglades Ecosystem. Implementation of the recommended plan will help to achieve ecosystem restoration, increased water supplies, improved water quality, and the maintenance of flood protection. This plan represents an opportunity to accomplish these goals and balance the need to provide water for natural systems and urban and agricultural uses.
SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT
The SFWMD notes that the Draft PIR/EIS covers policy issues that the SFWMD identified during the scoping process, specifically, three issues of significance at that time: water quality requirements, assumptions and cost-share; use of existing SFWMD-owned lands in project formulation; and inclusion in the CEPP "Future With Project Condition" of specific project features identified in the June 1992 General Design Memorandum and Environmental Impact Statement for Modified Water Deliveries to Everglades National Park. In addition, the following issues of significance arose during the CEPP PIR planning process: OMRR&R cost share and integrated operation of state facilities; and phased implementation and need for multiple Project Partnership Agreements. SFWMD staff received Governing Board guidance on these issues most recently in a Board resolution passed in August (see attached). These issues were resolved in the Draft PIR through language that was carefully negotiated by the state and the federal governments. As the Final PIR is developed, it is imperative that the Corps preserve the language used and the plan established for resolution of these issues. Please see the enclosed SFWMD letter and contact Mr. Tom Teets, Federal Policy Chief, at (561) 682-6993 or tteets@sfwmd.gov for further details and assistance.
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
The FWC notes its responsibilities in the CEPP footprint for fish, wildlife and land management in Water Conservation Areas (WCAs) 2A, 2B, 3A and 3B, which are managed collectively as the Everglades and Francis S. Taylor Wildlife Management Area (EWMA). Although Sections 5.2.4 and 5.2.5 of the draft PIR/EIS cover listed species, FWC requests that the Miami blue butterfly be included as a federally endangered species as well. Despite the diversity of fish and wildlife species and habitats in the EWMA and ENP, past water regimes have caused substantial harm to habitat areas within portions of the WCAs. FWC staff recognizes that the CEPP will be implemented over many years and will need to include a number of carefully sequenced phases. The FWC intends to actively participate in the adaptive management of this complex set of changes in the Central Everglades to help ensure maximum benefits to fish and wildlife resources. Please see the enclosed letter for further detailed comments and recommendations.
STATE - FLORIDA DEPARTMENT OF STATE
The DOS-SHPO reports that, as noted in Appendix C.2.1.7 of the document, Section 106 consultation regarding the potential effects of CEPP operations on historic properties is on-going. DOS-SHPO will continue to work with their federal, state and tribal partners as the project progresses to ensure compliance with Section 106, and to minimize impacts to historic properties.
SOUTH FL RPC - SOUTH FLORIDA REGIONAL PLANNING COUNCIL
No Comments Received

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

Visit the Clearinghouse Home Page to query other projects.

Memorandum

TO: Lauren Milligan, Florida State Clearinghouse

THROUGH: Ernie Marks, Director
Office of Ecosystem Projects

FROM: Inger Hansen, Jerilyn Ashworth, Jordan Pugh, Rhapsodie Osborne, Stacey Feken
Office of Ecosystem Projects

DATE: October 10, 2013

SUBJECT: U.S. Army Corps of Engineers, Jacksonville District – Draft Integrated Project Implementation Report and Environmental Impact Statement (PIR/EIS) – Central Everglades Planning Project – Okeechobee, Glades, Martin, Palm Beach, Broward, Miami-Dade and Monroe Counties, Florida.

Background:
The Central Everglades Planning Project (CEPP) is encompassed in the Comprehensive Everglades Restoration Plan (CERP), which was approved by Congress as a framework for the restoration of the natural system under Section 601 of the Water Resources Development Act (WRDA) of 2000. The purpose of the CEPP is to improve the quantity, quality, timing, and distribution of water flows to Water Conservation Area (WCA) 3 and Everglades National Park (ENP). The recommended plan would achieve these benefits by redirecting approximately 210,000 acre-feet of additional water from Lake Okeechobee on an annual basis to the historical southerly flow path. The study area for CEPP includes the Northern Estuaries (St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary), Lake Okeechobee, the Everglades Agricultural Area, the Water Conservation Areas (specifically WCA 2 and 3), ENP, the Southern Estuaries (specifically focused on Florida Bay), and portions of the Lower East Coast (Palm Beach, Broward, and Miami-Dade counties).

The tentatively recommended plan, Alternative 4R2, will provide significant system-wide ecological benefits especially for the central portion of the historic Everglades, restoring flows to WCA 3 (which includes 3A and 3B) and ENP. The proposed plan will improve Lake Okeechobee operations, and increase storage and conveyance to the south, which will aid in reducing harmful discharges from Lake Okeechobee to the St. Lucie and Caloosahatchee Estuaries. Though CEPP only provides an increment of what is needed for the northern estuaries, it will provide meaningful steps towards restoration of WCA 3 and ENP, including Shark River Slough and Florida Bay.

The CEPP study is being conducted under the authority provided by Section 601(d)(2)(b) of WRDA 2000, which requires preparation of a Project Implementation Report (PIR) to implement components of the CERP, and is being implemented jointly by the U.S. Army Corps of Engineers (Corps) and the South Florida Water Management District (SFWMD), the non-Federal

local sponsor. The CEPP consolidates six CERP project components including: Everglades Agricultural Storage Reservoirs, WCA 3 Decompartmentalization and Sheet Flow Enhancement, S-356 Pump Station Modifications, L-31 Levee Seepage Management, System-wide Operational Changes--Everglades Rain-Driven Operations, and Flow to Northwest and Central WCA 3A. Upon approval of the PIR by the Florida Department of Environmental Protection (Department) pursuant to Section 373.026, Florida Statutes (F.S.), the Governing Board of the SFWMD and the Assistant Secretary of the Army for Civil Works, the recommended plan will be submitted to Congress for authorization.

Comments:
The Department provided comments on the scoping notice through the Florida State Clearinghouse in January 2012 and has actively participated throughout the planning process. The Department outlined a number of issues significant to the State of Florida to be addressed during the planning process, including requirements related to water quality, planning assumptions, cost-share, and building upon our existing investment in lands already acquired for CERP. While we have made significant progress on these issues, the comments below should be considered carefully prior to finalizing the PIR and throughout the implementation of CEPP.

The comments provided below do not constitute the State's formal review of CERP project components, as required by State law under Sections 373.1501 and 373.026, F.S. This approval is needed before the recommended plan can be submitted to Congress for authorization, or receives an appropriation of state funds. The Department is concurrently reviewing an informal draft of the State Compliance Report submitted by the SFWMD. The draft was not included in the published draft of the PIR. Please coordinate with the SFWMD to ensure that sufficient and timely information is provided and that the report is included in the final PIR.

State Water Quality Standards:
A number of water quality issues that could impact the State of Florida's ability to commit as the local sponsor for CEPP were identified as critical issues throughout the planning process. Of these, a fundamental assumption made as part of the future without condition for CEPP was that existing volumes of water would be treated to meet the State's phosphorus criterion prior to discharge to the Everglades Protection Area. Parallel to the CEPP planning process, the State of Florida delivered on its commitment to address water quality in existing flows to the Everglades Protection Area through development of Governor Rick Scott's Everglades Restoration Strategies Water Quality Plan in 2012. The Governor and Florida Legislature strengthened this commitment through passage of House Bill 7065/Chapter 2013-59, Laws of Florida, which also provides a recurring dedicated source of funds to implement the 880 million dollar plan.

The PIR acknowledges that all features of the State's Restoration Strategies must be completed and meet State water quality standards prior to initiating construction of most CEPP project features. The Department issued a National Pollutant Discharge Elimination System (NPDES) watershed permit (File # FL0778451) and associated consent order (OGC # 12-1148) for the operation and maintenance of the Everglades Stormwater Treatment Areas (STAs), and an

Everglades Forever Act (EFA) watershed permit (File # 0311207) and associated consent order (OGC # 12-1149) for the construction, operation and maintenance of the Everglades STAs to the SFWMD on September 10, 2012. These permits are issued pursuant to the requirements of the EFA, Section 373.4592, F.S., and the NPDES program delegated to the State of Florida, pursuant to Title 122, Code of Federal Regulations, and Sections 403.088 and 403.0885, F.S. The consent orders that accompany the NPDES and EFA watershed permits require the design, construction and operation of a series of projects identified in the State's Restoration Strategies Water Quality Plan.

Implementation of CEPP will complement the State's effort to restore water quality in the Everglades, build upon the significant investment the State of Florida has made to restore water quality in the Everglades, and complement the acquisition of land, design and construction of the first generation components of CERP. Continued close coordination between the Corps, SFWMD (as local sponsor), and the Department will be needed to ensure that the integration of CEPP with State facilities designed to meet State water quality standards will meet the regulatory requirements set forth in the NPDES and EFA watershed permits and associated consent orders referenced above as well as other relevant provisions of state law.

Several enhanced procedures (*e.g.*, identifying risks early to aid in addressing uncertainties such as water quality in plan formulation, and improving vertical communication and decision making within the participating agencies and the Corps) were introduced during the planning process. An issue critical to the State of Florida is CEPP's effect on the provisions of the Settlement Agreement/Consent Decree[1] with regard to water quality within ENP. This issue was recognized early in the risk register and elevated for resolution. Since CEPP involves redistribution of flows and increased water volume above existing flows, it was recognized that water quality will be impacted as currently measured by the compliance methodology in Appendix A of the Consent Decree[2] and that future conditions may warrant additional water quality features. Through consultation with the principals of the parties to the Settlement Agreement, it was recognized that implementation of CEPP would require revisions to the existing Appendix A compliance methodology. The process and scope for accomplishing these goals has subsequently been established and agreed upon by the settling parties. Language was negotiated and added to the District Engineer's Recommendations in Section 8 to memorialize this outcome. It is imperative that all parties follow through with this important commitment to work together to develop a scientifically supportable revised compliance methodology and continue to assess whether additional water quality features are necessary to treat additional water moved into the system via CEPP implementation. Failure to reach agreed upon revisions to Appendix A and a cost share agreement on any additional water quality features to address additional water to the Everglades as a result of CEPP implementation will impact the State's ability to approve and/or implement these projects.

[1] *United States v. South Florida Water Management District, et al,*. Case No. 88-1886-CIV-Moreno (U.S.D.C., S.D. FLA.).
[2] The Appendix A compliance methodology is also incorporated into the State's Everglades Phosphorus Rule as the compliance test for meeting the 10 ppb phosphorus criterion in Everglades National Park. See Rule 62-302.540(4)(c), Fla. Admin. Code.

In addition to the recognition that Appendix A water quality compliance must be addressed for new project water entering ENP, the PIR establishes other basic principles considered during the development of CEPP with respect to water quality, including:

1) All features of the State's Restoration Strategies must be completed and meet State water quality standards prior to initiating construction of most CEPP project features.

2) Construction of CEPP project features cannot proceed until it is determined that construction and operation of the feature:
   a. Will not cause or contribute to a violation of State water quality standards;
   b. Will not cause or contribute to a violation of any applicable water quality permit discharge limits or specific permit conditions; and
   c. Reasonable assurances exist that demonstrate adverse impacts on flora and fauna in the area influenced by project features will not occur.

3) Additional CEPP water quality treatment features, including operational and structural modifications, may need to be constructed if State water quality standards are not met upon operations of CEPP project features.

As part of the State's regulatory process, the Department will require reasonable assurances that State water quality standards in the Everglades Protection Area, including the WCAs and ENP, will not be violated. Keeping this in mind, and through inclusion of the agreed upon water quality principles and aforementioned language regarding the Consent Decree, the Department believes that the PIR, as currently written, provides the appropriate framework to address water quality issues that may occur as a result of the implementation of CEPP. It is important to note that the District Engineer's Report states that should any of the existing recommendations be modified prior to the PIR being transmitted to Congress, that the Sponsor and the State will be advised of these modifications and afforded an opportunity to comment further. It is imperative that the Corps follow through with this commitment, as any changes to the agreed upon language could impact the State of Florida's ability to find the CEPP plan consistent with the enforceable policies of the Florida's federally approved Coastal Management Program and willingness to accept the role of local sponsor. We expect to see the agreed upon language mirrored in the Chief of Engineer's Report and Record of Decision, and anticipate concurrence that the plan, as currently proposed, is consistent with the provisions of the Florida Coastal Management Program – if both adequately support the statements contained in the negotiated language.

Expedited Planning Process:
Successful restoration of the Everglades is contingent on integrating and streamlining both the State and Federal efforts. The CEPP is one of seven projects being tested through a nationwide pilot program designed to improve the Federal planning process by significantly reducing the timeframe and process necessary to develop a Corps feasibility study – in the case of CERP, a PIR/EIS. The State of Florida strongly supports this effort and committed resources early on to ensure a successful outcome. The Department is pleased to see language in the draft versions of

WRDA currently circulating through the U.S. Congress that could turn this pilot program into a national practice for Corps feasibility studies. Completion of CEPP, and continued streamlining by all Federal and State agencies as CEPP moves through the final approval phases will demonstrate the success of this pilot program on a national level.

Department staff have actively participated in the development of the recommended plan and associated PIR. We commend the Corps and SFWMD for delivering a draft PIR in record time, and believe the planning process was significantly improved over previous CERP efforts. This was due in part to focusing the efforts and resources on one project that allowed for innovative plan formulation processes to be developed using Multi Criteria Decisional Analyses. Having a focused planning team that worked systematically through multiple formulation phases under a very tight timeline was helpful for moving the plan formulation process forward on an accelerated schedule. Perhaps more importantly, however, in terms of developing a plan that has broad stakeholder support was having the public actively participate in the planning process and providing opportunities for valuable input through the South Florida Ecosystem Restoration Task Force Working Group Sponsored Workshops.

Sequencing:
The PIR states that CEPP is composed of implementation phases that include features or logical groupings of plan features, and that individual Project Partnership Agreements (PPAs), or amendments to existing PPAs, will be executed prior to construction for each implementation phase. The PIR also recognizes dependencies on both CERP and non-CERP projects that must be in place prior to the implementation of CEPP. Many of these will require integration into the sequencing of CEPP to avoid unintended adverse consequences, and to allow for restoration benefits to be achieved as early as possible. However, the PIR is lacking in detail regarding these groupings, interdependencies, phasing, and the estimated year of initiation for features.

Although the Department believes the implementation schedule requires refinement and optimization, we stress that this need should not hold up completion of the PIR and submittal to Congress for authorization. Rather, this process would be the logical next step in the overall implementation of the restoration of the greater south Florida ecosystem, taking into account recent progress that has been made on both CERP and non-CERP projects in the region. The PIR acknowledges that the Corps and the SFWMD will undertake integration of CEPP and the other CERP projects awaiting authorization into the Integrated Delivery Schedule. We caution, however, that the need for additional refinement of the phased implementation and sequencing plan be considered carefully, so as to take regulatory requirements, water supply and flood control issues into account and not drive up programmatic costs.

Section 6.7.1 identifies a number of basic principles that were considered in developing the implementation sequence proposed in the PIR. However, it is important to note that these guidelines were not provided to the PDT, and to our knowledge were not identified during the public workshop held to solicit public input on the sequencing of projects. We recognize that many of these represent policy issues that were being resolved concurrently during development

of the CEPP. Since the PIR states that a robust public process will be used to integrate CEPP into the integrated delivery schedule for the south Florida restoration program, it will be important to clearly present these issues and define how they affect the implementation and sequencing plan so that all stakeholders can better understand the constraints (and opportunities) moving forward.

Figure 6-11 provides a broad view of implementation phases and sequencing of construction, but it is not clear how this schedule was derived and the logic behind the duration of the projects. More information regarding the estimated timeframes for CEPP is needed so that a realistic sequencing plan can be developed, taking into account necessary project authorizations, Federal and State funding streams, and other related requirements. The State's schedule for restoration strategies has been established, so these dates should be hard-wired into the implementation plan for CEPP. While the PIR acknowledges that completion of restoration strategies and the need for these features to meet State water quality standards prior to initiating construction, it does acknowledge that this is for *most* CEPP project features. CEPP features that may be independent of this requirement should be identified to determine whether early sequencing of project phases is feasible. Again, we stress that the sequencing effort should not hold up completion of the PIR, but rather be identified as the logical next step after CEPP and the other CERP projects with completed Chief's reports have been authorized through the next WRDA.

Project Costs:
The State of Florida, particularly the Department and SFWMD, have spent a significant amount of time and money acquiring more than 243,000 acres of land for the implementation of CERP. We commend the PDT for focusing planning efforts for storage and treatment projects on lands already in SFWMD ownership, which results in significant savings for taxpayers and puts the State's significant investments to work. Authorization of CEPP, and the other four CERP projects with completed Chief's Reports, will allow the State to receive credit for early efforts on land acquisition and construction, which is critical to balancing the 50-50 cost-share under CERP and keeping Federal construction efforts on pace.

The Department recommends continuing to work in parallel during the final approval for the PIR to further refine the cost estimates for the CEPP. The project contingencies (currently at 42 percent) in particular should be evaluated to identify further reduction in costs. In addition, almost half a billion dollars has been budgeted for additional planning, detailed design, and to oversee construction of 1.3 billion dollars worth of project components (total construction cost). These estimates, which add 37 percent to the total project costs, appear to be excessive. Typical engineering costs are generally 10 percent of the project construction cost. We urge the Corps to identify ways to streamline and reduce costs associated with planning and design, and staffing, in particular. In order to continue the State's partnership with the Federal government, it is imperative to find ways to more equitably balance programmatic costs between the Corps and SFWMD as the local sponsor to more effectively balance the 50-50 cost share. These costs should be tied to the partnership agreements between the agencies to control the expenditures and ensure cost efficiency.

Regulatory Considerations:
Upon completion of detailed design, phases of CEPP will require a Comprehensive Everglades Restoration Plan Regulation Act (CERPRA) permit under Section 373.1502, F.S. Other Department permits may be required during the construction phase of this project, as applicable. Further coordination will needed to ensure that appropriate permit type is identified early to ensure that reasonable assurances needed for regulatory authorization can be considered during detailed design. This will, to some degree, be dependent on the implementation sequencing plan developed for all of CEPP, so it is important that regulatory considerations be incorporated into the sequencing development process. The Corps and the SFWMD should work closely with the Office of Ecosystem Projects to ensure that the appropriate regulatory milestones are built into not only the overall plan for CEPP, but also for individual project schedules, and are consistent with the requirements of the existing State and NPDES permits.

While further refinement of the implementation and sequencing plan and cost estimates are needed, and further action to address water quality issues may be required, at this stage, the Department supports the implementation of CEPP and believes the plan complements the State's efforts to restore water quality and our continued commitment to the restoration of the Greater Everglades ecosystem. We would like to reiterate, however, that any changes to the negotiated language or principles established in the PIR could impact the State of Florida's ability to find the CEPP plan, or phases of the CEPP plan, consistent with the enforceable policies of the Florida's federally approved Coastal Management Program and effect the State's ability to act as the local sponsor.

Provided there are no changes that require further discussion and negotiation between the State of Florida and the Federal government, the Department supports continuing forward with the CEPP approval process on an expedited schedule. The State of Florida has expedited the necessary reviews to determine whether or not the project, as currently proposed, is consistent with the requirements of State law. We strongly urge the Corps and other Federal agencies to continue in this expedited fashion and commit to streamlining and expediting the remaining reviews through the vertical team in order to position the final PIR for authorization in any potential future WRDA bill. Completion of CEPP will also serve to demonstrate success of the nationwide pilot program, which will garner further support for inclusion of the expedited feasibility program in a final WRDA.

Please see Attachment 1 for more detailed comments on individual sections of the PIR. The Department sincerely appreciates the opportunity to provide comments on the CEPP. We look forward to continued cooperative discussions regarding revisions to the Appendix A Compliance Methodology and continuing our partnership with the SFWMD, Corps, and other State and Federal agencies in restoring America's Everglades. Should you have any questions regarding our comments, please contact Ms. Stacey Feken at 850-245-3176.

ec: Ernie Marks, Frank Powell, Chad Kennedy, Inger Hansen, Jerilyn Ashworth, Jennifer Carpenter, Gus Rios, Stacey Feken, Kelli Edson, Deinna Nicholson, Jordan Pugh, William

Rueckert, Brian Dougherty, Marianne Gengenbach, Paula Allen, Sheryl Boutin, Tom Butler, Chris Becker, Valinda Subic, Gregory Walker, Pamela Sweeney, Ann Lazar, Beth Alvi, Katie Hallas, Ken Kuhl, Lauren Milligan

Attachment 1: Specific Comments:

Section 2.5.9 Picayune Strand Restoration Project, page 2-17: This section gives very specific project features (83 canal plugs and 227 miles of road removal). These may not be completely accurate and it may be better to give more broad ranges (up to 260 miles, plugs placed in 48 miles of canals).

Section 3.2.1.3, page 3-11: As noted in the text, plan formulation and modeling performed during screening included provisions to modify the operations of Lake Okeechobee within the existing operational flexibility available in the 2008 Lake Okeechobee Regulation Schedule Study (LORSS). However, the PIR states that the assumptions made during CEPP formulation ultimately extended beyond this flexibility due to adjustments made to the tributary/ climatological classifications. This section implies that a separate NEPA analysis will be necessary, which is surprising given the careful consideration the PDT placed on working within the existing LORSS. Please clarify whether or not a NEPA analysis to evaluate the assumptions made during CEPP formulation will be needed, along with an explanation and justification for these changes.

Section 3.2.2.1, page 3-22: As part of plan formulation, the need to provide new or modified pump stations to distribute flows across northern WCA 3A was considered as the infrastructure at the existing S-8 pump station is over 40 years old and may require repair or replacement. This does not appear to be acknowledged in the PIR in this section or the alternatives as presented in section 3.0. However, the engineering appendix includes the design of a new gated culvert structure and a new canal rather than retrofit or replacement of the existing structure. Please provide an explanation for this change, along with an analysis to demonstrate that the existing pump station can handle the additional lift required, which may potentially affect flood protection capacity at the S-8 pump station. Also, has the cost-effectiveness of the new design as compared to the original plan proposed by the PDT been evaluated? The PIR indicates that there will be further analysis of the S-8 pump station during detailed design.

Section 4.2.2.1, page 4-13: The habitat unit calculations provided appear to be based an assumption that benefits will be achieved starting from year 2022, and that about 50% of the Greater Everglades (WCA 3 and ENP) benefits are achieved in the first two years. However, elsewhere in the PIR, it states that most of the associated features will not be constructed before 2029. Please provide a more detailed explanation for these calculations, as it appears that 50% of the benefits occur before construction starts. Please verify that the same schedule has been included in all parts of the report.

Figure 6-10, page 6-18: Figure label incorrectly makes reference to 1989 as a wet year. Top of the figure shows the year to be 1995. Text in the label needs to be corrected.

Section 6.1.3 Project Operations, page 6-9: Will each phase have its own stand-alone Project Operating Manual (POM), or will the overall CEPP POM be submitted with each phase, with

modifications specific to the phase? This could impact how the Department evaluates projects from a regulatory perspective.

Section 6.4, page 31: The text explaining cost estimates for the TSP states that costs were estimated at Fiscal Year 2013 and escalated to October 2015 price levels "to coincide with the expected project authorization." If the actual expected date is 2015, then all cost estimates should be reported at the 2015 price level (currently some are FY 2013).

Section 6.7.1: It is not clear how Figure 6-11 was derived and the logic behind the duration of the projects. For example, why does it take 9 years to construct the Flow Equalization Basin (FEB)? Please provide further explanation.

Section 6.7.3 Construction, page 6-42: This section regarding construction sequencing and phasing should also consider permitting requirements and reasonable assurances needed. Early coordination with the Department will help streamline the permitting process. Please include timeframes associated with the permitting process.

Section 6.9.3 Water Quality and Effects on State Facilities, page 6-50: The PIR states that "…discharge permits with associated effluent limits will govern discharges from the state facilities." Note that this is only relevant when discussing STA facilities permitted under the NPDES and EFA watershed permits. Please make the appropriate clarification.

Section 7.1.2 FEB Operations, page C-32: The last bullet states that no supplemental water supply is provided to the FEB to prevent dryout. Please note, however, that the FEB is expected to provide some treatment and through adaptive management, operation of the FEB should work towards optimizing performance. During permitting of the State's A-1 facility, we discussed monitoring to address dryout and Science Plan efforts to determine what adaptive management techniques should be implemented. The A-1 Adaptive Operations and Management Plan (AOMP) is referenced on page C-43. We recommend utilizing a similar approach for the A-2 FEB for consistency.

Section 7.3 Compliance with USACE CERP Agricultural Chemical Policy, page 7-8: The Department's Waste Compliance Assistance and Enforcement Section provided a memorandum dated April 4, 2013, regarding the Phase II Environmental Site Assessment for A-2 Flow Equalization Basin. The Department's review was performed following the "Protocol for Assessment, Remediation and Post Remediation Monitoring for Environmental Contaminants on Everglades Restoration Projects" known as the White Paper. Based on this memorandum, please also include barium in the list of contaminants that will be sampled. Also, please clarify that initial operations includes a start-up operation sampling event that should be performed at the 30- or 60-day period from inundation, as well as an additional surface water sampling event that should be performed after one year of operations.

Section 7.4, page 7-9: Please change Florida "Stature" to "Statutes."

Section 7.4, 2nd paragraph: Reference is made to the SFWMD's State Compliance Report required by Section 373.1501, F.S., being included in Annex B. As noted elsewhere in the document, the draft PIR does not contain this report, it only includes "Analyses Required by WRDA." Please coordinate with the SFWMD to ensure that sufficient and timely information is provided and that the report is included in the final PIR.

Section 9.0: We recommend revising this section to recognize stakeholders that actively participated and provided meaningful contributions during the CEPP planning process. In addition, the list of preparers and reviewers does not appear to fully represent everyone that contributed to writing sections of the PIR.

CEPP Appendix B Cost Engineering: The PIR states that the construction cost estimate may be further refined after the release of the draft report (section B.1.6). As noted elsewhere in our comments, the Department supports further refining costs to ensure that the proposed TSP is cost effective. Based upon the cost breakdown provided in this section, the FEB accounts for approximately 43% of the total construction cost for the TSP. During plan formulation, the FEB was retained as a cost effective management measure based upon the cost effectiveness (preliminary cost of $175 million versus $1.2 billion for the 12-foot-deep reservoir). The assumptions associated with the A-2 FEB appear to be very high, in part based upon the assumptions that went into the engineering design for this facility. Please provide more details regarding the development of costs for the four alternatives and an explanation for the high cost of this facility.

Section B-3: This section provides a breakdown of the cost estimates for each structural component of the Tentatively Selected Plan. The most costly feature of the plan is the FEB and the associated infrastructure. The estimated construction cost for the 14,000-acre A-2 FEB is approximately $480 million, where the 2013 FY contract cost is estimated at $338 million at the remaining cost are contingencies (42% or $142 million). The SFWMD recently received bids for construction on the A-1 FEB that the State of Florida is constructing under Restoration Strategies, which ranged from approximately $60 million to $88 million. The low bid was just less than what the SFWMD engineering division had estimated and previously shared with the Corps.

The two FEBs are similar in many ways – size, requirements, location, and both use the same inflow pump stations and require the same type of levees and distribution system. Therefore, it is unclear why there is such a large discrepancy in the cost estimates for both facilities. In reviewing the cost and engineering appendices it appears the Corps design is quite different for A-2 FEB and costs estimates were used for Kissimmee River structures rather than more recently constructed adjacent projects such as STA 3/4 and Compartment B. We strongly urge the Corps work closely with the SFWMD to further refine design and costs estimates to ensure that a feasible and cost-effective alternative for the A-2 FEB can be constructed.

Section B-6, page B-31: There is a statement that the Total Project Cost Summary (TPCS) was prepared based upon the scope of the recommended plan and the "official project schedule".

There appear to be a number of inconsistencies in the scheduling assumption throughout the Draft PIR and it is not clear which schedule is assumed here. Please provide the schedule that was used for the TPCS estimate. If this is the same schedule as provided in section B.4, please make reference to the schedule provided there.

Section B-6.1: The total cost summary sheet is dated July 1, 2013. The total project cost shown is $2.2 billion. It is our understanding that total costs have been updated to include consideration of the local sponsor's input, and are approximately $400 million less than what is shown here. Please revise and update this text accordingly.

Appendix C Environmental and Cultural Resources, Section C.2.2.7.13: The majority of Appendix C compares the Alternatives to the Future Without (FWO) condition rather than Initial Operating Regime Baseline 1 (IORBL1). In Section C.2.2.7.13, two sentences are dedicated to explaining impacts to Biscayne Bay when alternative 4R2 is compared to IORBL1. Please further clarify the difference of the IORBL1 and FWO in relation to Biscayne Bay. Please explain how reasonable assurances will be provided to ensure that operations will be changed in order to prevent these negative impacts to Biscayne Bay. (See our comments on Annex D.)

Appendix E Plan Formulation: Several tables in this chapter have formatting issues where the text is not legible (text on top of text) or not visible. Example, Table E1-45 is in part not legible because of double print formatting, Table E1-42 is cut off; the last row missing portion of text. Please revise.

Section E.1.5, page E1-30: The expected cost range of the FEB is given as 360-550 million ($ is missing). These figures do not match the costs provided in the table on the next page (Table E1-18), nor do they match the preliminary estimates used during plan formulation ($175 million). Please explain how the costs were determined**.** The PDT estimated approximately $1.2 billion estimate during the screening process for the cost of the 12-foot-deep reservoir, whereas Table E1-18 shows approximately $2 billion. Please provide an explanation regarding the change in cost estimates here and in Appendix B.

Table E1-44 and Table E1-45: These tables appear to utilize preliminary cost estimates that were used during screening. Please explain how the costs for this section were derived. We also recommend reviewing this section to ensure that a consistent approach was used in this section and elsewhere in the PIR. These costs do not appear to match the higher cost estimates that are provided in Appendix B. Additionally, the Cost column needs units displayed.

Annex B Analysis Required by WRDA 2000 (Project Assurances):

- **Section B, Table B4** identifies Biscayne Bay as an existing Legal Source/ User under (v) Water supply for fish and wildlife. Since Biscayne Bay is part of the Savings Clause, as noted above, monitoring may need to continue for longer than the durations listed in Annex D. Please review and revise as necessary.

- **Section B.2.1** (page B-6) states that *Compared to the FWO baseline the updated IORBL1 indicates a significant hydrologic difference with response to the St. Lucie Estuary and Biscayne Bay, with other portions of the CEPP Project area performing similar to the FWO. A summary of these* ***performance differences between the FWO and IROBL1 is provided in Appendix C.2.2*** *for St. Lucie Estuary and Biscayne Bay.* Comment: This hydrologic difference is not adequately explained in Appendix C. Please revise the text accordingly. See Appendix C, Section C.2.2.7.13 comment above.

Annex C:

- The Draft Project Operation Manual does not provide any detail regarding implementation of supplemental deliveries to Biscayne Bay to meet the conditions simulated during modeling. Since the supplemental deliveries were a critical component of meeting the savings clause analysis for water related needs for Biscayne Bay, please provide some discussion of what is planned in the Draft Project Operation Manual.

- Annex C, page C-14, Figure 3-6 South Dade Conveyance System Map has an icon in the Legend for a Temporary Pump but none are visible on the map. If there are Temporary pumps, please identify them and coordinate with the SFWMD to ensure the most recent shapefiles were used.

- Please provide the shapefiles used to make line segments, points, and areas for Alternative 4R2.

- Annex C, DPOM, Section 4.7: capitalize "Seaside Sparrow".

- Annex C, DPOM, page C-27, last sentence of first paragraph states, "a one-year field test to incrementally relax the G-3273 operational constraint is under consideration for 2013-2014." The recent draft EA actually extended into January 2015. Please correct.

- It appears that the S-152 currently under construction as part of the Decomp Physical Model is not referenced in this Annex or main report. Pages C-12 to C-13, Figure 3-4 WCA-3A Map and Figure 3-5 WCA-3B Map. Please reconcile.

Annex D Adaptive Management:

Section 1.4.4.2 and Figure D.1.11: This section covers the CEPP Hydrologic Effects on the Lower East Coast Ecosystems and it covers the CEPP Uncertainty #62: *Will the constructed and operational features of CEPP reduced surface and/or groundwater base flows and wetland/groundwater recharge to the east of the L-30 and L-31N in areas such as the Pennsuco Wetlands, south Miami-Dade wetlands, and Biscayne Bay?* The adaptive management plan provides monitoring attributes and timeframes, thresholds, and suggested management options.

Comments:

- Timeframes and Attributes: It is unclear when the monitoring timeframes for each of the attributes will be started and completed. For the attributes that have listed only a 7-day time frame, please elaborate on if it is a one-time 7-day monitoring period or if multiple 7-day monitoring periods are proposed. For example, wetland and canal/creek stage monitoring is proposed for 7 days. It is unclear how one monitoring event can determine long term effects.

- Timeframes and Attributes: The selected durations for the nine attributes should be explained, and possibly extended, as some of the timeframes are not long enough to see if the proposed thresholds are exceeded.

- Triggers and Thresholds: The 3rd paragraph identifies the Biscayne Bay reservation as "proposed" instead of "approved." Please revise, as the rule was adopted July 2013.

- Thresholds and Management Options: The management options state that there will be changes in operations for Biscayne Bay if any of the thresholds are exceeded. The operations as they impact Biscayne Bay are not discussed in the Draft Project Operation Manual (Annex C) and, therefore, it is not clear how the operations can be modified to address the exceedances of proposed thresholds. The current operation plan is driven by stage triggers and since most of the management options are not stage related, the integrations need clarification. Please review and address appropriately.

- Figure D.1.11, page 1-96: This figure shows that monitoring for the lower east coast is expected to start in year 7 with 2-3 years of baseline monitoring. The post construction monitoring begins in year 9 and ends around year 18. It appears that the overall monitoring will be ongoing for 10-11 years. Please note that since some of this monitoring is required for saving clause assurances, extended monitoring period may required. Please describe how the attributes ties into this monitoring schedule.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

October 11, 2013

Ms. Lauren P. Milligan
Environmental Manager, Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399-3000

Subject: Department of the Army, Jacksonville District Corps of Engineers Central Everglades Planning Project Draft Integrated Project Implementation Report and Environmental Impact Statement dated August 2013

Dear Ms. Milligan:

The South Florida Water Management District (SFWMD) appreciates the opportunity to provide comments on the Draft Project Implementation Report (PIR) for the Central Everglades Planning Project (CEPP) in accordance with the requirements of the regulations implementing the National Environmental Policy Act (NEPA), 40 C.F.R. Part 1503. The SFWMD is authorized to act as the local sponsor for CERP projects and has played an integral role in the development of the CEPP PIR by providing technical resources to the U.S. Army Corps of Engineers (Corps). The Governing Board at its August meeting unanimously supported release of the Draft PIR for public comment and provided guidance upon which continued support for CEPP is contingent.

The Draft PIR covers policy issues that the SFWMD identified in its scoping comments dated January 20, 2012. Specifically, the SFWMD identified three issues of significance at that time:

- Water quality requirements, assumptions, and cost share
- Use of existing SFWMD owned lands in project formulation
- Inclusion in the CEPP "Future With Project Condition" of specific project features identified in the June 1992 General Design Memorandum and Environmental Impact Statement for Modified Water Deliveries to Everglades National Park

In addition, the following additional issues of significance arose during the CEPP PIR planning process:

- OMRR&R cost share and integrated operation of state facilities
- Phased implementation and need for multiple Project Partnership Agreements

SFWMD staff received Governing Board guidance on these issues most recently in a Board resolution passed in August (attached). These issues were resolved in the Draft PIR through language that was carefully negotiated by the state and the federal governments. As the final PIR is developed, it is imperative that the Corps preserve the language used and the plan established for resolution of these issues.

Water Quality Requirements, Assumptions, and Cost Share

A fundamental assumption of CEPP is that the SFWMD will treat 877,300 acre/feet of water on average currently flowing into the Everglades Protection Area (EPA) through the central flow path of the Everglades Agricultural Area (EAA) utilizing the facilities identified in the state's Everglades Water Quality Restoration Strategies Plan finalized in 2012. The state of Florida has established its commitment to complete Restoration Strategies through passage of House Bill 7065 in 2013, which provides a recurring dedicated source of funds to implement the $880 million plan. The Recommendation Section of the PIR in Paragraph v. recognizes that all features of the state's Restoration Strategies must be completed and meet state water quality standards prior to initiating construction of most CEPP project features. The Corps must continue to recognize that CEPP can only be implemented once the SFWMD is in compliance with the requirements of the National Pollutant Discharge Elimination System watershed permit, the Everglades Forever Act watershed permit and the associated consent orders for the operation and maintenance of the Everglades Stormwater Treatment Areas.

As part of its scoping letter, the SFWMD expressed its concern that the redistribution of additional water flow into the Greater Everglades would cause violation of the Settlement Agreement/Consent Decree[1] provisions for water quality flowing into Everglades National Park. In order to implement CEPP, the compliance methodology currently found in Appendix A of the Consent Decree must be updated. Moreover, it is possible that implementation of CEPP will require development of additional features to ensure that the water made available by CEPP meets state water quality standards. The Recommendations section of the PIR in Paragraph z. contains the language setting forth the process and scope for accomplishing these goals. This language was negotiated at the highest levels with the Department of the Army and state government. It is imperative that all parties follow through with this important commitment to develop a scientifically supportable revised compliance methodology and to continue to assess whether additional water quality features are necessary to treat additional water moved into the Everglades. Failure to reach agreed upon revisions to Appendix A and a cost share agreement on any additional water quality features needed as a result of CEPP implementation will impact the state's ability to approve and/or implement these projects.

[1] *United States v. South Florida Water Management District, et al.* Case No. 88-1886-CIV-Moreno (U.S.D.C., S.D. FLA.)

The Corps must also continue to recognize that CEPP project features must meet state water quality standards. The Recommendations section in Paragraph w. acknowledges the interdependencies of and the necessity for phased implementation in order to assure water quality compliance is met.

Use of Existing SFWMD Owned Lands in Project Formulation
It has been clearly communicated to the public and stakeholders that the CEPP will focus on the initial increment of restoration for the central Everglades. In order for this initial increment to be implemented in the most expeditious and cost effective manner, formulation of CEPP project features must be undertaken utilizing lands currently owned by SFWMD. The Tentatively Selected Plan (TSP) meets this requirement. If there are any proposed changes to the TSP, these must be limited to lands within state ownership. The SFWMD will not support a CEPP TSP that requires additional land acquisition for storage and/or treatment for this initial increment.

Completion of Modified Water Deliveries to Everglades National Park and Development of an Operational Plan
Planning, design and construction of the features associated with Modified Water Deliveries to Everglades National Park is 100 percent the responsibility of the federal government (see Everglades National Park Protection and Expansion Act of 1989, Sec. 104 (16 U.S.C. 410r-8)). Certain project features that were originally envisioned to be completed as part of Modified Water Deliveries have been refined in the CEPP planning process and are included in the TSP. These include surrogates for the following components:

1. S-345A, S-345B and S-345C
2. S-349A, S-349B and S-349C
3. S-356 Pump (1,000 cfs)
4. Degrading the remaining five miles of the L-67 Extension Canal and Levee

SFWMD agrees to cost share construction and operation of the surrogate features developed for CEPP under the CERP authority, Section 601(e) of the Water Resources Development Act of 2000. The PIR identifies all remaining elements of Modified Water Deliveries that are either completed or under construction. See PIR at Sec. 2.5.7. These features must be finished and a water control plan developed as a precursor to CEPP implementation. The additional water identified in CEPP cannot be brought south until Modified Water Deliveries is fully operational.

OMRR&R Cost Share and Integrated Operation of State Facilities
In order for CEPP to be implemented in the most cost effective and efficient manner, integration with state owned and operated facilities is required. Section 8 District's

Engineers' Recommendations of the PIR sets forth this understanding and includes a cost share percentage of 9.5% for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) costs of the state facilities used by CEPP. It also clearly defines the state and federal roles; the state and the Corps have joint responsibility over OMRR&R decisions for the integrated Flow Equalization Basin feature, while the state retains sole authority over OMRR&R decisions for state owned facilities. The Corps must continue to recognize the state's sovereign role in operations of state facilities whose primary purpose is to ensure compliance with state water quality standards. Moreover, the Governing Board has stated in the attached Resolution that the OMRR&R cost share issues of state-owned and operated facilities to be used by CEPP will need to be resolved in a manner favorable to the SFWMD and such cost-share responsibility included in the CEPP Final PIR/EIS.

Phased Implementation and the Need for Multiple Project Partnership Agreements

The PIR recognizes that CEPP will be implemented over an extended time frame. As a result, CEPP is composed of implementation phases that include features or logical groupings of plan features. The PIR also recognizes dependencies on both CERP and non-CERP projects that must be in place prior to the implementation of CEPP. Many of these will require integration into the sequencing of CEPP to avoid unintended adverse consequences, and to allow for restoration benefits to be achieved as early as possible. Moreover, the SFWMD and the Corps will need to ensure that the cost share balance for CERP implementation is maintained over this extended implementation period. The Recommendations Section of the PIR at Paragraph y. contains language recognizing these contingencies and the important role of the Adaptive Management and Monitoring Plan in shaping the implementation phases. It specifically identifies the ability of the SFWMD and the Corps to enter into individual Project Partnership Agreements (PPAs), or amendments to existing PPAs for construction of each implementation phase. The flexibility provided by this language is essential to successful CEPP implementation given the uncertainties associated with the lengthy implementation period and the inevitable improvement in scientific knowledge about the functioning of the greater Everglades that will occur as planned CERP and Non- CERP projects are completed.

In the Resolution approving the draft PIR's release for public review and comment, the Governing Board acknowledged that the document is subject to further review by the public, state and federal agencies as well as the Corps headquarters and Department of Army. The Board specifically required that any substantive changes must be reviewed and approved before release of the Final PIR. It is critical that the Corps follow through with the commitments contained in the Recommendations Section of the Draft PIR. Any changes to the agreed upon language could impact SFWMD's ability to accept the role of local sponsor. Governing Board direction has been clear; the Board expects to see

the agreed upon language contained in the Recommendations Section mirrored in the Chief of Engineer's Report and Record of Decision for the CEPP project.

The SFWMD has demonstrated a continued commitment to strengthening and fulfilling our role as local sponsor for the Comprehensive Everglades Restoration Plan through its support of the CEPP planning process. We look forward to a continued commitment from the Corps on these important policy issues so that CEPP can move from the planning to the authorization phase. Should there be any questions associated with the SFWMD comments, please contact Tom Teets, Federal Policy Chief at (561) 682-6993 or tteets@sfwmd.gov.

Sincerely,

Blake C. Guillory, P.E.
Executive Director
South Florida Water Management District

BCG/pv
Attachment

c: Ernie Barnett, SFWMD
Eric Bush, USACE
Colonel Alan Dodd, USACE
Temperince Morgan, SFWMD
Matthew Morrison, SFWMD
Kimberley Taplin, USACE
Tom Teets, SFWMD

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

RESOLUTION NO. 2013-0815

A RESOLUTION OF THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT SUPPORTING THE RELEASE FOR PUBLIC AND AGENCY REVIEW OF THE CENTRAL AND SOUTHERN FLORIDA, CENTRAL EVERGLADES PLANNING PROJECT, DRAFT INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT, DATED AUGUST 2013 BY THE U.S. ARMY CORPS OF ENGINEERS; PROVIDING AN EFFECTIVE DATE. (EXO, ERNIE BARNETT, EXT. 2110)

WHEREAS, Congress, in Section 601 of the Water Resources Development Act of 2000, approved with modifications the Comprehensive Everglades Restoration Plan (CERP) contained in the Final Integrated Feasibility Report and Programmatic Environmental Impact Statement, dated April 1, 1999, as a framework for making modifications and changes to the Central and Southern Florida Project; and

WHEREAS, the Central Everglades Planning Project (CEPP) is composed of increments of major CERP components that will provide significant environmental benefits to the central Everglades ecosystem, the St. Lucie Estuary and the Caloosahatchee Estuary, and will help meet the other water-related needs of the region; and

WHEREAS, the CEPP Recommended Plan will improve the quantity, quality, timing, and distribution of water into Water Conservation Areas 3A and 3B, Everglades National Park, and Florida Bay by adding an average of approximately 210,000 acre-feet per year of additional freshwater flow in the central Everglades; and

WHEREAS, this additional water will help restore pre-drainage vegetative communities and habitat for fish and wildlife while providing incremental restoration of natural processes critical for the development of peat soils and tree islands, which are essential features of the Everglades ridge-and-slough landscape; and

WHEREAS, the Recommended Plan will reduce the number and severity of high-volume discharges from Lake Okeechobee into the St. Lucie and Caloosahatchee Estuaries and will improve salinity in these estuaries; and

WHEREAS, the Recommended Plan will improve the salinity in Florida Bay resulting in greater abundance and diversity of sea grasses and other estuarine plant and animal species; and

WHEREAS, the Recommended Plan will increase public water supply in Broward and Miami-Dade Counties by approximately 12 and 5 million gallons per day, respectively; and

WHEREAS, the Recommended Plan will also maintain water supply for agricultural users in the Lake Okeechobee Service Area and the Seminole Tribe and will also maintain current levels of service for flood protection in the CEPP study area; and

WHEREAS, the expedited planning process for the development of the CEPP Draft Integrated Project Implementation Report and Environmental Impact Statement (CEPP Draft PIR/EIS) required extensive coordination and input by the public and federal, Tribal, state, and local resource management and regulatory agencies; and

WHEREAS, assurances are included in Sections 6 (Tentatively Selected Plan) and Section 8 (Recommendations) of the CEPP Draft PIR/EIS, including with respect to water quality compliance, Project cost-share, and Project interdependency and phasing with other CERP and non-CERP Projects, that enable the Governing Board of the South Florida Water Management District to support the release of the CEPP Draft PIR/EIS;

NOW THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby supports release of the CEPP Draft PIR/EIS by the U.S. Army Corps of Engineers for public and agency review.

Section 2. The U.S. Army Corps of Engineers' cost-share of operation, maintenance, repair, replacement, and rehabilitation of State-owned and operated facilities to be used by CEPP will need to be resolved in a manner favorable to the South Florida Water Management District, and such cost-share responsibility included in the CEPP Final PIR/EIS.

Section 3. The Governing Board acknowledges that water quality issues need to be resolved prior to implementing CEPP projects. Issues include the need to revise the compliance methodology of the Consent Decree (Appendix A) and also to reach agreement on joint measures which may be needed in the event of an exceedance of Appendix A resulting from a change in operation of a federal project. Failure to develop a mutually agreed upon revised compliance methodology or mutually agreed upon joint measures will preclude the State from implementing, approving, or operating CEPP projects.

Section 4. The Governing Board acknowledges that project elements cannot proceed unless/until it is determined that construction and/or operation of the feature: will not cause or contribute to a violation of water quality standards; and will not cause or contribute to a violation of the permit(s) discharge limits or specific conditions; and reasonable assurances exist that demonstrate adverse impacts on flora and fauna in the area influenced by the project element will not occur.

Section 5. The Governing Board acknowledges that the CEPP Draft PIR/EIS is subject to further review by the public, State and Federal agencies as well as Army Corps of Engineers headquarters and Department of Army. Any substantive changes will require the review and approval of the Governing Board of the Final CEPP PIR/ EIS.

Section 6. This Resolution shall take effect immediately upon adoption.

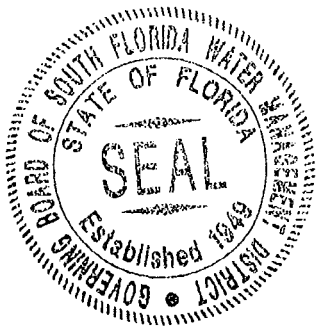
PASSED and **ADOPTED** this 15th day of August, 2013.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD

ATTEST:

Jacki McGorty
District Clerk / Secretary

By: Dan O'Keefe
Chairman



Approved as to form:

By: Abe Cooper
Office of Counsel

Abe Cooper
Print Name

OFFICE OF AGRICULTURAL WATER POLICY
(850) 617-1700

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TALLAHASSEE, FLORIDA 32301

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
COMMISSIONER ADAM H. PUTNAM

October 9, 2013

Lauren P. Milligan, Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Blvd, M.S. 47
Tallahassee, FL 32399-3000

Dear Ms. Milligan:

The Florida Department of Agriculture and Consumer Services (FDACS) appreciates the opportunity to provide comments on the Draft Integrated Project Implementation Report and Environmental Impact Statement (PIR/EIS), Central Everglades Planning Project (CEPP) – South Florida. We are submitting the following comments for consideration as part of the Florida State Clearinghouse consistency evaluation. (We have also attached more detailed staff comments.)

As noted in the draft PIR/EIS, WRDA 2000 requires preparation of a PIR to implement components of the Comprehensive Everglades Restoration Plan (CERP). CEPP does not implement any CERP components, instead it provides a conceptual plan for a suite of CERP components. The CERP components included in the CEPP will not be implemented for many years and likely under different conditions than exist today. Further, the detailed project planning and analyses that would normally be conducted for PIR purposes have not occurred for these components. While we recognize the value of the CEPP as a planning process, we do not believe it satisfies the planning requirements necessary for preparation of a PIR to implement CERP components.

Implementation of the CERP components included in the CEPP is constrained by the WRDA 2000 Savings Clause. This is clearly recognized in the draft PIR/EIS, which indicates that completion the C-44 Reservoir (IRL-S) and connection to the C-23 Canal, as well as modification of the Lake Okeechobee Regulation Schedule, must occur in order satisfy the requirements of the Savings Clause. There is certainly value in recognizing these future

constraints, but we believe their resolution should occur within the context of PIRs prepared for implementing the CERP components that are subject to such constraints.

Water quality considerations also constitute a significant barrier to implementing the CERP components included in the CEPP. The draft PIR/EIS identifies a number of "project dependencies," projects that must be completed and operational, or conditions that must exist, prior to implementation of the CERP components included in the CEPP. In regard to water quality the draft PIR/EIS provides, "All features of the State's Restoration Strategies must be completed and meet state water quality standards prior to initiating construction of most CEPP project features," (Pp. 6-38). If those water quality improvement features are completed and operational by 2029 as currently anticipated, there would still need to be a determination that the CERP components included in the CEPP would not cause or contribute to a violation of State water quality standards. Again, an issue that we believe would best be addressed when the detailed project planning occurs for the affected CERP components.

The recommended plan resulting from the CEPP provides a blueprint for the future implementation of a suite of related CERP components, and should be viewed as provisional. Project dependencies associated with the plan are substantial, and experience suggests that conditions may be very different by the time any of these components are implemented. We are concerned that PIR requirements for CERP components are being deferred to other undefined processes. For example, the draft PIR/EIS indicates that the plan will be implemented in phases and that Savings Clause analyses and projected assurances will be "updated" for each implementation phase. We support the concept of implementing logical groupings of CERP components in phases, but also that each such phase should be the subject of an individual PIR.

Thank you for the opportunity to provide Clearinghouse comments. If you have any questions regarding FDACS' comments, please contact Ray Scott at (850) 617-1716 or Rebecca Elliott at (561) 682-6040.

Sincerely,

W. Ray Scott
Environmental Administrator

WRS/bh

FDACS Staff Comments
Central Everglades Planning Project – Draft Integrated Project Implementation Report and Environmental Impact Statement, August 2013 (CEPP Draft PIR & EIS)

FDACS' review focused on actions and projects contained in the CEPP Draft PIR & EIS which may impact private agricultural lands and agricultural operations in the study area. The comments below are specific to the topics addressed and do not constitute a review of the entire CEPP Draft PIR & EIS and its supporting Annexes and Appendices.

General Concerns

Permittability and relationship to Preconstruction Engineering and Design (PED) and Project Partnership Agreement (PPA)

The CEPP Draft PIR & EIS presents a conceptual plan containing many components that are projected to be implemented in separate phases over a time frame encompassing the years between 2023 to 2040 – and beyond. The text and documentation provided in many sections to address this is appreciated, particularly Section 6 – Tentatively Selected Plan, Section 8 – District Engineer's Recommendation, Annex B – Analyses Required by WRDA 2000, and Annex C – Draft Project Operating Manual that acknowledge the uncertainties inherent in this planning process due to modeling limitations and uncertainties, engineering and design limitations during the CEPP planning process, and unknowns associated with the future conditions scenarios developed for CEPP planning purposes.

The CEPP Draft PIR & EIS recognizes that permittability can only be determined based on real world conditions existing at the time of project component implementation. Compliance with Florida rules, regulations and statutes regarding CERP as well as Federal rules, regulations, and statutes regarding CERP can only be evaluated with an acceptable level of confidence when specific project components are in the Preconstruction Engineering and Design (PED) phase during which project assurances, savings clause analyses and operating manuals will be updated consistent with the implementation phases (Section 6 – page 6-42 – 6.7.2). Annex B, B.4.5 page B-71 states that "The Corps and the District will undertake updated project assurances and savings clause analyses for the implementation phases that are selected to be included in a Project Partnership Agreement or amendment thereto prior to entering into the PPA or PPA amendment." The CEPP PIR should provide a comprehensive description on what PIR elements will be covered in the PED and PPA to ensure compliance with CERP's programmatic requirements and any applicable regulatory requirements. We recommend that these issues be addressed in a separate subsection of 6.7 – Plan Implementation so the expectations and strategy are well-defined and vetted during the CEPP PIR & EIS public review process. We believe this

is necessary to make it clear that regulatory and programmatic requirements are left unresolved and will need to be addressed prior to implementation of CEPP project components.

Replacement of the Everglades Agricultural Area (EAA) Storage Reservoir Project with alternative projects is not sufficiently described and addressed in the CEPP Draft PIR & EIS.

It is misleading to describe CEPP as an increment of the EAA Storage Reservoir Project. More accurately, CEPP completes the elimination the EAA Reservoir Project benefits; the EAA Storage Reservoir Project footprint is to be used for the A1 FEB (SFWMD Restoration Strategies) and the CEPP A2 FEB. On page ES-3, the first bullet describes Component G as "Everglades Agricultural Storage Reservoirs". The term should be "EAA A2 Flow Equalization Basin (FEB)" and this correction should be made throughout all CEPP documents.

The CEPP Draft PIR & EIS should describe the historic formulation of CERP, the purchase of the EAA Storage Reservoir footprint, and the earlier work of EAA Storage Reservoir Project Delivery Team. An understanding of this background explains why the replacement of the EAA Storage Reservoir Project with alternative projects is problematic to many stakeholders, including those advocating for capacity to convey larger volumes of Lake Okeechobee water south, agricultural interests in the EAA that are losing the opportunity for their water supply to be "off the lake" along with some flood risk reduction, and ENP where deliveries during the dry season could be increased by more storage in the EAA. The A1 FEB model results show it decreases deliveries to the Everglades National Park (ENP) and the volume of water the CEPP A2 FEB will be able to store and deliver is yet to be determined. It is unlikely that the planned CERP benefits of the EAA Storage Reservoir Project (water storage and delivery, as well as flood risk reduction) will ever be realized. Loss of benefits that were to be provided by the EAA Storage Reservoir Project and the controversy related to this decision should be acknowledged in the CEPP PIR & EIS.

Relationship to Modified Water Deliveries Project

Not including the Modified Water Deliveries operations in the future conditions scenarios because an operational plan has not been authorized for this project while including CERP projects yet to be authorized or funded is an arbitrary and unsupportable position. The Modified Water Deliveries Project facilities are in place and should be operational long before the first component of CEPP is implemented and long before the C-43 West Storage Reservoir is operational. Moreover, some evaluations estimate that once completed and operational, the Modified Water Deliveries Project can potentially deliver three-fourths of the projected CEPP volume of water to the ENP. Operation of the Modified Water Deliveries Project should have been analyzed in the future conditions scenarios, should be included in any future CEPP updates,

and any information gathered once the Modified Water Deliveries Project is operational should be used in adaptive management for CEPP features.

Project Dependencies

As described in the PIR & EIS, implementing the project components included in the CEPP depends upon completion of both CERP and non-CERP projects, which are detailed in the PIR & EIS. In some cases, project components included in CEPP cannot be permitted or comply with the Saving Clause until these other projects are complete, operating as intended, and providing the projected performance or benefits. Examples are discussed below.

Indian River Lagoon South Project/C-44 Reservoir and connection to C-23 Canal

In order for CEPP project components to meet the Savings Clause requirements for existing water supply for the Lake Okeechobee Service Area (LOSA), the C-44 Reservoir, the canal connecting it to the C-23 Canal, and the A-2 FEB must be built and operating. However, the CEPP Draft PIR & EIS creates uncertainty regarding this dependency. Page ES-7 refers to a "potential partial transfer." It is unclear what a "potential partial transfer" means and what role it plays in meeting the full transfer needed to meet the Savings Clause constraint. It should be made clear that the full transfer of water needed to meet the Savings Clause constraint is available before water can be re-directed south.

Modification to the Lake Okeechobee Regulation Schedule – currently LORS08

According to Table 6-10 (Pp. 6-39), "Changes to the 2008 LORS08 will be needed prior to the full utilization of the A-2 FEB in order to achieve the complete ecological benefits envisioned through re-directing the full 210,00 ac-ft/yr south and to avoid low Lake levels that would affect LOSA." The PIR & EIS should clearly state that the Lake Regulation Schedule must be modified to achieve the CEPP benefits projected and to maintain the level of service for water supply in the LOSA.

Water Quality

CEPP Draft PIR & EIS language states that CEPP project components cannot be implemented if agreements between the Federal and State partners cannot be reached to ensure that their implementation will not cause or contribute to a violation of State water quality standards. This has already proven to be problematic for the Modified Water Deliveries Project as evidenced by the inability to obtain a permit for operation of the 356 Pump Station in the 10 years since it was constructed. This suggests the uncomfortable, but very real possibility that the project components proposed in the CEPP Draft PIR & EIS cannot be permitted or operated.

Water Quality is also a major factor in determining the feasibility of CEPP's hallmark goal of diverting excess water from the Lake to WCA-3A. The State of Florida is in year one of a fifteen year program to implement the $880 million project to make sure water entering the Everglades from the EAA meets the water quality based effluent limitation (WQBEL) developed by EPA and included in Clean Water Act permits for the STAs. This plan includes the construction of a FEB on the site of the former A-1 Reservoir. The FEB is an entirely new type of feature and there is no information on whether it will perform as simulated in the CEPP water quality model during the drought and flood cycles typical in this area. It will take several years of operations of the A-1 FEB before any conclusions can be drawn about the potential performance of the A-2 FEB recommended in the CEPP. This should be described more clearly in the final PIR so decision makers not as familiar with the project needed to meet the WQBEL are fully informed during the next phases of Congressional and Federal Agency review of the CEPP.

Careful consideration should be given to whether the CEPP Draft PIR & EIS should go forward before there is some certainty that these water quality issues will be resolved.

Savings Clause – No Increased Flood Risks

Model results indicated an increase flood risk in South Dade for RSM-GL cell 4382. This result is characterized as an anomaly in water levels created by model flaws rather than a condition that will exist in the real world. Any possibility that this result will be seen as legitimate by the next generation of CEPP implementers must be removed.

Section 6 – 6.8.2, Annex B.3.2.5 and Annex B.4.2 describe this model result and the review conclusion that the results indicate a Savings Clause violation but further evaluation of the results indicate they are an artifact of the model inputs for that area. However, Annex B.4.2 does not include the cell identification and Section 6.8.2 and Annex B.3.2.5 do.

The Model Documentation Report graphic of the water levels for RSM-GL cell 4382 should be labeled as recommended by the Water Supply and Flood Protection Subteam, and should be included in Section 6 and Annex B so there is no opportunity for misinterpretation of the model results as indicative of acceptable CEPP performance. The Subteam recommendation was to include the following text on the graphic itself, "The results for this cell are erroneous, not predictive of project performance, and are not being used for the Savings Clause analyses." You should also consider including language to the effect that this area will be scrutinized as part of the future process to approve implementation of individual components of the CEPP and project operations will be adjusted if necessary to ensure that the problems indicated by the current model will not occur.

Document Technical Details

1) Section 1 page 1-6 : The first paragraph contains cfs rates but not the location associated with them.

2) Section 2 page 2-12, Table 2-2 : The first row "Status of Non-CERP projects includes the "Seepage Barrier Near the L-31 N Levee (Miami-Dade Limestone Products Association) " in the Future Without (FWO) condition. It is our understanding that this barrier was not included in the future conditions scenarios, unless it is a different barrier than the one discussed at length in the PDT meetings.

3) Section 2 page 2-16, item 4.c. states that the G-3273 Relaxation and S-356 Pump Station Test (1st year) are in progress. The proper status is inactive or EIS pending.

Florida Fish and Wildlife Conservation Commission

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October 1, 2013

Lauren Milligan
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399
Lauren.Milligan@DEP.state.fl.us

Re: SAI #FL201308286704C, Department of the Army, Jacksonville District Corps of Engineers – Draft Integrated Project Implementation Report and Environmental Impact Statement (PIR/EIS), Central Everglades Planning Project (CEPP) – South Florida

Dear Ms. Milligan:

Florida Fish and Wildlife Conservation Commission (FWC) staff has coordinated our agency's review of the above-referenced project, and provides the following comments for your consideration in accordance with the National Environmental Policy Act and the Coastal Zone Management Act/Florida Coastal Management Program.

Project Description

CEPP represents a significant opportunity to restore the defining hydrologic regime of the Everglades and, as such, lies at the heart of the Comprehensive Everglades Restoration Plan (CERP). The purpose of CEPP is to evaluate alternatives for restoring ecosystem conditions in the central Everglades as well as opportunities to provide for other water-related regional needs, as required by the Water Resources Development Act of 2000. The recommended plan would achieve benefits by reducing the large pulses of regulatory flood control releases sent from Lake Okeechobee by redirecting approximately 210,000 acre-feet of additional water on an annual basis to the historical southerly flow path. One of the explicit ecosystem goals of CEPP is to rehydrate the northern part of Water Conservation Area (WCA) 3A to reintroduce peat-accretion processes in an area that has seen substantial peat loss through fires and other forms of oxidation. It also represents a substantial step in reintroducing the historic northwest to southeast water-flow pattern that characterized the Everglades before the construction of the WCAs.

Major structural components of the tentatively selected plan (Alternative 4R2) include integrating the A-1 and A-2 Flow Equalization Basins (FEBs) into the overall water management system; removing 2.9 miles of the southern L-4 levee; rerouting water in the L-5 canal; filling the Miami Canal from 1.5 miles south of the S-8 structure to Alligator Alley (Interstate 75); preserving 22 of the artificial tree islands (i.e., enhanced soil mounds) along the Miami Canal and constructing additional tree islands across the canal where they historically occurred; degrading the lower part of the L-67C levee (but not filling the canal); constructing a new north-south levee (the L-67D levee) between the L-29 levee and remaining portion of the L-67C levee, thereby effectively dividing WCA 3B into an eastern and a western half; creating three breaches in the L-67A levee and one in the L-67C levee to allow water to flow from southern WCA 3A into WCA 3B and thence

into northeastern Everglades National Park (into Northeast Shark River Slough); constructing a new auxiliary structure at the S-333 pump station to augment its capacity; and providing a curtain wall along the northern part of the L-31N canal and levee system. Water management would be driven by naturally occurring rainfall patterns. CEPP also includes a conceptual recreation plan (Appendix F) that would address four sites in the A-2 FEB, one along the L-5 levee, and additional features in southern WCA 3A and WCA 3B. Finally, in recognition of the uncertainties inherent in this proposal, CEPP also includes an extensive program of adaptive management, a process that involves careful monitoring, learning from that monitoring, and adjusting the plans, including the Project Operating Manual (Annex C), as necessary based on new information obtained from the monitoring as the project elements are constructed.

Potentially Affected Resources

Statewide the FWC manages fish and wildlife resources for their long-term well being and the benefit of people. In the heart of the CEPP footprint, the FWC manages WCAs 2A, 2B, 3A, and 3B collectively as the Everglades and Francis S. Taylor Wildlife Management Area (EWMA). The EWMA provides recreation for the most populated sections of the southeastern United States. The FWC and its predecessor, the Florida Game and Fresh Water Fish Commission, have managed this area since 1952, when it was established. Some of the earliest reports from that period struggled with integrating the needs of Everglades fish and wildlife species with a water regulation schedule that reflected a hydrologic regime compatible with those needs.

Sections 5.2.4 and 5.2.5 of the draft PIR/EIS present a list of federally and state-listed species that may occur within the impact area. We concur with most of this list, but note that the Miami blue butterfly (*Cyclargus thomasi bethunebakeri*) should be included in the list of federally listed species (listed as Endangered). In addition, we would add the following species:

Common Name	***Scientific Name***	**Status***
Audubon's crested caracara	*Polyborus plancus audubonii*	FT
Bald eagle	*Haliaeetus leucocephalus*	**
Burrowing owl	*Athene cunicularia*	SSC
Florida sandhill crane	*Grus canadensis pratensis*	ST
Osprey (Monroe County only)	*Pandion haliaetus*	SSC
Roseate tern	*Sterna dougallii dougallii*	FT
Southeastern American kestrel	*Falco sparverius paulus*	ST

* SSC - Species of Special Concern; ST - State Threatened; FT - Federally Threatened;
**While the bald eagle has been both state and federally delisted, it is still governed by the state bald eagle rule and the federal Bald and Golden Eagle Protection Act (see http://myfwc.com/docs/WildlifeHabitats/Eagle_Plan_April_2008.pdf#page=35)

In addition to the imperiled species mentioned above and in the DPIR/EIS, the EWMA supports significant wading bird colonies; tree islands that provide upland habitat for terrestrial and semi-terrestrial wildlife, and refugia during high water events; ridge and

slough communities; and wet prairies that are essential for the Everglade snail kite and its prey, the apple snail. Other wildlife, such as white-tail deer, raccoons, marsh rabbits, and resident and migratory birds (e.g., the mottled duck, red-shouldered hawk, a variety of passerine birds) are abundant in the project footprint. Many of these species have ecological and societal values and are managed by the FWC. The EWMA also includes some of the most popular recreational fishing opportunities in southern Florida, particularly in its canal system.

Despite the diversity of fish and wildlife species and habitats in the EWMA and Everglades National Park immediately south and downstream of the EWMA, past water regimes have caused substantial harm, particularly in WCA 2A, WCA 2B, and the northern and southern ends of WCA 3A. A combination of high water levels in southern WCA 3A have damaged tree islands, and overly dry conditions have allowed peat fires and invasion by brush in northern WCA 3A. High water levels also appear to coincide with a lack of panther use of the western part of WCA 3A over the past 20 years. During extreme high water events, tree islands and man-made levees take on additional significance as refugia for terrestrial and semi-terrestrial species (primarily mammals and reptiles), but these features provide adequate forage only for a limited time. Likewise, Everglades National Park has suffered from rerouting water that used to flow into Northeast Shark River Slough. Instead of entering the slough in the northeastern part of the park, water now enters primarily to the west, through the limited capacity of the S-12 structures.

Potential Effects and Recommendations

We recognize that CEPP will be implemented over many years and will need to include a number of phases that will have to be carefully sequenced. The FWC intends to actively participate in the adaptive management of this complex set of changes in the central Everglades to help ensure maximum benefits to fish and wildlife resources. At this time, we provide the following information and recommendations, in addition to the enclosed general comments.

High Water Stages in WCA 3A

While recognizing that best professional judgment was applied to the voluminous modeling output and incorporated in the screening and alternatives evaluation process, we note that the evaluation process omitted the previously approved and important performance measure to assess potential impacts from high water events. Without using this performance measure, it is impossible to conclude that Alternative 4R2 will produce the benefits to wildlife that the DPIR/EIS predicts because there is no way to take into account the impacts of higher water levels that it would produce in parts of the EWMA. It can also lead to the erroneous conclusion that there would be no or little impact to terrestrial wildlife species. As the system is currently constructed and operated, Table 5.2-7 indicates that the FWC would have had to close the EWMA under the modeled period of record for the Existing Conditions Baseline 15 times for a total of 511 days and 12 times under the Future Without Project baseline for a total of 441 days. Yet under Alternative 4R2 the modeled number of closures would actually increase to 18 times for a total of 613 days. The stage duration curves are consistent with this prediction, with very little if any benefit seen for southern WCA 3A. While we agree that rehydrating northern

WCA 3A to some degree is an extremely important goal of Everglades restoration and are supportive of efforts in that direction, this predicted increased number of closures indicates that rehydration as modeled would result in unintended harm due to excessively high water levels in parts of the EWMA. Not only would this stress wildlife unduly, but we project that it would also continue the degradation of two key components of the Everglades landscape in southern and southwestern WCA 3A: tree islands and wet prairies. We maintain that closing the EWMA due to high water levels other than those caused by extreme storm events, such as hurricanes and tropical storms, is not an acceptable management option for this area.

Tree islands: Tree islands are a unique structural component of the Everglades, providing habitat for wildlife species that require some component of upland habitat with trees or brush in an overall matrix of marsh. Tree islands may occur (in order of increasing height above the slough bottom) as willow strands, bayhead swamp forests, and tropical hardwood hammocks. The last of these may be found throughout the EWMA, but are more numerous in southwestern WCA 3A and southern WCA 3B. Willow strands, which may also contain other brushy species such as pond apple, provide colonial wading bird habitat (Rodgers et al. 1996), while the bayheads and tropical hardwood hammocks may be important for neotropical migrating passerine birds (Mitchell 2010). Alligators, turtles, and snakes lay their eggs on the dry parts of tree islands (Towles 2009).

Much attention has also been given to the higher tree islands as refugia for Everglades wildlife species, such as deer, bobcats, marsh rabbits, raccoons, and small mammals. During extremely high water events, these terrestrial or semi-terrestrial species crowd onto what remains at or above water on tree islands and onto levees, where overcrowding and competition for food create physical stress (in extreme cases, resulting in death) and susceptibility to disease and parasites. This is particularly true for does, yearling, and fawns (Cornwell et al. 1970). Cornwell et al. (1970) noted that the situation became so severe during the high water events in 1957 – 1958 and 1966 that all vegetation was completely removed, the bark of trees and shrubs eaten as high up as a deer could reach, and tree island soils were trampled into mud by both deer and wild hogs.

While less information is available on impacts to Everglades wildlife species other than deer, Schortemeyer (1980) noted that water reversals during periods of naturally occurring recession have caused nest failure for alligators and turtles. FWC staff has also reported opossums, grey foxes, bobcats, and raccoons crowded on levees during high water events in 1986 and in 2005, and evidence of extensive predation on marsh rabbits during the 1986 event (unpublished GFC internal reports; T. Towles, FWC, personal communication 2013). Much of the effect on the diversity and abundance of wildlife can be inferred by changes in tree island vegetation. For example, the Andytown rookery in WCA 3A was one of the largest willow strands (over 60 acres) used by nesting wading birds before 1994; now only one-quarter acre of it remains.

Wet prairie: Wet prairies are a form of marsh dominated by emergent grass-like species, usually spikerush, beakrush, and maidencane (Gunderson 1994). Periphyton is also an important component of the submerged part of this community (Browder et al. 1994). They generally have a hydroperiod of 290 to 365 days (Goodrick 1974). Wet prairies in the EWMA have historically been important habitat for the federally endangered

Everglade snail kite and its prey, the apple snail. Snail kites search for prey by sight, so they typically forage over relatively open wet prairie and sloughs. They capture apple snails within about four inches of the surface as the snails come to the surface to respire (Bennetts et al. 1994). Apple snails feed on the periphyton component of both wet prairies and sloughs (Browder et al. 1994). Wet prairies, as opposed to sloughs appear to be an important area for apple snail production, particularly in areas dominated by maidencane (Karunaratne et al. 2006). Water levels greater than 1.6 feet during the peak apple snail breeding season result in fewer egg clusters, fewer drying events that reduce predation, and delayed egg laying that results in the next year in a larger number of juvenile snails that are too small for snail kites. The wet prairies and the ridge and slough communities provide critical foraging habitat for a wide variety of wading birds, including those currently designated by the State as Species of Special Concern. It also provides high-quality browse for deer as long as the water depths remain below approximately 20 inches, a depth above which begins to hamper deer movement (MacDonald-Beyers and Labisky 2005).

Recommendation: The FWC has revisited the recommendations that the FWC's predecessor agency, the Florida Game and Fresh Water Fish Commission, had provided the U.S. Army Corps of Engineers in 1980 (Schortemeyer 1980) and the July 1, 2010, *USFWS Multi-Species Transition Strategy for Water Conservation Area 3A* (U.S. Fish and Wildlife Service 2010). Both take a multi-species approach and were based on research in WCA 3A. The former addressed four species or suites of species: the deer, the alligator, passerine birds, and the pig frog. The latter addresses tree islands, wet prairies, wood storks, Everglade kites, and apple snails. We find that these key fish and wildlife in WCA 3A are best served by water stages no higher than 10.2 feet National Geodetic Vertical Datum (NGVD) by late October to early November and then a gradual and steady recession to a low of near 8.2 feet NGVD by late May to early June as measured by the three-gauge average of the G-63, G-64, and G-65 gauges (assuming their elevations are 8.8, 8.5, and 7.4 feet NGVD, respectively). At that time, water levels would increase back to no higher than 10.2 feet NGVD again by the end of October to early November. During extreme storms or unusually wet seasons, water levels may rise above the desired high levels, but even then depths should not exceed an average of 2.46 feet for longer than 60 days. Water levels for the two-gauge average at the 62 and 63 gauges should not exceed 11.6 feet NGVD (or 10.8 feet for the three-gauge average). If this is to occur, remediating actions must be taken to drop levels within seven days.

The DPIR/EIS acknowledges that rehydrating the northern part of WCA 3A may result in the remobilization of nutrients. Recognizing that it would be beneficial to rehydrate this area and begin to restore peat-accretion processes and recognizing the potential for nutrient remobilization, we strongly recommend that CEPP take an incremental approach to introducing more water into northern WCA 3A. This approach would be consistent with the principles of adaptive management both in monitoring vegetation changes in the currently dry areas and in allowing the Project Implementation Manual to adjust water inputs into WCA 3A (and ultimately into WCA 3B and Everglades National Park) in a manner that would avoid invasion of cattails due to increased nutrient levels. It would also allow for refining the operation of the new structures to decrease the chance of flooding tree islands and wet prairies beyond their tolerances.

Low water stages in WCA 3A

Tables 5.1-9 and 5.2-7 indicate that the EWMA is closed when water levels fall at or below a height of 9.16 feet NGVD, as indicated by the average readings at the 62 and 63 gauges. However, the actual closure criterion is at or below 9.30 feet NGVD.

Recommendation: We request that the evaluation of low water closure days be recalculated using the correct criterion.

Water levels in WCA 3B

While aerial photographs of WCA 3B indicate that the pattern of ridges and sloughs has been somewhat obscured, this area contains some of the tree islands least affected by high water levels in the EWMA. This is because this area has been subject only to what it receives directly from rainfall and what it loses from seepage and evapotranspiration. With the introduction of water into WCA 3B from WCA 3A, there will need to be careful monitoring of water levels to ensure that inflows equal outflows. If high water levels and/or ponding occurs as a result of transferring water from WCA 3A to WCA 3B, this may result in adverse impacts to tree islands and other natural vegetative communities, thus impacting remaining functional or potential wildlife habitat.

Recommendation: We recommend that the U.S. Army Corps of Engineers (ACOE) and the South Florida Water Management District (SFWMD) initially adopt the following criterion for managing water levels in WCA 3B. If in any year, depths in WCA 3B as measured at the 7-1 gauge for the eastern part and the EDEN 10 gauge for the western part exceed two feet for more than 59 days, extensive monitoring of tree island health will immediately begin. If significant stress to trees is detected, operational steps must be taken to achieve more favorable conditions during the following water year to reduce stress on these key Everglades landscape features. In the longer term, we recommend that the ACOE and the SFWMD work with FWC and others as appropriate through the adaptive management program to develop a regulation schedule that supports the redirected flows while avoiding harm to the tree islands in WCA 3B.

Levee construction

The L-67D levee would be a major new structure in the EWMA and its inclusion seems counterintuitive to moving toward a more natural system. Additionally, by proposing to connect the new L-67D levee to the L-67A levee, Alternative 4R2 would pose a significant impact to recreational fishing access in the L-67C canal and has the potential to cause environmental and habitat impacts associated with construction.

Recommendation: We prefer that the new L-67D levee be constructed as one of the last components to come on line and only if it is shown through operational experience to be necessary. If it is constructed, then we recommend that it be terminated at the L-67C levee so as not to impact this important fishery.

Filling of the Miami Canal and removal of spoil mounds

Public use of the Everglades remains strong. The canal system supports thousands of angler-hours of fishing effort; facilitates further travel into the area promoting hunting, fishing, boating, and wildlife viewing; and provides an economic benefit to Florida and our local communities. Our position during the Restudy was, and continues to be, that we do not support filling canals that provide recreational opportunities unless it can be

shown to be necessary in order to accomplish hydrological restoration. The CEPP modeling suggested that backfilling south to the S-339 structure provided the most demonstrated benefits; additional benefits from filling from the S-339 structure to Alligator Alley were questionable. Thus, although CEPP proposes to retain 22 of the FWC's highest priority enhanced spoil mounds between the S-339 and Alligator Alley, the use of any spoil material as fill in a recreationally important canal raises both ecological and recreational concerns for the FWC. We do, however, fully support reconstructing tree islands across the footprint of the filled portions of the Miami Canal in locations where they historically were located.

Recommendation: FWC should be included in decisionmaking processes during detailed design to re-examine that backfilling of the Miami Canal only be included as far south as the S-339 structure.

Exotic Species

The projects' plans for detection, monitoring, and treatment/control of exotic species are largely covered in Annex G. While we agree that exotic fish, wildlife, and vegetation can be cause for concern, we contend that there is currently no evidence that exotic fishes in man-made canals pose a threat to ecosystem function. In 2007, the FWC developed a position paper (enclosed) that details this conclusion. Furthermore, in our experience, electrofishing has not been demonstrated to be an effective method of eradication of exotic fishes, particularly those known to be established in the construction locations for the project. While the FWC supports the pre- and post-construction monitoring and early detection and rapid response (EDRR) approach outlined, we do not support the use of electrofishing to attempt to eliminate exotic fishes from construction locations.

Recommendation: We request that Annex G be more value-neutral in addressing the impacts of exotic fishes on canal systems in the Everglades. Further development of the discussion of mechanical control would also be appropriate. Unless restricted to roads or levees, our experience leads us to believe that the kind of mechanical control described is not feasible in the central Everglades. Additionally, we request a clarification of the temporal and geographic context of the statement in G.2.1.3 regarding the dominance of Brazilian pepper in the canopy of small tree islands. Currently, most tree islands in EWMA are treated and in a state of maintenance control.

Sequencing

Sequencing will be a critical factor in achieving success via CEPP. The DPIR/EIS indicates that one of the later actions will be to remove the Old Tamiami Trail. Recent events have shown that water managers consider breaching it to be an important action contributing to a short-term solution to this year's high water levels.

Recommendation: We recommend that the Old Tamiami Trail be removed as early as possible in the implementation of CEPP so it no longer acts as a barrier to water moving south. Additionally, as part of the removal of the old Tamiami Trail regarding the 1,320 foot east-west strip that runs along the entire length of the Tamiami Trail that shares a boundary with Everglades National Park, we recommend an easement be established south of Tamiami Trail to facilitate road modifications, maintenance and water delivery. We further recommend during the removal of the old Tamiami Trail that the associated borrow canal west of L-67 Extension be left in place to serve as a spreader canal for

incoming flows to promote sheetflow into Everglades National Park. Similarly, as part of this element, a spreader swale should be established south of Tamiami Trail east of the L-67 Extension to improve distribution of flows downstream.

Additional Comments

Biscayne Bay
Although current analysis of model outputs suggest sustained freshwater flow to Biscayne Bay, numerous concerns about real world performance were raised by a variety of stakeholders during plan formulation. We echo these concerns; it would be difficult for FWC to support a project that would decrease freshwater flows to Biscayne Bay. Many of the organisms in the bay, including the pink shrimp, which supports the number one commercial fishery in the bay, thrive in salinity ranges of 20-35ppt. Thus, any decline in freshwater flows to the bay could have negative impacts on ecological conditions in the bay and important recreational and commercial fisheries.

Recreation
The discussion of recreation in Appendix F does not adequately address how CEPP could impact recreational access and opportunity. Repeated, legitimate concerns about impacts to hunting access and/or opportunities were raised by stakeholders during plan development and should be addressed. Given the potential for reduced carrying capacity of deer and other mammals dependent on uplands, the potential for some loss of hunting opportunity is real.

Summary

The interdependencies on which CEPP is predicated are likely to make implementing CEPP challenging. Sequencing in a way that allows CEPP to meet its potential, along with operational flexibility combined with a rigorous and active adaptive management approach will be key to its success. Nevertheless, the FWC supports CEPP as part of the greater south Florida ecosystem restoration effort, and we look forward to participating in refining its performance.

If you or your staff would like to coordinate further on the recommendations contained in this letter, please contact Mr. Scott Sanders at (850) 488-3831 or email him at scott.sanders@myfwc.com and he will be glad to help make the necessary arrangements. Similarly, please engage the FWC through Mr. Sanders when you enter the detailed design phase of project development so that we may continue to support the development of this important project.

Sincerely,

Nick Wiley
Executive Director

nw/map/bam
Central Everglades Planning Project Draft PIR-EIS_18044_100113
Enclosures: 1 agency position paper (canals); 1 enclosed general comments

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Staff Comments on the Draft Project Implementation Report/Environmental Impact Statement (DPIR/EIS) for the Central Everglades Planning Project (CEPP)

General comment

CEPP is striving to make significant increases in water deliveries to Water Conservation Area (WCA) 3A with limited storage components in the Everglades Agricultural Area or the Lake Belt. Staff is concerned that without sufficient storage capabilities in these areas, CEPP will lead to the continuation of the periodic extreme high water events that have been degrading wildlife habitat in the WCAs for decades.

Section 5

This section separates the comparison of effects among Alternatives 1 through 4 from the comparison of effects between Alternatives 4R and 4R2. The fact that the scale used to depict the stage duration curves for the first set of comparisons is different from the scale used for these graphs in the second set of comparisons makes it very difficult to determine how the tentatively selected plan (Alternative 4R2 or TSP) compares with Alternatives 1 through 4. Presenting the full range of alternatives in one set of stage duration curves for each region in the final PIR/EIS would better document the decision for the finally selected plan.

Table 5.2-1 has to be interpreted carefully and can be unintentionally misleading. It would be easy to think that the changes in water levels described for Alternatives 4R and 4R2 are how they compare to existing conditions, but they are actually compared to the "future without project" (FWO) condition. To understand what the alternatives mean in terms of how different they are from the existing condition, one must first compare FWO against the existing condition and then calculate how the alternatives compare against the existing condition. We recognize that EIS's must compare alternatives to FWO conditions, but, in the interest of transparency, we recommend including how they compare against the existing conditions.

Throughout Section 5, Water Conservation Area 3B is predicted to have increased hydroperiods that would be of benefit to snail kites, but from review of model output (stage duration curves), staff could not find any improvements for WCA 3B. The difference in hydroperiods as shown in Figure 6-8 does not appear to show any improvements. Figure 6-9 indicates only marginal improvements on the east side, and Figure 6-10 shows improvement to WCA 3B in that portion west of the Blue Shanty.

Sections 5.1.6.2 and 5.2.6.5 state that although deer may be impacted by the removal of levees and lower tree islands being inundated in WCA 3B, the remaining portions of CEPP will see no significant effects on mammals. However, this is not true since northern WCA 3A will likely experience increased depths. Increased depths for longer periods of time will likely reduce foraging areas and limit carrying capacity of deer and other mammals dependent on uplands.

Table 5.1-2 and 5.2-1 characterize a drop in water level by 0.05-0.75 feet as a major adverse impact and drop of 0.25-0.50 feet as a moderate impact, respectively. WCA 2B has consistently experienced high water levels for a number of years, so a decrease in water levels in this area should be a benefit for wildlife.

Table 5.1-8 states: "Hunting (deer, hog, rabbit, etc.) could have a major adverse effect in the short term by increased hydration in the very northern WCA 3A areas that have been dryer." The way that the sentence is written implies that hunting will have a major adverse effect on wildlife. We assume that what the DPIR/EIS means is that hunting will be negatively affected by increased hydrology. It also depends on what kind of hunting and what species of wildlife being referenced. Overall, hunting for deer, hog, and rabbit may be adversely impacted by increased depths in northern WCA 3A. This comment also applies to Table 5.2-6. We suggest this be clarified.

In Section 5.1.15.3, Recreation: The first paragraph mentions the Everglades and Francis S. Taylor Wildlife Management Area for the first time in the DPIR/EIS without mentioning where it is in relation to the CEPP footprint. We suggest mentioning it in the project area description and clarifying that it comprises WCAs 2 and 3 (excluding the Reservation of the Miccosukee Tribe of Indians of Florida).

Table 5.2-1 states that there will be moderate to major improvements for WCA 3B, but from the staff was unable to determine the source of this water for the TSP. We also noted that there is no improvement in outflows from WCA 3B. Balancing inflows to WCA 3B with outflows from WCA 3B will be critical for ensuring that deleterious effects from high water levels are not introduced into WCA 3B, which, for the most part, has escaped the fate of a substantial loss of tree islands as has occurred in WCA 3A and in WCA 2.

Section 6

Figure 6-10: The difference in stages between the FWO and the TSP shows a 0.5- to >1.0 increase in water stage during 1995 in northwest WCA3A, which means water depths would have been three feet or greater near the L4 and L5. Although we recognize that the 1995 year is a model simulation as opposed to an actual condition at the time, the water levels in 1995 were much too high, and the TSP would have exacerbated the event.

Table 6-1 addresses the indicators used to measure progress toward meeting interim goals. Item 3.12 refers to the measure for the snail kite as: "Increase the areal extent of suitable foraging for snail kites." What is the basis for the supposition that CEPP provides better habitat conditions for apple snail populations in "most of WCA 3A and in WCA-B and Shark River Slough in ENP"? Was a performance measure employed that specifically addressed this question? Did model performance indicate dry downs every 3-5 years in extensive marsh areas (central and western WCA 3A, southern part of WCA 3A North, southern WCA 3B, and Shark River Slough) where wet prairie habitats are prevalent? Such dry downs are necessary to maintain the integrity of these communities and prevent a transition to slough environments (poor habitat for apple snails). Was the occurrence of extreme high water (>1.3-foot depth) during the apple snail's reproductive season (March-May) less frequent in key wet prairie areas in the TSP compared to the FWO condition? Also, was potential snail kite nesting habitat taken into consideration? The woody species that provide the best nesting substrates for successful nesting are likely to continue to decline as long as the frequency of extreme high water events remain similar to the FWO.

Table 6-3 includes the comment: "Rehydration within previously dry areas of WCA3A, 3B, and ENP would increase the spatial extent of suitable habitat." This statement should include a caveat as to what type of wildlife this increase in habitat would result. In particular, it would increase wildlife habitat for wading birds and snail kites, but will probably result in less habitat for terrestrial wildlife.

Annex G, Invasive and Nuisance Species Management Plan
There are other exotic species not identified in section G.2.1.1 and which would be appropriate to include: the West Indian marsh grass (*Hymenachne amplexicauli*), climbing acacia (*Senna pendula*), wild taro (*Colocasia esculenta*), and Napier grass (*Pennisetum purpureum*).

Section G.2.1.1 states that the non-native plant inventory included Holey Land Wildlife Management Area, Rotenberger Wildlife Management Area, and Southern Glades Wildlife and Environmental Area (note that the last is not technically a wildlife management area). CEPP, however, is primarily focused on Everglades and Francis S. Taylor WMA (EWMA). Did this inventory include the EWMA?

The statement in paragraph G.2.1.2: "In these areas, Australian pine is present in remote mangrove swamps and sawgrass marshes where populations vary from dense stands to widely scattered patches" is technically incorrect. Australian pines do not grow in the marsh, but are typically found on dry locations and follow linear features (including levees and roads).

Section G.3.4 states: "Mechanical control refers to the use of machinery designed to cut, shear, shred, uproot, grind, transport and remove invasive species. Equipment used to complete mechanical control may include but is not limited to heavy equipment such as an excavator or front-end loader (with a root rake, grinding heads or other attachments), cutter boats, dredges and mechanical harvesters (Haller, 2009)." These techniques would not be feasible in the Central Everglades. Most initial efforts in the Central Everglades have focused on manual removal with chainsaw and removal by hand, followed by treatment of the remaining stumps.

Section G.6.9 states: "It is recommended the adjacent lands within 0.5 mile of the canal and levee be surveyed and treated to eliminate close proximity seed sources. This would assist in preventing spread of priority species such as Brazilian pepper." This statement is not very specific on how the area within 0.5 miles will be surveyed and how infestations will be treated. Also, it doesn't mention what the priority species for treatment will be other than Brazilian pepper. What are the other priority species to be targeted? Does it just include plants?

Appendix F, Recreation
In paragraph F.3.6 and in figure F-3, recreational features describe three shelters at three locations, but it is not clear if the plan intends to state that there will be three shelters at each site identified or one at each site.

Table F-5 proposes an earthen crossing near the S339 structure, but does not mention if the current bridge would remain. Please provide clarification on plans to retain or remove the historic bridge at S339.

Staff would like to see a discussion on how CEPP would impact recreational access.

Appendix G, Benefit Model

G.1.2 – Description of Project Performance Measures. In terms of this model's ability to measure ecosystem functions and benefits for CEPP, it is inherently flawed based on the biased subset of Greater Everglades Performance Measures (or parts thereof) selected for inclusion. The Everglades Ridge and Slough Conceptual Ecological Model is referred to as part of the scientific basis for this set of performance measures (PMs). This conceptual model states that, "The depth, distribution and duration of surface flooding in this environment largely determined the vegetation patterns, as well as the distribution, abundance and seasonal movements and reproductive dynamics of all of the aquatic and many of the terrestrial animals in the Everglades." (Ogden 2005). The Everglades Ridge and Slough Conceptual Ecological Model identifies tree islands as one of its key attributes to be used as an indicator of restoration success. Tree islands have proven to be very sensitive to water management practices and approximately half of the tree islands in WCA 3A have been lost or degraded, with repeted high water events being a major contributor to this loss. Yet, every one of the PMs selected (page G-2) evaluate how alternatives perform either by avoiding low water conditions (nine target components) or by improving sheetflow (three target components). The high-water depth target portion of the Extreme High and Low Water Levels in the Greater Everglades Wetlands PM used for evaluating model performance in ridge and slough indicator regions in WCA 3A was omitted from the benefits analysis. Due to the high ecosystem values that we attribute to Everglades plant communities such as tree islands and wet prairies that have been degraded by extreme high water levels, we find the omission of such an important performance measures to be a major hindrance in being able to provide an acceptable analysis of CEPP performance.

Page G-41- Table G-9. The raw performance scores for Percent Period of Record (PPOR) of Inundation do not include all of the indicator regions in WCA 3, making it difficult to judge performance in southern WCA 3A and WCA 3B. However, those scores presented suggest that inundation lengths may be getting too long in northern and central WCA 3A. All of these indicator regions (IRs) have inundations that exceed Natural System Model 4.6.2 predictions by 2 to 5%, and range from 92 to 96% period of record. Only IR 118 had an inundation value that matched NSM 4.6.2 (91%), which likely reflects the diversion of greater quantities of flows into northern WCA 3A with concomitant decrease from WCA 2A through the S-11 structures into the area occupied by IR 118. Of particular concern is the increase in inundation lengths in central WCA 3A (IR 121) from 93% in FWO to 96% POR in the TSP. Such long periods of inundation suggest that there would likely be fewer of the dry downs that are necessary to maintain the wet prairie communities needed by snail kites for suitable foraging habitat.

Page G-55- Normalized Duration Curves for Gage in Blue Shanty Flow-way for Alternatives 1-4. The footprint of the Blue Shanty flow-way would include the Twin Head tree islands located immediately south of the L-67C levee. These islands are swamp forest strands that possess elevations that are only about 1.0 feet or less higher than the adjacent marsh. The stage duration curve indicates that this area would have water depths > 1.0 foot about 60% of the time. However, the TSP proposes water depths > 1.0 foot for approximately 88% of the time. These much longer periods of inundation would very likely result in the loss of swamp hardwood species (dahoon holly, swamp bay, wax myrtle, etc.) from these islands. Their species diversity

would be greatly diminished, and limited to only the most water tolerant tree species, such as Carolina willow.

Adaptive Management

Option: Dig a shallow S-355 B Collector Canal Extension near the southern end of WCA 3B, east of the proposed L-67D levee, to increase flows southward out of this part of WCA 3B. We note that this option would require significant impacts to wetlands and potential nesting and foraging sites for snail kites.

Option: Modify the agricultural canals in the WCA 3B flowway, west of the proposed L-67D levee, to maximize sheetflow and hydroperiod objectives. This option would impact potential nesting sites for wading birds and snail kites. The agricultural canals have been used extensively in the past by wading birds and snail kites as nesting substrate.

Florida Fish and Wildlife Conservation Commission
620 South Meridian Street, Tallahassee, FL 32399

POLICY: POSITION: X GUIDELINE:

TITLE: South Florida Canals Affected by CERP

APPROVAL AUTHORITY: Senior Leadership Team

DATE: September 2007

SUMMARY OF TEXT & PURPOSE FOR THE APG:

There are over 2,600 miles of canals and levees in the South Florida Water Management District system. In addition, there are numerous canals operated by local drainage districts, as well as drainage canals located within the Everglades Agricultural Area. The creation and operation of this extensive network of canals and levees has significantly altered the natural hydrology of South Florida. Some areas of the Everglades have become over-drained, while other areas have become unnaturally impounded. The Central and Southern Florida Comprehensive Review Study (Restudy) was authorized by Congress and developed the framework to restore and preserve the South Florida natural ecosystem.

One of the major components of the Comprehensive Everglades Restoration Plan (CERP) focuses on removing barriers to sheetflow, and could result in the large-scale backfilling of canals. The purpose of this APG is to review our policy regarding canal fisheries in South Florida and the potential impacts of CERP projects on them; develop a position regarding this matter; and to communicate this position to CERP authorities and stakeholders.

Our position during the Restudy was, and continues to be, that we do not support filling canals that provide recreational opportunities unless it can be shown to be necessary in order to accomplish hydrological restoration.

I. FULL TEXT:

Agency Position Regarding South Florida Canals Affected by CERP

Position Statement: The Florida Fish and Wildlife Conservation Commission does not support filling canals that provide recreational opportunities unless it can be shown to be necessary in order to accomplish hydrological restoration. Additionally, it is our position that exotic fishes currently inhabiting the ridge and slough systems of the Everglades do not pose a sufficiently serious threat to native Everglades species to justify filling canals.

A. INTRODUCTION & BACKGROUND

Widespread construction of canals in South Florida began after flooding from hurricanes in 1947 prompted the creation of a massive federal flood control project. The resultant Central

and Southern Florida Project for Flood Control and Other Purposes, authorized in 1948 created a canal system to reroute and control surface waters. Canals can currently be separated into those occurring in developed or urban areas, and those occurring in natural areas. Water is conveyed primarily to meet the flood control and water supply needs of South Florida, and secondarily to meet environmental goals. There are currently over 2,600 miles of canals and levees in the South Florida Water Management District system.

The creation and operation of this extensive network of canals and levees has significantly altered the natural hydrology of South Florida. Some areas of the Everglades have become over-drained, while other areas have become unnaturally impounded. The Water Resources Development Acts of 1992 and 1996 authorized the U.S. Army Corps of Engineers to review the C&SF Project and develop a plan to restore and preserve the South Florida natural ecosystem. The onset of this process was the Central and Southern Florida Comprehensive Review Study (Restudy). During the development of the Restudy it became apparent that the goal of increased connectivity of the greater Everglades was being viewed synonymously with the complete removal of many miles of canals.

One of the major components of the Comprehensive Everglades Restoration Plan (CERP) is the Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement Project (Decomp), the purpose of which is to restore hydrological functions of the remaining Everglades to historical conditions as defined by the Natural Systems Model. The Decomp project focuses on removing barriers to sheetflow in an attempt to return the natural flow patterns within the area. According to project documents, barriers to sheetflow include canals, levees, roads, drainage ditches, and spoil banks.

All major canals contain fish populations comprised of freshwater and/or marine species. As a result, many of these canals attract recreational anglers and support multi-million dollar sport fisheries. Additionally, canals are inhabited or frequented by alligators, turtles, anhingas, ospreys, wading birds, river otters, and other wildlife important to FWC. Historically, FWC's position did not support filling canals that provided recreational opportunities unless it was shown to be necessary in order to accomplish hydrological restoration.

A multi-division issue team was developed to review our policy regarding canal fisheries in South Florida and the potential impacts of CERP projects on them; develop an agency position regarding this matter; and to communicate this position to CERP authorities and stakeholders. The team identified three main issues commonly used to justify canal removal: 1) canals impede directional sheetflow and connectivity between compartments of the central and southern Everglades; 2) exotic fishes living in these canals pose a serious threat to native species; and 3) canals were not a component of the historical Everglades landscape.

B. IMPLEMENTATION PROCEDURES AND / OR GUIDELINES

Position element 1: The Florida Fish & Wildlife Conservation Commission does not support filling canals that provide recreational opportunities unless it can be shown to be necessary in order to accomplish hydrological restoration.

The Commission will take a proactive approach to continue to provide technical assistance to CERP planning agencies to ensure that all of the State's wildlife resources are given adequate consideration in the refinement of Decomp and similar hydrological restoration plans. Key components of CERP will provide water-quality treatment, the reestablishment of appropriate seasonal variation in water depth, and the reestablishment of sheetflow as water moves from the northern part of today's Everglades, through the Water Conservation Areas (WCAs) and Everglades National Park, and ultimately to Florida Bay. The Commission supported this approach conceptually when we reviewed the Integrated Feasibility Report and Environmental Impact Statement of the Restudy, and we continue to do so.

One issue FWC presented during our review of the Restudy was the need to justify the necessity for filling recreationally popular fisheries and canals in order to meet CERP goals. We noted that for the most part, the removal of levees was discussed as if it were synonymous with using them to fill in the associated canals, but FWC believes this presumption is premature. The potential for restoring overland flow by removing levees without full-scale backfilling of canals has not been adequately explored. While incorporating the assumptions of levee removal and permanently plugging the downstream end of a canal to halt conveyance, hydrologic and physical models should be designed to show differences in flow for a range of options including no backfilling, partial backfilling, and complete backfilling. The FWC recommends this be included in the alternative evaluation process for projects dealing with canal backfilling issues. Additionally, there is potential to use levee material to create functional tree island habitat similar to that which historically existed, and we have previously requested that this idea be explored.

Position element 2: The Florida Fish & Wildlife Conservation Commission does not support the filling of canals to reduce the abundance of exotic fishes since to do so cannot be socioeconomically or ecologically justified.

The potential for exotic fishes to detrimentally affect native species has been studied by FWC for more than 40 years. As part of these studies, FWC has collected 11 species of illegally introduced exotic fish from the WCAs since 1965; and one, the yellowbelly cichlid (*Cichlasoma salvini*) has not been collected since 1995. The occurrence of an exotic fish does have an inherent ecological effect in that it alters the energy flow and takes up space in the resource, but current data indicate that such changes can be, and often are, innocuous. Obvious and measurable deleterious effects caused by exotic fishes within the ridge and slough systems of the Everglades have not been documented by FWC, nor are we aware of published studies that have documented such effects. Based on the historical status and relatively minor effects of those non-native fishes that have been documented in South Florida, we do not believe that they represent an obstacle to achieving ecological restoration.

Position element 3: The Florida Fish & Wildlife Conservation Commission does not support the view that canals should be filled because they were not a component of the historical Everglades landscape.

The FWC considers recommendations to backfill canals because "canals were not a part of the pre-European man Everglades landscape" as a value-based judgment. Using this judgment to justify removing canals would disregard the values of at least four generations

of Floridians (and others) who spend many hours recreating on these canals. Providing quality nature-based recreational opportunities is a major objective of FWC. Given these conflicting values, decisions regarding canal backfilling should be based on value-neutral comprehensive analysis and hard data taken from these systems.

C. APPENDICES:

- **Appendix A – South Florida Canals Affected by CERP**

APPENDIX A

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

Executive Summary and Agency Position

Issue: South Florida Canals Affected by CERP

Issue Team: Sponsor–South Regional Leadership Team; Leader–Joe Walsh (Division of Habitat and Species Conservation); Members-Steve Coughlin (Division of Habitat and Species Conservation), Jon Fury (Division of Freshwater Fisheries Management), Dan Roberts (Fish and Wildlife Research Institute), Paul Shafland (Division of Habitat and Species Conservation), Tim Towles (Division of Habitat and Species Conservation)

EXECUTIVE SUMMARY

Issue: South Florida Canals Affected by CERP

There are currently over 2,600 miles of canals and levees in the South Florida Water Management District system. In addition, there are numerous canals operated by local drainage districts, as well as drainage canals located within the Everglades Agricultural Area. All major canals contain fish populations comprised of freshwater and/or marine species. As a result, many of these canals attract recreational anglers and have developed into popular fisheries.

The purpose of this issue team is to review the Florida Fish and Wildlife Conservation Commission (FWC) policy regarding canal fisheries in South Florida and the potential impacts of the Comprehensive Everglades Restoration Plan (CERP) projects on them; develop a position statement regarding this matter; and to communicate this statement to CERP authorities and our stakeholders. We identified three main issues commonly used to justify canal removal: 1) canals impede directional sheetflow and connectivity between compartments of the central and southern Everglades; 2) exotic fishes living in these canals pose a serious threat to native species; and 3) canals were not a component of the historical Everglades landscape.

Historically, FWC's position does not support filling canals that provide recreational opportunities unless it is shown to be necessary in order to accomplish hydrological restoration, and it is our position that exotic fishes do not pose a sufficiently serious threat to native Everglades species to justify filling canals. Moreover, filling these canals could negatively impact the many native species that currently reside in them.

The necessity of filling canals in order to restore sheetflow has yet to be demonstrated, and until this is demonstrated FWC opposes such actions in favor of other alternatives that do not compromise recreational fisheries (e.g., plugging downstream reaches to halt conveyance, removal of levees to restore sheetflow). Various modifications may be needed for any given canal depending on its orientation to ground topography and desired downstream flow. The FWC recommends that CERP authorities develop model flow vectors for a wide range of canal modifications (including no backfill, partial backfill, and complete backfill) during the alternative selection process in order to help choose the desired alternative.

The potential for exotic fishes to detrimentally affect native species has been studied by FWC for more than 40 years. As part of these studies, FWC has collected 11 species of illegally introduced exotic fish from the Water Conservation Areas (WCAs) since 1965; and one, the yellowbelly cichlid (*Cichlasoma salvini*) has not been collected since 1995. The occurrence of an exotic fish does have an inherent ecological effect in that it alters the energy flow and takes up space in the resource, but current data indicate that such changes can be, and often are, innocuous. Obvious and measurable deleterious effects

caused by exotic fishes within the ridge and slough systems of the Everglades have not been documented by FWC, nor are we aware of published studies that have documented such effects. Based on the historical status and relatively minor effects of those non-native fishes that have been documented in South Florida, we do not believe that they represent an obstacle to achieving ecological restoration.

Using the reason that canals were not part of the pre-Columbian Everglades landscape to justify their removal is not a compelling argument. Both the historic Everglades and the heavily managed system that we have today have long been used by outdoor enthusiasts for hunting, fishing, boating, and wildlife viewing. These activities have social, economic, and intrinsic values. For example, the canals in the northern and central Everglades provide multi-million dollar fisheries accessible to both Florida residents and non-residents. Incorporation of multiple-use CERP-approved programs involving popular recreational components will increase value and public support for Everglades restoration.

AGENCY POSITION

Issue: South Florida Canals Affected by CERP

INTRODUCTION

The oldest canal in Florida is estimated to have been dug approximately 1,700 years ago. Widespread construction of canals in South Florida began after flooding from hurricanes in 1947 prompted the creation of a massive federal flood control project. The resultant Central and Southern Florida Project for Flood Control and Other Purposes (C&SF Project), authorized in 1948 created a canal system to reroute and control surface waters. The great majority of canals are designed to convey water from more natural, rural areas to man-made urban landscapes and then to other receiving water bodies, either fresh or estuarine/marine.

While it is recognized that all canals were constructed in what were once "natural areas," canals can currently be separated into those occurring in developed or urban areas, and those occurring in natural areas. Water is conveyed primarily to meet the flood control and water supply needs of South Florida, and secondarily to meet environmental goals. There are currently over 2,600 miles of canals and levees in the South Florida Water Management District system. In addition, there are numerous canals operated by local drainage districts, as well as drainage canals located within the Everglades Agricultural Area. All major canals contain fish populations comprised of freshwater and/or marine species. As a result, many of these canals attract recreational anglers and have developed into popular fisheries. Additionally, canals are inhabited or frequented by alligators, turtles, anhingas, ospreys, wading birds, river otters, and other wildlife.

The creation and operation of this extensive network of canals and levees has significantly altered the natural hydrology of South Florida. Some areas of the Everglades have become over-drained, while other areas have become unnaturally impounded. The Water Resources Development Acts (WRDA) of 1992 and 1996 authorized the U.S. Army Corps of Engineers to review the C&SF Project and develop a plan to restore and preserve the South Florida natural ecosystem. The onset of this process was the Central and Southern Florida Comprehensive Review Study (Restudy). During the development of the Restudy it became apparent that the goal of increased connectivity of the greater Everglades was being viewed synonymously with the complete removal of many miles of canals. One of the major components of the Comprehensive Everglades Restoration Plan (CERP) is the Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement Project (Decomp), the purpose of which is to restore hydrological functions of the remaining Everglades to historical conditions as defined by the Natural Systems Model. The Decomp project focuses on removing barriers to sheetflow in an attempt to return the natural flow patterns within the area. According to project documents, barriers to sheetflow include canals, levees, roads, drainage ditches, and spoil banks.

The purpose of this issue team is to review our policy regarding canal fisheries in South Florida and the potential impacts of CERP projects on them; develop a position statement regarding this matter; and to communicate this statement to CERP authorities and stakeholders. We identified three main issues commonly used to justify canal removal: 1) canals impede directional sheetflow and connectivity between compartments of the central and southern Everglades; 2) exotic fishes living in these canals pose a serious threat to native species; and 3) canals were not a component of the historical Everglades landscape. The following sections explore each issue in more detail.

Canals, Sheetflow, and Connectivity

The CERP aims to restore the ecological functions of the remaining natural areas of the Everglades to a state that more closely resembles that which occurred before it was diked and channelized into the system of Water Conservation Areas (WCAs) that we see today. The CERP is predicated upon the principle that restoration of water quality and hydrology of the Everglades are the critical components needed to achieve the goals of CERP. Key components of the plan will provide water-quality treatment, the reestablishment of appropriate seasonal variation in water depth, and the reestablishment of sheetflow as water moves from the northern part of today's Everglades, through the WCAs and Everglades National Park, and ultimately to Florida Bay. The Florida Fish and Wildlife Conservation Commission (FWC) supported this approach conceptually when we reviewed the Integrated Feasibility Report and Environmental Impact Statement of the Restudy, and we continue to do so.

One issue FWC presented during our review of the Restudy was the need to justify the necessity for filling recreationally popular fisheries and canals in order to meet CERP goals. We noted that for the most part, the removal of levees was discussed as if it were synonymous with using them to fill in the associated canals, but FWC believes this presumption is premature. We also requested that this plan include an analysis of the extent to which these canals must be filled to achieve hydrological targets, and that references to degrading the levees refrain from adding canal backfilling as a means unless it had been shown to be necessary to restore sheetflow. Furthermore, we asked for an opportunity to see modeling of flow vectors for a wide range of canal modifications, from no backfilling, to partial plugs, to complete backfilling.

The economic value of some South Florida canals is considerable. The canals in the WCAs and some urban areas support multi-million dollar sport fisheries. For example, FWC documented that the L-67A Canal supports some of the best catch rates in the state for largemouth bass, and that anglers generated an estimated $1.6 million in benefits to the economy, most of which was spent locally during the state fiscal year 2005-2006 (figure represents amount spent during the six-month period when fishing is at its peak in terms of public participation, and it is derived using the U.S. Fish and Wildlife Service's National Survey of Fishing, Hunting, and Wildlife-Associated Recreation approach). In

addition, these canals are also popular fishing areas for subsistence anglers. The future of these and other popular canals is therefore of considerable interest to FWC and others.

The CERP project having the greatest potential to remove recreationally popular canals is Decomp. This project proposes to fill the Miami Canal and remove all barriers to sheetflow. These barriers are identified as portions of the L-67A, L-67C, and L-29 canals and levees. While we agree that the levees are barriers to sheetflow, we do not assume that the canals are also barriers. It may be possible to remove a levee, plug the downstream reach of a canal to halt conveyance, and establish sheetflow without interference across the canal. Depending on the orientation of the canal to ground topography and desired downstream flow, various modifications may be needed for any given canal. Additionally, we believe there is potential to use levee material to create functional tree island habitat similar to that which historically existed, and have previously requested that this idea be explored.

Exotic Fish Invasions

More exotic freshwater fishes have been documented in Florida than nearly any other place, and some of these fishes have become very successful in terms of their range extensions and abundance. Today, 34 exotic freshwater fishes have reproducing populations in Florida. Twenty-three of these are considered established (i.e., population unlikely to be eliminated by man or natural causes and from which individuals can be regularly collected), nine are categorized as possibly established (i.e., reproducing species not considered to have achieved the status of permanence), and two have localized populations. In addition to these, 14 exotic species have been eliminated by FWC, University of Florida's Fisheries Department, or by natural causes.

The potential of exotic fishes to detrimentally affect native species has been a major concern to FWC for over 40 years. These concerns are based in the knowledge that exotic fishes alter the natural energy flow through aquatic ecosystems, are a potential source of exotic diseases and parasites, may pose a public safety concern (i.e., piranhas and electric eels), may compete with native species, and their ecological effects are largely unknown. The FWC has dealt with this important environmental issue by developing and maintaining multifaceted programs focused on the prevention of illegal introductions, assessment, and management of exotic fishes throughout the State.

Because the specific effects of newly introduced exotics are largely unknown, prevention of illegal releases is important. Florida statutes require persons possessing exotic fishes to obey FWC rules, and prohibits the introduction of any freshwater fish that is not native to Florida. One of our basic principles for preventing illegal releases of exotic species is to identify and then to restrict or prohibit possession of those exotics species that are considered to be especially harmful. Several FWC rules deal specifically with exotic fishes, such as Rule 68A-23.008 which includes two lists of fishes. The first is a list of "restricted" species such as the grass carp (*Ctenopharyngodon idella*), which can be possessed under certain conditions. The second is a list of "prohibited" species such as

electric eels, piranhas, and freshwater stingrays. One reason why FWC focuses on preventing exotic fishes from being introduced is that it is currently impractical, if not impossible, to eliminate or geographically restrict these species once they become established.

The long-term objective of FWC is to develop new fish management strategies that either wisely use and/or reduce the abundance of established exotic fishes (those that cannot be practically eliminated). More specifically, the goal of FWC is to eliminate illegally introduced fishes wherever and whenever practical, but when this is impractical, our goal is to identify practical best-use practices for these resources in order to minimize their potential effects and keep our fish communities as exotic-free as is reasonably possible.

Once an exotic fish is known to be reproducing, FWC focuses on assessing the role of the species distribution, life history, environmental limiting factors, and associations with native fishes. The purpose of accumulating science-based field observations and data is to develop management strategies that incorporate these otherwise undesirable but nonetheless present resources while minimizing their potential deleterious effects by taking advantage of any fortuitous beneficial uses that can be identified for them.

Exotic fish have been documented in or near the WCAs since the mid 1960s (Dineen 1965). The first exotic fish to be reported was identified as *Aequidens portalegrensis*, but is now presumed to be the black acara (*Cichlasoma bimaculatum*). A total of eight species were collected from this single, one-acre rotenone sample. Black acara made up 17% of the total number and 5% of the total weight of all fish collected. From 1965 to 2006, FWC has collected 11 species of exotic fish (nine of which were illegal introductions) from the WCAs. One of the nine illegally introduced species, yellow belly cichlid (*Cichlasoma salvini*), has not been collected since 1995. The grass carp (*Ctenopharyngodon idella*) and butterfly peacock bass (*Cichla ocellaris*) were both legally introduced by FWC.

Exotic fishes in the WCAs inhabit both marsh and canal habitats, but are more abundant in canals. Trexler et al. (2001) reported that in contrast to wet prairies, canals offer features that appear to favor higher population levels of exotic fishes. Canals provide deep-water refugia during low water periods that are more limited in marsh habitats. Shafland (1995) reported that canals in coastal southeast Florida had warmer than expected winter temperatures, seldom dropping below 17°C. The water-warming effect of the Biscayne Aquifer is likely maximized in these coastal canals due to the easterly flow of this surficial and highly transmissive aquifer. Although FWC is unaware of long-term minimum water temperatures from WCA canals, these canals almost certainly experience minimum annual temperatures lower than those canals located in the coastal areas of southeast Florida. Established exotic fishes in South Florida come from the tropical areas of Central/South America, Southeast Asia, and Africa. As a result, the most significant range-limiting factor for these fishes is their intolerance to low water temperatures.

Canals in WCA-2 and 3 support a higher proportion of exotic fishes than in wet prairies, even though the two habitats are directly connected; however, the abundance of exotic fishes is considerably less than native fishes in both habitats. For example, from 1990 through 1995 exotic species made up 1-11% of the total number (range = 995-12,084 per hectare) of all species collected in canal blocknet samples (Fury et al. 1995). Fish biomass estimates ranged from 167 to 1,048 kg/ha for the same samples, with exotic species contributing 5-20% of the total weight. Between 1990 and 2003, blocknet samples were also conducted in marsh areas located within one mile of the L-67A Canal. The estimated total number of fish collected ranged from 21,536 to 70,914 per hectare. Biomass estimates ranged from a low of 22 kg/ha to a high of 79 kg/ha. Exotic species collected in these samples made up less than 1% of the total number in all years, and 1-15% of the total weight (Fury et al. 1995, and unpublished data). This supports other observations that the exotic fish populations currently inhabiting the WCAs prefer canal habitats over marsh habitats even when the two are directly connected. While exotic fishes are permanent parts of these fish communities, it is erroneous to automatically assume this means they are directly displacing native fishes.

Trexler et al. (2001) reported data from eight studies that used a variety of techniques across many inland habitats. They reported that exotic fishes have not succeeded equally in aquatic habitats in southern Florida, noting they were most successful in solution holes located in the short hydroperiod rockland habitats of the eastern Everglades. More importantly, they also reported that their analyses indicated low densities of exotic fishes in central or northern Everglades wet-prairie communities, and little evidence of biotic effects in this spatially extensive habitat.

In a draft report on evaluating alternatives for raising portions of Tamiami Trail (Everglades National Park 2005), a section speaking to the goal of maintaining a low abundance of exotic aquatic species within all park habitats stated the following:

For the purpose of the Tamiami Trail evaluation, the question to answer is the following: "Will increased sheetflow and connectivity from the north lead to increased spread of non-native fishes into the wetlands of Shark River Slough?" In all parts of the Everglades system (north and south) canals are an unnatural deepwater habitat that tends to harbor and promote the spread of exotic fish. Trexler 2003 and Rehage and Trexler (in prep.) studied the density of non-native and native fishes in marsh with respect to distance from canals in 4 sites north of Shark Slough in ENP, and one site north of the ENP eastern panhandle.

These studies showed that both native and non-native fishes are found at artificially high densities along the canal border, but that these densities drop off very quickly with increasing distance into the marsh. The dominant exotic fish (Mayan ciclid) dropped to undetectable levels at about 50m distance from the canals. These results indicate that those species of exotic fish currently in the deepwater canal system to the north are unlikely to spread into any restored marsh habitats in ENP resulting from increased sheetflow across the Tamiami Trail.

With respect to the spread of exotic fish, a second line of evidence indicates that it is more beneficial for the park to receive water by increasing sheetflow from the north than to receive water via pumping from canals along the eastern boundaries. Because

human development is concentrated to the east of the park, the canal systems to the east have a much higher potential for introducing exotics fish to marsh habitats within the park than the L-67 canals. Long-term monitoring studies carried out by park staff have discovered at least 4 species of exotic fish within the eastern park boundary (Kline 2003). These species were all detected since 1999, and two of them (the jewel ciclid and jaguar ciclid) have spread rapidly throughout the Rocky Glades since first detection. It is worthwhile noting that the long-term monitoring studies included a number of sampling sites toward the northern boundary of the park; however, no exotic species have yet to be detected at the sample sites in that region.

The populations of all fish species in the WCAs, both native and exotic, are dynamic and constantly change due to a variety of natural and anthropomorphic influences. Loftus and Kushlan (1987) reported that a common phenomenon among exotic species is an explosive population increase followed by a rapid decrease, eventually reaching equilibrium with their environment. Drop trap samples near the north border of Florida Bay showed a repetitive 'boom-and-bust' pattern for Mayan cichlid (*Cichlasoma urophthalmus*), with significant decreases following extreme cold events (Trexler et al. 2001).

Fury and Morello (1994) reported a similar phenomenon for the oscar (*Astronotus ocellatus*) population in WCA-2. The oscar was illegally released in the 1950s, and remained in relatively low numbers until the mid 1980s when it exhibited an accelerated population expansion. Six-month long angler surveys were conducted annually in WCA-2 from 1985 to 1990. The oscar harvest peaked at 11,583 in 1986-87, then declined each year until it hit 0 in 1989-90. A cold front in December 1989 resulted in a large die-off of oscar in WCA-2. An identical angler use survey conducted 13 years later in WCA-2 reported a harvest of only 81 oscar (Morello et al. 2003). When the oscar first showed up in "high" numbers in WCA-2, native panfish harvest was 32,000 (angler success rate = 1.90/hr). When oscar harvest peaked (1986-87), so did native panfish harvest (101,000; success rate = 2.79/hr). As the oscar harvest dropped to 0 in 1989-90, panfish harvest dropped to 18,000 but the angler success rate (2.40/hr) remained similar to the previous years. Hence, these dramatic fluctuations in the oscar population did little to affect the abundance of native sport fishes.

Exotic fishes driving local extirpations in southwest Florida has not been documented. Gilbert (1987) pointed out that the natural zoogeography of peninsular Florida is depauperate in fish species richness. The work by Shafland (1996) and others have documented the parade of exotic fishes that have been found in Florida. In southwest Florida (Lee County northward), there are at least twelve established exotics, including approximately six commonly found in lakes, rivers, and canals. It is possible that exotics that become established are able to occupy a vacant niche with sufficient resource partitioning to allow the addition of new species without exclusion of natives (Champeau, FWC, personal communications).

The occurrence of an exotic fish does have an inherent ecological effect in that it alters the energy flow and takes up space in the resource, but current data indicate that such

changes can be, and often are, innocuous. Obvious and measurable deleterious effects caused by exotic fishes within the ridge and slough systems of the Everglades have not been documented by FWC, nor are we aware of published studies that have documented such effects. Trexler et al. (2001) reported that walking catfish (*Clarias batrachus*) along with black acara and pike killifish (*Belonesox belizanus*) are "over-represented" in solution holes, during the dry season in the Rocky Glades. Their paper also stated that there are microhabitat and seasonal fluctuations in abundance that may yield under- or over-estimates of the relative abundance of introduced fishes. Lachner et al. (1970) predicted that the walking catfish would reduce the entire freshwater community to nothing but more walking catfish. More than 30 years after this dire prediction was published by the Smithsonian Institute, walking catfish remain a relatively minor component of most freshwater fish communities within their range.

Sampling efforts by Trexler and Jordan (1999) and Fury et al. (1995) indicated very low exotic fish densities in wet prairie habitats used by wading birds. Documented effects of exotic fish on native species have been minimal and in some cases they provide a ready food source for native species (e.g., Frederick 1995 found cichlids and pike killifish to constitute 32% of the biomass from regurgitated Great Egret boluses). Moreover, native fish populations in the Everglades continue to thrive in the presence of the exotic fishes living there. In summary, although isolated samples have temporally documented high abundances of exotic freshwater fishes, the larger body of evidence indicates that these species remain a minor component of Everglades fish populations.

Based on the historical status and relatively minor effects of non-native fishes in South Florida, FWC does not believe that non-native fish represent an obstacle to achieving ecological restoration, unless the definition of ecological restoration inherently includes "the absence of any non-native fish species." After more than 40 years of study, FWC has replaced this presupposition with a realization that these fish have "real" but less than catastrophic effects.

Canals and Historic Everglades Landscapes

Even though the oldest documented canal in Florida is approximately 1,700 years old, canals were not a natural part of the pre-European man Everglades landscape. However, using this as justification to backfill canals in the Everglades is not a science-based decision. It is a value-based decision and FWC recognizes that there are conflicting values underlying this topic. Both the historic Everglades and the heavily managed system that we have today have long been used by outdoor enthusiasts for hunting, fishing, boating, and wildlife viewing. These activities have social, economic, and intrinsic values. The mission of FWC is to manage Florida's fish and wildlife resources for their long-term well-being and the benefit of people.

The FWC believes strongly in the value of public use and enjoyment of the resources that we are restoring and protecting. We view the ability and determination of South Florida residents to live close to nature as the primary source of the passion that led to the

creation of CERP. This may be a national program, but it was South Floridians who requested restoration and they are intricately connected to its success or failure. In addition to being taxpayers, many of our South Florida stakeholders pay, in a very direct manner, for the maintenance of fish and wildlife habitat through recreational hunting and fishing licenses, and commercial permits. It is estimated that all recreational activities including hunting and fishing within the Everglades Wildlife Management Area (i.e., WCA-2 and 3) generate approximately $31 million in revenues, $3.6 million in state sales taxes and supports over 700 jobs.

Ecologically, in addition to fish, these canals currently provide habitat utilized by reptiles, amphibians, mammals, and birds. During drought conditions the canals provide a readily available food source for ospreys and eagles, as well as refugia for species such as the alligator.

It was previously mentioned that the canals in the northern and central Everglades are important [socioeconomically] as a recreational fishery. For example, since 1990 FWC has conducted 12 creel surveys on the 26-mile long L-67A Canal in WCA-3. Angler expenditures during the last five surveys have ranged from $960,000 to over $1.6 million with a mean of $1.2 million. It is important to emphasize that this angler expenditure is during a six-month period only. Using the mean value, that works out to $261/mile/day. The L-67A Canal is only one of several canals within the WCA system. While the Decomp project is currently in the design phase, project documents have identified potentially backfilling 240 miles of canals.

By virtue of saving and restoring both our freshwater and estuarine resources, we also can protect and enhance the recreational uses to which these resources are put. While the intent of the plan is to protect and restore those natural features that define the Everglades, we should not allow ourselves to ignore the potential for compatible multiple uses of CERP project features. Planning for multiple uses can add value to, and support for, these projects.

CONCLUSIONS

During the planning and implementation of CERP, we need to keep in mind the human environment that the original C&SF Project created. The long-term benefits of that project included not only flood control and water supply, but also access to a unique outdoor recreational experience.

Florida has 7,700 lakes and 12,000 miles of rivers and streams. Even so, the canals in the Everglades Wildlife Management Areas are ranked among the top 10 bass fishing locations in the entire state and consistently have the highest catch rates for largemouth bass in the state; higher even than such world renowned largemouth bass fisheries as Lake Okeechobee, Lake Toho or the Stick Marsh.

Unfortunately, the early plans for restoration of the Everglades assumed that all internal canals and their adjacent levees needed to be leveled to ground elevation in order to achieve appropriate overland flow. The FWC's view is that the potential for restoring overland flow by removing levees without full-scale backfilling of canals has not been adequately explored. Alternatives to complete backfilling should be explored to ensure that the valuable canal fisheries are not unnecessarily lost.

While incorporating the assumptions of levee removal and permanently plugging the downstream end of a canal to halt conveyance, hydrologic and physical models should be designed to show differences in flow for a range of options including no backfilling, partial backfilling, and complete backfilling. The FWC recommends this be included in the alternative evaluation process for projects dealing with canal backfilling issues.

The FWC recommends taking a proactive approach to continue to provide technical assistance to CERP planning agencies to ensure that all of the State's wildlife resources are given adequate consideration in the refinement of Decomp and similar hydrological restoration plans.

Prevention of illegal introductions, assessment, and management of exotic fishes are top priorities of FWC; however, we do not concur with the presumption that introduced species are inherently invasive. Data-based assessments should be used to evaluate the ecological effects of exotic fishes, and to determine which ones are truly invasive, especially since there is general professional consensus that exotic freshwater fishes in South Florida canals have not caused serious ecological effects during the past 50 years that they have been present. Moreover, these fishes make up a minor component of the fish communities in the WCAs, and in southwest Florida freshwater and euryhaline systems. As a result, FWC cannot support the filling of canals and other deep-water habitats simply to reduce the abundance of exotic fishes since to do so cannot be socioeconomically or ecologically justified.

The FWC considers recommendations to backfill canals because "canals were not a part of the pre-European man Everglades landscape" as a value-based judgment. Using this judgment to justify removing canals would disregard the values of at least four generations of Floridians (and others) who spend many hours recreating on these canals. Given these conflicting values, decisions regarding canal backfilling should be based on value-neutral comprehensive analysis and hard data taken from these systems. Continuing to provide quality nature-based recreational opportunities is a major objective of FWC.

Our position during the Restudy was, and continues to be, that we do not support filling canals that provide recreational opportunities unless it can be shown to be necessary in order to accomplish hydrological restoration.

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Florida Department of Transportation

MEMORANDUM

TO: Lauren Milligan, Coordinator, Florida State Clearinghouse

FROM: Aileen Boucle, AICP, Planning and Environmental Management Administrator
District 6 Project Development and Environmental Office

David Bogardus, Senior Environmental Specialist
District 4 Planning and Environmental Management Office

DATE: October 3, 2013

SUBJECT: Department of the Army, Jacksonville District Corps of Engineers – Draft Integrated Project Implementation Report and Environmental Impact Statement (PIR/EIS), Central Everglades Planning Project (CEPP).
ICAR SAI # FL201308286704C

The Florida Department of Transportation (FDOT), District 6 offers the following comments on the major elements of the proposed Draft PIR/EIS:

- **CEPP Draft Integrated Project Implementation Report, Figure 4-6.** This figure outlines the main components of the Tentative Selected Plan (Alternative 4R2). One of the key components that could potentially impact the Tamiami Trail roadway base is raising the L-29 max stages to 9.7 feet. The report and figure do not define the datum. From the Appendixes and Annexes provided, it appears that this elevation will be relative to the National Geodetic Vertical Datum of 1929 (NGVD). The report and figure should specify the datum referenced. In addition, the report does not define the duration that the peak stages will be maintained. As defined in the comment below, the flood duration is critical in determining if the portions of the Tamiami Trail will be required to be raised. The figure also states that the Tamiami Trail western 2.6-mile bridge will be "Others." The report should clarify who are the "Other" entities that will be responsible.

- **CEPP Draft Integrated Project Implementation Report, Table 1.** This table defines the total project cost for the Tentative Selected Plan (Alternative 4R2) at $1,748,800,000. From the Appendix B – Cost Engineering Appendix (Cost Estimates and Risk Analysis), the SAJ – CEPP Cost and Schedule Risk Analysis Table, Risk No. BG-TL-15 (Tamiami Trail Bridges and Roads Raising) is identified as Very Unlikely, Negligible and Low, for Likely hood, Impact and Risk Level, respectively, and it appears that there was no cost was associated with this risk. Does the projected cost include raising portions of the Tamiami Trail? If not, a cost should be associated with raising portions of Tamiami Trail, because raising the L-29 canal elevation to 9.7 ft. NGVD will require raising portions of this roadway as

described in Annex C – Draft Project Operating Manual, Page C-27, Section 5.3, second paragraph, third sentence.

- **Annex A-2: Hydrologic Modeling, Page 83, last paragraph.** This paragraph states that Figures 78 through 81 include stage-duration curves for the L-29 Canal. However, there were no stage hydrographs provided for the L-29 as provided for the 3A-3G gauge (Figures 55 through 57), which appears to be located within WCA-3A. It would be helpful to have stage hydrographs provided for the L-29 for an average, a wet and a dry year. This will show the duration of when stages in the canal will be above the existing Tamiami Trail roadway base, which is critical to determine if the durations will require raising the roadway.

- **General:** It is not clear in the CEPP Draft PIR/EIS documentation what the anticipated stages in the area of Tamiami Trail from Structure S-343 to Structure S-12A/S-14 are. If the stage in this area is also anticipated to be raised to 9.7 ft. NGVD, approximately 2.5 miles of Tamiami Trail in this area will be have to be raised for roadway base protection.

- District 6 advises that the L-29 canal stage may be raised to a maximum elevation of 8.5 ft. NGVD in accordance with the operation criteria outlined in Article III. Operation Issues contained in the *Contract between the United States of America and Florida Department of Transportation for Relocation, Rearrangement, or Alteration of Facilities, Modified Water Deliveries to Everglades National Park Project* (*Tamiami Trail Modifications*), dated September 25, 2008 (attached).

Thank you for providing District 6 with the opportunity to comment. Should you have any questions, please contact Ms. Aileen Boucle at (305) 470-5201.

The following comments are provided by the FDOT's District 4 staff on the Draft PIR/EIS:

- District 4 has several transportation structures within the Central Everglades Planning Area including, but not limited to, I-75 (SR 93), US 27 (SR 25), and US 441 (SR 80/SR15). Proposed increases in water flow need to be evaluated in terms of roadway engineering and safety. The report highlights the need to maintain levels of flood protection for the urban and agricultural areas east of the WCAs and Everglades National Park. However, little discussion, other than Tamiami Trail, is included regarding the potential impacts to current and future transportation structures (roadways, rail and bridges). The District requests further information regarding how CEPP will integrate transportation infrastructure within its planning framework.

- The FDOT is evaluating the feasibility of widening US 27 and developing rail capacity along the corridor, as an alternative to shipping freight along the eastern

seaboard from the South Florida Seaports to proposed Inland Logistics Centers around Lake Okeechobee and Central Florida. The addition of a rail corridor has the potential to reduce existing rail/highway conflicts along exiting FEC and CSX lines in South Florida by shifting freight traffic to a more rural area, with significantly fewer at-grade crossings. Proposed increases in water flow through the North New River Canal, as well as creating Stormwater Treatment Areas and other water control structures along the US 27 corridor, should be coordinated with the FDOT to work towards mutual regional goals.

- It should be noted that historic agreements exist between the FDOT and State and Federal regulatory agencies regarding recreational access and natural resources/ mitigation along US 27 and I-75. These agreements should be included within the framework and planning of the CEPP.

Please feel free to contact Mr. David Bogardus at (954) 777-4339 if you have any questions.

CONTRACT BETWEEN
THE UNITED STATES OF AMERICA AND
FLORIDA DEPARTMENT OF TRANSPORTATION
FOR RELOCATION, REARRANGEMENT, OR ALTERATION OF FACILITIES
MODIFIED WATER DELIVERIES TO EVERGLADES NATIONAL PARK PROJECT
(TAMIAMI TRAIL MODIFICATIONS)

CONTRACT NO. DACW_____

THIS CONTRACT, entered into this 25th day of September, 2008, between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), represented by the District Chief of Real Estate executing this contract, and Florida Department of Transportation, an agency duly organized and existing under the laws of the State of Florida (hereinafter referred to as "FDOT");

WITNESSETH, that:

WHEREAS, The Government has been authorized, under Act of Congress approved December 31, 1989 (Public Law 101-229, 103 Stat. 1949, 16 U.S.C. 410r-8), "THE EVERGLADES NATIONAL PARK PROTECTION AND EXPANSION ACT OF 1989", as amended (hereinafter referred to as the "Project"), to construct certain modifications to the Central and Southern Florida Project in order to improve water deliveries into the park and shall, to the extent practicable, take steps to restore the natural hydrological conditions within the park;

WHEREAS, FDOT is the holder of ownership rights to the land upon which FDOT has constructed and is currently operating and maintaining certain facilities, consisting of State Road 90 ("Tamiami Trail") and such other appurtenant uses, which will be affected by the construction of the Project by the Government;

WHEREAS, the anticipated affect of the Project on the Tamiami Trail necessitates that the Government construct a substitute FDOT facility consisting of a one mile bridge and roadway mitigation, i.e. raising the remaining roadway as necessary to accommodate an 8.5' design high water ("DHW") in L29 canal;

WHEREAS, it is necessary for the construction, completion, and enjoyment by the Government of said Project that certain title, rights and privileges of FDOT be conveyed or relinquished and that said facilities of FDOT be removed, relocated, reconstructed, or altered; and,

WHEREAS, FDOT is willing to convey or relinquish to the Government certain rights, title, and interests in and to said lands in consideration of the Government's design, permitting and construction of a substitute FDOT facility, including both the one mile bridge and all necessary roadway mitigation to accommodate a DHW of 8.5' in the L29 canal together with the payment of all reasonable and necessary costs FDOT has and may incur as provided in Article II and Article 1(e); and FDOT agrees that said consideration will constitute full, just, and complete compensation for the acquisition by the Government of certain rights and interests of FDOT in said lands and/or right-of-way.

NOW, THEREFORE, in consideration of the faithful performance of each party of the mutual covenants and agreements hereinafter set forth, it is mutually agreed as follows:

ARTICLE I. OBLIGATIONS OF THE OWNER.

a) FDOT agrees that if both the bridge and the necessary roadway mitigation are actually constructed as set out in the preliminary drawings, estimates, schedules, designs or specifications hereto attached and made a part hereof as **Exhibit "A"**, and as modified and approved by FDOT throughout the period of construction, said substitute FDOT facility, shall constitute an adequate substitute for FDOT's existing facilities for a Design High Water (DHW) elevation of 8.5 feet in the L29 canal.

b) In order to accomplish the substitution of FDOT's facilities affected by the construction of the Project, FDOT hereby grants to the Government, its agents, and its assigns, without further considerations, rights-of-entry for construction to work on those parcels of real estate in which FDOT has an real estate interest, necessary, in the

opinion of the District Engineer, or his authorized representative, to permit the Government to construct the bridge, raise the remaining roadway, and perform the work needed to accommodate an 8.5 foot design high water level in the L29 Canal. This right of entry specifically includes the right, after acceptance of the new bridge by FDOT and subject to the obligation of the Government to minimize interference with traffic on the Tamiami Trail, to remove portions of the existing Tamiami Trail adjacent to the new bridge, as required for enjoyment by the Government of the easement for channel and flow described below.

c) Upon completion of the bridge and necessary roadway mitigation, FDOT will grant to the Government, its agents, and its assigns, a Perpetual Channel Easement and a Flowage Easement across its lands as set forth in **Exhibit "B,"** an attachment to this contract, which shall be limited to the area adjacent to the bridge, and otherwise under the substitute facility through existing culverts with the express conveyance right that conveyance through the existing culverts will be always maintained during the authorized life of the Project regardless of any reconfiguration, maintenance, improvement or modification FDOT may make to Tamiami Trail in the future.

d) FDOT, without additional consideration, shall convey to the Government by good and sufficient instruments, all real estate rights and interests described above, to permit the Government to construct the bridge, raise the remaining roadway, and accommodate an 8.5 foot design high water level in the L29 Canal.

e) FDOT shall, to the extent practicable, maintain separate cost records of its reimbursable expenses incurred because of, and related directly to, this relocation contract for purposes of reimbursement and other purposes as set forth herein.

f) Any future reconstruction, modification, operation or maintenance by FDOT of the substitute FDOT facility shall not permanently or unreasonably interfere or impede the flow of water into the Everglades National Park.

g) All subsequent operation, maintenance, repair, replacement and rehabilitation to the substitute facility shall be borne solely by FDOT. For any damages to the substitute facility resulting from increased operational water levels greater than 8.5' in the L29 canal, FDOT may pursue any legal remedies that it may have in law or equity. This Contract does not extend to a second bridge or to operational water levels greater than 8.5'. It shall be the Government's responsibility to design and construct the roadway mitigation and bridge as necessary to facilitate their operational water levels in the L29 canal.

ARTICLE II. OBLIGATIONS OF THE GOVERNMENT.

Subject to the availability of funds, the Government shall:

a) Provide a FDOT substitute facility as generally provided under **Exhibit "A"**, General Specifications, attached hereto and made a part of this Contract. The lack of funding does not meet the Government's responsibility to undertake both the one mile bridge and the necessary roadway work mitigation as a single obligation to FDOT. The Corps must complete the bridge construction and roadway modifications prior to the raising of the water levels in the L29 Canal. Further, merely providing funds to FDOT for all or part of the construction of the bridge or mitigation roadwork does not meet the obligations of the Government under this Contract.

b) Work with such other federal agencies on the Highway Easement Deed in order to furnish all lands required to affect the substitute FDOT facility herein described. Subject to the approval of the Secretary of the Army, convey or cause to be conveyed to FDOT, at a minimum, an easement and right-of-way in, on, over, and across all lands not currently owned by FDOT that are required to affect the substitute FDOT facility and for FDOT to operate, maintain, alter, and replace the substitute facility and all appurtenances, including any utilities now or subsequently permitted by FDOT. Any

easement and right-of-way over lands owned by any person other than the United States of America shall be perpetual. Such interests shall be conveyed without any further consideration from FDOT beyond its agreement to accept the substitute facility as full, just, and complete compensation for the acquisition by the Government of certain rights and interests of FDOT, as provided above. The Government shall provide a survey and legal description for all interests in land to be conveyed to FDOT under this agreement. Conveyance of these interests is an essential part of the obligation of the Government to FDOT to furnish the substitute facility and must occur prior to removal of the portions of the existing Tamiami Trail that will be replaced by the new bridge and its approaches.

c) Solely be responsible for satisfying any outstanding valid claims as required by the Highway Easement Deed.

d) Solely be responsible for making all determinations of the necessity for archeological and pateontological reconnaissance and salvage within the right-of-way as required by the Highway Easement Deed together with all necessary reconnaissance and salvage.

e) Prepare or have prepared all signed and sealed design drawings, plans, specifications and as-builts by a Professional Engineer consistent with current FDOT guidance documents and requirements in connection with the work to be performed by or under the direction of the Government in accordance with the preliminary documents set forth in **Exhibit "A"** attached hereto and submit same to FDOT or its authorized representative for review and approval before any work to which they relate is performed. This right of review and approval shall include all modifications to the designs or criteria set forth in **Exhibit "A"** including post bid changes and Value Engineering changes recommended by the Government's contractors. FDOT's right of approval which has already commenced shall continue through the entire period of

construction. FDOT will make such approvals in a manner that will not delay the Government construction contract.

f) Furnish, or have furnished subject to the conditions hereinafter stipulated, all services, labor, material, tools, equipment, permits and licenses necessary and essential to the substitute FDOT facility and/or alteration of the aforesaid facilities, and shall relocate, rearrange or alter such facilities in accordance with FDOT approved drawings, schedules or plan specifications consistent with FDOT guidance documents, manuals and requirements. Provide documentation of materials furnished and work performed consistent with current FDOT standards and requirements. These expenditures are only for the construction costs. All subsequent operation, maintenance, repair, replacement and rehabilitation shall be borne by FDOT and for any damages attributable to the operation of water levels higher than 8.5 feet in the L29 canal, FDOT may pursue any and all remedies it may have in law or equity. FDOT substitute facility shall be constructed through standard Government Procedures.

g) Throughout the term of construction, the Government shall provide all necessary traffic control and safety personnel and equipment as may be required by FDOT.

h) Require each of its contractors, before entering upon the lands of FDOT for construction, operating or maintenance functions relative to the Government's Project work, to:

(1) Furnish evidence of the following additional types of insurance:

(a) **Workers' Compensation Insurance**: Provide Workers' Compensation Insurance in accordance with the laws of the State of Florida and in amounts sufficient to secure the benefits of the Florida Workers' Compensation Law for all employees. If subletting any of the work, ensure that the employees of the subcontractors are covered by similar insurance. Ensure that any equipment rental agreements that

include operators who are employees of independent Contractors, sole proprietorships or partners are covered by similar insurance.

(b) **Contractors' Public Liability and Property Damages Liability Insurance**: Furnish evidence to FDOT that, with respect to the operations performed, regular Contractors' Public Liability Insurance providing for a limit of not less than $1,000,000 for all damages arising out of bodily injuries to, or death of, one person and, subject to that limit for each person, a total limit of $5,000,000 for all damages arising out of bodily injuries to, or death of, two or more persons in any one occurrence; and regular Contractors' Property Damage Liability Insurance providing for a limit of not less than $50,000 for all damages arising out of injury to, or destruction of, property in any one occurrence and, subject to that limit per occurrence, a total (or aggregate) limit of $100,000 for all damages arising out of injury to, or destruction of, property during the policy period is carried. Cause FDOT to be an additional insured party on the Contractors' Public Liability and Property Damages Liability Insurance policies that insure the Contractor for the described work that it performs under the Contract.

(c) **Contractors' Protective Public Liability and Property Damage Liability Insurance**: Furnish evidence to FDOT that, with respect to the operations performed by subcontractors, regular Contractors' Protective Public Liability Insurance providing for a limit of not less than $1,000,000 for all damages arising out of bodily injuries to, or death of, one person and, subject to that limit for each person, a total limit of $5,000,000 for all damages arising out of bodily injuries to, or death of, two or more persons in any one occurrence; and regular Contractors' Protective Property

Damage Liability Insurance providing for a limit of not less than $50,000 for all damages arising out of injury to, or destruction of, property in any one occurrence and, subject to that limit per occurrence, a total (or aggregate) limit of $100,000 for all damages arising out of injury to, or destruction of, property during the policy period is carried. Cause FDOT to be an additional insured party on the Contractors' Protective Public Liability and Property Damage Liability Insurance policies that insure the Contractor for the described work that it performs under the Contract.

(d) Provide those warranties to FDOT for latent defects in the workmanship and/or materials as required by FDOT standard construction specifications and requirements.

i) The Government shall be solely responsible for performing all tasks and complying with all terms and conditions of all necessary permits related to the construction of the one mile bridge, removal of that portion of Tamiami Trail immediately north of the new bridge and raising the remaining roadway as necessary to accommodate an 8.5 feet DHW in L29 canal. FDOT shall not be liable for any cost related to design, construction or permit compliance.

j) Not later than the completion of the construction work contemplated herein and subject to the approval of the Secretary of the Army, convey to FDOT, at a minimum, an easement for any additional land acquired by the Government for the right-of-way necessary for the purposes of the substitute FDOT facility and for the operation and maintenance, over and along the right-of-way.

k) Subject to the availability of funds, reimburse or cause the FDOT to be reimbursed for all of its reasonable and necessary actual costs expended in the development, review and approval of the work constituting the substitute facility. Such costs shall include all items of FDOT expense reasonably chargeable to the relocation of

FDOT facilities from the beginning of the alternatives' review through final acceptance of the substitute facility.

l) As part of the foregoing, the USACE specifically agrees to modify the typical Government contracting, construction and operation procedures and processes to include the following:

(1) The Government will require the contractor to obtain additional quality control and quality assurance personnel and procedures in order to match all currently required Federal Highway Administration guidelines and procedures that are pertinent to the project work. The Contractor will be required to implement these procedures as part of their Quality Control Organization;

(2) The FDOT shall have input as part of the review team who will discuss personnel qualifications and experience utilized as part of the additional quality control and quality assurance staff for a project of this scope and magnitude;

(3) If it becomes apparent that there is a discrepancy between the Government contract construction specifications and the FDOT standard construction specifications, the Government will use the more stringent specification;

(4) The FDOT shall receive all submittals in a reasonable and timely manner in order to review and approve any contract modifications. The FDOT shall respond in a reasonable and timely manner.

ARTICLE III. OPERATION ISSUES.

Implementing Alternative 3.2.2.a in the Limited Reevaluation Report ("LRR") is expected to raise the Maximum Operating Limit in the L29 Canal to 8.5 feet NGVD, one foot above the existing operating limit of 7.5 feet NGVD. FDOT is allowing USACE to use a new standard (adopted in the March 2008 FDOT Flexible Pavement Design

Manual) thereby reducing the required separation (Design Base Highwater Clearance) between the DHW and the bottom of the road base. DHW (also referred to as Base Clearance Water Elevation) is defined as the average October wet season elevation plus the rainfall from a specific design storm event (10-year frequency, with duration (1 hr, 8 hr, or 24 hr) producing the highest stage and drawing down within a specific period). The old standard required either a higher base or a lower DHW. The use of this new standard with its reduced requirements for separation between the base and the DHW makes adherence to the DHW more imperative.

All inflows shall be cut off to the structures that influence this canal once the maximum operating limit of 8.5 feet NGVD is reached and in advance of certain stage and weather events. This one foot increase in the maximum stage elevation, coupled with improved hydraulic conveyance under the bridge, is expected to provide additional meaningful benefits as described in the LRR. In addition no changes (such as passive weirs in the L29 Levee or removal of the L67 Extension Levee without adequate engineering justification) shall be allowed which may cause stages to exceed the Maximum Operating Limit.

The benefits described in the LRR/EA are potential benefits associated with the evaluation of the LRR alternatives based on a single constraint of 8.5 feet in the L29 canal. The constraints that follow are required by FDOT in order to ensure the stability and safety of the highway. Therefore, when these FDOT constraints are applied to the recommended plan, there will be some change of benefits. During the Combined and Structural and Operational Plan (CSOP) alternative planning process, the effects of these constraints on benefits will be thoroughly evaluated. In addition, there is an expectation that field monitoring, based on a reconfiguration of existing monitoring activities, will continue following implementation of the LRR features in conjunction with

the CSOP operating plan. Such monitoring will allow for adaptive management to potentially mitigate any loss of benefits.

Operations of the C&SF system will ultimately depend on the operations of both the MWD and C-111 South Dade projects as defined in the CSOP. The operations of CSOP will have to be adjusted because the alternative recommended by the LRR does not allow stages high enough (i.e., 9.7 feet NGVD as proposed in the 2005 RGRR) to allow uncontrolled flow into the L29 canal. Specifically, the CSOP operations will have to be modified to include an L29 maximum operating limit of 8.5 feet NGVD. Therefore, CSOP is dependent on the constraints set forth by this Contract. These constraints include:

A. All inflow structures to L29 Canal will be closed and all inflows terminated, allowing the canal to naturally recede under the following scenarios. For the scenarios requiring a quantitative forecast the SFWMD Daily Quality Precipitation Frequency (QPF) will be used. All L29 Canal stage references are as measured at the S-333 Tail Water unless this location is unavailable then S-334 Head Water may be used:

1. Once the stage in the L29 canal reaches a stage of 8.5 feet NGVD, input from all structures that discharge into the canal shall be stopped until the level in L29 canal recedes beneath 8.5 feet NGVD. The operation of the MWD system, including management of inflows into L29 canal, will be determined as part of the CSOP evaluation. The trigger elevation that will allow the recommencement of flows and maintenance of the integrity of the roadway embankment will be determined in a manner consistent with the FDOT or other applicable design criteria and standards in force at the time of the preparation of the LRR.

2. Two or three days (as soon as forecast information is available) before any named storm or tropical event is expected to impact the area, all inflow shall be stopped.

3. Two or three days (as soon as forecast information is available) before an approaching rainfall event that is predicted to drop six inches or more inches of rainfall within a 72-hour period if the L29 canal stage is at or above 7.8 feet NGVD.

4. Two or three days (as soon as forecast information is available) that a rainfall event is expected to result in stages that will meaningfully exceed 8.5 feet NGVD. For example, if the forecast is for 2 or more inches of rain and the L29 stage exceeds 8.4 feet NGVD; or if the forecast is for 3 or more inches of rain and the L29 stage exceeds 8.3 feet NGVD; or if the forecast is for 4 or more inches of rain and the L29 stage exceeds 8.2 feet NGVD; or if the forecast is for 5 or more inches of rain and the L29 stage exceeds 8.1 feet NGVD.

B. The following information is provided to clarify expectations for development of the final operating plan and how operations will be monitored once implemented. The LRR Recommended Plan used 8.5 feet NGVD as the DHW elevation for purposes of establishing the roadway profile and pavement design. This DHW was calculated from a 36-year POR by averaging all October days within the initial CSOP model simulation. The LRR Recommended Plan assumed a 36-year POR average October wet season elevation of 7.89 feet NGVD to establish the 8.5 DHW. While the target stage for the L29 Canal is 8.5 feet, it is understood that the average October wet season elevation is expected to be approximately 7.89 feet, NGVD based on multiple years (36-year simulated POR). Since this elevation is an average, during some individual years the average October elevation may exceed the 7.89 feet stage and other years it would be below 7.89 feet. The average elevation will be dependent on the meteorological conditions of that year. However when considering multiple years the October average should be at or below 7.9 feet NGVD. The final CSOP will be

developed such that the average October elevation does not exceed 7.9 NGVD in the L29 Canal for the model's period of record (1965 through 2000).

These evaluations could also result in the identification of additional criteria that may modify the benefits described in this report. It is the expectation of the participating agencies of the LRR that the subsequent CSOP evaluations will thoroughly analyze the impacts of these modifications and attempt to mitigate any adverse impacts to the level of benefits described in this report.

Agreements with FDOT and other State agencies are contingent on this 36-year POR average October wet season elevation of 7.89 feet NGVD. This elevation was based on modeling performed by the Government during the initial development of the CSOP plan. These model runs assumed sufficient road raising and bridges to allow unconstrained flow into the L29 canal. This average October stage will be verified in the following manner:

1. The 7.89 feet NGVD stage elevation is based on a simulated 36-year period of record (POR) modeling data which are the best information currently available. The CSOP team will be required to analyze the 36-year POR modeling average monthly water levels during October and compare the calculated DHW to that defined in this report (7.89 feet, NGVD). If the 36-year POR model simulated average October elevation is above this stage, adjustments to CSOP shall be required operationally or structurally to ensure the design integrity of the roadway embankment and pavement. U.S. Army Corps of Engineers ("USACE") will consult with SFWMD and FDOT so that the 36-year POR modeling results in an average October stage at or below the 7.89 feet NGVD.

2. Once the Tamiami Trail Modifications are constructed and operational, yearly average October water surface elevations will be computed (S333 tailwater) and shared with FDOT. After three years of operation, the average of the three years will be

computed and compared to the predicted 36-year POR October average of 7.89 feet stage elevation. If the average October elevation is found to be more than 0.2 feet above this stage ($\geq$ 8.09 feet NGVD), adjustments shall be required operationally or structurally to ensure the design integrity of the roadway embankment and pavement. The condition of the roadway will be evaluated using the annual Florida Department of Transportation Pavement Condition Survey ratings for Crack, Rut and Ride. The Government will consult with SFWMD and FDOT on needed changes and implement them in a timely manner. After each subsequent year of operations, the average October elevation will be recalculated to include all operational years (e.g., after four years of operation, the average October elevation will use the four years of elevation data).

C. FDOT contemplates executing a Joint Participation Agreement (JPA) in favor of USACE on or about July 1, 2011 in the amount of its deferred maintenance. The present day value of that is $4.716 million and the funding would be provided prior to 30 September 2011. That contribution to project funding is contingent upon and subject to the following:

1. The availability of funds.

2. State budget authorizations.

In summary it is important to maintain the integrity and safe conditions for Tamiami Trail. In order to accomplish these conditions, certain assumptions were made on the best available data to predict how the stages in L29 Canal would change during the wet season and during specific storm events. Certain contingencies were set in place to minimize impacts to the road base and to reevaluate the original assumptions. Potential benefits were based on the best information to date. As stated earlier, final benefits will be thoroughly evaluated and vetted through operating procedures under CSOP.

ARTICLE IV. SALVAGE.

FDOT, Government and/or their agents shall use such materials, equipment and supplies from the facilities existing as of the date of this contract as are suitable for use in the facilities to be relocated, rearranged, or altered hereunder; the parties shall agree prior to the commencement of any field work as to the materials which cannot be reused. All such unsatisfactory materials shall be removed from their original location by the Government and/or its contractors and shall become the property of the Government and/or its contractors, which shall be responsible for their salvage and/or disposal.

ARTICLE V. BETTERMENTS.

FDOT agrees that the substitute FDOT facility to be accomplished under this contract will provide FDOT with facilities that are functionally equivalent in service and utility as to those now in existence but for a water level up to 8.5' in the L29 canal, instead of the current water elevation in the canal. If FDOT desires any improvement in design, construction, or capacity over and above what is required to provide facilities of equal service and utility, such improvement shall constitute a betterment and will be paid for by FDOT; provided however, that the term "betterment" will not be deemed to include more costly construction or design necessitated solely as a result of the relocation. Required upgrades to the facility to meet current standards shall not be deemed a betterment. The Government shall identify all betterments and notify FDOT in writing of its determination that a proposed change is a betterment before the betterment is constructed.

Notwithstanding the foregoing, the Government will construct as a betterment the necessary features to facilitate future capacity to locate a Florida Power and Light Co. distribution line or lines on the new bridge and its approaches. All funding required to accomplish this betterment will be provided by the South Florida Water Management

District directly to the Government. The construction of this betterment by the Government is not a commitment by FDOT to authorize the installation of Florida Power and Light Co. distribution lines on the substitute facility. Nothing in this agreement requires FDOT to expend funds for the relocation of any utilities from the existing FDOT right-of-way or otherwise onto the substitute facility. Any request or application by Florida Power and Light, or any other person or company, to install, operate, maintain, or relocate any utility on or along the bridge, the remaining substitute facility, or otherwise on FDOT right-of-way must be made and will be evaluated in accordance with the applicable requirements of Florida law and FDOT rules.

In addition, the Government will construct as a betterment the necessary features to relocate communication facilities onto the new bridge and its approaches currently owned by AT&T of Florida. Prior to their corporate merger, the telecommunications companies impacted by this project were known separately and permitted by FDOT as AT&T Corp. and BellSouth Telecommunications, Inc., (also known in some older permits as Southern Bell Telephone & Telegraph Company). Collectively, these companies are now known as AT&T of Florida. All funding required to accomplish this betterment will be provided by the Department of the Interior directly to the Government. The construction of this betterment by the Government is not a commitment by FDOT to authorize the installation of AT&T of Florida communication lines on the substitute facility. Nothing in this agreement requires FDOT to expend funds for the relocation of any utilities from the existing FDOT right-of-way or otherwise onto the substitute facility. Any request or application by AT&T of Florida, or any other person or company, to install, operate, maintain, or relocate any utility on or along the bridge, the remaining substitute facility, or otherwise on FDOT right-of-way must be made and will be evaluated in accordance with the applicable requirements of Florida law and FDOT rules.

ARTICLE VI. OWNERSHIP AND CONDUCT OF THE WORK.

The one mile bridge and roadway mitigation constructed hereunder shall be performed by the Government. Upon completion of a functional portion of the substitute FDOT facility and its final acceptance after inspection by FDOT, the Government will transfer that portion to FDOT for operation and maintenance. Following transfer, FDOT will be responsible for all subsequent operations, maintenance, repair and rehabilitation, as necessary. For any damages attributable to the operation of water levels higher than 8.5 feet in the L29 canal, FDOT may pursue any and all remedies it may have in law or equity.

The Government may award other contracts for additional or other work in connection with the substitute FDOT facility in the same vicinity. FDOT shall conduct operations so as to cooperate fully with any such work being performed by the Government and/or Government contractors and shall carefully fit its work to that provided under other contracts as directed by the District Engineer. FDOT shall not commit or permit any act which may interfere with the performance of any such work by the Government and/or any Government contractor unless approved in advance by the District Engineer.

ARTICLE VII. INTERFERENCE.

a) The parties agree that so long as the substitute FDOT facility is operated or maintained, it shall not be so further altered or modified nor other facilities constructed by FDOT so as to materially interfere with the flow of water into the Everglades National Park without the express written authorization of said Secretary of the Army, his successors and assigns.

b) Likewise, after the final delivery of the substitute FDOT facility to FDOT by the Government, the Government shall do no act or acts which shall injure, destroy or interfere with said substitute FDOT facility which shall be owned and operated by FDOT.

c) During the period of construction, the Government, its agents and contractors shall minimize interference with traffic flow on Tamiami Trial. The Government shall require its contractors to submit a Traffic Management Plan to FDOT for their approval and/or modification. The Government shall be solely liable for the costs associated with traffic management during construction.

d) In the event a Government contractor files a construction lien arising from activities associated with the Project on lands held by FDOT or to be conveyed to FDOT, the Government shall take all steps necessary to satisfy and/or release said lien.

ARTICLE VIII. INSPECTION AND ACCEPTANCE.

a) Testing and inspection of the work to be performed hereunder by the Government shall be the responsibility of the Government and may be performed by qualified Government employees or a qualified independent testing laboratory approved by FDOT. Any plan for testing or otherwise providing for control of the quality of work to be performed by the Government shall meet with the approval of FDOT.

b) Upon completion of all work for a functional portion of the substitute facility, the Government will give notice of such to FDOT. Following notice, FDOT will have 90 days in which to inspect the work for final acceptance. If all or any portion of the work is found to be unsatisfactory, FDOT will so notify the Government and the Government will require its contractor to perform appropriate remedial work. Upon completion of the remedial work, the Government will again notify FDOT and FDOT will inspect the work for final acceptance as provided above. When the work is satisfactorily completed, FDOT will provide the Government with notice of final acceptance.

c) FDOT shall have the right to inspect the work to be performed hereunder by the Government at any time during its progress and to make final inspection upon completion thereof. If FDOT shall determine that the work is not being performed in accordance with the plans, specifications, and schedules which FDOT has previously approved, FDOT shall make its objections known to the Government. It will be the responsibility of the Government to make all needed corrections in the Project to assure conformity with the plans, schedules, and specifications which had previously been approved by FDOT.

d) After the Government has determined that construction of the substitute FDOT facility or a functional portion of said facility is complete and provides FDOT with written notice of such determination and after FDOT accepts that portion of the substitute FDOT facility in writing, FDOT shall operate, maintain, repair, replace, and rehabilitate the completed substitute FDOT facility, or functional part thereof, except for the conveyance channels, in accordance with applicable Federal and State laws.

e) All Warranties provided to the Government by contractors or suppliers for the substitute FDOT facility shall also be provided to FDOT or assigned to FDOT by the Government not later than the date FDOT accepts that portion of the substitute facility.

ARTICLE IX. INTERIM CONTROL DURING CONSTRUCTION

Upon commencement of on-site work for any phase of the substitute FDOT facility, the Government shall assume complete responsibility and liability for the operation, maintenance and safety of that phase of the substitute FDOT facility. The

Government's responsibility shall continue until that phase of the substitute FDOT facility is accepted by FDOT in writing.

ARTICLE X. RELEASE.

FDOT agrees, on completion of the work provided herein together with the reimbursements set forth and the conveyance of property contemplated in this Contract, to accept said substitute FDOT facilities and payment of the consideration provided for herein as full and just compensation for any and all damages that have been caused to the facilities altered or relocated hereunder and shall, upon final written acceptance of any functional portion of the substitute FDOT facility, release the Government from any and all causes of actions, suits-at-law or equity or claims or demands, and from any liability of any nature whatsoever FDOT would otherwise be entitled to make for and on account of any damages to said rights-of-way and facilities of FDOT, constructed relocated or altered hereunder. Said release shall not include claims for subsequent operations of the Government Project that might negatively affect the substitute FDOT facility after construction and transfer or any subsequent work undertaken by the Government to accommodate a greater DHW elevation in the L29 canal. In addition, said release shall not include latent defects. Said release shall not include asserted or unasserted claims for misfeasance or nonfeasance during the Government's control of the facility.

ARTICLE XI. COMPLETION.

The parties agree that they will faithfully and expeditiously prosecute their obligations hereunder as soon as practicable after this contract is approved and shall complete the work with diligence to completion. The transfer of the substitute FDOT facility may be accomplished in phases representing functional portions of the Project. Failure to

complete any phase which is initiated by the Government shall be a material breach and shall be completely unacceptable to FDOT and may result in significant damages. Any phase where construction is initiated must be completed within a reasonable time as reflected in the Project schedule in effect when construction of that phase commenced.

ARTICLE XII. CONDEMNATION.

Should it be determined for any reason that the right, title, and interest of FDOT in and to the lands, referred to in Article I hereof, shall be acquired by condemnation or other judicial proceedings, FDOT shall cooperate in the prosecution of the proceedings and this Contract shall, without more, constitute a stipulation which may be filed in the proceedings and be final and conclusive evidence of the adjustments to be made to the facilities herein mentioned.

ARTICLE XIII. DISPUTES.

As a condition precedent to a party bringing any suit for breach of this Contract, that party must first notify the other party in writing of the nature of the purported breach and seek in good faith to resolve the dispute through negotiation. If the parties cannot resolve the dispute through negotiations, they may agree to a mutually acceptable method of non-binding alternative dispute resolution with a qualified third party acceptable to both parties. The parties shall each pay 50% of any costs for the services provided by such a third party as such costs are incurred. The existence of a dispute shall not excuse the parties from performance pursuant to this Contract.

ARTICLE XIV. ENVIRONMENTAL LITIGATION.

a. If the performance of all or any part of the construction is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of

environmental litigation, as defined below, the District Engineer may suspend, delay, or interrupt all or any part of the work for such period of time as he may determine to be appropriate to permit the Government to comply with the Court's Order.

b. The term "environmental litigation", as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

c. Notwithstanding any suspension, delay or interruption of construction pursuant to subparagraph (a) of this article, the Government shall at the Government's sole expense, provide, subject to the availability of funds, whatever materials and perform whatever work is necessary to prevent any adverse effect on the short or long-term operation and safety of FDOT's facilities as a result of such suspension, delay or interruption. In the event of any Project delay after commencement of construction, the Government shall, at its sole expense and subject to the availability of appropriations, implement all modifications to the Traffic Management Plan as coordinated with FDOT.

ARTICLE XV. APPROVAL.

This Contract shall be subject to the written approval of the Chief of Real Estate, Jacksonville District and shall not be binding until so approved.

ARTICLE XVI. NOTICE.

a) Any notice, request, demand, or other communication required or permitted to be given under this Contract shall be deemed to have been duly given if in writing and

either delivered personally, express mail service or mailed by first-class, registered, or certified mail, as follows:

If to the Facility Owner:

Florida Department of Transportation
Stephanie C. Kopelousos
Secretary
605 Suwannee Street
Tallahassee, FL 32399

With a copy to:

Florida Department of Transportation
Alexis M. Yarbrough
General Counsel
605 Suwannee Street, MS 58
Tallahassee, FL 32399

If to the Government:

District Engineer
U.S. Army Corps of Engineers
ATTN: Cem S. Goral, CESAJ-OC
701 San Marco Boulevard
Jacksonville, Florida 32207

b) A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

c) Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at the earlier of such time as it is actually received or seven calendar days after it is mailed.

ARTICLE XVII. OFFICIALS NOT TO BENEFIT.

No member of or delegate to Congress or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom,

but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE XVIII. DEFINITIONS AND GENERAL PROVISIONS

For purposes of this Contract:

a) The term "head of agency" or "Secretary" used herein means the Secretary of the Army; and the term "his duly authorized representative" means the Chief of Engineers, Department of the Army or an individual or board designated by him.

b) The term "District Engineer" as used herein shall mean the District Commander, U.S. Army Corps of Engineers, Jacksonville District.

c) The term "Project" shall mean those works authorized by The Everglades National Park Protection and Expansion Act of 1989, as amended including construction of a substitute FDOT facility for Tamiami Trail and structures in Water Conservation Area 3 providing for the flow of water from Water Conservation Area 3A to Water Conservation Area 3B and into Everglades National Park, the construction of a levee, seepage canal and pump system for the "East Everglades 8 1/2 square mile residential area" adjacent to Levee 31 North; construction of a pump system to maintain water levels in L-31Nborrow canal and to return excess seepage water to Shark River Slough via the L29 borrow canal; the degrading of Levee 67 extension; relocation of the Tigertail Indian Camp and the L-67 pilot test and other tests. All as generally described in a General Design Memorandum entitled "Central and Southern Florida Project, for Flood Control and Other Purposes, Part 1, Agricultural and Conservation Areas, Supplement 54, General Design Memorandum and Environmental Impact Statement, Modified Water Deliveries to Everglades National Park, Florida" dated June 1992, and approved by Headquarters, U.S. Army Corps of Engineers in June 1992.

d) The term "period of construction" shall mean the time from the advertisement of the first construction contract to the time the Government certifies in writing to the Local Sponsor that construction of the Project is complete. The Government shall furnish to the Local Sponsor copies of the Government's written Notice of Acceptance of completed work furnished to the contractor(s) for all contracts for the Project.

e) The term "highway" shall mean any highway, thoroughfare, roadway, street, or other public road or way.

f) The term "substitute FDOT facility" shall mean the construction of a bridge and the increase in elevation of the Tamiami Trail between Structures 333 and Structure 356 for a length of approximately 10.7 miles to compensate for the increase in water elevations in the L29 canal resulting from the Project.

g) The term "relocations" shall mean the preparation of plans and specifications for, and the accomplishment of all, alterations, modifications, lowering or raising in place, and/or new construction related to, but not limited to, existing: railroads (excluding existing railroad bridges and approaches thereto), highways, and other bridges, pipelines, public utilities (such as municipal water and sanitary sewer lines, telephone lines, and storm drains), aerial utilities, culverts, cemeteries, and other facilities, structures, and improvements determined by the Government to be necessary for the construction, operation and maintenance of the Project.

h) The term "functional portion of the Project" shall mean a completed portion of the Project as determined by the Government in writing to be suitable for tender to the FDOT to operate and maintain in advance of completion of the entire Project. To be suitable for tender, the Government must determine, after consultation with the FDOT that the completed portion of the Project can function independently and for a useful purpose, although the balance of the Project is not complete.

i) The term "betterment" shall mean the design and construction of a Project feature accomplished on behalf of, or at the request of, the FDOT in accordance with standards which exceed the standards which the Government would otherwise apply for accomplishing the design and construction of the Project. Improvements made to meet current FDOT design standards shall not be considered a betterment.

END OF PAGE

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

FLORIDA DEPARTMENT OF TRANSPORTATION

BY: SCKopel
Stephanie C. Kopelousos, Secretary

ATTEST:

BY: Jennifer L Parfitt

DATE: 9/24/08

SEAL:

THE UNITED STATES OF AMERICA

BY: Sharon W. Conklin
Sharon W. Conklin
Chief, Real Estate Division
U.S. Army Corps of Engineers
Jacksonville District

ATTEST:

BY: Lawrence P Wright

DATE: 9/25/08

SEAL:

CERTIFICATE OF CORPORATE AUTHORITY

I, Jenniffer L. Parfitt, do hereby certify that I am the Executive Secretary of Florida Department of Transportation; that Stephanie Kopelousos, who signed this contract on behalf of said Agency, was then Secretary of said Agency; that said contract was duly signed for and on behalf of said Agency by authority of its governing body and is within the scope of its powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of the Said Agency this 24th day of September, 2008.

(CORPORATE SEAL)

Jenniffer L Parfitt
Secretary / Executive
Florida Department of Transportation

I hereby certify to the best of my knowledge and belief, based upon my observation and inquiry, Stephanie Kopelousos, who signed this contract for Florida Department of Transportation, has the authority to execute the same, and is the individual who signs similar contract of behalf of said Agency with the public generally.

Sharon W. Cork
Chief, Real Estate Division
U.S. Army Corps of Engineers
Jacksonville District

ATTACHMENTS

1) **Exhibit A – Plans and Specifications; &**
2) **Exhibit B – Flowage & Channel Easement Deed**

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Lauren P. Milligan
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399-300

October 1, 2013

Re: DHR Project File No.: 2013-4293
Corps of Engineers – Draft Integrated Project Implementation Report and Environmental Impact Statement, Central Everglades Planning Project (CEPP)

Dear Ms. Milligan:

Our office reviewed the draft PIR/EIS for the Central Everglades Planning Project in accordance with the National Environmental Policy Act of 1969 and implementing regulations. We find the document to be consistent with federal regulation regarding the treatment of historic properties/cultural resources under NEPA.

As noted in Appendix C.2.1.7 of the document, Section 106 consultation regarding the potential effects of CEPP operations on historic properties is ongoing. We will continue to work with our federal, state, and tribal partners as the project progresses to ensure compliance with Section 106, and to minimize impacts to historic properties.

If I can be of any further help, or if you have any questions about this letter, please feel free to contact me at *timothy.parsons@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,

Timothy A. Parsons, Ph.D., RPA
Compliance Review Supervisor
and Deputy State Historic Preservation Officer

Pc. Eric P. Summa
Chief, Environmental Branch
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

SA 1-106 - CORPS

COUNTY: ALL

DATE: 8/28/2013
COMMENTS DUE DATE: 10/1/2013
CLEARANCE DUE DATE: 10/13/2013
SAI#: FL201308286704C
REFER TO: FL201112066056

MESSAGE:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
AGRICULTURE	SOUTH FLORIDA WMD		
ENVIRONMENTAL PROTECTION			
FISH and WILDLIFE COMMISSION			
X STATE			
TRANSPORTATION			

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

_ **Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.**

X **Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.**

_ **Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.**

_ **Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.**

Project Description:

DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - DRAFT INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT, CENTRAL EVERGLADES PLANNING PROJECT (CEPP) - SOUTH FLORIDA.

To: Florida State Clearinghouse

AGENCY CONTACT AND COORDINATOR (SCH)
3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

EO. 12372/NEPA Federal Consistency

- ☐ No Comment
- ☐ Comment Attached
- ☐ Not Applicable
- ☐ No Comment/Consistent
- ☑ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

From:

Division/Bureau: Historic Preservation

Reviewer: T. Parsons

Date: 10/1/13

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Lauren P. Milligan
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399-300

October 1, 2013

Re: DHR Project File No.: 2013-4293
Corps of Engineers – Draft Integrated Project Implementation Report and Environmental Impact Statement, Central Everglades Planning Project (CEPP)

Dear Ms. Milligan:

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As noted in Appendix C.2.1.7 of the document, Section 106 consultation regarding the potential effects of CEPP operations on historic properties is ongoing. We will continue to work with our federal, state, and tribal partners as the project progresses to ensure compliance with Section 106, and to minimize impacts to historic properties.

If I can be of any further help, or if you have any questions about this letter, please feel free to contact me at *timothy.parsons@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,

Timothy A. Parsons, Ph.D., RPA
Compliance Review Supervisor
and Deputy State Historic Preservation Officer

Pc. Eric P. Summa
Chief, Environmental Branch
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

From:	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
Subject:	[EXTERNAL] The Draft Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS) for the Central Everglades Planning Project (CEPP)
Date:	Tuesday, October 15, 2013 5:51:57 PM

Please accept this email as formal comments regarding the Draft Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS) for the Central Everglades Planning Project (CEPP) on behalf of the Lee County Division of Natural Resources.

General Comments

First, Lee County applauds the efforts of the U.S. Army Corps ("Corps") leadership and its staff and the South Florida Water Management District ("SFWMD") in its effort to expedite the planning phase of CEPP under the Corps' national pilot program. Given the numerous agencies and stakeholders involved and the sheer magnitude of this project, to arrive at a PIR in less than two years is remarkable. Secondly, Lee County wishes to express its continued support of the goals and objectives of CEPP to provide treated water to the Everglades National Park ("ENP") by capturing and redirecting south approximately 210,000 acre-feet of water from of Lake Okeechobee. This translates into an estimated reduction of high volume flows (>2,800 cfs) to the Caloosahatchee River and Estuary ("CRE") from 81 to 70 for the period of record. While these targets are long terms goals and only represent a fraction of the reductions necessary to alleviate the CRE, we can use the data and information produced from the PIR/EIS process in support of short term strategies to relieve the CRE from the devastating Lake Okeechobee releases that we felt this year.

Caloosahatchee River and Estuary

As you are aware, estuaries such as the CRE rely on a balance of fresh and salt water conditions for survival of seagrasses and oysters. Unfortunately, the CRE endures adverse impacts at both ends of the spectrum. Specifically, due to extensive historical modifications to its watershed, the CRE receives the lion's share of adversity in both dry times and wet times from the Corps' Lake Okeechobee Regulation Schedule ("LORS 08"). In wet times, as we are experiencing recently, the Caloosahatchee River is the largest and most utilized discharge route. Essentially, by "managing" the system, the watershed of the CRE is expanded to include Lake Okeechobee and the Kissimmee River, more than double its natural size. During these times, the CRE and the near shore of the Gulf of Mexico are "blown out" with brown, nutrient laden water. Then, in dry times, when minimal base flows are needed for freshwater grasses, the CRE is often cutoff 100% – zero water releases. In fact, there are instances when the CRE is essentially severed at Ortona Lock so that all flows east return to Lake Okeechobee for water supply interests. Granted, estuaries are resilient to natural flood and drought conditions and often bounce back to productivity. Yet, when subject to numerous "extreme" events for extensive durations, year to year, meaningful recovery is unlikely.

Caloosahatchee River and Estuary – Southwest Florida's Economic Engine

Dozens of studies and plans have documented the harmful environmental damage to the CRE. However, the same level of scrutiny has not been applied to the corresponding economic damage to Southwest Florida, and its coastal communities. Now, local governments, business leaders, hotel associations, real estate groups and other stakeholders are partnering together in Southwest Florida to quantify the economic value and impact that is at stake. Here are a few facts that demonstrate the value of the natural resources in Southwest Florida (Collier/Lee Counties):

- $4.3 billion in economic activity from tourism; Creating 85,000 jobs
- $400 million in bed tax, sales tax, and local tax revenue
- $147 billion in real estate value
- $1.9 billion in property tax revenue

Simply put, impacts to the CRE directly translate into compounding impacts to our economy and quality of life. Selection of alternatives must address economics of CRE. Although any reduction of harmful releases can demonstrate a net benefit, the on-going impacts will continue until they can be reduced to a meaningful level.

Caloosahatchee River (C-43) West Basin Storage Reservoir Project

The C-43 Project is critical to the overall goals of CEPP and CERP. The C-43 Project is identified as one of the structural and operation assumptions in the future without comparisons. Flows less than 450 cubic feet per second (cfs) in the CRE are considered harmful since these flow levels allow salt water to intrude, raising salinity above the tolerance limits for communities of submerged aquatic plants in the upper estuary. The C-43 Reservoir will contribute to the restoration of ecosystem function in the CRE by maintaining a desirable minimum flow of freshwater to the estuary during the dry season. The importance of the C-43 Project is demonstrated by the Project Assurances Analysis below.

Project Assurances – Identification of Water for the Natural System

The low flow criteria for the Caloosahatchee Estuary is an average monthly flow of less than 450 cfs. In the Caloosahatchee Estuary, the number of months the low flow criteria is not met is similar in the with-project and without-project conditions. The estuary low flow criteria are not met for 23 months out the 41-year period of simulation (492 total months) in the with-project and 27 months in the without-project. Comparisons to the existing condition baselines show significant improvement in low flow performance with the with-project. Both the 2012EC and ECB show 116 months when average monthly flows are less than 450 cfs, compared to 23 months in the with-project. Neither of the existing condition baselines benefit from the inclusion of the C-43 Project which is included in the future without assumptions.

Lake Okeechobee Herbert Hoover Dike Repairs

Current approved Herbert Hoover Dike ("HHD") remediation measures consist of cutoff wall in Reach 1: cutoff wall task orders 1 through 9 are scheduled for completion in 2013, and 32 culvert replacements or removal around the lake are scheduled for completion in 2018. The Planned remediation measures consist of cutoff wall and/or a seepage management system in Reaches 2 and 3. These actions are scheduled for completion in 2022. The comprehensive potential failure mode analysis and risk assessment is being performed and will be included in the ongoing Dam Safety Modification Report (DSMR). This report is scheduled for completion/approval in 2014. Following the conclusion of this report, there needs to be consideration of incremental increases in the Lake's operating levels. Increases in operational levels can give the Corps more storage in wet times and can lead to additional water made available for the CRE during dry times.

Operations – Adaptive Management

As the CEPP proceeds and data from individual project sequencing is continued to be gathered, this data is expected to feed back into the CEPP adaptive management plan. Integration of adaptive management/operations/monitoring into the CEPP will help provide reasonable assurance associated with water quality issues and uncertainties. Adaptive management must be applied iteratively throughout the sequence phasing of the CEPP to seek avenues for additional capacity to store, treat and move water south to the Everglades. Is the plan adaptive enough to incorporate future expansion or phases should lands become available?

The Corps District Commander has the authority when requested by the non-Federal sponsor to approve deviations from normal operating criteria. These are typically approved in emergency situations. Given the severe impacts from the Lake Okeechobee releases this summer, many believe emergency type actions were warranted to move more water south through the WCA 3 into ENP. Recently, the SFWMD took several steps to move more water south into ENP, including cutting a section of Tamiami Trail and clearing vegetation. Were these action granted under a similar deviation? The Corps must use the data and information gathered through the PIR/EIS in order to develop operational flexibility and contingency plans for moving more water south during extended wet times and during major storms. These events must be viewed in a "force majeure" type situation and the State must be held harmless from water quality violations. Is the volume of flows diverted from the estuaries south based on STA capabilities or hydraulic restriction? What will be the built hydraulic capacity south from Lake Okeechobee to ENP?

Sequencing of CEPP and CERP

The unconstrained timeline for the recommended plan is approximately 14 years. However, dependencies on other projects will affect recommended plan implementation. Considering the cost of the recommended plan ($1.8B), the need for Congressional authorization and appropriation of funding, it is likely that full implementation of the recommended plan will extend over two or more decades providing incremental hydrologic and environmental benefits.

Many factors influence implementation of the CERP Program of projects. In addition to the kind of project dependency considerations, other factors that influence implementation include funding

availability, cost-share balance between the Federal and Non-federal sponsor, as well as the integration of projects that are to be constructed by other agencies. The PIR states that Corps and the SFWMD will "undertake integration of the CEPP recommended plan and the other CERP projects awaiting authorization into the CERP programs' integrated delivery schedule through a robust public process once these projects have been authorized." When will this occur? Additionally, given the structural and operational assumptions in the modeling, project assurance and savings clause analysis, is it possible for CEPP to precede projects assumed complete and operational like the C-43 Project?

Conclusion

We realize this project along with the remaining phases of CERP (incl C43, C-111) and interim short term storage strategies may be the totality of efforts for the benefit of the CRE for decades. We are hopeful you will be able to address our concerns stated above.

Thank you for giving us the opportunity to review and comment.

Roland Ottolini, PE

Director

Lee County Division of Natural Resources

[redacted]

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October 9, 2013

Dr. Gretchen S. Ehlinger
Planning and Policy Division
Jacksonville District, US Army Corps of Engineers
701 San Marco Blvd.
Jacksonville, FL 32207

SUBJECT: Martin County Comments on the Central Everglades Planning Project Draft Project Implementation Report and Environmental Impact Statement

The Martin County Board of County Commissioners has long advocated for the completion of the Indian River Lagoon-South Project (IRL-S), authorized by Congress in 2007. The first component of the project, the C-44 Reservoir and STA, is currently under construction. We are proud partners with the U.S. Army Corps of Engineers and the South Florida Water Management District in the completion of this vital restoration project. Our citizens voluntarily taxed themselves, generating $75 million dollars, towards the implementation of this project, acquiring 45,000 acres of land. This unique and substantial partnership reflects the importance of Everglades restoration to the people of Martin County.

Martin County continues to voice our support of the Central Everglades Planning Project. We recognize and appreciate the 23% reduction in the highest volumes of freshwater flows from Lake Okeechobee into the St. Lucie Estuary. We also stress, as you noted in the Project Implementation Report (PIR), and in the numerous PIR team meetings that occurred throughout this process, that "additional actions are needed to further reduce harmful discharges of freshwater from Lake Okeechobee to the St. Lucie and Caloosahatchee estuaries." We support CEPP as a one of many efforts to reduce freshwater inflows to the St. Lucie. Moving forward, a critical component of the restoration discussion is the need to complete the remaining components of IRL-S beyond the C-44 Reservoir and STA, and to establish a minimum of 1 million acre-feet of new storage capacity north and south of Lake Okeechobee to meaningfully reduce the freshwater discharges to the St. Lucie from the Lake.

Specific to the PIR, Martin County would like to see improved descriptions, both in the narrative and graphically, of the project benefits to the estuary associated with various project efforts. Specifically, on your graph that shows the number of times the mean monthly flows are greater than 2000 cfs to the SLE, there is a 20 "high discharge" event improvement for *basin flows* with IRL-S in place, and a 4 event improvement for *Lake flows* with IRL-South in place.

With CEPP in place, there is a 10 "high discharge" event improvement for *basin flows* (compared to 20 for IRL-S), and a 5 event improvement for *Lake flows* (compared to 4 for IRL-S). This information is straight from the generalized graphs in the PIR, however those graphs do not provide relevant detail regarding to which projects those benefits are attributed.

In order to make those benefits clear and transparent so we can better explain and advocate to our Congressional members the merits of both the IRL-S and CEPP, we ask that greater explanation be provided in the PIR. Specifically, Martin County respectfully requests that the ACOE edit the graphs to include the greater detail on benefits, as well as add language to the PIR, particularly in the Executive Summary, that details all of the projects that were assumed to be completed in order for the CEPP benefits to be fully realized (e.g. Modified Water Deliveries, Tamiami Trail Next Steps, C-11 Impoundment, Restoration Strategies, C-43 Reservoir, and the IRL-S projects), and how system-wide benefits are attributed to each of those projects in the context of the CEPP benefits. This type of detail will assist all of your stakeholders in understanding what CEPP entails, and the benefits that each of the related projects brings to the greater Everglades ecosystem, including the estuaries.

We appreciate and understand the benefits that CEPP brings in reducing harmful freshwater discharges from the Lake to the estuaries. We offer our assistance to your team now in addressing our comments to provide more information that can be readily understood by the public, elected officials, or anyone who is not immersed day-to-day in the federal project process, regarding what CEPP brings in the way of improved conditions compared with other relevant restoration efforts. Thank you.

Sincerely,

Commissioner Sarah Heard, Chair
Martin County Board of County Commissioners

SH/ejm

cc: Martin County Board of County Commissioners
LTC Thomas M. Greco, Deputy District Commander, Army Corps of Engineers
Ernie Barnett, Assistant Executive Director,
Everglades and Water Resources, South Florida Water Management District
Deborah Drum, Ecosystem Restoration & Management Manager, Martin County

MIAMI-DADE COUNTY
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October 9, 2013

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Draft Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS) for the Central Everglades Planning Project (CEPP)

Dear Dr. Ehlinger:

As a county of more than two million people uniquely situated among two National Parks, a National Marine Sanctuary, aquatic preserves, one of the world's most transmissive aquifers, and globally imperiled natural systems, Miami-Dade has a demonstrated commitment to environmental restoration, water quality, wellfield and flood protection, conservation land acquisition, and sustainability. Miami-Dade County has supported the Central Everglades Planning Project (CEPP) process, because we understand that improvements in the heart of the central Everglades are necessary to achieve ecological restoration benefits in the Water Conservation Areas (WCAs), Everglades National Park (ENP), and estuaries. Additional freshwater flows also offer the potential to maintain, or even improve in some circumstances, water available for human water supply needs. CEPP has also provided the first meaningful opportunity to integrate seepage management features with increased flows to ENP. Increased stages in eastern portions of the WCA and ENP and in certain canals require concurrent implementation of seepage management to assure that flood protection level of service to the east is maintained at levels that existed at the time CERP was authorized by Congress. These considerations, of water supply for both human needs and for natural systems, as well as flood protection, are generally referred to as "Savings Clause" requirements, a reference to language in WRDA 2000.

The USACE and SFWMD staff is to be commended for their diligent efforts to complete CEPP, which represents the most comprehensive Everglades restoration project plan to date, in accordance with an ambitious timeline. Particularly deserving of commendation is the work of the modeling team, which has provided superior systemwide model tools and output, compared to previous CERP and non-CERP restoration project efforts. Modeling evaluations suggest that ecological benefits will be provided by CEPP components that provide for improved water quality treatment north of the Water Conservation Areas, and increased flows through WCA3A to Everglades National Park and Florida Bay. These improvements are critical and should be initiated as soon as possible to reverse continued decline of natural systems and begin incremental progress toward restoration goals. However, systemwide modeling tools have also suggested through multiple lines of evidence that over some periods of dry conditions, flows to portions of the southeast coast, including wellfield protection areas, may be reduced compared to simulated baseline conditions.

Miami-Dade wellfield protection strategies and regulatory approvals depend upon ability to maintain canal and groundwater elevation to prevent saltwater intrusion in vulnerable coastal areas and also to reduce the potential for impacts of contaminants that could arise from urban areas or surface water interactions. Similarly, modeling shows the possibility of increased groundwater stages in some localized areas during wet

conditions, which may represent an increased risk of flooding. Miami-Dade identified these specific concerns during CEPP scoping, and have consistently maintained through the planning process that seepage management components and system operations must also maintain both quality and quantity of water reaching wellfields and the Biscayne Bay estuary.

As active members of CEPP technical teams, Miami-Dade staff is aware that refinements of the selected CEPP Alternative 4 and modeling assumptions were made to improve performance with respect to Savings Clause issues of water supply and flood protection. However, the Draft Project Implementation Report (PIR) also states that insufficient engineering information is available to adequately evaluate or design key structural elements and operation of Alternative 4R2, particularly those associated with seepage management. Further, the systemwide model tools available do not have adequate resolution or capability of evaluating sub-regional scale flood risk, water quantity and quality concerns. The analysis and conclusions are also based upon compounded assumptions about which CERP and non-CERP projects may be in place in the future, but do not address sequenced or partial implementation of CEPP and other projects in South Florida. There has also been a difference of opinion about the selection of a baseline for comparison for Savings Clause analysis. Therefore, although Miami-Dade generally supports the objectives and general approach of CEPP, and the expected benefits it promises for water quality and deliveries to the central Everglades, we do not concur at this time with conclusions in the Draft PIR that Savings Clause requirements have been met.

More detailed comments regarding the County's concerns and suggestions for revisions to the Draft PIR, all of which relate to Savings Clause considerations, are provided as an attachment to this correspondence.

Miami-Dade County remains committed to participating with agency partners and stakeholders to assure the success of CEPP, CERP and ecosystem restoration overall.

For any questions or further discussion on the County's technical comments please contact Mr. Lee N. Hefty, Director of Environmental Resources Management for the Miami-Dade County Department of Regulatory and Economic Resources at 305-372-6754.

Sincerely,

Jack Osterholt
Deputy Mayor/Director
Department of Regulatory and Economic Resources

Miami-Dade County offers the following comments to provide more detailed documentation of our concerns and suggestions for revisions of the Draft PIR, all of which relate to Savings Clause considerations:

- **Modeling of Water for Future Water Supply Demand**
  Annex B, Annex D and other sections of the report refer to late modeling efforts to optimize and identify potential additional water to help meet increased future water supply demand, in average annual withdrawals, in the LECSA. The report cites this modeling outcome as a demonstration that Savings Clause and Assurance requirements are met. Miami-Dade County advised during the planning process that it did not expect CEPP to provide additional water for future demand, since it was understood that CEPP will only partially fulfill total restoration goals envisioned by CERP. Although it is encouraging that benefits from CEPP and system operations may indeed provide more water for water supply without reducing benefits to natural systems, this theoretical water-made-available does not help to address specific Savings Clause concerns that Miami-Dade has repeatedly described. Miami-Dade's interest in water supply Savings Clause and Assurances has focused upon maintaining groundwater and surface flows in each wellfield area, particularly during dry season, drought periods, and in view of rising sea levels so that water quantity and quality remain equivalent to the condition at the time of adoption of WRDA 2000. The modest amount of average annual withdrawal identified by modeling for Miami-Dade is associated with only one wellfield area, and the analysis did not address water quality or availability during dry conditions, when Savings Clause considerations are of greatest concern.

- **Seepage Barrier Uncertainty**
  Flood risk in urban and agriculture lands is primarily a wet season/year concern, whereas wellfield recharge, downstream water quality, saltwater intrusion, and hypersalinity in Biscayne Bay are primarily dry season or drought concerns. Water management strategies must be integrated and flexible enough at regional and local scales to address the full range of extreme wet and dry conditions. Miami-Dade has generally advocated use of operable infrastructure such a pumps, detention areas, and step down-systems for water delivery and seepage management. An operable system, with performance that can be adjusted in extreme conditions, is more compatible with adaptive management goals of CERP. The seepage barrier wall that is part of CEPP Alt4R2 will not be operable. There are remaining uncertainties about its overall effectiveness in maintaining desired stages in marshes of ENP while maintaining flood protection and canal stages to the east without holding too much groundwater back during dry conditions. "Appendix A – Engineering" states that existing hydrologic data is not adequate for assessing performance or design of the proposed barrier or its configuration, although this concern is not consistently reflected in other sections of the PIR. At this time, though a pilot barrier wall has been installed by rockmining interests in Miami-Dade, sufficient data has not been available to evaluate its specific effectiveness in relation to all CEPP objectives and constraints. "Section 6.10.2.1 – L-31 Seepage Barrier Demonstration Project" acknowledges uncertainty about this feature, largely from the perspective of preventing loss of water from the marsh, and does not address potential concerns for water supply or flows to Biscayne Bay or Savings Clause implications at all. The seepage barrier wall is one of the CEPP features with the greatest uncertainty regarding its performance, and also a feature that is associated with relatively great risk related to flood protection, water supply, and ecological benefits within and outside ENP. The dependence of CEPP seepage control on this feature makes Savings Clause conclusions inherently uncertain as well, regardless of what baseline condition is utilized in

models. This uncertainty should be acknowledged clearly and consistently in all relevant sections of the draft PIR, and a more coordinated approach to refined modeling, design, assessment and adaptive response strategies for seepage control features must be emphasized in the AM plan.

- **Performance During Extreme Wet and Dry Conditions**
  As noted above, it is important to be able to evaluate how effectively CEPP compares to performance of the existing system during periods where risk of damaging high or low water levels and flows could occur. Performance metrics used in Savings Clause evaluation and assessment therefore should be based upon seasonal and extreme wet or drought conditions, whether related to flood, water supply for human uses, or water supply for fish and wildlife. Even though the probability of drought or extreme wet conditions may be relatively low, the ecological or human and economic costs of flood, saltwater intrusion, or hypersalinity of such an occurrence are significant, or even devastating, and should not be discounted. Comparisons of annual average flow or long-term temporal averages of flow or stage cannot adequately address water supply and flood considerations during the evaluation and design process, or during assessment when project components are being implemented. Additional graphic analysis of wet and dry years and regional analysis of flood-prone and wellfield areas should be included consistently in Annex B, D, and other relevant sections of the report.

- **Incremental Analysis of Savings Clause and Assurances**
  Evaluations of CEPP benefits and constraints are based upon assumptions of full project completion and a systemwide operating plan that incorporates an array of CERP and non-CERP projects. It is noted in "Section 6.1.3 Project Operations" of the Main Report that the operating plan will evolve as components are constructed or begin operation. "Annex C – Project Operating Manual Section 21" states that "At this time, interim operations during construction cannot be determined." "Section 6.8.7 Incremental Analysis During Plan Implementation" states in a cursory fashion that Savings Clause and Project Assurances will also have to be repeated for each phase of CEPP. This is a highly critical issue, and should be moved to a higher level of emphasis, and included in the uncertainty section of the Main Report, as well as thoroughly acknowledged and addressed in Annex B and Annex C. Because it is not possible to determine how the CEPP project will be funded and over what timeline, or if it actually will be completed as assumed, this adds significant uncertainty to the Saving Clause analysis. Even if it is accepted that a systemwide evaluation supports a conclusion that Savings Clause requirements are met, regardless of what baseline is used for a comparison, this is a hypothetical modeling exercise that does not reflect the actual construction and operating sequence, extended timeline, possibility that some elements may not be completed as assumed, and effects on regional ecological, flood, and water supply benefits and risks. Regional water control plans and Savings Clause analyses must be revisited and integrated at each stage of project or component design and implementation. A plan for such re-evaluations of CEPP components and operating plans should be described in the Adaptive Management Plan as well.

- **Sequencing of Project Components**
  Miami-Dade is pleased that proposed sequencing strategies generally recognizes the need to have seepage management features in place and operational prior to or concurrently with components that are expected to improve conveyance to Northeast Shark River Slough. However, we recommend that operation of the S-356 pump at its current capacity be actively

pursued immediately. This Mod Waters feature, together with the existing seepage barrier pilot project constructed by the rockmining industry, represents an opportunity to address seepage that currently exists, as well as incremental increases in seepage that could result from weather events or water management to address ponding in WCA3a. Some early ecological benefits for Northeast Shark River Slough, southern WCA3a, listed species, and southern estuaries could be achieved by improved delivery and distribution of water already in the system, or more flexibility in water management options as Tamiami Trail improvements are completed. Operation of these seepage management features, that are already on the ground, make early benefits a reasonable expectation, and their integration into CEPP should not be deferred until new water is made available. The current S-356 and barrier wall should be utilized for assessment of performance and refinement of localized models, engineering design and operating plans.

- **Annex D Adaptive Management Plan Approach to Seepage Barrier Issues**
  Miami-Dade is pleased that the Adaptive Management (AM) plan includes a specific uncertainty related to effectiveness of the proposed seepage barrier with respect to Savings Clause issues of flood protection and water supply. However, some of the proposed "management options" or metrics/triggers and monitoring approaches are of great concern. For example, the in Annex D Section 1-83, it is suggested that if seepage occurs around the "north end" of the proposed seepage barrier then it may be extended to the north into the "triangle". A wall extending to the north (which was part of Alt 2 and Alt 3) was not carried into Alt4 when Alt 4 was identified as the preferred alternative. Further, it is not clear how this management option would integrate with management of the L-29, the existing or proposed S-356, or any other infrastructure and operations in that area, or how deep an extended wall would be. Other content (see Annex D Section 1-85), such as inclusion of "windows" in the wall, increased stages in the WCA3b in the dry season to force water under the wall, or pumping around the wall in the dry season are options that are not well substantiated or documented. There is a proposal of "two feet of drawdown" in a wellfield cone of influence as a trigger for a management action. It is not clear to us what this means, what baseline would be employed, or where and when it would be modeled, measured or implemented. We do not recall these options or triggers ever being discussed in interagency meetings. We recommend that these more detailed elements of the AM plan be revisited, and that any concept of such management options or triggers must be integrated with other features and operation metrics for the WCAs, ENP, L-29, L-30, and L-31. Miami-Dade also has questions and concerns about the descriptions of proposed monitoring for AM (or water quality and hydrology) and costs. Miami-Dade does have an existing network of surface and groundwater monitoring stations which help to define larger scale geographic and temporal conditions, but the spatial extent of these is not adequate to specifically address the effectiveness of the seepage barrier or other CEPP components. Additional surface water and groundwater monitoring stations would be required to assess potential affect of the seepage barrier, pumps, and detention areas on water flows, stages, and quality in the adjoining and downstream canals and wellfields.

- **Savings Clause Baseline**
  Miami-Dade has clearly stated from the beginning of CEPP discussion that the Savings Clause modeling analysis should be based upon comparison to a baseline condition that describes the flood level of service and water supply characteristics that existed on the date of enactment of WRDA 2000. Despite clear and direct language in WRDA, the Savings Clause analyses in the PIR were made by comparison of Alt4R2 to the assumed future without CEPP in place. Miami-Dade

has reviewed and understands the arguments offered by the USACE in the PIR for this approach, but we respectfully cannot concur with this interpretation or conclusions regarding Savings Clause compliance that flow from it. For example, Miami-Dade understands that the operations plans in place in 2000 are no longer considered viable and have been replaced with a new transition plan, which focuses on protection of endangered species habitat. The Draft PIR Savings Clause analysis describes the new transition plan as a non-CERP "intervening condition", which is not subject to Savings Clause considerations. However, the CEPP modeling evaluation also assumes that this plan will be used as the CEPP Alt4R2 operating plan, even though it does not include some existing Mod Water features, such as operation of the S-356 pump. "Annex C – Project Operating Manual" also includes ERTP operating criteria for new or existing components. It is our position that once an interim or transition operating plan, which was not approved as a permanent plan or with the benefit of the excellent modeling tools now available, becomes integrated as a CERP operating plan that it in fact is subject to Savings Clause, or at least the intent of the Savings Clause, to assure that ecological restoration will also maintain or improve flood protection and water supply compared to conditions at the time WRDA 2000 was enacted. Miami-Dade does not object to use of a "future without CEPP" scenario for comparison of the performance of various alternatives, determination of new water made available by the project or various benefit analyses.

- **Sea Level Rise Considerations**
  Miami-Dade identified evaluation of projected sea level rise as an issue during CEPP scoping, particularly from the perspective of maintaining freshwater flows and stages so as to optimize strategies for protecting coastal water supply wells from saltwater intrusion, and also from the perspective of system structure operations for maintaining flood control. We are pleased that there is some consideration of this issue, but the discussion in the report largely addresses estimation of the effect of sea level rise on project ecological benefits in coastal wetlands. Miami-Dade recommends that sea level rise considerations also take into evaluation of CEPP operations for drainage and for saltwater intrusion in coastal wellfields.

Arthur R. Marshall Foundation & Florida Environmental Institute, Inc., for the Everglades
Public Comment November 1, 2013, on
The CEPP DRAFT Project Implementation Report (PIR)

The Art Marshall.org is pleased to have the opportunity to comment on the Central Everglades Panning Project (CEPP) Draft PIR. These comments are an expansion of public comment provided to the Water Resources Advisory Commission (WRAC) Oct 3, 2013, following the CEPP update by Tom Teets, SFWMD, and a minor update of earlier comments provided Oct 15, 2013.

EXECUTIVE SUMMARY: We support CEPP as the first step in CERP to restore sheet flow as envisioned in the 1981 Marshall Plan published as Friends of the Everglades News Letter and petition, by Marjory Stoneman Douglas: *Effective repair requires restoration of sheet flow to the greatest possible extent from the Kissimmee Lakes to Florida Bay…. The purpose of this petition is to achieve environmental benefits accruing form repair of the Everglades.* As it was in the Marshall Plan, ***benefits*** is a powerful word in the CEPP DRAFT PIR, with the word ***benefits*** appearing some 175 times in the CEPP main document. However the absence of a publishable ecosystem services valuation (ESV) to define benefits, relative to cost, thus absent a clear measure of CEPP return on investment, is a deficiency that makes the CEPP PIR sticker shock price harder to sell. As noted by the National Research Council (NRC 2005) no publishable value results in a default value of zero (0). A Total Economic Valuation of CEPP benefits, a synthesis format per NRC 2005, remains an unfulfilled challenge to what could be a major enhancing feature for better environmental decision-support in CEPP. Based on CEPP ESV Calculations in the attached spread-sheet, and previous demonstrations we conclude that a TEV of benefits will always lead to a robust B:C calculation of an order of magnitude approximating 20:1. We also conclude that the ESV approach would demonstrate that the value of restoring sheet flow is much greater than the value of a massive reservoir system in an analysis of alternatives trade-off using the B:C ratio.

DISCUSSION AND RESULTS

We support the CEPP. Having been involved in and observed at close hand, CERP/CEPP from December, 1997 to present. The CEPP process has been an amazing and encouraging process. Kudo's to the CEPP PDT and all who supported it for speeding it along, with more streamlining of process to go to meet deadlines.

In the list of public comments received summarized in the WRAC update, we would emphasize the need for a flow through system and more EAA land acquisition, to meet dynamic storage and sheet flow requirements per CERP Section 2.3.1, and less emphasis on massive reservoirs as advocated in some quarters.

We would add the need for a publishable CEPP Ecosystem Service Valuation (ESV) as the means to better sell the CEPP program and get funding by a synthesis that is clear to all. CEPP benefits are widely touted, with the word "benefit" appearing 175 times in the PIR main report. However there is no published economic value given to these benefits. A major point made by a National Research Council (NRC) 2005 Study is that when no value for services is given for an Ecosystem, the default value is zero (0).

As we have done in the past, (ARM Foundation: Economic Valuation of Restoring the River of Grass, 2010) we are providing as part of this comment, a demonstration on how a total economic valuation (TEV - NRC 2005) might be done for CEPP. We have used CEPP habitat unit assessment (HUA) "lift" data (difference in ESV before CEPP and after CEPP), and applied the benefit transfer method using generic ecosystem habitat ESV calculated in the Constanza Synthesis (1997).

The result is a demonstrated notional TEV of $53.353 Billion at an estimated cost of $2.024 million, for a benefit/cost of 26.36. The calculated B/C ratio of 26.36 fell just slightly higher than the same range of values demonstrated by our ARM 2010 summer interns where B/C = B:C ranged from 5 to 24.

From repeated demonstrations, we conclude that a govt calculated TEV would place the economic value of ecological benefits in its proper perspective. This can then be related to cost in a B:C ratio, to provide a clear measure of Return on Investment. We conclude that this would provide a clear and measurable synthesis based on TEV that would sell the program.

While the Costanza Synthesis has evoked some controversy as to its practical applications, it appears to be the only ESV paradigm available to provide a quick, inexpensive reality check on the ESV expected value for a given ecosystem, and a guide-line on how to proceed with a more localized TEV. In the face of the PCAST (2011) Report to the President and the call for agencies of the federal government to move in this direction, and the NRC 2005 Study, the move in this direction is costly slow. More applications are needed.

Consider the following Syllogism.

- Environmental Capital provides the basis for all economic activity.
- Environmental Capital in the form of Ecosystem Services is of significant value to society.
- Assigning a Total Economic Value to Ecosystem Services over time is a way to sustain environmental capital to protect society and the economy. What gets measured gets done
- Conclusion: The dollar value of Ecosystem Services restored, enhanced, and sustained will be much greater than the cost to restore, enhance and sustain same.

Thus robust B:C ratios greater than 20:1 should be no surprise. In the case of the attached calculations giving a B:C of 26.36, a few comments: (1) The large B:C should be no surprise; (2) the ESV calculation based on HUA may be mildly optimistic, as a result of computer generated habit units based on performance measures. (3) For a conservative estimate of the value of wetlands, swamps (forested wetlands) and estuaries, for back of the envelop calculations: Think $10,000 per acre per year and multiply $10,000 by number of acres and years of life cycle (~40 years).

There are three possibilities for calculating CEPP ESV in the TEV recommended by NRC 2005
1. Use the somewhat controversial Costanza Synthesis (1997) and benefits transfer for a quicker, better, cheaper approach for a ball park - same order of magnitude - expected value. 2. Spend three years and a few million dollars to provide the preferred local TEV calculation of benefits.
3. Absent a publishable TEV of benefits, the default value of benefits is zero (0) (NRC 2005), and there is over-focus on costs even as benefits are mentioned 175 times. This is the present case for CEPP.

If Mark Perry were here for the Rivers Coalition, instead of DC, [giving testimony to Congress on the need to protect and restore the estuaries] he would be calling for more flow south, Plan 6 being the fix, Plan 6 being a central element of the Marshall Plan.

We support CEPP as an initial increment of the Marshall Plan, 1981, which had as its central element, what became Plan 6 in 1994. This was not an accident. Art's vision expressed in the 1981 – 1984 Marshall Plan, published by Marjory Stoneman Douglas as a *Friends of the Everglades* News Letter and a petition to all levels of government. The primary thrust was to restore sheet flow from the Kissimmee Basin to Florida Bay.

In context of a principle objective of CERP, read this as Full DECOMP, and restoring habitat and functional quality. We need to keep our eyes on the prize. Given the WRAC comments October 3, 2013, that is not happening. The devil remains in the details which impedes the total ecosystem approach, a tenet of the Task Force strategic plan.

In a recent Regional Climate Action Plan (RCAP) Brief to the PB Count Commission, we made comments that CERP/CEPP was an essential element to an Action Plan. We were pleased to see at the top of the RECAP action list: Planting Trees!

This immediately brought to mind the need to restore the pond apple forest in CERP/CEPP as previously suggested as the means to (1) increase the spatial extent of natural area; (2) restore habitat and functional quality, and increase native species an abundance per CERP Table 5-1 goals and objectives.
Connecting the dots to the previous presentation which mentioned the Okeechobee Gourd as an endangered species. The pond apple forest provides the habitat for the Okeechobee Gourd, an endangered species.

Recognizing that actions on many of these comments must come in subsequent CEPP increments, we fully support CEPP increment 1 as a significant step to restore the Everglades and save the planet in Art Marshall fashion. Thank you for your consideration.

Respectfully submitted,
//S// *JAMarshall*
John Arthur Marshall, Chairman of the Board.

Attachment: Spread-sheet model that demonstrates TEV by a notional CEPP ESV calculation.

References:

Arthur R. Marshall Summer Interns (2010); *Valuing Ecosystem Services of a Restored River of Grass*; Anglique Giraud, et al; http://www.conference.ifas.ufl.edu/GEER2010/Poster%20PDFs/Marshall.pdf

Costanza Synthesis: 1997: *The value of the world's ecosystem services and natural capital*, *Robert Costanza*, et al; Google Nature 387.

NRC 2005 Study: Valuing Ecosystem Services – Toward Better Environmental Decision-Making; the National Academies Press

PCAST 2011: President's Council of Advisors on Science & Technology; Report to the President: Sustaining Environmental Capital: Protecting Society and the Economy.
http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_sustaining_environmental_capital_report.pdf

Reality Check on CEPP ESV: Another data demonstration					**Approach: Costanza value (CV) based on Habitat Unit "lift"**					
	CEPP Habitat Unit Index		Costanza $	Worth in $/Acre/yr		Net Gain	x Acres from	Subtot $/acre/yr	x yrs =	Total
Habitat	Future WC	ALT4R2	frm Ref Data	Before CEPP	After CEPP	$/acre/yr	CEPP Chart	one year	28	For J years, J3 =
Type			$/acre/year							
CE-1	0.48	0.55	11,018	$ 5,288.48	$ 6,059.72	$ 771	70,979	$ 54,741,607	28	$ 1,532,765,006
SE-1	0.34	0.55	11,018	$ 3,746.01	$ 6,059.72	$ 2,314	14,994	$ 34,691,768	28	$ 971,369,497
3A-NE	0.24	0.74	$6,269	$ 1,504.64	$ 4,639.31	$ 3,135	123,475	$ 387,052,967	28	$ 10,837,483,067
3A-MC	0.35	0.7	$6,269	$ 2,194.27	$ 4,388.53	$ 2,194	78,208	$ 171,609,207	28	$ 4,805,057,809
3A-NW	0.43	0.77	$6,269	$ 2,695.81	$ 4,827.39	$ 2,132	70,387	$ 150,035,052	28	$ 4,200,981,462
3A-C	0.77	0.81	$6,269	$ 4,827.39	$ 5,078.16	$ 251	137,233	$ 34,414,377	28	$ 963,602,552
3A-S	0.83	0.83	$6,269	$ 5,203.55	$ 5,203.55	$ -	82,437	$ -	28	$ -
3B	0.57	0.69	$6,269	$ 3,573.52	$ 4,325.84	$ 752	85,688	$ 64,464,796	28	$ 1,805,014,292
ENP-N	0.44	0.79	$5,878	$ 2,586.10	$ 4,643.23	$ 2,057	125,133	$ 257,414,223	28	$ 7,207,598,234
ENP-S	0.53	0.71	$2,708	$ 1,435.24	$ 1,922.68	$ 487	238,592	$ 116,299,284	28	$ 3,256,379,965
ENP-SE	0.6	0.63	$2,708	$ 1,624.80	$ 1,706.04	$ 81	135,104	$ 10,975,849	28	$ 307,323,771
FB-W	0.13	0.26	$ 11,018	$ 1,432.30	$ 2,864.59	$ 1,432	157,952	$ 226,234,123	28	$ 6,334,555,447
FB-C	0.1	0.18	$ 11,018	$ 1,101.77	$ 1,983.18	$ 881	82,048	$ 72,318,201	28	$ 2,024,909,633
FB-S	0.15	0.29	$ 11,018	$ 1,652.65	$ 3,195.12	$ 1,542	97,728	$ 150,742,834	28	$ 4,220,799,350
FB-EC	0.23	0.39	$ 11,018	$ 2,534.06	$ 4,296.89	$ 1,763	87,936	$ 155,015,926	28	$ 4,340,445,921
FB-NB	0.16	0.21	$ 11,018	$ 1,762.83	$ 2,313.71	$ 551	12,672	$ 6,980,794	28	$ 195,462,221
FB-E	0.23	0.26	$ 11,018	$ 2,534.06	$ 2,864.59	$ 331	37,760	$ 12,480,813	28	$ 349,462,758
Total Acres							1,638,326			
								TOTAL Benefits*		$ 53,353,210,985
FOLKS: This is just data for a reality check on CEPP ESV					I.E., an estimation!		USACE	Construction		$ 900,000,000
* Consider this theCEPP ESV Upper limit?							COST	Contingency		$ 500,000,000
* Does this make sense?							DATA	non-Construct		$ 400,000,000
FL Crystals ROG Plan B:C = 26:1						Per Year $	8,000,000	***O&M***	28	$ 224,000,000
For 2010 ROG Demo TEV was ~ $90 billion.								Total Cost		$ 2,024,000,000
								Benefit/Cost		$ 26.36
Using Costanza Value Synthesis by Habitat type in $$$/Acre Year, 2013 $$$										
Constanza values are low in lieu of a discount rate. Long-term question: Will economic benefit of the resource increase in value due to										
Sea Level Rise, salt water intrusion, and potential drought? If so, value accretes rather than deminishes per a discount rate.										
Costanza Habitat Values - 2013 $$$/Acre/Year				Argument for no discount rate - see			http://en.wikipedia.org/wiki/Social_discount_rate			
Lift Value = FWO HSI (CV) - ALT4R2 HSI(CV										
	REFERENCE DATA		(feeds into calculations above)							
	1994 $/acre/Yr		1994 $/acre/y	Inflate to 20	$/Acre/Year					
Habitat Ty	TEV,Hecta	x conversion	TEV acre	Govt factor	2013 Value	Habitat Type				
Estuary	$22,832	0.404686	$9,240	1.576	$14,562	Estuary				
Seagrass	$19,004	0.404686	$7,691	1.576	$12,120	Seagrass				
Swamps	$19,580	0.404686	$7,924	1.576	$12,488	Swamps				
Flood Plair	$19,580	0.404686	$7,924	1.576	$12,488	Flood Plains				
Wetlands	$14,745	0.404686	$5,967	1.576	$9,404	Wetlands				
mangroves	$9,990	0.404686	$4,043	1.576	$6,371	mangroves				
forest/trop	$2,007	0.404686	$812	1.576	$1,280	forest				
Wet Scrub	Use 1/2 Wetland		0.5	9404	$4,702	Wetscrub				
Sawgrass	Use 1/2 Wetland		0.5	9404	$4,702	sawgrass				
Rangeland	$232	0.404686	$94	1.576	$148	Marl P				
TEV - Total Economic Value										
Fundamental application questions:										
How close to reality is a local TEV to a global TEV Synthesis of similar habitat by SME?										
How long will it take to develop an accurate local TEV v. using Global Synthesis Data?										
							Calculated			
CE-1	shoal grass, widgeon gras		Estuary	Sea Grass	Mangroves	Subtotal	TEV. $/Ac/yr			
			$14,562	$12,120	$6,371	$33,053	$11,018			
SE-1	shoal grass, manatee gra		$14,562	$12,120	$6,371	$33,053	$11,018			
3A-NE -	Sawgrass, Wet Scrubland, Floating Emergent, Open Marsh									
	4702	4702		$9,404		$18,808	$6,269			
3A-MC -	Sawgrass, Cattail, Floating Emergent, Open Marsh									
	4702	4702		$9,404		$18,808	$6,269			
3A-NW -	Sawgrass, Floating Emergent, Open Marsh, Spikerush, Cattail									
	4702		$9,404	4702		$18,808	$6,269			
3A-C -	Sawgrass, Open Marsh, Floating Emergent, Cattail, Spikerush									
	4702	$9,404		4702		$18,808	$6,269			
3A-S -	Open Marsh, Sawgrass, Floating Emergent, Cattail									
	$9,404	4702		4702		$18,808	$6,269			
3B -	Sawgrass, Open Marsh, Cattail									
	4702	$9,404		4702		$18,808	$6,269			
ENP-N -	Sawgrass, Marl Prairie, Floating Emergent, Marsh, Cattail, Scrub									
	4702	4702	4702	$9,404		$23,510	$5,878			
ENP-S -	Sawgrass, Marl Prairie, Wet Scrubland, Pineland									
	4702	4702	148	1280		$10,832	$2,708			
ENP-SE -	Marl Prairie, Pineland, Sawgrass, Spikerush									
	148	1280	4702	4702		$10,832	$2,708			
FL Bay Ger	Estuary, Seagrass, Mangroves									
	$14,562	$12,120	$6,371			$33,053	$11,018			

For justification of a zero discount rate see http://en.wikipedia.org/wiki/Social_discount_rate

1000 Friends of Florida * Audubon Florida * Audubon of the Western Everglades * Clean Water Action * Conservancy of Southwest Florida Defenders of Wildlife * Everglades Foundation * Everglades Law Center Florida Oceanographic Society * Friends of Arthur R. Marshall Loxahatchee National Parks Conservation Association * Natural Resources Defense Council * Reef Relief * Sierra Club *Sierra Club Broward Group Sierra Club Loxahatchee Group * Sierra Club Miami Group * South Florida Audubon *Tropical Audubon Society * United Waterfowlers

October 10, 2012

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Dr. Ehlinger et al.;

On behalf of the above listed organizations, we would like to thank you for the opportunity to comment on the Central Everglades Planning Project (CEPP). Timing is of the essence to halt irreversible ecosystem degradation and avoid the high costs of delay. As a pilot project, CEPP embodies the sound planning and unprecedented public input that can be accomplished with modernized planning and provides a significant step to restoring America's Everglades. Thus, we implore you to highlight the success of this effort and eliminate any remaining procedural obstacles to deliver a Chief's Report on this historic project by December 31, 2013.

The CEPP Tentatively Selected Plan (TSP) is a worthy investment that delivers significant benefits to reduce damaging discharges to the Caloosahatchee and St. Lucie estuaries; to restore habitat in the central Everglades, focusing on the "River of Grass"; and to deliver an annual average of 210,000 acre-feet of water from Lake Okeechobee to the central Everglades, Everglades National Park (ENP) and Florida Bay.

Pilot Project Success

The bundling of project elements to produce a cost-effective TSP, which delivers broad benefits, provides a model for long-term success in advancing Everglades restoration. We are delighted with efforts to capture the value of ecosystem services postulated by this project and encourage this type of evaluation going forward. We applaud the utilization of existing data and tools developed in previous Decompartmentalization and Sheet Flow Enhancement Project (DECOMP) and other previous planning efforts. Moreover, the public engagement model used by the South Florida Ecosystem Restoration Task Force created an extraordinary platform for stakeholder participation in this truncated timeline that we hope to see replicated. We acknowledge that concerted efforts by the PDT have already reduced anticipated project costs by over $200 million dollars. We look forward to continuing to find cost control measure and taking advantage of the South Florida Water Management District's experience and proficiency

in constructing restoration projects within this unique ecosystem. The significant leadership undertaken by the state and federal partners to overcome obstacles to advancing this project should be heralded. There are some uncertainties inherent to a project of this scope that includes a considerable implementation period. These uncertainties should be acknowledged and addressed during the course of executing Everglades restoration but should not become justification to forestall the implementation of CEPP or delay the substantial ecosystem benefits provided by this project. CEPP's adaptive management plan provides needed flexibility and should be utilized.

Endangered Species Recovery

Everglades restoration is good for endangered species throughout the ecosystem. The CEPP TSP benefits more than 1.5 million acres of habitat across the Greater Everglades, from the northern estuaries, Water Conservation Area 3A (WCA-3A) and Water Conservation Area 3B (WCA-3B), ENP, and Florida Bay as well as a vast estuarine area along the SW coast of Florida from Whitewater Bay to Broad River. Overall, the TSP is best for the Everglades food web and endangered species such as the Everglade Snail Kite, Wood Stork, and American crocodile. Benefits to the Cape Sable Seaside Sparrow (CSSS) will be realized in the long run as we continue to shift the balance of flow from the S-12s through WCA-3B into Northeast Shark River Slough (NESRS). CEPP takes a first, significant step at doing that.

We are encouraged by agency efforts to pro-actively manage habitat to ameliorate any short-term impacts to CSSS associated with construction of the TSP while we wait for CEPP to come online. These changes include, but are not limited to, revisiting operation regimes including the Everglades Restoration Transition Plan which will be revisited in 2016. If potentially adverse effects are observed or predicted, longer-term impacts to CSSS associated with the operation of project features would be addressed through operational monitoring and adaptive management actions. We look forward to reviewing the Service's analysis of the modeling results for hydrologic impacts to the CSSS and its habitat. ESA consultation must address potential adverse effects to the CSSS, including by requiring robust monitoring of habitat conditions and breeding success and clear triggers for mitigation action in the event of adverse effects, with mitigation actions agreed to in advance. We urge the agencies to advance CEPP and Everglades restoration while continuing to ensure an adequate nesting window for all CSSS subpopulations and hydrologic regimes that support the bird's habitat – short-hydroperiod freshwater marl prairies in the southern Everglades.

Water Supply Benefits

The TSP results in meaningful restoration of the heart of Everglades and is consistent with CEPP's three initial project purposes to: reduce damaging discharges to east and west coast estuaries; restore habitat in the central Everglades focusing on the "River of Grass"; and deliver "new" sources of clean water to the central Everglades and ENP. This plan successfully increases water quantities delivered south to the natural system and municipal users without reducing the levels of service for agricultural or other existing legal users as provided for in the Water Resources Development Act (WRDA) 2000 Savings Clause. Seepage management features proposed are necessary to reduce the loss of water from the natural system and are key elements to avoid flooding in urban and agricultural communities. We support the adaptive

management plan language for water quality monitoring, including salinity, in Biscayne Bay that result from seepage controls. We caution that underground seepage barrier walls are permanent structures and request that design need be continually evaluated prior to implementation of this feature. We should also continue to establish baseline data to better understand any canal and groundwater flow impacts. If potentially adverse effects are observed or predicted, longer-term impacts to Biscayne Bay associated with the operation of project features should be addressed through operational monitoring and adaptive management actions.

Recreational Opportunities

The CEPP TSP embraces innovative partial backfill and plugging opportunities in the L-67A, L-67C and Miami Canal that create continued fishing opportunities and restore sheetflow. CEPP will provide greatest recreational benefits in the dry season, when soils are currently at highest risk of oxidation leading to habitat (ridge-and-slough and tree island) loss—particularly in northern WCA-3A, NE SRS, and WCA-3B. As a result, the TSP will cut the number of fire closures for recreationalists by half, while reconnecting habitat and hydrology needed to protect remaining and restore lost habitat. Restored ecological connectivity between WCA-3A, WCA-3B and Everglades National Park will also improve estuarine conditions and fisheries habitat in Florida Bay and along the southwest coast of Florida.

Restoring Sheet Flow

The Blue Shanty Flow-way (L-67D) feature provides a unique opportunity to restore sheet flow while utilizing an already impacted part of the landscape. We must remain focused that this feature is intended to allow for restoration of sheetflow, the creation of ridge-and-slough habitat and fishery improvement. The L-67D is a necessary prosthesis to orient flow in such an impacted system that has undergone significant soil oxidation/elevation loss and landscape pattern deterioration and should not be interpreted or designed as a flood control structure. We support the use of adaptive management to determine the true need for, best use of, placement for and design needs for this feature. Current criteria mandating a 6-ft high levee with a 14-ft wide crest and 3:1 sloping banks constitute an unnecessary level of flood control to an undeveloped natural wetlands area. Furthermore, adequate seepage control benefits for WCA-3B can be achieved by utilizing a temporary berm to “train” the River of Grass flow from gated structures along L-67-A while providing significant cost savings. We remain committed to feature refinements throughout the design process that allow us to greatly increase ecological connectivity through the degradation of the L-29 and is compatible with the 2.6-mile bridge provided for in the Tamiami Trail Next Steps project. The removal of existing levees and other obstructions to flow is fundamental to advancing restoration objectives envisioned in CERP.

Conclusion

We believe that the CEPP reflects a tremendous undertaking and the TSP achieves the highest ecosystem benefits possible within existing lands in public ownership. As plans to sequence interdependent projects are developed, concurrent construction of multiple projects should be prioritized to avoid implementation delays. We urge that all opportunities to begin construction of CEPP as soon as possible be explored.

We commend the Project Delivery Team on this highly successful pilot planning effort and honor their tremendous efforts by remaining committed to ensure CEPP's expediting this process are not undermined by bureaucratic delays. A Chief's Report by December 2013 and inclusion of CEPP in a 2013 WRDA is essential to our ability to increase water flows to the central Everglades, provide relief to the northern estuaries and provide short term ecological benefits for restoring America's Everglades.

Sincerely,

/signatures waived to expedite delivery/

Charles Pattison, President
1000 Friends of Florida

Julie Hill-Gabriel, Director of Everglades Policy
Audubon Florida

Brad Cornell, Southwest Florida Policy Associate
Audubon of the Western Everglades

Kathleen Aterno, Florida Director
Clean Water Action

Jennifer Hecker, Director of Natural Resource Policy
Conservancy of Southwest Florida

Laurie MacDonald, Florida Program Director
Defenders of Wildlife

Eric Eikenberg, CEO
Everglades Foundation

Sara Fain, Executive Director
Everglades Law Center

Mark Perry, Executive Director
Florida Oceanographic Society

Elinor Williams, President
Friends of ARM Lox NWR

John Adornato, Sun Coast Regional Director
National Parks Conservation Association

Brad Sewell, Senior Attorney
Natural Resources Defense Council

Millard McCleary, Executive Program Director
Reef Relief

Jonathan Ullman, Everglades Senior Field Organizer
Sierra Club

Stanley Pannaman
Sierra Club Broward Group

Stephen Mahoney, Conservation Chair
Sierra Club Miami Group

Drew Martin, Conservation Chair
Sierra Club Loxahatchee Group

Doug Young, President
South Florida Audubon Society

Laura Reynolds, Executive Director
Tropical Audubon Society

Newton Cook, Executive Director
Ducks Unlimited

CLEAN WATER ACTION

August 29, 2013

Colonel Alan M. Dodd
U.S. Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207

Re: Central Everglades Planning Project Draft PIR Release

Dear Colonel Dodd:

Thank you for your leadership and the tremendous effort of the Army Corps in working to prepare the draft Project Implementation Report (PIR) for the Central Everglades Planning Project (CEPP). Clean Water Action looks forward to reviewing the PIR closely now that it has been made publically available as of this morning. We applaud the dedicated effort of the Army Corps and the South Florida Water Management District teams that led to this decisive next step toward restoring much-needed flow to the southern Everglades ecosystem.

The timing of CEPP approval is critical. With Congress considering the Water Resources Development Act (WRDA) of 2013, we have the opportunity to have this important project authorized this year. If this window of opportunity is missed, CEPP may be forced to wait in the queue for Congressional authorization for years while the ecosystem and surrounding communities – including those of the St. Lucie and Caloosahatchee estuaries – continue to decline and suffer. We simply cannot wait.

Given the narrow window of opportunity available with WRDA, Clean Water Action urges you to ensure that the public comment window be kept to the minimum requirement of 45 days and not be extended any further. Even pushing the comment period by an additional two weeks could mean missing the December 31st deadline for 2013 authorization. Given the tremendous effort already exerted by agency staff, stakeholders, and the public over the past 18 months, we hope you will use your leadership position to ensure that momentum will not let up as the deadline approaches.

Thank you again for your commitment and leadership. Please contact Clean Water Action at (561) 672-7638 or flcwa@cleanwater.org with any questions or concerns.

Sincerely,

Kathleen E. Aterno
Florida Director

7300 N. Federal Highway, Suite 200, Boca Raton, FL 33487 | p: (561) 672-7638 | e: flcwa@cleanwater.org

October 22, 2013

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Dr. Ehlinger

On behalf of the Sierra Club Everglades restoration team we would like to thank you for your work on developing the Central Everglades Planning Project (CEEP) and on providing us with the opportunity to comment on this project. We applaud the Army Corps of Engineers efforts in developing and implementing this massive project in restoring clean water flow throughout the Everglades. This letter is in addition to the comment letter we submitted with other environmental organizations (attached).

A major concern we have is in the timing of the components and whether they will achieve a reduction in harmful flows to the estuaries in time to prevent more serious harmful algal blooms. We believe that the discharges of polluted waters into the Caloosahatchee and St. Lucie estuaries should be addressed immediately through operational changes and through expediting those parts of the project that will permit water from Lake Okeechobee to be cleaned to the 10 parts per billion or less and transported south to the Park.

These discharges cause immediate and long-term harm to human and other marine and biological life. The algae produced by these polluted discharges causes harmful effects, including the poisoning of fish and shellfish, habitat disruptions for many organisms, water discoloration, beach fouling, and even toxic effects for humans and coral reefs. In 2013 alone in the Atlantic Ocean and Gulf of Mexico over 700 manatees have died directly from red tide and blue green algae pollution.

If we wait till 2018 to address the discharge of these heavily polluted waters into the Caloosahatchee and St. Lucie estuaries the cumulative effect will continue to be devastating to our environment, and we believe it will produce a massive die off of coral reefs off of South East Florida. Many marine animals have a symbiotic relationship to these corals in Palm Beach and Broward counties. These reefs also play a protective role during severe storms by absorbing storm wave action. Nutrients and turbidity that blocks sunlight destroy reefs.

Since tourism is the number one source of income for the state of Florida it is in Florida's best interest to make sure the environment that draws people from other states to ours is pristine and well preserved.

We encourage you to take the following actions:

1) **Expedite the building of FEB and STA's that will clean the water from Lake Okeechobee.**
2) **Pursue the purchase of new lands that could facilitate a flow way south.**
3) **Set up operational changes that permit rain driven storm water in the WCA's when they are experiencing too much water to be transported into Everglades National Park when the water quality in these areas meets park standards.**
4) **Increase BMP requirements that reduce nutrient flows into the lake and we oppose back pumping of storm water into the lake. Additional distributed water storage will reduce these harmful discharges to the estuaries.**
5) **Take advantage of the Tamiami Trail bridging to send as much clean water as possible into the park.**

Adaptive management permits you to modify your plans as you proceed. Please take advantage of any opportunities to increase sheet flows that clean water and sends it south towards Everglades National Park rather than into the estuaries.

Sincerely,

Jonathan Ullman

South Florida/Everglades Senior Representative

Sierra Club

Save the Manatee® Club

The Voice For Manatees Since 1981

Submitted via email to: CEPPcomments@usace.army.mil

October 10, 2013

Re: CEPP PIR for Tentatively Selected Plan

To whom it may concern:

Save the Manatee Club has reviewed the Project Implementation Report (PIR) for the Tentatively Selected Plan (TSP), Alternative 4R2, and recognizes the proposal for CEPP as one important component of a much larger plan of action to regulate discharges from Lake Okeechobee to the estuaries.

The current feast or famine management scheme sometimes inundates the estuaries with too much nutrient rich fresh water, and at other times deprives them of fresh water, which causes damaging salinity fluctuations. Pulses of flow create turbidity, cause sedimentation and nutrient enrichment, and support algal blooms, all of which limit or prevent seagrass growth and survival. Absence of flow increases salinity, particularly in the upper estuary, to levels that kill submerged aquatic vegetation like tape grass (*Vallisneria)*.

We support CEPP because it will promote conditions to help restore seagrasses important for manatee forage, and oyster beds important for water quality and clarity, within the St. Lucie and Caloosahatchee estuaries, by reducing flows to each from Lake Okeechobee by 23% and 25%, respectively. Unfortunately, CEPP is only predicted to increase coverage of seagrass shoots by 8.5% in the Caloosahatchee and 6.6% in the St. Lucie (PDF p. 199). Florida Bay will also benefit from CEPP, because historic management of Lake Okeechobee has greatly reduced flows to the south and into the Bay, creating hypersaline conditions that have killed expansive beds of turtle grass (*Thalassia*). CEPP will increase southerly flows to Florida Bay. We offer the following comments and questions for consideration as the project plans are finalized.

<u>Climate Change</u>

We were pleased to see climate change scenarios considered in developing the recommended plan. If future adaptations to project construction and/or operation are necessary to respond to sea level rise, changes in rainfall, or other climate change-related scenarios, we request that plans to alter

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operations of CEPP components consider not only the impact on the land and water within the CEPP boundary, but also those areas outside the boundary that might be affected by such decisions. Stated simply, we don't wish to see the environment outside the project boundary degraded or compromised in the name of meeting project goals for CEPP.

Nutrient Concerns Related to Increased Water Availability

The report states that the TSP will increase water supply for municipal and agricultural users (PDF p.5) then says the project will increase water available for municipal and industrial users but maintain "existing water supply performance for agricultural users in the Lake Okeechobee Service Area" (PDF p.9). Clarification is needed as to whether additional water will be made available for agricultural uses as a result of this plan. If additional water is made available, then additional nutrient-rich runoff will be produced, and the SFWMD should adjust BMP requirements accordingly to ensure that the existing problems associated with runoff are not exacerbated. Additionally, producers of nutrient-enriched runoff in the Everglades Agricultural Area (EAA) should be financially responsible for the treatment of this polluted water. This component of CEPP is not a financial burden that should be carried by the public, but by the private industry creating the pollution. Additionally, it is not clear how the additional 12 million gallons per day for Broward County and 5 million gallons per day for Miami-Dade County will be utilized. Although the report states that the stormwater treatment areas (STAs) will reduce phosphorus concentrations in the water to meet required water quality standards, this should be closely monitored, particularly if flows through the STAs are increased. Given the high nutrient content of water moving through this system, it will be important to ensure that nutrient loads to coastal waters are not increased as a result of this water delivery. The same assurances are needed for water that will be routed south to Florida Bay.

Clarifying Explanation of Benefits

It is stated that an average of 1.7 billion gallons of water per day is discharged to the Atlantic and Gulf (PDF p.16) and CEPP will redirect a portion of this. Unfortunately, the report does not provide the number of gallons per day by which discharges will be decreased, instead referring to the amount of water that will be redirected south through flow equalization basins and STAs. Even this amount is not characterized in gallons per day, but as "approximately 210,000 acre feet per year, annual average"- a figure not readily comparable with gallons per day. This point is further confused with the report states that CEPP will capture and annual average of ~79,000 acre feet of water from being lost to tide in the Caloosahatchee (an 18% increase compared to the future without project) and 60,000 acres from the St. Lucie (a 32% increase). Later (PDF p.191), the project is stated to beneficially affect more than 1.5 million acres in the Caloosahatchee and St. Lucie Estuaries, the Greater Everglades, and Florida Bay, and the increase in habitat units afforded by the project is provided. Standard units of measurement should be utilized throughout the report to facilitate understanding of project benefits in quantifiable terms.

The report states that 160,000 acre feet per year will enter Florida Bay, but it is not clear what will become of the other 60,000 acre feet per year that will not travel to the northern estuaries. Will any of this go to aquifer recharge? If so, then this benefit should be stated. The conclusion of the report should introduce those CERP projects that are intended to address the remainder of the 1.7 billion gallons that will not be offset by CEPP.

The TSP is intended to benefit both the St. Lucie and Caloosahatchee Estuaries by decreasing the number and intensity of high-volume releases from Lake Okeechobee, according to PDF page 19. Later (PDF p.133), it is explained that with the TSP, the number of low and high salinity events for the Caloosahatchee will be reduced, and that while the number of high flow events will be reduced in the St. Lucie, the number of low flow events in this estuary will increase. This fact should be pointed out explicitly within the executive summary.

Manatee Considerations

While the TSP will maximize benefits to Florida Bay (PDF p.129), it will reduce water flowing into another important manatee habitat: Biscayne Bay. Any changes in water flowing to Biscayne Bay should be monitored, and impacts to the Bay's ecology reported, since the TSP is estimated to have "negligible to minor adverse effects" on mangrove communities and seagrass beds in Biscayne Bay (PDF p.123).

Annex 1 (PDF p.424) states that deep canals are believed to provide refuge to manatees during cold periods because these canals retain heat for longer periods of time. Will CEPP alter manatee access to any of these canals believed to provide refuge? And will the depth or flow of water in any of these canals change in a way that might decrease their utility by manatees during cold events? If so, contingency plans should be developed with FWC and FWS to rescue manatees observed with cold stress in this system, or otherwise in need of rescue.

Safety features (i.e. grating of culverts) must be maintained not only in those canals known to accommodate manatees, but also those which are capable of providing access to manatees. All personnel who work in these areas should be trained on spotting manatees and assessing possible health concerns such as cold stress.

With regard to seagrass, the report states (PDF p.201) that the goal is to have a stable mixed community of *Thalassia, Halodule,* and *Ruppia* in North Florida Bay with decreased coverage of *Thalassia* and increased coverage of *Ruppia*. The reason for desiring *Ruppia* over *Thalassia* is not clear and should be explained.

We will review the USFWS Biological Opinion (being prepared in response to the Corps' "may affect" determination) when it is released in December and provide comment if necessary. Thank you for considering our comments on the Subject PIR.

Sincerely,

Katie Tripp

Katie Tripp, Ph.D.

Director of Science and Conservation

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October 14, 2013

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Dr. Ehlinger,

On behalf of over four million members and supporters, restoration of America's Everglades is a top priority for the National Wildlife Federation (NWF). In that vein, NWF strongly supports the Central Everglades Planning Project (CEPP) and urges you to complete a final Report signed by the Chief of Engineers as soon as practicable.

Progress on this project would be timely. The longer water is shunted unnaturally to the east and west coasts of Florida, the more degraded the Indian River Lagoon and the Caloosahatchee estuary become. In addition, the historic Everglades ecosystem is starved of necessary freshwater inflows. CEPP was contemplated specifically to speed delivery of a project to fundamentally re-plumb the River of Grass. The urgency of authorization, funding, construction and implementation of this project cannot be understated.

Even though the planning process for CEPP has been expedient, it has complied with all existing environmental review requirements while allowing for robust scientific inquiry and public participation. This serves as a model for other Corps ecosystem restoration projects.

The Tentatively Selected Plan (TSP) would be a wise investment in an international treasure. The Everglades is both an environmental and an economic driver. By increasing southerly freshwater flows of over 200,000 acre feet, CEPP will restore the historic River of Grass for future generations.

As such, NWF believes a signed Chief's Report for the CEPP Tentatively Selected Plan can and should be delivered to the Secretary of the Army for Civil Works by the end of this calendar year. Thank you in advance for your consideration and for your continued efforts on this important project.

Sincerely,

Malia Hale

Director
Protecting and Restoring Coasts and Floodplains
National Wildlife Federation

GLADES SUGAR HOUSE

Sugar Cane Growers Cooperative of Florida

POST OFFICE BOX 666

BELLE GLADE, FLORIDA

33430-0666

October 11, 2013

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Dr. Ehlinger:

Please accept the following comments on behalf of the 45 grower-members of Sugar Cane Growers Cooperative of Florida on the draft PIR/EIS issued for the Central Everglades Planning Project (CEPP).

The Cooperative's grower-members have a direct interest in CEPP. Our grower-members farm 70,000 acres of sugarcane and an additional 40,000 acres of winter vegetables in the Everglades Agricultural Area that is part of the Lake Okeechobee Service Area (LOSA) for water supply from Lake Okeechobee. The grower-members own and operate the Belle Glade based raw sugar processing facility that is dependent upon our growers' ability to produce our cane supply. This project has ramifications to our existing water supply and creates the potential for water quality violations that in turn could impact our growers. Some of our grower-members have legal standing in the USA vs. State of Florida (Moreno) federal litigation that enforces the conditions of the Consent Decree including the water quality limits outlined in Appendix A for Everglades National Park and Appendix B for Loxahatchee National Wildlife Refuge.

First, we applaud the efforts of the U.S. Army Corps of Engineers and the South Florida Water Management District in their efforts to streamline the planning process through vertical integration of decision making. CEPP represents the most complex set of features in the Comprehensive Everglades Restoration Plan (CERP) therefore proving to be a huge challenge to complete in the expedited schedule. We compliment the team for listening to concerns and attempting to address the concerns of stakeholders throughout plan development. Please accept the following specific comments.

SAVINGS CLAUSE/PROJECT ASSURANCES

As the Corps of Engineer's rightly points out in the draft PIR for CEPP, meeting the Savings Clause requirements of Section 601(h) of WRDA 2000 is a hard constraint. In Section 6.1.1 of the draft PIR, the Corps recognizes that while Lake Okeechobee remains the primary source of water for the LOSA, "the operational changes to the Indian River Lagoon-South suite of projects (different than the approved operations contained in WRDA 2007) is considered a partial water supply *source transfer*. The transfer would not be implemented until the CERP C-44 Reservoir, the inflow canal to the C-23 Basin and Canal is completed."

More important is the recognition of the dependency on the Lake Okeechobee Regulation schedule modifications to enable CEPP to convey water south. This regulation schedule modification is necessary to *maintain the level of service for water supply for existing legal users* dependent on lake Okeechobee, specifically users in LOSA and the Seminole Tribe of Florida.

Table 6-9 depicts the interdependencies among CEPP and non-CEPP features. Deviating from the interdependent non-CEPP features proposed sequencing will upset the requirement to meet Saving Clause provisions for water supply and flood protection and water quality under state law and as implemented by Federal court order. Since the audience for the PIR is much broader than the select group that has followed it closely, it is important to add some additional discussion on the importance of these interdependencies so future readers will be able to understand the significance.

The narrative in the paragraph following Table 6-9, states, *"the following outlines one potential scenario for integration of the CEPP features....."* The interdependencies are much more than 'potential scenarios' and must be acknowledged as such in the final PIR rather than described as optional. Otherwise it is impossible to be sure about what CEPP is and how all the benefits will be achieved assuming the project is authorized.

WATER QUALITY

Impacts to water quality parameters are expected to occur as a result of diverting an additional 200,000 AF of water from Lake Okeechobee into the Everglades. This could trigger a violation of Appendix A of the Federal Consent Decree and result in more litigation by a party to the case or a third party litigant. The draft PIR recognizes this as an outstanding issue but does not offer up a resolution to Appendix A by way of a modification of the formula, relaxing the limits or dismissing the case as unnecessary in light of the state's program for meeting the strict requirements in the new Clean Water Act permits issued in 2012.

In agreeing to release the draft PIR and act as local sponsor, the South Florida Water Management District Governing Board passed a resolution supporting the release of the CEPP draft PIR/EIS for agency and the publics' review. However, in Section 3 and 4 of the resolution, the Board acknowledged the water quality issues and asked that they be resolved prior to implementing CEPP projects. Issues include the need to revise the compliance methodology of Appendix A of the Consent Decree and also to reach agreement on joint measures which may be needed in the event of an exceedance of Appendix A resulting from a change in operation of a federal project. Failure to develop a mutually agreed upon revised compliance methodology or mutually agreed upon joint measures will *preclude the state from implementing, approving or operating CEPP projects.* The final PIR should contain an explicit discussion of the Board's resolution and what it means for the implementation of CEPP features in the future.

Further the Governing Board acknowledged that project elements *cannot proceed* unless/until it is determined that construction and/or operation of the feature: will not cause or contribute to a violation of the permit(s) discharge limits or specific conditions; and reasonable assurance exists that demonstrate adverse impacts on flora and fauna in the area influenced by project element will not occur. This means that the state must meet the terms and conditions of the NPDES permits and state-issued consent order under the Clean Water Act for operations of the Stormwater Treatment Areas for discharges into the Everglades Protection Area including the WQBEL effluent limit. The state and federal parties have mutually agreed to implement the 2012 Everglades Restoration Strategies (ERS) suite of projects with permits issued in September 2012. Further, the state Legislature ratified these projects and dedicated long term funding to implement the suite of projects designed to come into compliance with the WQBEL. The consent order requires the ERS projects to be complete and operational in 2029.

The draft PIR should be clear that construction of CEPP features cannot move forward until this constraint is met.

PROJECT ALTERNATIVE ANALYSIS PROCESS

Clearly, due to the interdependencies of Alt4R2 with non-CEPP features and operational changes, CEPP does not have stand alone benefits that can be discerned in this PIR. The benefits to the estuaries can only be

realized after the C-43 and C-44 reservoirs are built and operational. Then the CEPP plan provides an increment of benefit. Benefits to Everglades National Park in moving water south can only be realized by completing the Modified Water Delivery Project features and operations of the S-356 pump. Based on earlier studies by the Corps and District the Mod Waters Project can provide up to three quarters of the additional water flow into the Park expected with the CEPP.

A better alternative analysis may have been realized by evaluating an operational alternative that stores more water in the Lake and opening the southern end of the system. Only one alternative for north of the Redline was evaluated in the final array of alternatives since deep storage was rejected early in the process due to perceived cost.

ENDANGERED SPECIES ACT REQUIREMENTS

The draft PIR recognizes that CEPP will impact endangered species; however, the USFWS has not completed its Biological Opinion (BO). Therefore we reserve the right to supplement our comments regarding endangered species once the BO is available.

Please accept these comments on behalf of the grower-members of Sugar Cane Growers Cooperative of Florida.

Sincerely,

Barbara J. Miedema
VP- Public Affairs & Communications

BJM:swd

cc: Blake Guillory, Executive Director, SFWMD
SFWMD Board members

DADE COUNTY FARM BUREAU

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Ms. Gretchen Ehlinger, Ph.D.
U.S. Army Corps of Engineers, Jacksonville District
Planning and Policy Division
701 San Marco Blvd
Jacksonville, FL 32207

Subject: Comments on the Draft PIR for the Central Everglades Planning Project.

Dear Ms. Ehlinger:

This letter is in response to the notice seeking public comment on the subject report. The Dade County Farm Bureau is the largest agricultural organization in Miami-Dade County with over 800 active members. We have represented the interests of agriculture in this county for over 71 years. Although we are not experts in the Corps planning process or the many technical details discussed in the draft report, there are several points we would like to make with respect to this plan. We have worked with the Florida Department of Agriculture and Consumer Services and we fully endorse their extensively detailed comments on this plan.

Growers in our area have been engaged in federal water project planning since the early 1960s. The changes the Corps made to the South Dade canal system in the 1970s had a direct and negative impact on agriculture. We participated in numerous government processes that eventually led to the authorization of the *Modified Water Delivery Project* in 1989. The project included important elements to correct the problem created in the 70s, especially the S-356 Pump. The most frustrating thing for us has been to see that project flounder; even though important elements, such as S-356, have been constructed for years. The CEPP seems to assume that Mod Waters will never be operational. We feel it would make much more sense to hold CEPP in abeyance until Mod Waters is fully operational, and until you had enough experience with it to clearly define its capabilities. You could then decide what additional work might be needed. To rush CEPP through Congress when you haven't even operated a very similar project that was approved 24 years ago, and which is already built, does not seem like the right thing to do.

Our other big concern is how the L-31N and C-111 canals will be operated in the future. The CEPP model results show an increase in high canal stages in the critical reach of L-31N between Richmond Drive and the Frog Pond. This is clearly not acceptable. Apparently there is some language in the document that says this is due to a problem with the model. No plan should move forward based on a computer model that the agencies think is flawed in one of the most important areas. We suggest getting the model right and then moving forward with a plan you can be confident will work.

The C-111 system is another example where you need to slow down and learn more about what you have already built before you try to approve a complicated plan based on how you think something that is already in place will work. Since 2000 there have been 5 new pump stations and 5 separate impoundments built in the C-111 Basin. Two of

these pumps have been operational for only a single year. There is also a new project in place in the 8.5 Square Mile Area that has not been fully utilized yet, and the final structural element to tie the two areas together is yet to be done. The CEPP plan will put a lot more stress on these features, and the CEPP model has a flaw in how it simulates this area. You need more experience operating this system once it is complete before you propose a major new plan that will place more demand on this untested system. Again, how can we have confidence in this plan when we're not sure how the one you have yet to complete will work?

In the last 15 years we have lost some of our best agricultural land to various Corps projects and much of the land that is left is constantly threatened by root zone flooding due to the operation of the canals. We are now hearing that some of the oldest avocado groves in the area are losing trees to a disease that is often associated with prolonged high water tables. We support projects for the Everglades and have tried to work within your system to make our interests heard. However it is clear to us that protecting property and the economy in South Dade is only an afterthought at best in your rush to do more and more for the Everglades, whether it will work or not.

Please consider slowing this process down to allow time to finish the Mod Waters and C-111 Projects and fully document and understand what they can do before you start a whole new round of changes.

Thank you for considering our concerns.

Sincerely,

George Butler, *President*

September 19, 2013

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

VIA ELECTRONIC SUBMITTAL: CEPPcomments@usace.army.mil

Subject: Draft Integrated Project Implementation Report and Environmental Impact Statement for the Central Everglades Planning Project Comments

Dear Dr. Ehlinger:

Florida Power & Light Company (FPL) values the cooperative relationship we have had with the U.S. Army Corps of Engineers (USACE) for multiple decades. FPL appreciates the USACE leadership in the coordination and design of the Central Everglades Planning Project to accomplish storage, delivery, and water quality improvement objectives for long-term water supplies in the South Florida region. FPL has performed a review of the Draft Integrated Project Implementation Report and Environmental Impact Statement for the Central Everglades Planning Project and is submitting the following comment.

The Draft Integrated Project Implementation Report and Environmental Impact Statement for the Central Everglades Planning Project, Section 6.1.2.6, Plan Description, Facility/Utility Relocations, states that "*Florida Power and Light lines will have to be relocated or abandoned from the area within the A-2 FEB. Florida Power and Light, and Quest Communications lines will have to be relocated where the L-29 is being removed. The removal of Old Tamiami Trail will require relocation of the Florida Power and Light line.*" FPL recommends that coordination with FPL begin as early in the design process as possible to avoid or minimize any impacts to existing FPL properties or infrastructure and to facilitate the implementation of any new infrastructure to deliver power to project facilities.

FPL is willing to discuss this issue with USACE staff to further clarify the observations made in this letter. Please do not hesitate to contact me at Eric.M.Shea@Fpl.Com or at (561) 691-2993.

Respectfully,

Eric M. Shea
Senior Environmental Specialist
Environmental Services

Cc: Florette Braun, FPL
Agnes Ramsey, FPL

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Oct. 15, 2013

Dr. Gretchen Ehlinger
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P.O. Box 4970
Jacksonville, FL 32232-0019

Email: ceppcomments@usace.army.mil

Dear Dr. Ehlinger et al.:

The Florida Wildlife Federation appreciates the opportunity to participate in the workshops held to develop the Central Everglades Planning Project and, now, to comment on the Draft Integrated Project Implementation Report and Environmental Impact Statement.

The Central Everglades Planning Project (CEPP) is the first to address restoration within the Central Everglades by moving water from Lake Okeechobee into Everglades National Park (ENP). The fast-track process used in developing the Tentative Selected Plan (Alternative 4R2) was transparent, open and FWF members welcomed the opportunity to engage staff members of the Army Corps of Engineers and the South Florida Water Management District in discussing details. The process forced timely decisions. It remains our hope that, notwithstanding the government shutdown that began Oct. 1, 2013, a Chief's Report can be readied and presented to Congress by Dec.1, 2013, meeting a deadline set in the Senate-passed Water Resources Development Act for obtaining authorization for CEPP and four pending projects stemming from the Comprehensive Everglades Restoration Plan adopted in 2000. Once authorized, the CEPP can proceed to the design stage, while construction of precedential projects is implemented.

We consider the following projects to be precedential:

- Beginning construction on the Flow Equalization Basins and expanded Stormwater Treatment facilities laid out in the South Florida Water Management District's (SFWMD's) Restoration Strategies Plan to meet water-quality standards required by two court orders, state and federal law;

- Constructing an additional 2.6 mile, Tamiami Trail bridge as identified in the Department of Interior's Next Steps Project to increase the flow of water into Everglades National Park's Northeast Shark River Slough (NESRS); and raising

the Tamiami Trail roadbed to 8.5 feet NGVD, which allows water levels to rise in the adjacent L-29 canal;

- Removing an old Tamiami Trail road bed and clearing vegetation that currently impedes the flow of water into Everglades National Park (ENP) that is released through existing culverts and/or new bridges; and

- Completing the C-111 South Dade Project to connect the Frog Pond detention areas (Contract 8) and plugged L-31W (Contract 9) with the C-111 Spreader Canal to restore water flows to Florida Bay via Taylor Slough.

- Developing operational plans for integrating South Miami-Dade projects before or as they come "on line."

FWF acknowledges and recognizes the assurances that the "savings clause" of the Comprehensive Everglades Restoration Plan (CERP) adopted by the Florida Legislature and Congress in 2000. CEPP is a component of CERP and then-existing levels of flood protection and water supplies for utilities, agriculture, industry and commerce must be maintained.

We will continue to work diligently with ACOE, SFWMD and other Federal and State natural agencies to sequence appropriately the implementation of CEPP and CERP projects so that the ecological restoration benefits, sought throughout the greater Everglades, are met. Adjustments in the design stages of CEPP projects may be warranted, and it is readily apparent that operating plans and regulatory schedules will need to be adjusted as new projects come on line.

FWF agrees with our colleagues in other environmental organizations that the uncertainties inherent in projects with the scope of the CEPP and the years required to implement can be managed utilizing existing review processes. Uncertainties should be identified and acknowledged but should not become justification for stalling authorization or delaying substantial ecosystem benefits achievable within the next 10 years.

The following are comments specific to the Draft Integrated Project Implementation Report and Environmental Impact Statement, Central Everglades Planning Project (CEPP):

Environmental Water Supply and Habitat:

The Tentatively Selected Plan (TSP) proposes to convey, clean up, and release an additional 210,000 acre feet of water from Lake Okeechobee into the Water Conservation Areas (WCA) allowing it to flow south in a shallow sheet. Such sheet-flow was a distinguishing characteristic of the historic Everglades. It was disrupted by the canals and impoundments of the Central and Southern Florida Flood Control Project. The Comprehensive Everglades Restoration Plan to reestablish sheet-flow is a modification of that 1948 project and the Central Everglades Planning Project is a component of CERP.

Restoration of sheet-flow in WCA-3A is facilitated by redirecting water discharges from STA 2 into the L-6 and L-5 canals for release into WCA-3A through a series of gated culverts and spillways. Additionally, in the northwest corner of WCA-3A, sheet flow will be encouraged by the removal of 2.9 miles of the L-4 levee. The Miami Canal will be filled from a point 1.5 miles south of the S-8 to Interstate-I75 (Alligator Alley). Changing the flow of water, inevitably changes habitats and the mix of fish, birds and wildlife those habitats support.

The Florida Wildlife Federation and the Florida Fish and Wildlife Conservation Commission (FWC), which manages the conservation areas, are concerned about current high-water levels and projections that extended high water stages will be detrimental.

The existing conservation areas are impoundments that lack adequate discharge capacities to prevent excessive ponding during wet periods. As shown in Table 5.2.1 "Environmental Effects of Alt 4R and Alt4R2:Hydrology" in the CEPP Draft PIR and EIS, the tentatively selected plan decreases water stages by one to six inches in WCA-2A and -2B, but increases water levels in WCA-3A. In the northwest section of WCA-3A water rises six to nine inches, in the northeast section by five to six inches. Rehydrating northern WCA 3-A is an explicit, desirable goal of CEPP in order to increase the accretion of peat in an area, which has seen substantial losses as a result of oxidation and fire. As Tables 5.2.7 and 5.2.8 show, increasing water levels significantly reduces the number of fire closures in WCA-3A but the number of high-water recreational closures increases significantly. That does not suggest a sufficient "flow-through system" of water management will be achieved. We believe FWC's recommendations regarding water stages and duration should be evaluated and appropriately applied.

Driven by seasonal rainfall patterns, the historic Central Everglades thrived on the rise and fall of flowing water. That regime remains vital to restoring and maintaining the mosaic of landscapes typical of Central Everglades habitats. If the rate of recession is slowed and the length of the winter dry-out cut short, critical forage and breeding habitat for birds and wildlife are modified or lost. Prolonged inundation can be just as deadly to wildlife and lacks the velocity to rebuild tree islands or reestablish the characteristic ridge and slough landscape. FWC'S specific proposals for water depths and duration should be considered, analyzed and appropriately integrated into CEPP design and operational criteria.

To achieve the benefits sought by CEPP, water must *flow through* the conservation areas; the outflow capacity planned and designed into CEPP must be sufficient to keep pace with the inflow of water. ***Until outflow and inflow capacities can be balanced, the FWF suggests additional water be introduced incrementally, the impact on fish, bird and wildlife habitats continuously monitored, and timely adjustments be made as needed to maintain flow and reduce harmful ponding in the southern WCA 3A.*** We believe such an approach is in keeping with the principles of "adaptive management." Periodically it may be necessary to facilitate partial dry-outs to moist soil conditions with water levels at or slightly below soil levels. Accordingly, ***the adoption of new regulation schedules and operating protocols should take place before construction is completed.***

Tree islands are a unique and vital Everglades habitat critical to the preservation of terrestrial wildlife. They occur as willow strands, tropical hardwood hammocks and bayheads of swamp forests with mixtures of other brushy species such as pond apple. Alligators build their nests on them. The islands and existing levees provide refugia during high-water period for deer, bobcats, marsh rabbits, raccoons. Gladesmen have vivid memories of the prolonged high-water events of 1957-58, 1966, and 1982 that resulted in massive deer kills. Not all of those high-water events are included in the "period of record" used in CEPP modeling. Nevertheless they attest to the importance of preserving natural tree islands and the construction and planting of "new" islands. Both provide refugia for wildlife and become oases for migrating and resident species of birds. ***FWF supports retaining and preserving the 22 of these constructed tree islands adjacent to the Miami Canal as a needed conservation element.***

Blue Shanty Flow Way and Levee/Berm, new L67 D, will " train" water south into North East Shark River Slough (NESRS) of Everglades National Park but the size , and configuration of the levee will need to be adjusted to achieve maximum restoration benefits and done so that it benefits restoration objectives with Conservation Area 3B including preservation and enhancement of tree islands and ridge and slough habitats. The proposed 8 miles of the existing L67-C levee and 4.3 miles of the L-29 (Miami Canal) levee would also be removed to increase water flow into the NESRS.

FWF remains committed to feature refinements during the design process to improve ecological connectivity and assure the successful implementation of CEPP. One refinement to the Blue Shanty feature that we think worthy of evaluating during the design stage is to construct a curving berm/levee reflecting actual flow patterns and preserving significant, natural tree islands to the north. Another is to substitute a weir or weirs for one or more of the gates proposed to funnel water from WCA-3A into the Blue Shanty and to ensure the detrimental ponding in southern WCA -3A is reduced. If gates remain the preferred alternative to release water into the Blue Shanty flow way, FWF proposes they and the S-12 gates be telemetrically automated so they can quickly be adjusted to deal with real-time flows. Currently ACOE personnel drive from Clewiston to open, shut or adjust the S12 gates. During hurricanes, tropical storms and even "normal" rainy seasons, this is inefficient and precludes quick action when water levels in WCA-3A rise suddenly.

Debate continues among environmental organizations, ACOE, and various natural resource agencies over the size, exact location, etc. of the proposed Blue Shanty levee/berm (L67-D). Environmental organizations argue that were the structure breached and water released, it would flow into the main body of WCA3-B posing no danger to urban or other developed areas to the east. A discussion in Appendix A-Annex A at 3.2.2 - WCA-3B Design Considerations, appears to discount the risk of a breach and overtopping of the L-29 (Miami Canal) levee even with higher-water levels in WCA 3-B. Controlled gates moving water from WCA 3A, the Blue Shanty flow-way and the main body of WCA 3B are also cited as providing a measure of safety. Were a weir or weirs to be substituted for controlled gates, another assessment would be required. ***The FWF suggests that the sizing of the levee/berm be determined during the design stage when***

the L-67D levee/berm may be seen as serving multiple functions and the risk of failure is weighed against the potential damage. We believe any damage would be minimal.

Endangered Species and Affected Resources:

Despite deteriorating conditions in the water conservation areas during the last 40 years, the mosaic of habitats – sloughs, ponds, ridge and slough, upland tree islands, wet prairies, canals and levees -- continues to support significant wading bird colonies, fish populations, migratory birds, terrestrial and semi-terrestrial wildlife and their prey. Some 24 federally listed endangered, threatened and candidate species exist within the CEPP project area and potentially could be affected.

The Florida panther and indigo snake will be impacted by the modifications or loss of habitat as it transitions from upland to wetland habitats occur. For the Everglades snail kite, which eats only apple snails, more shallow water wetland suggests greater foraging opportunities. The Eastern indigo snake inhabits EAA agricultural fields, and despite the eventual construction of two flow-equalization basins, there will be a large area of agricultural fields and native uplands to sustain that population.

During construction of CEPP projects, FWF supports ACOE recommendations in the CEPP Biological Assessment (Annex A, Sections 7 an 8) to require contractors to minimize adverse impacts by following applicable species guidelines and conservation measures, developed and published by the U.S. Fish and Wildlife Service (FWS).

The Cape Sable Seaside Sparrow (CSSS) is the most likely species to be adversely affected by implementation of CEPP. The bird relies exclusively on short-hydroperiod freshwater marl prairies east and west of ENP's Shark River Slough and along the eastern edge of Taylor Slough, in the southeastern ENP. It feeds on soft-bodied insects from low lying vegetation and avoids open-water sites. Changes in water flows are deemed to have contributed to its precipitous decline. In evaluating CEPP impacts on the six resident-subpopulations of the sparrow, the ACOE is using a performance measure that calls for a nesting window of 60 consecutive dry days (ground water below 6 feet NGVD) beginning March 15 and two "ecological targets." The first, for CSSS subpopulations on the west edge of the Shark River Slough, drops water levels to less than 7 feet NGVD by December 31 to ensure nesting-season water levels reach 6 feet NVD by mid-March. That's a level below ground. The second establishes a three-to-seven month hydroperiod in sparrow habitats to maintain marl-prairie vegetation. Tested against 40 year period of record, the nesting windows were met only for two subpopulations and the dry-season targets were met only in 20 to 25 of those years. (Appendix C.2.1, figures C.2.1-19 and C.2.1-20) The tentative selected plan, Alternate 4R2 was not among the four alternatives tested. The ACOE has sought a "Section 7 consultation" with U.S. Fish and Wildlife Service.

The FWF supports the ACOE's proposals to monitor sparrow nesting and foraging habits intensely to identify what correlations exist to changes in the water regime and to explore mitigation measures potentially offsetting adverse effects. (Annex A, CEPP Biological Assessment, Section 7).

The hydrologic changes called for in TSP 4R2 have been designed to improve conditions and forging opportunities for wading birds in the conservation areas and Everglades National Park. It should not become necessary to sacrifice substantial benefits for wading birds, some of which are threatened or endangered, in order to protect another endangered species. Incorporation of multi species recovery objectives into CEPP and other CERP project's implementation through the USFWS consultation process is needed.

Recreational Opportunities:

South Floridians who camp fish, boat/ airboat, hunt in the conservation areas, often refer to them as "Florida's Everglades" or by the name used by the Florida Fish and Wildlife Conservation Commission (FWC): the Everglades and Francis S. Taylor Wildlife Management Area. FWC has managed WCA-2A, -2B, -3A and -3B since 1952. Adjacent to the urban southeast coast, those areas and lands owned by the SFWMD and state of Florida bordering Everglades National Park are readily accessible and heavily used and enjoyed by the public for fishing, hunting, frogging, nature observation and a variety of other forms of outdoor recreation.

The Florida Wildlife Federation thanks the CEPP Project Delivery Team for its concerted effort to maintain access and enhance recreational opportunities. The added parking, boat ramps, fishing platforms, shelters and toilets – all compliant with the Americans with Disabilities Act -- planned are welcome.

The L-67 Everglades canals separating WCA 3-A and WCA 3-B consistently record the state's highest catch-rates for largemouth bass. ***FWF and other recreational organizations active in the region are eager to expand that renowned fishery into the L-29 (Miami Canal) and WCA-3B and offset fishing opportunities that will be lost by the filling parts of the Miami Canal.*** Fishing access from Broward County's Holiday Park into WCA 3-B also ought to be provided. Construction of the Broward Water Preserves, currently awaiting congressional authorization, will dramatically improve the quality of water discharged from Broward into the conservation areas.

Current recreational activities in the conservation areas and storm-water treatment areas include fishing, air-boating, boating, hunting, bird-watching, nature photography, cycling, hiking and star gazing. CEPP focuses on water flows and improving the ecological connectivity of the Everglades systems that sustain such outdoor recreation, so it's worth noting that recreation is now a major driver of South Florida's tourist economy. According to FWC studies, the Everglades Wildlife Management Area alone generates $31 million annually in spending and supports some 700 local jobs. The continued use and enjoyment of the Central Everglades area for sustainable outdoor recreation including fishing and hunting is important to Florida Wildlife Federation and allied sporting conservationist's

The rehydration of WCA-3A will help maintain tree islands and rebuild the characteristic ridge-and-slough Everglades landscape. Tree islands are identified as a key attribute of a healthy Everglades landscape but half of those existing pre-drainage have since been destroyed by erratic water management allowing oxidation of the soil killing roots and leaving the trees vulnerable to toppling. Dry-season fires have also diminished the

islands. Commendably the ***TSP preserves 22 of the FWC's constructed and planted tree islands along the Miami Canal in northern WCA-3A;*** efforts are underway to identify significant natural tree islands for preservation as well.

Rehydration also cuts by half the number of fire closures in the conservation area, albeit the number of high-water closures increases, adversely affecting deer and other wildlife that require dry ground during their life cycle. Deer are indigenous to the mosaic of Everglades habitats. Alligators, turtles and snakes require dry nesting sites. Wading birds and other tree or shrub nesting birds rely on tree or shrub dominated islands. To do well as the Everglades is restored, mammals and reptiles require refugia that is protected from flooding during high-water events. Wading birds require shallow water foraging habitat. We support programs to construct and plant additional tree islands and perimeter levees to provide habitat to benefit wildlife that require "Everglades uplands" in their lifecycles.

FWF also supports retaining the buggy bridge at S339 over the Miami Canal, unless the fill to be put into the canal is sufficiently compacted to sustain the weight of crossing vehicles. This will allow continued traditional recreational access important to Glades hunters and anglers.

Estuaries, Florida Bay and Biscayne Bay:

Restoration of the northern estuaries will be aided by the diversion of 210,000 acre feet of water from Lake Okeechobee as provided in the TSP and construction of the long-delayed C-43 (Caloosahatchee Reservoir, which awaits congressional authorization) and by completion of the C-44 (St. Lucie/South Indian River Lagoon watershed projects. Alt. 4R2, plus increased water-storage in the Kissimmee River Valley, reduces the risk of damaging wet-season releases to the Caloosahatchee by 14 percent and St. Lucie/ Indian River Lagoon by 34 percent.(CEPP Draft PIR and EIS, Table 5.2.1). These projects are beneficial but to fully address the question of large discharges of nutrient rich fresh waters into the northern estuaries from the Lake Okeechobee basin requires CEPP, C43, C44 completion, and additional future storage and treatment areas. Dry-season releases are also needed by the Caloosahatchee to retard equally damaging intrusion of salt water upstream. These projects do alleviate some of the damages to those estuaries. Important elements of ***restoration of the northern estuaries depends on constructing the long-delayed C-43 (Caloosahatchee Reservoir, which awaits congressional authorization) and completing the C-44 (St. Lucie/ South Indian River Lagoon) watershed projects).***

CEPP's features restoring ecological connectivity among WCA-3A, WCA-3B, Everglades National Park and Biscayne National Park ought to improve estuarine conditions and fisheries habitat in Biscayne Bay and Florida Bay. This should benefit salt-water fishing opportunities in the Everglades National Park and the Florida Keys. However the combined discharges to Central and Southern Biscayne Bay, while increasing by 15 percent are described as a "minor to moderate adverse effect" in the Draft PIR and EIS (Table 5.2.1). Average annual canal discharges to northern Biscayne Bay are reduced by 11 percent, and in Florida Bay there is only a "moderate improvement" of 9 percent. ***It is unclear why and should be further explained within 5.2.8 – Hydrology section.*** .

While remaining attentive to flood protection in Miami-Dade County, ***equal attention must also be paid to sustaining freshwater flows to Biscayne Bay, the linkage between the CEPP and the Biscayne Bay Coastal Wetlands Project, and the vitality of Biscayne National Park, any one of which would be severely damaged by a decrease in the flow of freshwater. Southern Biscayne Bay remains a productive fishery, supporting commercial and sports fishing.*** Organisms of the near-shore nursery, which include pink shrimp, require salinity ranges between 20-35 ppt to thrive. A decline of those organisms (the food web) would be a severely negative ecological impact with far ranging effects on grass beds, shell fish, fish and higher order species, possibly including manatees and American crocodiles as well as compromise popular salt water fishing areas.

The SFWMD has established water reservations to protect the flow of canal water required by the Biscayne Bay Coastal Wetlands Project. The district this year also updated the Water Supply Plan for the region's public water utilities. The latter identifies usage, flow and facility needs. Implementation of CEPP and regional CERP projects are expected to enhance and protect the urban and agricultural water supply.

Urban and Agricultural Water Supply Benefits

Restoring the flow of water to the Central Everglades is wholly consistent with the CERP goals and proposed CERP projects. The geology underlying southern Miami-Dade is extremely porous and ground water flows are large enough to be deemed sufficient to protect Biscayne National Park, Biscayne Bay, and irrigate South Dade farmland. That does not allay the fear of users that supplies are inadequate and deliveries ill-timed.

As water moves south along the eastern border of ENP seepage controls must be in place to prevent flooding of farmlands and suburbs of Miami-Dade County. Because of the porous rock underlying those areas and the rapid flow of ground water, it is important to recognize that "flooding" in this region, more often refers to rising ground water than to an above-ground overflow. The "South Miami-Dade Conveyance" system must operate efficiently to keep water in ENP and direct it through Taylor Slough into Florida Bay.

FWF supports increasing the capacity of the S-356 pump station and installation of a seepage cut-off wall south of the Tamiami Trail. Seepage barriers have been used successfully for many years in southern Florida. FWF has followed the testing of the current pilot project. Although the first attempt to install a shallow wall failed, the latest wall is larger, deeper and employs a different slurry mix. Initial findings are good, and final results will be reported in December. The depth of a seepage wall is an important variable in determining its impact on surface and ground water flows. Ample time exists to redesign or install a sheet-metal wall. It is a misconception that seepage barriers cut off all water flows; the walls serve specific, limited purposes.

In commenting on the need to complete the precedential projects, we also called attention to the necessity of connecting Frog Pond detention areas of the Modified Waters Delivery project to the current C-111 spreader canal.

Conclusion:

CEPP planning, including public participation, modeling to assess proposed features, and publication of the draft PIR has been a tremendous undertaking. Implementation of the plan and projects will be no less daunting. The tentative selected plan (Alt 4R-2) represents a consensus of what should and can be done as well as today's sense of what's achievable. At $1.748 billion the cost provokes sticker shock, but can be amortized over 30 or more years that implementation will take. The cost will be shared between the state and federal governments. It is consistent with other projects of similar scope. The value of the CEPP is that it provides direction for the next generation along with explanations of what decisions were made and why.

There is general agreement that projects must be prioritized; there is less agreement about which to prioritize, other than recognition of the fact that CEPP successful implementation rests on the completion of precedential projects and the requirement to achieve a basic water-quality standard that has not changed in 25 years.

The CEPP Draft PIR addresses and successfully balances many interests and hews to both the goals and performance measures outlined in CERP. The Florida Wildlife Federation believes steady progress has been made toward restoration, embraces and supports CEPP's focus on the importance of moving water through the Central Everglades. The Federation will continue its efforts to expedite Everglades Restoration knowing that its costs are not beyond America's means and can be managed long term.

Sincerely,

Manley Fuller

Manley K. Fuller
President
Florida Wildlife Federation

Martin County Chapter of the Florida Native Plant Society * PO Box 233 * Stuart, FL 34995-0233

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019
Telephone: 904-232-1682
E-mail: ceppcomments@usace.army.mil

The Board of Directors of the Martin County Chapter of the Florida Native Plant Society wishes to offer comments on the draft CEPP draft PIR process.

Thank you for the rapid process for sorting out the many criteria and potential solutions to find the best way forward in restoring the central Everglades area. Both the Army Corps and South Florida Water Management District personnel, as well as representatives of other agencies, and stakeholders, worked diligently to get the work done in half the time.

The speed is appreciated. We hope that CEPP can be authorized with the WRDA bill working it way through Congress now. Those of us living along the St Lucie and Indian River estuary know that the projects and solutions encompassed in CEPP will lead to a better, cleaner river and lagoon.

This is the next step needed to compliment the CERP-Indian River Lagoon-South plan that was authorized previously. As this summer's rains and the resulting blue green algae made clear, the river and lagoon need help ASAP. The pace of spending and construction needs to match the speed of the planning model you have set before us. It pains us to see that the CEPP building process might take TEN (10) years! The plan needs to be implemented faster. That is our main complaint.

We will call upon Congress, State Legislators and the Governor to pick up the funding pace as the denizens of the river are struggling to survive. If the ACE and SFWMD can get planning done in two years, our legislators need to get the political will to fund what is required to repair the damages done as best as possible, as soon as possible.

We recognize that there is a needed "next" next step to fully free our estuaries from the onslaught of dirty water during heavy rainy seasons, that is a connection from Lake Okeechobee through a flowway solution so that the water flows naturally out of the lake to the soon-to-be Central Everglades natural areas.

We hope the potential for a flowway directly out of Lake Okeechobee will be next on your planning plate. We look forward to participating in those workshops.

Sincerely,
Joan Bausch, Conservation Chair,
Martin County Chapter of the Florida Native Plant Society

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October 15, 2013

VIA E-MAIL AND U.S. MAIL

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Re: Draft Integrated Project Implementation Report and Environmental Impact Statement for Central Everglades Planning Project

Dear Dr. Ehlinger:

I am writing to provide comments of Florida Crystals and its affiliates, including Okeelanta Corporation and New Hope Sugar Company, on the Draft Integrated Project Implementation Report and Environmental Impact Statement ("Draft PIR/EIS") for the Central Everglades Planning Project ("CEPP"). This is our fifth comment letter on the CEPP, and to save space, we hereby incorporate and reiterate our previous comments dated January 20, 2012, March 30, 2012, October 16, 2012, and January 4, 2013.

Florida Crystals remains committed to Everglades restoration. For two decades, Florida Crystals and other farmers in the Everglades Agricultural Area ("EAA") have worked to reduce phosphorus in farm runoff by implementing on-farm Best Management Practices, contributing hundreds of millions of dollars toward the construction and operation of Stormwater Treatment Areas ("STA's") by the South Florida Water Management District ("SFWMD"), and cooperating in land swaps with the SFWMD to facilitate restoration projects.

While we support the Corps' efforts to formulate long-term restoration plans such as the CEPP, there are important projects

which the Corps can and should implement now. In particular, the Corps should implement the Modified Water Deliveries Project by increasing water deliveries to Northeast Shark River Slough using newly-built water management features; speed efforts to rehabilitate the Herbert Hoover Dike around Lake Okeechobee to allow for more water storage in the lake; and implement projects designed to address the needs of the Northern Estuaries, specifically, the Indian River Lagoon and C-43 Reservoir Projects. The formulation of long-term plans such as the CEPP should not distract the Corps from completing projects already underway or approved by the Chief of Engineers.

Florida Crystals supports the concept behind the CEPP, which is to send excess, unneeded water from Lake Okeechobee south to the Water Conservation Areas ("WCAs") and Everglades National Park. It should be possible to do this without adversely affecting existing legal water users and by using land already owned by the government in the EAA.

The Draft PIR/EIS makes clear that the CEPP remains a work-in-progress. There remain several critical substantive issues that the Corps and SFWMD must resolve before the CEPP is finalized. Those issues include:

Water Quality: Based on information contained in the annual South Florida Environmental Reports published by the SFWMD and other Corps reports, EAA farmers and the SFWMD already have achieved 97% of the phosphorus concentration cleanup targets for EAA runoff to the Central Everglades (WCA-2 and WCA-3), from approximately 184 ppb twenty years ago to approximately 18 ppb today. The State of Florida and EAA farmers are implementing a plan to achieve the final 3% of the cleanup goal. Nevertheless, the phosphorus concentration targets are set so low that the current CEPP proposal to send new Lake Okeechobee water to the WCA's will be severely constrained. In particular, it is certain that the additional flow into Everglades National Park will trigger a violation of the criteria contained in Appendix A to the Consent Decree in US v. SFWMD, Case No. 88-1886 (S.D. Fla.). This will prevent the delivery of additional water to the Central Everglades, and will limit the State's ability to approve the CEPP under Florida law. The Draft PIR/EIS does not resolve this problem related to Appendix A, but instead only identifies a process to discuss it. The Corps and SFWMD need to resolve this issue before finalizing the plan so that the CEPP can be approved and

implemented without the prospect of additional court action by third parties.

Water Supply: Existing legal users around Lake Okeechobee have far less water supply than they had when the Water Resources Development Act of 2000 ("WRDA 2000") was signed into law. The CEPP apparently will lock-in that reduction in water supply for the foreseeable future in violation of the WRDA 2000 Savings Clause. Even applying the Corps' approach to water supply accounting, the Draft PIR/EIS indicates that the current CEPP plan will not be able to replace water supply reserved for the existing legal users in the Lake Okeechobee Service Area that is being transferred due to water quality issues in the lake that likely will prevent the inter-basin transfer of runoff from the C-23 canal. The Corps and SFWMD need to address this issue before finalizing CEPP to avoid a violation of the Savings Clause.

Lake Okeechobee Regulation Schedule: A critical element to improving performance of the Central and Southern Florida Project ("C&SF Project") is modifying the Lake Okeechobee Regulation Schedule. The Draft PIR/EIS admits that the regulation schedule must be revised to implement the CEPP, but it fails to develop those revisions. The Corps needs to provide more information on the necessary revisions to the Lake Okeechobee Regulation Schedule before approving and implementing the CEPP.

Modified Water Deliveries Project: In WRDA 2000, Congress prohibited any appropriations for the decompartmentalization of the WCAs until the Modified Water Deliveries Project is completed. The agencies are close to finishing construction on Tamiami Trail improvements, but the Draft PIR/EIS indicates that they have no plans to complete the project by implementing an operational plan to deliver significant new flows into Northeast Shark Slough. The Modified Water Deliveries Project should be fully implemented, and soon, irrespective of CEPP. Nevertheless, since the Modified Water Deliveries Project will not be completed before the proposed initiation of the CEPP, there will be no federal appropriations for the CEPP features in WCA-3. The Corps needs to commit to completing the Modified Water Deliveries Project in the near future – in other words, put the newly-constructed features into operation to modify the deliveries of water into Everglades National Park – or the CEPP cannot be implemented.

Flood Protection: The proposed A-2 Flow Equalization Basin risks worsening flood protection for adjacent areas in the EAA. The Corps needs to produce a final design for the FEB in the final PIR/EIS to demonstrate how the project will avoid violating the WRDA 2000 Savings Clause as it relates to flood protection for the adjacent farmland.

These substantive problems with the current CEPP plan are linked to the flaws in the process by which the plan was developed. In the agencies' rush to develop a plan, they have cut too many corners on critically important issues. For example:

- The Corps has not acknowledged that it is making major changes to the Comprehensive Everglades Restoration Plan. The proposed CEPP plan abandons projects in the EAA identified in the 1999 Approved CERP Plan and abandons some of the goals of improving water supply for human users. Even if the Corps believes that such changes are appropriate, it should reveal and discuss those changes and engage all stakeholders in that decision. Instead, it is rushing through a Project Implementation Report which purports to just implement the 1999 Approved Plan when in fact it is changing that plan in important ways.

- The Corps has not considered any alternatives north of the WCAs. NEPA requires agencies to consider a range of alternatives to highlight the choices being made. We proposed several alternatives north of the "redline" which the Corps could have included in the Draft PIR/EIS, some of which could save hundreds of millions of dollars and allow the CEPP to be implemented more quickly. The Corps has refused to evaluate them. Even if the Corps does not prefer an alternative proposal, it must at least analyze and disclose such alternatives to members of Congress and the public so that they can make up their own minds.

- The Corps is deferring analysis under NEPA and the WRDA 2000 Savings Clause of critical plan elements. Instead of analyzing all parts of the overall CEPP plan, the Corps is deferring analysis of critical plan elements. In particular, the Corps is deferring the development of operational plans, and is not tackling difficult water quality issues. This means that the agency has not worked through all of the issues yet, and risks encountering unexpected challenges after it commits to the plan.

It is more important to get the CEPP right than rush through an incomplete plan. The Corps has proposed its new "3-3-3 process" for civil works planning that establishes a framework for developing and approving projects within a three-year planning schedule. This concept offers great possibilities for adding efficiency and predictability to Corps planning. However with the CEPP, which seeks to combine several large and very complicated plans into a single process, the Corps sought to rush the project through in eighteen months. The goal was laudable, but unrealistic, and the process has not produced a plan that is ready for the necessary public review (much less Congressional action).

We offer our detailed comments below on the Draft PIR/EIS so that the Corps can correct the flaws in the CEPP and have a solid plan which can be approved by Congress, permitted and operated as proposed. With kind regards, I remain,

Yours truly,

William Tarr
Vice President
Florida Crystals Corporation

/jcd
Copy w/encl. (via e-mail) to:
Mr. Daniel O'Keefe, SFWMD Chair
Mr. Kevin Powers, SFWMD, Vice Chair
Mr. Mitch Hutchcraft, SFWMD Board Member
Ms. Sandy Batchelor, SFWMD Board Member
Mr. James J. Moran, SFWMD Board Member
Mr. Juan M. Portuondo, SFWMD Board Member
Mr. Timothy Sargent, SFWMD Board Member
Mr. Glenn J. Waldman, SFWMD Board Member
Mr. Rick Barber, SFWMD Board Member
Mr. Blake Guillory, SFWMD Executive Director
Mr. Ernie Barnett, SFWMD
Mr. Matt Morrison, SFWMD
Mr. Tom Teets, SFWMD
Ms. Kimberly Taplin, USACE
Mr. Steven Kopecky, USACE
Mr. Neal McAliley

Detailed Comments of Florida Crystals on CEPP Draft PIR/EIS

The CERP Programmatic Regulations require that a "Project Implementation Report shall ... [b]e consistent with the Plan and applicable law, policy, regulation." 33 CFR 385.26(a)(3)(i). In particular, the regulations provide that "[p]rior to requesting approval or authorization for the implementation of a project, the Corps of Engineers and the non-Federal sponsor shall ... complete a Project Implementation Report addressing the project's justification [in accordance with WRDA 2000] ... [and] address the factors of relevant State laws, including sections 373.1501 and 373.470 of the Florida Statutes." 33 CFR § 385.26(a)(1); *see also* Programmatic Regulations Proposed Rule, 67 Fed. Reg. 50540, 50544 (Aug. 2, 2002) (PIRs must "provid[e] information required by the State of Florida for the participation of the non-Federal sponsor"). The Draft PIR/EIS does not sufficiently address the requirements of the Programmatic Regulations, and needs to be revised before the CEPP can be approved.

1. Water Quality

The Corps and other agencies need to ensure that the CEPP plan can be implemented consistent with water quality rules. The CERP Programmatic Regulations provide that a "Project Implementation Report shall ... [c]omply ... with applicable water quality standards and applicable water quality permitting requirements." 33 CFR § 385.26(a)(3)(vi). Florida law prohibits state agencies from approving a PIR unless they "determine with reasonable certainty that all project components ... can be permitted and operated as proposed." Florida Statutes § 373.1501(5)(c). The Draft PIR/EIS does not provide those assurances.

A. Water Quality Based Effluent Limitation ("WQBEL") for WCA's

Discharges from the STAs generally must meet the WQBEL, which prohibits flow-weighted mean phosphorus concentrations from exceeding 13 ppb in more than three out of five years on a rolling basis. Today, EAA farmers and the SFWMD have substantially achieved the phosphorus reductions necessary to meet the WQBEL for discharges from the EAA into the Central Everglades. In particular, STA discharges are projected to achieve 13 ppb for STA-2 and 18 ppb for STA-3/4 with current facilities. A-1 Shallow Flow Equalization Basin, Final EIS, § 4.6.1.2, p. 4-66 (July 2013). The State Restoration Strategies plan, now being implemented, is designed to achieve the final few percentage points of phosphorus reductions.

The Corps proposes in the CEPP to send an additional 210,000 acre-feet of water from Lake Okeechobee to the Everglades. The EAA contributes almost none of the phosphorus in Lake Okeechobee, a point which the final PIR/EIS should acknowledge. This means that the CEPP is sending water to the STAs for which they were not designed with the hope that the additional A-2 Flow Equalization Basin will provide enough phosphorus removal to meet the WQBEL even though the Flow Equalization Basin concept is a new to the phosphorus removal process and how it will actually perform in this task is unknown.

The Draft PIR/EIS indicates that the STA's should meet the WQBEL once the State's Restoration Strategies plan is implemented. § 5.1.9, Table 5.1-3, p. 5-14. Until that plan is implemented, and the role of the A-1 Flow Equalization Basin in phosphorus removal is clearly understood, there is no reasonable assurance that the CEPP can be operated to deliver the

additional lake water as proposed. The Draft PIR/EIS acknowledges that fact, and states that "All features of the State's Restoration Strategies must be completed and meet state water quality standards prior to initiating construction of most CEPP project features." § 6.7.1, p. 6-38 ; § 8, p. 8-5 (District Engineer Recommendation v: "the binding agreement shall include terms and conditions of cooperation for implementing the Project as set forth ... below... Restoration Strategies Compliance – Recognition that all features of the State's Restoration Strategies must be completed and meet State water quality standards prior to initiating construction of most CEPP project features."); Annex F, p. F-33. Florida Crystals agrees that such a condition is necessary to protect against potential violations of the WQBEL resulting from the delivery of new lake water. We support the recommendation of the District Engineer that this condition be made a legally-binding constraint on implementation of the CEPP. Also, the PIR would be more useful to policy makers and the public if it included the current construction schedule for the Restoration Strategies Project. That schedule indicates a 15-year construction period followed by at least three years to confirm that the WQBEL is being met.

B. Appendix A for Everglades National Park

Independent of the WQBEL, the Consent Decree in *United States v. SFWMD,* Case No. 88-1886 (S.D. Fla.), requires even lower phosphorus levels in federal areas of the Everglades. Appendix A of the Consent Decree, which governs phosphorus levels in water entering Everglades National Park, sets the long-term limit on phosphorus concentrations at 8 ppb in the Shark River Slough in wet years. The methodology for the limit in Consent Decree Appendix A is sensitive to the amount of water released into the park by the Corps, i.e., the phosphorus concentration limit decreases as flow increases. Annex F, p. F-31.

It appears likely that the CEPP will trigger a violation of Appendix A. Since 2007, phosphorus concentrations entering the park have been very close or equal to the Appendix A long-term limit. Annex F, p. F-31. The SFWMD currently is being accused of a violation because phosphorus levels are one-tenth of 1ppb above the Appendix A limit. Increasing flows to the park as part of the CEPP will lower the phosphorus concentration limit even further. At the July 9, 2013 meeting of the South Florida Ecosystem Restoration Task Force, the Corps' project manager for the CEPP stated that there is an "[a]cknowledgement that there is a likelihood of an exceedance due to increased flows into ENP based upon the current Appendix A methodology." *See also* Draft PIR/EIS, p. ES-8 ("State and federal water managers expressed concerns that the recommended plan may *increase the probability* of exceeding the compliance limit [in Appendix A]..."); § 6.3.2, p. 6-24 ("The Corps and its federal and state partners recognize that to achieve long-term hydrologic improvement, water quality may be impacted, particularly as measured by the current Consent Decree Appendix A compliance methodology."). The Draft PIR/EIS is written in a way which obscures that problem: despite the fact that the Draft PIR/EIS contains a quantitative assessment of compliance with the WQBEL, the document contains only a "qualitative assessment of Appendix A compliance." Annex F, at F-34. Since the Corps did not actually calculate whether the CEPP would comply with Appendix A, the Draft PIR/EIS concludes that "[i]t is uncertain how changes in flow distributions proposed under CEPP will impact compliance with Appendix A of the 1991 Settlement Agreement." Annex F, p. F-34. This conclusion is not sufficient to demonstrate "reasonable certainty that all project components ... can be permitted and operated as proposed,"

Florida Statutes § 373.1501(5)(c), which is the standard which governs whether Florida agencies can approve the CEPP.

Unlike the WQBEL issue, the Draft PIR/EIS offers no real solution for the problem of Appendix A compliance. The document acknowledges that the problem is the criteria in Appendix A, not the quality of the water that will be delivered to the park. § 6.3.2, p. 6-25 ("The Corps and the state partners agree that the monitoring locations/stations for inflows to ENP will require revision."). Despite this, no actual changes to Appendix A are proposed in relation to the CEPP. Instead, the agencies have only agreed to have meetings between federal and state staff to discuss how to proceed. § 6.3.2, p. 6-25 ("In an effort to … determine updates to Appendix A …, the parties to the Consent Decree have established a process and scope for evaluating and identifying necessary revisions to the Appendix A compliance methodology…. Ultimately, such evaluations and changes to the Appendix A compliance methodology would be recommended … for potential agreement by all parties."). There is no deadline for these discussions to be completed, or for any revisions to Appendix A to be agreed upon. History shows that just because the agencies are talking does not mean that they will reach any agreement: the state and federal agencies have been discussing these issues literally for years, and they are yet to be resolved. Moreover, any modifications to the Consent Decree will need to be approved by the U.S. District Court, and third parties have vociferously opposed in the past any changes to the phosphorus limitations. Appendix A has also been incorporated into state water quality standards approved by EPA, Fla. Admin. Code § 62-302.540(4)(c), and changes to Appendix A may necessitate a formal change to state water quality standards, another lengthy and possibly contentious process. The Draft PIR/EIS therefore identifies a serious obstacle to implementing the CEPP, but no real solution.

The history of the Modified Water Deliveries Project proves out our concerns. That project calls for pumping water from the L-31N canal into Northeast Shark Slough to address increased groundwater seepage from additional water deliveries to that area of the park. The Corps completed construction of the S-356 pump station in 2003 – 10 years ago – to do this. However, the pump has never been permitted or used due to concerns that it would lead to a violation of Appendix A. § 2.5.7, p. 2-16 ("The following MWD features have been constructed or are in progress. … f. Pump Station S-356 – complete (temporary pump station), no operational permit"). The federal agencies apparently do not expect to ever resolve this issue. In the Draft PIR/EIS, the Corps has refused to include operation of the Modified Water Deliveries Project in the "future without project condition." § 2.5, Table 2-2 ("Future Without Project Condition: … Construction completed (no operational changes assumed for modeling): MWD…"); Annex C, p. C-25. The Draft PIR/EIS explains that "[t]he FWO project condition describes what is assumed to be in place if none of the study's alternative plans are implemented." § 2.1, p.2-1; *see also* U.S. Water Resources Council, Principles and Guidelines § 2.1 (FWO represents the "most likely future conditions … without those plans in place"). Since all of the major construction features of the Modified Water Deliveries Project will be finished by spring 2014, this can only mean that the federal agencies are planning for failure on this project due to water quality issues. Instead of acknowledging this roadblock, the CEPP plan calls for increasing the size of the S-356 pump, without solving the problem which prevents the existing pump from being used.

Florida law prohibits approval of the CEPP by state agencies until this Appendix A issue is resolved. The Draft PIR/EIS politely admits as much: "Failure to develop a ... revised [Appendix A] compliance methodology will impact the state's ability to implement or approve these projects." § 6.3.2, p. 6-25. So that the state agencies can approve the CEPP PIR/EIS, we recommend that the Corps make it a priority and reach an agreement on revisions to Appendix A, and obtain court approval, prior to finalizing the PIR/EIS.

C. Lake Okeechobee TMDL

The proposed CEPP plan calls for backflows of water from the C-44 basin (through S-308) into Lake Okeechobee, in an attempt to offset the loss of water supply for existing legal users in the Lake Okeechobee Service Area ("LOSA"). § 6.8.1, p. 6-46. Without those backflows, LOSA users will lose an important part of their water supply during droughts. This backflow of C-44 basin water is necessary for the A-2 Flow Equalization Basin to operate as planned. § 6.8.1, p. 6-46.

The Draft PIR/EIS indicates that the proposed backflows will violate water quality rules for Lake Okeechobee, specifically, the Total Maximum Daily Load ("TMDL") limitations. § 5.1.9, Table 5.1-3, p. 5-14; § 5.2.9, Table 5.2-2, p. 5-40; § 7.4.2, p. 7-9 to 7-10. Experience indicates that this will prevent the delivery of the water: the Florida DEP rejected a similar proposal a decade ago in relation to the Indian River Lagoon planning process. IRL Final PIR/EIS, p. H-41 (March 2004) ("Issues regarding Lake water quality and TMDLs are currently precluding the delivery of new sources of water to the Lake.")

The Draft PIR/EIS offers no solution for this problem. The document only states that the issue "will be addressed holistically throughout the watershed via the [Florida DEP's] Lake Okeechobee Basin Management Action Plan (BMAP) process. The BMAP is currently under development via a public stakeholder driven process." § 5.1.9, Table 5.1-3, p. 5-12. In other words, the Corps is assuming that the water quality rules will change based on a "process" run by a different agency over which it has no control. This provides no "reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed." Fla. Stat. § 373.1501(5)(c). Moreover, if the backflows cannot be "permitted and operated as proposed," then the CEPP will violate the Savings Clause which provides that "the [Corps] and the non-Federal sponsor shall not eliminate or transfer existing legal sources of water" until "a new source of water supply of comparable quantity and quality ... is available." WRDA 2000, § 601(h)(5)(A).

We recommend that the Corps obtain legal authorization for the C-44 basin backflows before finalizing the PIR/EIS, so that the SFWMD can approve the plan under Florida law. We also support the District Engineer's recommendation that there be a "binding agreement" that "[c]onstruction of CEPP project features cannot proceed until it is determined that construction and operation of the feature ... will not cause or contribute to a violation of State water quality standards; and ... will not cause or contribute to a violation of any applicable water quality permit discharge limits or specific permit conditions." Ch. 8, ¶ w, pp. 8-5 to 8-6.

2. Water Supply

A. Savings Clause

The WRDA 2000 Savings Clause provides that "[u]ntil a new source of water supply of comparable quantity and quality as that available on the date of enactment of this Act is available to replace the water to be lost as a result of implementation of the Plan, the [Corps] and the non-Federal sponsor shall not eliminate or transfer existing legal sources of water, including those for – an agricultural or urban water supply." WRDA 2000, § 601(h)(5)(A). Based on that language, the CERP Programmatic Regulations provide that a "Project Implementation Report shall … [d]etermine … if existing legal sources of water are to be eliminated or transferred." 33 CFR § 385.26(a)(3)(x). If that will occur, "then the Project Implementation Report shall include an implementation plan that ensures that such elimination or transfer shall not occur until a new source of water of comparable quantity and quality is available to replace the water to be lost as result of the implementation of the Plan." *Id.* § 385.36(a). "Elimination of existing sources of water supply is barred until new sources of comparable quantity and quality of water are available." S. Rep. No. 106-362, *quoted in* Programmatic Regulations Proposed Rule, 67 Fed. Reg. 50540, 50546 (Aug. 2, 2002).

The Draft PIR/EIS fails to contain a plan that ensures that existing legal users will not be harmed by the CEPP. In our previous comment letters, we pointed out how the CEPP proposal would severely reduce agricultural water supply for users in the LOSA, by locking in lowered Lake Okeechobee levels contained in the 2008 Lake Okeechobee Regulation Schedule ("LORS 2008") compared to water supplies available at the time WRDA 2000 was enacted. While we will not repeat all of our comments on this point, we note that the Corps appears to be selectively identifying its sources of authority with regard to the Lake Okeechobee Regulation Schedule to avoid protecting existing legal users as required by the WRDA 2000 Savings Clause. In the Draft PIR/EIS, the Corps asserts that this elimination of water supply is not subject to the Savings Clause because LORS 2008 was an "[i]ntervening non-CERP activit[y] … wholly outside of CERP." Annex B, § B.2.2, p. B-9. This apparently is based on the LORS 2008 Supplemental EIS's reference to language contained in WRDA 1992 which authorized the review of the C&SF Project and which resulted in the CERP. Lake Okeechobee Regulation Schedule, Final Supplemental Environmental Impact Statement, p. 1 (Nov. 2007) (referencing "Section 310 of the 1990 Water Resources Development Act" as the source of authority for LORS 2008; Congress did not pass a WRDA 1990, but the quoted language was included in Section 309(l) of WRDA 1992). The reference to WRDA 1992 does not avoid the WRDA 2000 Savings Clause, because WRDA 2000 generally governs authorization for Corps' revisions to the C&SF Project after it was enacted in 2000; WRDA 1992 only authorized a "review" of the original C&SF Project, and the proposed revisions to the C&SF Project identified as a result of that review were set forth in the CERP approved in WRDA 2000. Congress also made clear in WRDA 2000 that it approved the CERP as "a framework for … operational changes to the Central and Southern Florida Project," and the CERP included an operational feature entitled "Lake Okeechobee Regulation Schedule (F)." It is disturbing to see the Corps engage in legal gymnastics to avoid protecting the many existing legal users around Lake Okeechobee.

Even if one just focuses on the operational changes discussed in the Draft PIR/EIS, the proposed CEPP plan is problematic under the Savings Clause and Programmatic Regulations. While the CEPP calls for storing a small amount of additional water in the lake, all of that water is being saved for environmental deliveries to the WCAs. The CEPP explicitly plans to transfer

Lake Okeechobee water relied upon by LOSA users to the WCAs, and replace it with backflows from the C-44 basin. However, as discussed above, the Draft PIR/EIS acknowledges that this will violate the TMDL for the Lake, which will prevent the Corps from delivering the replacement water.

The treatment of this issue is not sufficient under the Programmatic Regulations or Florida law. As discussed above, the Draft PIR/EIS simply assumes that the backflows will be allowed as a result of a future planning exercise which neither the Corps nor SFWMD control. This fails to "ensure" that the "transfer shall not occur until a new source of [replacement] water ... is available," as required by the Programmatic Regulations. 33 CFR § 385.36(a). In addition, Florida law only allows the SFWMD to act as local sponsor of the CEPP if it "[d]etermine[s] with reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed," Fla. Stat. § 373.1501(5)(c), and it is obvious that the project cannot be permitted and operated as currently proposed.

To avoid a violation of the Savings Clause, we recommend changes to the Lake Okeechobee Regulation Schedule to replace water lost when LORS 2008 was implemented. We also recommend that the CEPP be modified to make clear that the C-44 basin backflows will not be used to replace existing legal water supply for the LOSA users, but instead will be used to send additional flows to the WCAs. Such a revision would mean that if the Corps is unable to deliver C-44 backflows to Lake Okeechobee, then LOSA water users would be held harmless and there would be no violation of the Savings Clause. This is in addition to the steps we recommend above related to resolution of the water supply issue.

B. Improvements to Agricultural and Urban Water Supplies

One of the purposes of the 1999 Approved CERP Plan was to affirmatively increase agricultural and urban water supplies, not just prevent them from shrinking. The Florida Legislature, in approving the 1999 Approved CERP Plan, directed state agencies to "[e]nsure that project components will be implemented to achieve the purposes ... that include ... providing such features as are necessary to meet the other water-related needs to the region, including .. the *enhancement* of water supplies..." Fla. Stat. § 373.470(3)(b)(2). The Legislature also required the SFWMD to complete a PIR, which "shall identify the *increase* in water supplies resulting from the project component." *Id.* –(3)(c).

Even though the CEPP is the grouping of projects which govern the central part of the state from Lake Okeechobee to Florida Bay, the Draft PIR/EIS indicates that it will not increase water supplies for people at all. § 6.8.6, p. 6-48 ("The CEPP components do not directly provide water to meet other water related needs in LOSA, LECSA 2 [Broward County], or LECSA 3 [Miami-Dade County]."); *see also* Annex B, § B.4.4, p. B-71. For agricultural water users, the CEPP contains no additional storage in Lake Okeechobee for agricultural supply, and significantly changes the EAA reservoir feature of the 1999 Approved Plan to eliminate agricultural water supply as one of its functions. Under the CEPP, agricultural users will have less water supply than when Congress approved the CERP in WRDA 2000, and less water supply than called-for in the 1999 Approved CERP Plan. For urban water users, the Draft PIR/EIS indicates that the CEPP might generate additional water, but only after "completion of all CEPP project features" and a series of steps which will not occur for many years, if ever.

Annex B, § B.4.4, p. B-71. This is quite surprising, since the CEPP has been sold to the urban communities of Southeast Florida as a solution to their water supply concerns. The communities of people who live in South Florida are being put at the back of the line when it comes to water supply in this plan. We recommend that the PIR/EIS be revised to acknowledge the responsibility to increase water supplies for the people of South Florida and commit to providing that water supply at the time each CEPP component is constructed.

3. Revisions to the Lake Okeechobee Regulation Schedule

The CERP Programmatic Regulations provide that a "Project Implementation Report shall ... [i]nclude . . . a draft Project Operating Manual as an appendix." 33 CFR 385.26(a)(3)(xvi). Operating Manuals are the "operating plan for the operation of the projects of the Plan and other C&SF Project features," and must "[c]omply with NEPA" and "[d]escribe regulation schedules, water control, and operating criteria for a project, group of projects, or the entire system." 33 CFR § 385.28(a)(2), -(6)(ii)-(iii). The reason the Programmatic Regulations require inclusion of a draft Project Operating Manual is so that all stakeholders are aware of how new project features will be used before those features are built. Programmatic Regulations Final Rule, 68 Fed. Reg. 64200, 64212 (Nov. 12, 2003) (discussing changes to proposed regulations to limit Corps' ability to deviate from operational plans contained in PIR).

We have major concerns about the absence of a revised Lake Okeechobee Regulation Schedule in the Draft PIR/EIS. On several previous occasions, we asked the Corps to consider revisions to LORS 2008 in the formulation of the CEPP. A revised regulation schedule is a necessary element of the grouping of projects that make up the CEPP, because the central concept of the CEPP is to divert excess water from the lake to the Central Everglades. In order to do that, not only do the operational rules need to be changed to allow for diversion of water south, but the Corps needs to store additional water in the lake to supply the A-2 Flow Equalization Basin. This provides the opportunity to not only provide more water for the Central Everglades, but also to improve water supply for existing legal users in LOSA and to improve conditions for the Northern Estuaries.

In the Draft PIR/EIS, the Corps finally acknowledges that it must revise LORS 2008 in order to implement the CEPP. *See, e.g.,* § 4.1.3, p. 4-5; § 4.6.2, p. 4-22; § 6.7.1, Table 6-10, p. 6-39. The Corps acknowledges that the triggers set forth in LORS 2008 for revisions to the regulation schedule – certain rehabilitations of the Herbert Hoover Dike and completion of certain restoration projects – will be completed by 2022. § 2.5.2. Indeed, the Draft PIR/EIS assumes that the lake would be managed in ways inconsistent with the LORS 2008. Specifically, LORS 2008 is designed to avoid lake levels over 17 feet NGVD in order to avoid the risk of a catastrophic dike failure. The Draft PIR/EIS indicates that the CEPP will double the number of days where lake levels will exceed 17 feet NGVD (from 34 to 68) and nearly double the number of days when lake levels will exceed 17.25 feet NGVD (from 18 to 29). Annex B, Figure B-32, p. B-48. In other words, the Corps must revise LORS 2008 to implement the CEPP, and must quickly move forward with repairs to the HHD so that more water can be stored in Lake Okeechobee.

Nevertheless, the Corps is refusing to consider and analyze revisions to LORS 2008 in the Draft PIR/EIS. The Draft PIR/EIS does not look at options for revising the schedule or the

impacts of different alternative revisions. Instead, the Draft PIR/EIS contains general language about how the lake would be operated for purposes of modeling, but no detailed operational rules. The document further indicates that the Corps will comply with NEPA regarding revisions to LORS 2008 at an undisclosed later date. § 6.1.1; § 6.7.1, p. 6-41; pp. B-48, Annex C, § 7.1.1, p. C-30 ("Based on the hydrologic modeling conducted for the CEPP recommended plan, it is anticipated that changes to the 2008 LORS will be needed… The CEPP PIR, including the POM [Project Operating Manual], will not be mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule, although the CEPP PIR may recommend that revisions to the 2008 LORS be conducted through a separate effort.").

The Corps' failure to set forth the proposed revisions to LORS 2008 in the Draft PIR/EIS violates the Programmatic Regulations, which require the Corps to "include … a draft Project Operating Manual as an appendix." 33 CFR 385.26(a)(3)(xvi). The draft Project Operational Manual must have enough detail for the Corps to actually operate the completed project, 33 CFR § 385.28(c)(5), "[c]omply with NEPA," *id.* –(a)(6)(ii), and "[d]escribe regulation schedules, water control, and operating criteria for a project," *id.* -(a)(6)(iii). The draft Project Operating Manual attached as Annex C, provides no revised regulation schedule for the lake and expressly refuses to comply with NEPA.

The Draft PIR/EIS also violates NEPA. NEPA requires agencies to consider the environmental impacts of their proposals before they approve them, not after. In addition, NEPA regulations require agencies to consider in "the same impact statement" all connected actions, which include actions that "[a]re interdependent parts of a larger action and depend on the larger action for their justification." 40 CFR § 1508.25(a)(1)(iii). The Corps previously has indicated that it would conduct "one comprehensive NEPA analysis for each project in the Project Implementation Report, rather than having piecemeal analyses in each of the supporting documents." Programmatic Regulations Proposed Rule, 67 Fed. Reg. 50540, 50549 (Aug. 2, 2002). The Draft PIR/EIS does precisely what NEPA prohibits, and what the Corps said it would not do.

We recommend that the Corps prepare a final PIR/EIS that complies with the Programmatic Regulations and NEPA, so that the CEPP can be approved. In particular, we ask (once again) that the Corps revise LORS 2008 as part of the CEPP formulation process, and include a complete NEPA analysis in the Final PIR/EIS.

4. Relationship of CEPP to the Modified Water Deliveries Project

The Draft PIR/EIS does not sufficiently address the interplay between the CEPP and the Modified Water Deliveries ("MWD") Project. When Congress authorized the Comprehensive Everglades Restoration Plan in 2000, it provided that "no appropriation shall be made to construct WCA 3 Compartmentalization and Sheetflow Enhancement Project [the heart of the CEPP] until the completion of the project to improve water deliveries to Everglades National Park authorized by section 104 of the Everglades National Park Protection and Expansion Act of 1989 (16 U.S.C. 410r-8)," otherwise known as the MWD Project. WRDA 2000, § 601(b)(2)(D)(iv). Without an appropriation by Congress for the central features of the CEPP – all of the work within WCA-3 – the CEPP will not be implemented.

The purpose of the MWD Project is to increase deliveries of water to Everglades National Park, and redirect most those deliveries to Northeast Shark River Slough. The project originally called for a series of construction features within the park, along Tamiami Trail, and in WCA-3. Since 1989, the Corps and the Department of Interior have reduced the scope of the features considered to be part of the MWD Project, and now propose to include some of the original MWD Project features in the CEPP (e.g., the conveyance features in southern WCA-3A/3B). The construction features left in the redefined MWD Project now are almost entirely built.

Integral to the MWD Project is an operational plan to modify water deliveries to Everglades National Park. § 2.5.7, p. 2-17. The MWD Project was built on the assumption that canal stages in the L-29 borrow canal could be increased to 8.5 ft NGVD, which would allow the delivery of significantly more water to Northeast Shark River Slough. *Id.* p. 2-16. The MWD Project is not complete until the Corps develops and implements a "new water control plan for the area that incorporates the constructed features of the project and higher water levels in the L-29 Canal afforded by the Tamiami Trail modifications." *Id.* p. 2-17.

The Draft PIR/EIS assumes that the MWD Project will not be completed before the CEPP is implemented. In the "Future Without Project Condition," which represents the "most likely future conditions ... without those plans in place" through 2050, U.S. Water Resources Council, Principles and Guidelines § 2.1, the Corps assumes that the new water control plan will not be implemented. *See, e.g.,* Draft PIR/EIS, § 2.5, Table 2-2 ("Future Without Project Condition: ... Construction completed (no operational changes assumed for modeling): MWD..."); § 2.5.11, p. 2-18 ("Since a final operational plan for the MWD Project has not been completed, for planning purposes, the CEPP FWO project condition will assume the 7.5 NGVD operational constraint in the L-29 borrow canal that is associated with ERTP [the current operational plan] will remain in place."); Annex C, p. C-25.

We recommend that the Draft PIR/EIS be revised to better address the interaction between the MWD Project and the CEPP. First, the Final PIR/EIS should make completion of the MWD Project through an operational plan a precondition to initiation of the CEPP. Without such a precondition, the CEPP risks losing federal appropriations for some of its primary features, which will prevent them from being built. The Corps should make completion of the MWD Project its highest priority, because that project can yield immediate ecological benefits to Everglades National Park.

Second, the Final PIR/EIS should include a MWD Project operational plan in its "future without project condition." Since the MWD Project must be completed before the CEPP can be implemented, it properly belongs in the FWO condition.

Third, the analysis in the Final PIR/EIS should be revised to adjust for the inclusion of the MWD Project in the FWO condition. The Draft PIR/EIS assumes that all of the increased flows to the park that would come from the MWD Project are part of the CEPP. *See, e.g.,* Annex B, § B.3.3.1, p. B-65 (identifying "total water made available by the CEPP project" by comparing the "with project condition" to the "future without base condition"). WRDA 2000 provides that "water made available by each project in the Plan" be reserved for environmental use only, but there is no similar provision in the authorization for the MWD Project. *Compare* WRDA 2000, § 601(b)(2)(h)(2) *and* 33 CFR § 385.35(b) *with* 16 U.S.C. § 410-r-8(a). As a

result, the Draft PIR/EIS seeks to reserve those increased flows under WRDA 2000. Since the MWD Project was authorized in 1989, prior to the "Restudy" language in the 1992 WRDA, it would follow that the water reservation provisions of WRDA 2000 are not applicable to MWD Project, and the Corps should not seek to reserve the MWD Project flows as part of the CEPP.

5. Flood Protection

The Draft PIR/EIS does not sufficiently analyze flood protection issues related to the proposed A-2 Flow Equalization Basin. WRDA 2000 provides that "[i]mplementation of the Plan shall not reduce levels of service for flood protection that are – (i) in existence on the date of enactment of this Act; and (ii) in accordance with applicable law." WRDA 2000, § 601(h)(5)(B). Under certain high-water events (e.g., the 50% PMP storm event modeled for the Draft PIR/EIS), the A-2 Flow Equalization Basin could result in flooding of nearby agricultural lands. The Draft PIR/EIS does not provide the detailed design information necessary to determine whether such flooding will occur in violation of the WRDA 2000 provision protecting existing levels of flood protection. We recommend that the Final PIR/EIS include detailed design information necessary to confirm compliance with WRDA 2000, and include additional flood control features as necessary to avoid a reduction in existing levels of flood protection in the EAA.

6. Changes to Overall Comprehensive Everglades Restoration Plan

In previous letters, we have commented that the Corps is proposing significant changes to the Comprehensive Everglades Restoration Plan, and that it should prepare a Comprehensive Plan Modification Report instead of a PIR. The Programmatic Regulations also require PIR's to "[i]nclude a discussion of any significant changes in cost or scope of the project from that presented in the 'Final Integrated Feasibility Report and Programmatic Environmental Impact Statement,' dated April 1, 1999" ("1999 Approved CERP Plan"). 33 CFR § 385.26(a)(3)(xiii). The Draft PIR/EIS fails to do that, and should be revised to discuss the significant changes proposed for the CERP.

The Corps has identified as being part of the CEPP six projects contained in the 1999 Approved CERP Plan, including the "Everglades Agricultural Storage Reservoir (G)." App. C.3 (response to Crystals-2). The 1999 Approved CERP Plan called for that reservoir to have three compartments, one of which "will be used to meet Everglades Agricultural Area irrigation demands only," one which would be "used to meet environmental demands," and the third to meet both environmental and irrigation demands. 1999 Approved CERP Plan, p. 9-9. This was one of the primary means by which the CERP proposed to improve water supply for agricultural users, which is one of the basic purposes of the CERP. Fla. Stat. § 373.470(3)(b)(2) (State approval of the CERP, which includes among the purposes "meet the other water-related needs of the region, including … enhancement of water supplies").

In the proposed CEPP plan, the agricultural water supply function of the EAA reservoir has been completely eliminated. However, we found no acknowledgement of this fact in the Draft PIR/EIS, much less "a discussion of any significant changes … of the project from that presented in the [1999 Approved CERP Plan]." The PIR/EIS needs to be revised to explain why the Corps is eliminating improvements to agricultural water supply in the CEPP. This is

especially important since the Corps has refused to modify the Lake Okeechobee Regulation Schedule to maintain more agricultural and urban water supply in Lake Okeechobee.

The proposed CEPP plan also includes some, but not all, features for the Central Everglades which were identified in the 1999 Approved CERP Plan. In our previous comment letters, we pointed out how the CEPP leaves out some projects identified in the 1999 Approved CERP Plan, which suggests that the Corps no longer intends to implement them. *See, e.g.,* App. C.3, p. 723. The history of the C&SF Project is littered with examples of projects authorized by Congress which the Corps never fully implemented. The assertion in the Draft PIR/EIS that the Corps is engaging in an "adaptive assessment strategy require[ing] incremental implementation of the plan components," *id.* p. 685, does not relieve the Corps from explaining whether these project elements of the 1999 Approved CERP Plan remain viable or not. The Final PIR/EIS should explain fully what the overall CERP Plan looks like after the CEPP is implemented.

7. Lack of Consideration of Alternatives

Federal law requires the Corps to consider a range of alternative plans in evaluating a proposed project. NEPA requires federal agencies to consider reasonable alternatives to a proposed action, so that agency officials and the public can clearly understand the choices being made. 40 CFR §§ 1500.2(e), 1502.14. The Programmatic Regulations also require the Corps and SFWMD to "formulate and evaluate alternative plans" in a PIR, and for CERP projects being considered in a PIR, "the project as described in the [1999 Approved CERP Plan] shall be included as one of the alternative plans that is evaluated." 33 CFR § 385.26(b)(2).

The Draft PIR/EIS does not consider any alternatives north of the "redline," which is the boundary between the EAA and WCA-2 and WCA-3. In our previous comment letters, we suggested several alternatives that could be considered, including modifications to the Lake Okeechobee Regulation Schedule; routing of the "new" lake water through the Holey Land and Rotenberger Wildlife Management Areas on the way to the WCAs; and use of the Flow Equalization Basin sites as a deep reservoir or STA. We also expressed concerns that the Corps is building an inappropriate bias into the CEPP study related to water levels in Lake Okeechobee, that the Corps is only considering alternatives that it prefers, and that it is refusing to highlight the tradeoffs between different environmental and economic interests inherent in the Corps' formulation of alternatives. The Corps has completely ignored these comments. The Draft PIR/EIS only considers a single alternative in the EAA – a Flow Equalization Basin – which the document admits will "represent an irreversible and irretrievable commitment of resources." § 6.3.6, p. 6-30. The Draft PIR/EIS also explicitly states that it is will not comply with NEPA regarding revisions to LORS 2008 until some undisclosed later date. Annex C, § 7.1.1, p. C-30. This violates both NEPA and the Programmatic Regulations.

The Corps also has refused to evaluate as an alternative the relevant projects of the 1999 Approved CERP Plan itself. In particular, the Draft PIR/EIS does not consider as an alternative the "Everglades Agricultural Storage Reservoir (G)" project from the 1999 Approved CERP Plan. This clearly violates the Programmatic Regulations, which the Corps itself has stated "make clear that the project described in the April 1999 'Final Integrated Feasibility Report and Programmatic Environmental Impact Statement,' will be one of the alternative plans that will be evaluated." Programmatic Regulations Final Rule, 68 Fed. Reg. 64200, 64218 (Nov. 12, 2003).

We recommend that the Corps revise the PIR/EIS to consider a range of reasonable alternatives north of the "redline" as required by NEPA and the Programmatic Regulations. We continue to believe that the Corps can achieve the goals of the CEPP more quickly and much more cheaply through some of the alternatives we suggested.

September 13, 2013

Colonel Alan M. Dodd
District Commander
Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Colonel Dodd

Good morning.

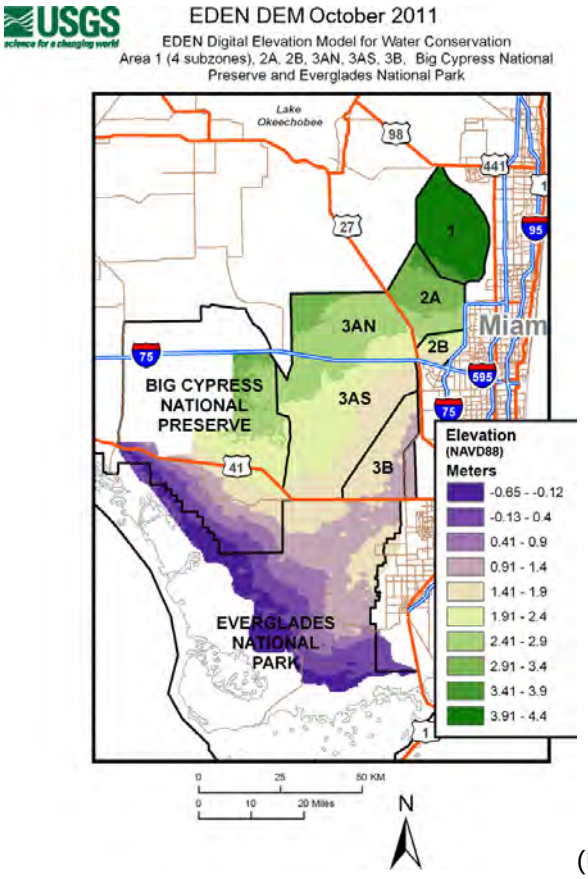
Please include this additional comment as a part of the CEPP record.

Sincerely

L Jack Moller
[redacted]

The following is an evaluation of *Landscapes and Hydrology of the Predrainage Everglades* done by L Jack Moller, May 26, 2013.

While the work done to create this book was excellent and very professionally done it was also designed to lead decision makers to believe the proper actions to be taken to restore the Everglades is to push enough water into today's remaining portion of the undeveloped Everglades that would cause today's Everglades to drown and to further be destroyed and not restored. The following information was taken from the works that are cited. Some of these works were also cited by the author of this book. As you read the two document keep in mind the reason for the author to select specific passages, which I will bring into this document, that are designed to create a rationale to but 20% more water than is allowed by today's regulatory schedule, 20% more water than today's flood stage, and to hold this flood water for 40% of the year (146 days). With this amount of flooding, there can be one result and that is the complete destruction of the already drastically reduced upland areas in the remaining Everglades.



(If you want a big picture you can copy and paste into a word document and then enlarge the map.)

To help the reader follow the discussion that follows the above map is being provided.

To help the readers understand what the Everglades was really like I have taken the time to cut and paste the following information taken from the works that are cited. As you will see the Everglades, was not deep water, was not all sawgrass, had thousands of islands in them and a tremendous amount of wildlife, not just birds.

One also must consider the natural habitat needs of the plants and animals that were and remain in the Everglades. One mined the needs of the human's that lived in the historic predrainage Everglades.

The natural needs of the plants that were found, and somewhat remain, in the Everglades was dry ground. At least ground dry enough to allow the plants roots not to rot and the plant to grow. One also must remember that while standing water on an island is not start of the harm to these plants as the harm to them starts when their roots are too wet. This is often a matter of inches because in most cases the uplands were only inches above the high water line of the predrained Everglades. Some of the key indicator plants that we must look at are wild fig, coco plum, maiden cane, myrtle, sawgrass and cattails.

Sawgrass has to have a period of time where there is no water, yes wet soil, but not standing water on the ground. This is brought out in the book where it talks about how deep water caused sawgrass to die out while too little water caused it to also die out. Yet, without proper water sawgrass does not reproduce. The plant's seeds and seedlings have to land on damp soil to grow. New starts will not grow if they fall onto land that is covered with water.

Wild fig, coco plum, maiden cane all require dry ground to live and reproduce. As you read the following records you will find these plants are often observed in the Everglades. When you read the *LANDSCAPES AND HYDROLOGY OF THE PREDRAINAGE EVERGLADES* you will find that the author acknowledges these natural facts. But, the author attempts to discredit these plants in today's Everglades as being a product of drainage and were not of significant populations in the undrained Everglades region. In my opinion, and I am sure after you read the following will agree, the author is not correct in this assumption.

We can agree that these upland plants have been harmed by the over draining which caused fires and the burning of the muck islands and then by the floods which caused these plants to die.

The death of the plants stopped the natural island building cycle which is brought about the massive leaf and wood branch loses that occur. The falling vegetation speeds up the development of these islands.

You will also find that thousands of islands were in the predrained Everglades. These islands are mostly gone today because of the fires and flooding. By pushing in 20% more water than is allowed by today's regulation these smaller islands, "mud pie" islands will not ever develop.

I also find it interesting the author does not address the issue of cattails in the Everglades and particularly in the parts of the WCAs that are kept flooded. The best of example of what will happen to the Everglades when kept under water is the NE part of WCA2A. This area has long been nothing but a huge thick cattail monoculture. Another area the author should bring into the mix is the NE part of Holely Lands. This area burned and is now under water all the time and unless the area has changed in the last ten years, it is a cattail plantation, too. This is what we can expect if they continue with flooding WCA3.

The animals you need to key in are the alligators, turtles and snakes. All these animals require dry ground to lay their eggs. No dry ground means not reproduction of these animals.

While the author of *LANDSCAPES AND HYDROLOGY OF THE PREDRAINAGE EVERGLADES* has a good bit to say about the deer in the Everglades he seems to trying to discredit the Florida Fish, Wildlife and Conservation Commission and the fine work they have been doing in the Everglades, more on this later. He also seems to be attempting to get uninformed folks to think the predrained Everglades was not home to the deer. As you read the following information about the predrained Everglades, you will see that there were deer in these Everglades. You also must remember that by the time the deer have drowned all the smaller animals have already drowned. Any water over 18 inches is harmful to not only the deer but also the smaller animals and upland areas.

I will agree that because of the canals we have drained off much of the water that once was in the greater Everglades system. This water needs to flow without levees and pumps from Lake Okeechobee to FL Bay. However, this does not mean that the water in the Florida Everglades, WCAs, is to be so deep that it harms what is there today. CERP was created on a do no harm concept. This concepts seems to have been lost in the quest to push predrainage water volumes back into Everglades National Park, while providing potable water and irrigation water along with flood protection to development yet to come. To get the volume of predrainage water that was once in Everglades National Park it is necessary to double the depth of today's water in the remaining Everglades. This is just simple math. With about 50% of the historic predrained Everglades remaining to obtain 100% of the predrained water volumes then twice the natural water depth is needed in the remaining Everglades hence, we have the CEPP plan to put 20% more flood stage for 40% of each year.

The following question has been asked for nearly 15 years: When does the floods of today become tomorrow's desired and planned for water depths? How do we turn flood conditions into

normal conditions? It now appears this can happen by cherry picking the data from old records to support such a plan while ignore all the other facts that do not support such a plan.

I do agree that the land elevation differences in today's Everglades from US 41 to the L-5 is about four feet. However, this is not a flat line but an undulating line that may have more or less elevation differences. This undulating landscape is seen in the works below as well as in the *LANDSCAPES AND HYDROLOGY OF THE PREDRAINAGE EVERGLADES*. This is because we can read where there were locations were water was deeper than others and shallower than others. Hence the need to portaging, to drag canoes in the Everglades. Hence, the ability to paddle and in some cases sail small boats in the Everglades. However, in today's everglades due to the flattening of the system these undulations are not as significant or severe as they were in the predained Everglades. Thus, today if we attempt to push the predrainage water volumes into today's Everglades we will be doing more harm than good.

Not only does the land undulate north and south but also east and west. This explains the ridge and slough issue where explores had to portage their canoes in a swamp. The reports below have explores not only having to portage when going east and west but also north and south. One day there are able to paddle their canoes in two feet of water and the next they are dragging them in two inches of water will going south and well south of US 41.

Obviously, there were deer in the predrained Everglades. All one has to do is read the following documents, some of which were cited by the author to help establish the book's position on deep water.

Further, one reads about Willoughby's exploits into the Everglades they will find the states he found deer tracks on the islands he camped on. He never mentioned if he saw or shot a deer. But, the deer were present.

One needs to also read the book *Pelts Plumes & Hides White traders among the Seminole Indians 1870-1930* by Harry A. Kersey, Jr. to fully understand that there were plenty of deer and other animals that require dry ground live on, as well as water.

http://digitalcollections.fiu.edu/tequesta/files/1950/50_1_05.pdf

Across South Gentral Florida in 1882;

THE **ACCOUNT** OF **THE FIRST NEW** ORLEANS *TIMES-DEMOCRAT*
EXPLORING EXPEDITION
*Edited **by***
MORGAN DEWEY PEOPLES
and
EDWIN ADAMS DAVIS

"After walking about one-quarter of a mile in the woods, we come upon an old Indian camp, consisting of seven or eight palmetto shanties. This is one of their summer camps. During the winter they go further South, in and around the Everglades, for the purpose of hunting. The bones and antlers of deer which lay scattered around attest the excellence of the surrounding country as a hunting ground."

http://digitalcollections.fiu.edu/tequesta/files/1951/51_1_04.pdf

Across South Central Florida in 1882;

THE ACCOUNT OF THE FIRST **NEW** ORLEANS *TIMES-DEMOCRAT*
EXPLORING EXPEDITION
*Edited **by***
MORGAN **DEWEY PEOPLES**
and

EDWIN ADAMS DAVIS
On Lake Okeechobee, Fla.
Dec. 1882

"The huge hummucks surrounding this lake are noted throughout the State as being the finest wild turkey and deer ground there is in the South. Two or three weeks before our arrival a band of Indians camped on
these grounds and went deliberately to work slaughtering the turkeys, leaving hundreds on the ground dead, not even picking them up. No other reason could be given for such wanton destruction, except to keep away the white hunters they wished to destroy the game."

http://digitalcollections.fiu.edu/tequesta/files/1945/45_1_03.pdf

A Canoe Expedition Into the Everglades in 1842*

by GEORGE HENRY PREBLE
*Rear Admiral **USN**, z8z6-1885.*

"The In-to-keetah, or Deer-Driving Place, is a pretty little lake, with an island of perhaps one hundred acres of very fine land. 'There,' said the guide, 'the Indians once lived in very great numbers, and many may yet remain;' so our boats were concealed, and we waited for night to make an examination,"

"Tuesday, M'ch 15-Cool and cloudy, wind **N.E.;** at 9 A.M. landed and examined a live-oak hummock where Indians had been dressing deerskins not more than two weeks back."

"Monday, Ap'l 4-Pleasant. Killed two moccasin snakes. Our guide shot two Everglade hens. Saw two deer. They stood gazing at us some time, and then loped off, stopping to gaze and wonder who we were. My Division captured twenty blue cranes, almost full grown, one hardshell
turtle, one terrapin, and a small alligator. Lots of grub for all hands. Lat. at noon 26 degrees *52'* N. Our course about S.E. Saw a large smoke in the cypress bearing East. Dragged the canoes along by main force all day. Camped in the canoes at sundown."

http://digitalcollections.fiu.edu/tequesta/files/1949/49_1_02.pdf

A Dash through the Everglades

Introduction
When preparing the Journal of James **E.** Ingraham's Everglades Exploring Expedition in March-April, **1892,**

"The "Everglades" was always associated in my mind with Seminole Indians, plenty of deer, turkey, fish and all kinds of game usually found 15 in the wild and undeveloped sections of our State, besides being endowed with that glamour that unexplored regions shroud themselves in and which to an ardent fancy have all the attractions that the imagination can bring forth."

"We had not gone far from camp when we heard the baying of our dogs coming rapidly toward us. We were standing ankle deep in water and just in the edge of some young

cypress trees no higher than our heads when I saw a deer on the run in the edge of the swamp about 100 yards to our right.”

“Since we had not seen any game in the 'Glades the guns were usually kept in the boats. This morning, however, as we were strung out through the saw grass I heard shouts of those in front, "Get the gun-shoot him kill him-catch him!" and an instant later a deer emerged from the grass and plunged heavily in the bog not twenty yards from me.”

“At four o'clock we made camp on a high, dry island which had a growth of young hack berries on it. The island looked as if it had once been in cultivation. We also saw deer tracks and believed we must be near land. Next morning, April 4th, from the top of a tree the thatched roof of an Indian hut on a neighboring island could be distinctly seen and we knew then that this was what Mr. Ingraham had seen the day before. We started off in high spirits for the Indian camp, but found saw grass in front of us any way we turned. Just as we began forcing our way through the grass, an Indian in his canoe came into sight.”

As you read the following records of the Ingraham expedition in 1892 keep in mind there was only one night they had to spend sleeping on sawgrass because they could not locate a suitable island to camp on.

http://digitalcollections.fiu.edu/tequesta/files/1947/47_1_01.pdf

The Ingraham Everglades Exploring Expedition, 1892

Edited, with notes, ***by*** WATT P. MARCHMAN

“In the afternoon we were crossing the Allen Prairie, a fine body of land some 25 miles long by **3** to 6 miles wide, lying between the Okaloacoochee Swamp and the Big Cypress from a point 2 miles east of place known as "Carson's." It is a plateau diversified by pine islands, hammock islands and prairie with abundance of water and seemingly of character to afford thoroughly good pasturage with attention, for the raising of stock in large quantities, improving breeds, etc”

“Messrs. Ingraham, Chase and Moses with one of the canvas boats, visited a little hammock island, lying south of the camp about one mile, on which evidence of an Indian camp remained, - a lean-to-roof that once had been thatched with palmetto, a few poles stuck into the ground and half burned logs, end to end,”

“after starting an Indian approached them on foot, accompanied by three dogs. He introduced himself as "Billy Fiewel" and, in English, said, "good morning." He understood English sufficiently to make himself readily understood. Was acquainted with the Hendrys of Fort Myers, Taylor Frierson and others of the same place. After some palaver, he agreed to go with us today for a consideration. Shortly after he said, "wait; will get canoe". Leaving us and going to a little hammock island some 200 yards distant, he soon returned with a fine cypress canoe which he said was made by his son "Little Billy", whose age was 20. All got into the boat, seated themselves in the bottom and Billy stood upon the stern and poled, and pushed when the water was too shallow for polling, following the remainder of the crowd,”

“The island upon which we are located is perhaps 1/4 of an acre in extent upon which are grape vines, India rubber or wild fig, elder bushes, briers and a pumpkin vine. Indian signs were noticed. The average depth of water today, 12 inches[;] the latter part of the day it deepened to 18 inches. In sounding with a pole we discovered rock frequently about one foot below the surface of the water.”

"We will call this camp island No. 22 (indicating the day of the month), and enabling the location of any particular point when taken in connection with the engineer's report and plat. From the top of a tree an Indian camp can be seen about 5 miles to the south of us and supposed to be occupied."

"Camp No. **7,** Island No. 22, Wednesday, March 23rd.**Up** to last night, we made, approximately, 14.7 miles from Ft. Shackleford, which is better than anticipated. Surveying party left about 6 A.M. on foot, but taking one boat to carry stakes and a portion of the luggage. Broke camp and followed at 7 A.M. and proceeded very well until noon.
Reached island No. **23,** Camp No. **8,** after sunset. In order to get to the island and secure a dry sleeping place, were obliged to leave our boats **. . .**behind, packing food and bedding on our backs.
Made about 7 miles on our course today, though"

"This island has a very tropical growth and is the richest yet visited. It is perhaps one acre in extent and, as usual, used **by** the Indians as a camping ground. It has been partially cleared and cultivated at one time, marks of the corn or potato rows being well defined, especially after lying on them at night."

"Our Indian, Billy Fiewel, did not turn up tonight as agreed. Fresh Indian signs were seen by Mr. Newman, who arrived ahead of the party an hour or two before sunset; so he may have come and seeing our saw grass fires to the south and west of the island, concluded we were too far off the course for him to bother about us.
The 2 miles of packing from the point where we left the boats was through the boggiest marsh and saw grass imaginable, and all hands were thoroughly tired out when we reached Camp No. 8, Island No. 23.
The Glades at this point present an endless sea of saw and other"

"The Glades at this point present an endless sea of saw and other grasses, lily pads, a great many of them in bloom, with small patches of water amid clear spots in the grass and small islands here and there. Two large islands of considerable extent can be seen to the eastward from this island-only 2 or 3 very small ones to the southeast and the cypress still very visible to the southwest but further away. We are 92,750 feet from Shackleford tonight on our course." (17+miles)

"The boats arrived shortly afternoon. Broke camp about 2 P.M. and followed surveyors. It took until sunset to reach Island No. 24 and Camp No. 9[,] only 21/2 miles east. Had to make several portages and drag the boats through saw grass. All hands extremely tired and whiskey was served out from the medicine stores. We captured 5 turtles today"

"Camp No. 9, Island No. 24, Friday, March 25th, 1892. Surveyors got away first, balance following about 7 A.M. This was one of the hardest days yet. Water on our course, sufficient for the boats, scarce[;] and saw grass very plentiful. Made the longest portage yet over one of the saw grasses, over 2,000 feet. Abandoned the smallest of our wooden boats and threw away some of our impedimenta before crossing.

Arrived at Island No. 25 about **3** P.M. The prospecting party reported good showing for tomorrow, which means that sufficient water courses through the saw grass was visible in the direction we want to travel.

Island No. 25 has not been visited by Indians for a long time, as we found it occupied as a rookery by white herons, principally, who flew away at our approach, leaving their nests occupied by many young birds."

"Camp No. 10, Island No. 25, Saturday, March 26th, 1892. Got away about 8 A.M. and had a very successful day, making nearly 5 miles in a southeasterly direction. The rock continues from 12 to 18 inches below mud, 4 feet from surface of water to rock. Rather easy day though all were quite tired. Arrived at Island No. 26, Camp No. **11,** at 5:30 P. M. Island about **1/** of an acre in extent and recently visited by Indians. A larger island lies 1/4 of a mile east, in which roosted a large number of birds. We did not visit it, as the smaller island was less odorous and answered our requirements."

"Got away about 9 A.M. Made 14 of a mile east and 2 miles or so S.E. Ran into large bodies of saw grass and no water on our course sufficient to float boats. The glades all seem to have a tendency to the south and occasionally a little west of south, while our course is almost due S. E. Retraced our steps in a northeasterly course and camped at a small tree, the inception of an island, about 11/2 miles east of Camp No. 11, being out Camp No. 12. It was a very discouraging day as we worked hard and travelled several miles that did not count. Cut down part of the green tree above mentioned for fuel, which our commissary, George Matthieux, finally succeeded in inducing to burn after everybody else had given it up."

"One small island in sight 4 miles to the N.E. One about 7 miles east somewhat larger. Seen from the top of a stunted custard apple tree from which we were prospecting."

NO WATER: "Camp No. 13, Tuesday, March 29th. Left Camp No. 13 at 7 A.M., all except Mr. Ingraham, who remained with the boats. Each carried a pack and walked about 1½ miles through saw grass and bog. 14 men went back after the boats. We are endeavoring to reach the same island we saw yesterday and are within 1% miles of it with our packs, but the boats remain behind yet."

"After an excessively arduous day's work all hands reached Island No. 29, Camp No. 14, about 5 P.M. Found it to be a white heron rookery. By Mr. Newman's direction we killed 15 of the nearly grown young that could not fly and Mr. Matthieux converted them into a dish much better than the average Florida chicken; or so it seemed to us. Mr. Newman estimates we are 25 to 27 miles from Miami."

"Left island No. 29, Camp No. 14, about 8 A.M. Surveyors chaining for an island to the S. E., but the chainmen giving out, occasioned by physical exhaustion going through high saw grass and limited food, chaining had to be given up for the present and Mr. Newman triangulated for an island nearer and more to the eastward. From Island 29 there are 6 or 7 islands in sight. Saw grass almost continuously towards Island
No. 30 and we had a hard time reaching it, but finally succeeded about dark. Distance from Island 29, 3 miles and 3,000 feet."

"[Camp No. 15,] Thursday, March 31st. 3 or 4 islands in sight to the south and east. Got away from Island 30, Camp 15, about 9 A.M. Triangulated to island South 20 degrees east. The chainmen gave completely out in chaining for the base line to make this triangulation, and **had** to ride in boat."

"We caught and shot, during the day, 7 terrapins, 1 marsh hen, and 3 or 4 fish. The latter jumped into our boats and proved a fine addition to our evening meal. Wind all day very strong from the S. E. In the afternoon at one time found sand underlying the mud instead of rock. For the most part the rock is about 5 feet from the surface of water. This island has willow growth; is perhaps **3/** of an acre in extent and the richest soil of any we have struck, although they are all exceedingly fertile. The saw grass stumps from which we cut our bed to lie on, pushed out its center stalk 3/4 of an inch during the night. This had been noticed several times."

"[Camp No. 16], Friday, April 1st. Broke Camp No. 16 and left Island No. 31 about 8:30 A.M., though we
made strong efforts to get away earlier. Small islands are becoming quite frequent. On some of them is a small stunted tree said to be a custard apple."

"Good water for the boats, the deepest yet. About 2.5 feet on an average; sometimes 4 feet. It seemed to have fairly well defined banks. Along the edges of the channels the saw grass was very heavy and tall, as well as quite dark colored. We came across frequent Indian burns, some made within a few days.

Smokes to the east, southeast, and west, indicating their presence, but none were visible. The water gave out after dinner and we made several portages finally reaching Camp No. 17 about 5:30 P.M. Island No. 1 is exceedingly rich, having been cultivated, and Indian signs found. It was occupied by buzzards that left on our approach."

"The growth on the last two islands has consisted largely of morning glories, wild cucumbers, bays, elders, and other familiar growth. Mr. Lucky found a piece of pine bark on Island No. 1 . [The islands were numbered, it must be remembered, on the day on which each was sighted.] We caught 7 terrapins,...."

"High water mark well defined on the saw grass, indicating about 12 inches above present level. We noticed at many points, since leaving Camp **5,** nests of ants fastened to leaves and bushes, usually about 18 to 24 inches above present water level"

"This island is said by the engineer to be **191/2** miles in a direct line from Miami, bearing South 47 degrees east, as near as he can determine by the opposite character of the survey and 1/2 mile north of our original course from Shackleford."

"We saw one large island to the south and one to the **N. E.,** each perhaps 2 or **3** acres or less.
A good many bushes grew in the saw grass. Rock getting deeper, being from 6 to **61/2** feet from surface of water. Less water on the saw grasses."

"Had a pretty hard day trying to keep on our course. Made several portages and got bottled up several times in tortuous, narrow, channels through the saw grass. To lighten the boat we cached several things at Camp No. 18, which had an incipient island in the shape of a willow tree on a slight elevation, a few inches above present stage of water."

"We omitted our noon meal as it took all our efforts to get to an island where there was wood for cooking and a dry place to sleep. We arrived at Island No. 3, Camp No. 19 about 3:30 P.M. It contained possibly 1ı/2 to 2 acres, having a scrubby extension for some distance to the S. E. The portion upon which we pitched our bars was circular in form and apparently of second growth. The soil is dark brown and very rich, covered with fallen leaves, making it an ideal camp. From the top of the one large rubber tree, timber was seen 4 or 5 miles away to the eastward and extending north and south several miles. The character of the timber could not be definitely determined but presumably pine. This was very encouraging and braced everybody up wonderfully, giving them renewed strength and courage as it foretold the beginning of the end. Two or three small shanties were also seen on an island to the Northeast about one mile away. A peculiarity of the atmosphere makes it difficult to estimate distances or magnitudes of objects. Small bushes having the a..."

http://digitalcollections.fiu.edu/tequesta/files/1963/63_1_04.pdf

North to South Through the Glades in 1883

The Account of the Second Expedition into the Florida Everglades
by the New Orleans *Times-Democrat*
Edited *by* MARY K. WINTRINGHAM

"The gentlemen of the party are all keen sportsmen, the majority of them good shoots and fisherman, consequently we are seldom without game or fish in this country, that is teeming with deer, bear, wild turkeys, ducks, snipe, quail, and numerous water fowl of species quite new to us, which we will describe more fully hereafter. "

"In the Southern glades many of the islands can be utilized and cultivated, but with this exception, the Florida Everglades are of no value agriculturally."

"Our progress was uninterrupted in our passage among the hundreds of islands composing the glades, until Dec. 3, when we encountered the rocks which border the southern glades. The boats were carried for miles by hand until the evening of the 5th of December, when we sighted the rockets from the camp of parties we had sent to camp, until our arrival at the head of Sharks River, with instruction to send up rockets by night and make smoke by day."

"Once in the Everglades proper the scene was different. Innumerable romantic islands were discovered, lakes and game in super-abundance, and plenty of Indians, suspicious but not unfriendly to the whites."

http://digitalcollections.fiu.edu/tequesta/files/1964/64_1_05.pdf

North to South
Through the Everglades in 1883

PART **II***
Edited by **MARY K. WINTRINGHAM**

"Lieut. Francis Marion, in company with Mr. Buckingham Smith, attempted to explore them in 1847. He says: "It was my desire to reach the northern end of the glades and the region of Lake Okeechobee on this expedition, and to examine the islands above New River,"

"The character of the country now improved with every day's journey. The water was deeper and the boats moved more easily. In making soundings it was discovered that the bottom was no longer mud but rock, the first that had been met with. The party were evidently approaching the islands lying in the southern portion of the Everglades. The first island they found was about three acres in extent, well covered with wild fig and orchard apple, but only about twenty feet square of it was solid dry land. Here the party rested and recuperated, for they were completely fagged out, ragged, barefooted and broken down."

"For several days the party moved through a region of islands. Islands there were innumerable, but all of them very small, not over three acres in extent, with very little high and dry land on them, and separated from each other by streams and saw-grass. On several of them traces of Indian camps were discovered, but the Indians never put in their appearance, although whenever the expedition made a fire it was answered in every direction. They were now on the lookout for the smoke signal which was"

"The saw-grass extends 100 miles south of Lake Okeechobee, instead of ten. South of this is a region of islands, but islands so small as to be of little value for any practical purposes. The Indians, who were supposed to live in the Everglades, do reside there, but they seem to be peaceful and well-disposed, and..."

In reading the book *LANDSCAPES AND HYDROLOGY OF THE PREDRAINAGE EVERGLADES* a number of items need more explanation:
1) What is meant by 3rd rate land good sized pine, (5.10)?
2) What is meant by 3rd rate wet prairie.?
3) These two terms imply that there is a 1st, 2nd or 4th rate land type. Is there other levels of land "rate"?
4) What are the performance measures use to determine the land's "rate"?

Page 14; 5.10; inundated to 2 feet deep seasonal; this implies that the water is only two feet deep when there it is the rainy season and not 3 or more feet as currently planed for in CEPP.
Sawgrass marsh under water at all times. This does not comply with what is presented in other research which state sawgrass must have dry ground, not dusty dry but no water standing to allow it to reproduce. Also, we read later that sawgrass that is under water all the time dies.
The explores saw islands but could not reach them because of the sawgrass.

Page 15; 5.17; the explore mentions the ground was scoured by the water. We need to know how long, how many years, it took for this type of geological structure to appear. This is an important issue because the current work by Larson is encouraging the deep water in the Everglades so that a 3 cm/sec flow rate can be reached or 1.5 miles/day flow rate there by causing the scouring of today's Everglades and hence thought to build the sloughs and inversely building the ridges and islands. Mind you this 1.5 miles/day flow rate is about is about six (6) times faster than the historically accepted rate. Further, this high flow rate is supposed to move only 3 microns of material. Therefore the questions have to be asked; how many days a year does this flow rate have to occur to move any material, how far will this material move, where will it move to, and how many years will it take to scour one inch of a slough's bottom to create a one inch inverse elevation for an island? These questions have been submitted to the ACOE/DOI/SFWMD folks since November 2012. As of this writing there has been no answers presented.

Page 15; water is said to have a current that is perceptible. Such a current would not be 1.5 miles/day. Such a current would be more like the historically accepted rate of a quarter a mile per day.

5.18; It is said the sawgrass is growing in 10 to 12 inches of water. This is far from the desired CEPP goal of 3 feet.

Page 22; 5.52; The author of the book includes information from an explore about water leads from Lake Okeechobee going into the sawgrass.... One has to asked why the dots indicating there was more to the original statement made by the explorer? Does this mean that the explore saw distance islands as we have read in the above information that there were thousands of islands in the Everglades? What did the book's author leave out and why?

Page 30; 5.83; Lake Okeechobee has streams going south and are closed off by sawgrass and the water moves slow. Slow moving water is not 1.5 miles per day.

Page 31; 5.86; it is reported by the explorer that they observed many alligators in the sawgrass. Remind you that alligators need some dry ground to lay their eggs.

(I stop typing the page number and only using the section indicators, which are in page number order.)

6.5; What is meant by "made mount and pits"?

6.6; What is meant by "shoal water"?

6:30; Sawgrass is every where; remember sawgrass needs dry ground to reproduce.

8.1; Maiden Cane seen; this plant needs dry ground to live. There must have been islands.

8.2; The explores found islands with corn fields on them. Obviously, these islands were big and very dry. If the current CEPPP plan are implemented any of these islands would be under water for more than 130 days a year. This would not be restoration but destruction.

8.5; The explorers report that there are thousands of islands, many are a quarter-acre with some are several acres. All these islands would be under water if today's CEPP plans come about. The explorers talk about channels between these islands being 3 to 5 feet. This is possible because of the undulating nature of the ground. But today with the area having lost this undulation any attempt to return these channels to this predrainage water depth will certainly drown the remaining islands.

8.7; The explores talk about the ridge and slough water depths (1905) being three to six feet in the sloughs. This could be possible in 1905 or before in some places. But, as read in the above actual reports more likely such water depth was only for a short distance and not for many miles. No matter what the depth and distance of these deep water sloughs were in 1905 to attempt to put that deep of water in today's Everglades will drown the remaining islands. In this section the explorers again mention how slow the water moves, "water almost imperceptibly moving south". This is not 3 cm/sec or 1.5 miles per day. Therefore, obviously there has to be another natural mechanize to make the ridges and sloughs and not the theoretical concept of scouring out the bottom of the slough. There is a better and more natural mechanism to create the islands, ridges and sloughs that I will present later.

8.8; The explores talk about the islands being 2 to 3 feet high and have wild figs on them. If the CEPP plan calling for 20% more water than today's flood stage happens even the islands of predrainage will go under water. Remember wild figs grow on the driest of ground.

Section 8.8 begs the question: How do you have six feet of water and the big driest of islands are only two to three feet high? The only answer is the slough bottoms nearest these islands is not very deep while in some other places some slough bottoms are very low thereby allowing for deeper water.

8.10: The explorers go into detail about going from island to island and use the Indian given name for each island. Hence, the Indians had use these islands. Why did the book's author not use the most current archeological information to help reconstruct the predrainage landscape? Could it be if this information was used the deep water folks would not have their desires supported by the real and total facts about the Everglades? Hocomothlacco was camped on, moved a day's away to Efanoc-co-qu-chee that was to the NNW; moved six miles NW to Co-chok-o-ne-lu-jo, which had cornfields on it; moved 6 miles further to In-tas-kee, it too was cultivated by the Indians who were living on it (1847). Obviously, there were plenty of islands in the Everglades.

8.16; Ives, 1856, talks about the "mud islands". Today sportsmen who know the glades talk about the "mud islands". If CEPP is implemented as currently planned there will be no mud islands as they will go under water.
8.17; The explorers talk about a "sea of waving green grasses with innumerable islands of all sizes, Henshall, 1883. He also talks about sloughs with two feet of water in them in the dry season and 4 to 6 feet of water deep in the wet season. This leads to the question of how do you have innumerable islands that are only 2 to 3 feet high, above the ground, with 4 to 6 feet of water during the west season? Certainly, these islands would not grow upland vegetation on them as it would drown. Is there some other fact or element that is missing from what was observed and what we are able to learn from such reports? The natural system needs and the numbers do not add up, why not?

8.19; The explorers talk about the islands being covered with wild figs and custard apples. Again, these trees need high dry ground. How do we account for 2 to 3 foot high islands and then 4 to 6 feet of water on the ground and dry land plants growing on the islands?

8.20; The book's author talks about Willoughby's exploration and assumes the years of 1891 – 1892 were low rain fall years. How is this rainfall information reached or verified? The books author also does not tell us that Willoughby found the head waters of the Miami River as he traveled from the mouth of Shark River

by following a very slow current, not 1.5 miles per day current, that was flowing to the NE. This is Willoughby's book. Why was this fact omitted?

8.23; Dodge, 1894, observed a variety of tree island sizes. With all the reports of islands it appears there were plenty of uplands before the Everglades was drained and with all these islands there were plenty of types of upland animals, including deer.

8.24; 1896 Griswold reports on sailing the Everglades. Was this a particularly wet year with lots of rain. Since this was so early in the history of Florida does that mean the Everglades is state sovereign lands and if it is does it mean the EAA is too?

8.27; Where Col. Harney's 1840 expedition found open water Willoughby found sawgrass. This just proves that sawgrass does not grow where there is standing water. Therefore, all the places that had sawgrass before drainage did not have standing water on them before the canals were dug.

8.33; The explorers reported seeing tree islands in the ridge and slough area. It is also stated that islands make up less than 1% of the entire acreage of the Everglades thus with thousands of islands, so many they could not be counted, they were not very big in size.

8.49; Water moves very slow, so Gallatin, 1958, stated; this is not 3 cm/sec.

8.50; Slough bottom relationship to the ridge top predrainage closure of WCA3, 1915, is 2 to 3 feet. Loveless (FWC-1959). This is inline with what many others said about the topography of that area.

8.51; The book's author does a real disservice to one of the Nation's finest wildlife conservation organization by stating the FWC wants low water for deer and that the FWC controls this water depth for the purpose. First, the FWC has no control over the water going and coming from the WCA, Everglades. The control is with the ACOE/SFWMD/National Park Service. It is controlled by the ACOE because draining and flood protection project that is now in place is an ACOE project. Then the SFWMD controls the water going and coming because they either own the land or have flood easement on the land which allows them to flood the area to a depth of 12 feet. Unless these facts have changed that is what they were in the 1990s. You may wonder how the National Park Service controls the water in the WCAs. The Everglades National Park Superintendent can get all the water control structures close or opened as he desires. This happened on a number of occasions and that has caused the water to flood the WCAs. Further, I have read where the ENP superintendent wants to keep control of the water flowing into ENP and plans to close the out flow structures when needed.

8-WP-4; The author wants us to believe that the myrtle and sawgrass ridges are a due to lower water levels. While I will agree some might be the majority of these were in place before drainage took place. This is evident in the reports done by the early explorers who had to portage and/or drag their canoes more then paddle. I will agree some of these higher areas became bigger due to drainage.

This is the 1943 map of the remaining islands that were once innumerable:

(For those who want a closer look at this map you can copy it and paste into another word document. Once there you can expand it to 300% and see all the islands and information better.)

I am sure there are more recent maps of the remaining islands. I also understand that we are currently losing a lot of islands each year due to high water. Today's high water is going to be tomorrow's low water. This means will lose all the island even faster.

If high water created, islands then why have all the islands that were drowned in WCA2A & B not returned. One think if high water created islands that we would see such happen in WCA2.

8-WP-5; 1970 Loveless stated the returning higher water depths eliminated the tree islands. This is what will happen to all the islands in WCA3 when the current CEPP is implemented. I am sure everyone knows why Loveless said "returning" high water. The SFWMD lowered the water in this area because their people were concerned about the floc (a woolly flocculent mass that forms in a liquid as a result of precipitation or the aggregation of suspended particles), was remaining suspended in the water column. Because the area remained flooded, the dead plants did not start the formation of muck and thus water storage was being reduced. Therefore, the dropped the water to cause this material to compact itself back into the muck soils of the area. Once this settling took place the raised the water again.

Since WCA1, Lox NWR, has remained flooded, why are the islands there not returning? One would think if those pushing the current CEPP plan want us to believe floodwaters will cause the rebuilding of the islands and ridges they would first look at those areas, which have been flooded for many years.

There is plenty more evidence in the *LANDSCAPES AND HYDROLOGY OF THE PREDRAINAGE* EVERGLADES that proves high water is not good for uplands in the Everglades.
8-WP-15; Hagenbuck (1974) the lower 1/3 of WCA3A is a gigantic permanent shallow lake. This is exactly what Arron Hieger told Tom Shirley and I before Arron retired. He explained to us that if they put as much water in the WCA3 as they want to that the entire area would become like the lower 1/3, which according to Hagenbuck is a shallow lake.

8-WP-15; Hagenbuck talks about the slope in WCA3 being a problem because what is good for the northern end is not good for the southern end and vis-a-versa. McVoy (2005) refers to this problem as "flat pool". I think this simply means that water will seeks its own level. Which is exactly what I said it would

do if they push floodwater volumes into WCA3. They will drown the East Slough Cape Sable Seaside Sparrow population. Well to over come this fact they are currently planning to leave in L-28's southern portion there by blocking water flow from the flooded WCA3 into that part of the Big Cypress and western ENP.

8-WP-18; Alexander in 1974 informed all that the tree island lose was due to flooding and/or fire. This is absolutely true and will be after CEPP is done as planed today. They will drown the remaining uplands. By 1845 the coco plum islands were gone and by 1974 the Willow Islands were gone. Both of these types of islands in the southern end of WCA3 which is currently a shallow lake require dry ground. Dry ground, which will not be there when CEPP as planned is completed.

To illustrate the undulation of the ground from north to south one only needs to read and understand what they are reading in the 1883 Times-Democrat expedition. In the appendix section of *LANDSCAPES AND HYDROLOGY OF THE PREDRAINAGE EVERGLADES*, page 212-214, we find these explorers reporting the following:
Near Lake Okeechobee, the water was 10 inches deep
Miles south of there it was 4 inches deep on November 11
On November 22 they saw lots of gators, remember gators need dry ground to lay their eggs so there had to be islands about
November 23 the water was 2 inches deep
November 27 they found islands with maiden cane on them; this plant requires dry ground
November 29 they found islands with fig trees on them and to the east they say 100's of islands and to the west they saw cypress trees, the water was also shallow

I could go on but I think most understand the problem and the big picture surrounding this book *LANDSCAPES AND HYDROLOGY OF THE PREDRAINAGE EVERGLADES*.

The author of the book often uses terms that are not for certain type terms. These terms are ones that are used when one is not sure of their positions. The following terms are used excessively: Assume, Probable, Most Likely, Possibly or Possible, Apparently, and Conjecture.

Earlier in the document, I said I would lay out what I think built the islands, ridges and sloughs which took place over many hundreds of years. These elements of the Everglades were built by the interaction between the water depth, annual droughts, animals (birds, gators, fish, and upland animals), plants and water flow. In most case, the islands south of US 41 I have been told are mainly rock based islands, which is means the island has a higher rock formation to develop on. The process of this location becoming and island follows the same one as the islands north of US 41. Of course, I have to take the word of folks who are allowed to access Everglades National Park as I have not been to these islands. I can say with all confidence that majority, if not all, of the islands north of US 41 were started by alligators. The gator would dig his hole and pile up muck. This mud pie island would be the starting place for wood vegetation to grow, which would help attract birds to the water hole. Along with the fish, bird, gator and other animals by-products falling onto the mud pie island and/or in to the water this material enriched the soil and water by adding P and N to the system. This enrichment would encourage faster and stronger growth of plant materials which would drop leaves and limbs which would add to the structure of the island. The water would flow, causing the familiar tear drop shape, but this shape was not caused by souring or erosion but by the movement of the P and N down stream. As this enriched water moved south it encouraged a more vigorous plant growth, which in turn created more places for birds and other animals to rest, which add to the P and N in the water in that location. Over time, we developed a big high island. That was until man started drying them so much they burned or flooding them as with CEPP plans will and drowning the figs and upland plants that caused a reversal of the process and killed the islands. A similar process occurred on rock base islands only the gator was not the starting element, it was the higher rock of the location.

The ridges are bit more complex in their origin but the idea is clearly laid out in *LANDSCAPES AND HYDROLOGY OF THE PREDRAINAGE EVERGLADES* and other works. That is if the reader is aware of the interaction between all the players in the Everglades. In most cases the ridge is started by a process that is wind generated. The wind blows the floc into the line of sawgrass or other plants. This floc is left there when the **annual drought** happens. This floc starts to accumulate over time and starts a ridge. The slightly higher ground allows wood plants, myrtle or willow, to start. These plants provide a place for birds to land. Their droppings enrich the water in that location and the plants grow faster because of the P and N, which initiates the start of the ridge. As the ridge develops, it causes the water to channel and different plant species respond to this channeling and deeper water. Over time, the ridges become very big and have dense sawgrass, myrtle, willows and vines. All these elements working together make ridge and slough system process.

I am sure all remember the reports of the huge flocks of birds that were so big the sky would darken when they flew over. The noise of their wing beats was said to be deafening. Walt Deneen always used the return of these huge flocks of birds as one of the performance measure for the success of CERP. Of course, today many of these birds do not reach the Everglades because they find easier feeding in the fish farm areas of the SE and on other areas that feed them.

I do not understand why the researchers have not fully investigated the relationships between the water, birds, gators, upland animals, fish etc. to develop a properly defined technique by which nature created the uplands, ridges and sloughs of the Everglades.

While I do not agree with all the findings in the book and I do agree with some I think the book should be used by all to press for the absolute need to reconnect Lake Okeechobee with the remaining undeveloped Everglades. This book clearly illustrates there must be year around constant flow of water from the Lake to the Everglades that is not hindered by the levees and pumps as it moves to Florida Bay through Everglades National Park. In order to this there needs to be a serious of well planned spillways on the current dam around Lake Okeechobee that will allow water from the Lake to freely flow south whenever the water reaches an elevation of 13.5 in the Lake. These spillways would feed water to an expanding flow way to the planned STAs and onto the remaining undeveloped Everglades. Once there it would freely flow to FL Bay with no locks, gates, pumps, etc for man to control the waters historic movement south. By doing this there would be water in the wet times of the year and less water in the off-rain periods.

In my opinion I the Federal Government/DOI was serious about restoring Everglades National Park they would work with the State of Florida to figure out how to purchase the US Sugar lands that currently have a contract to purchase agreement on it.

L Jack Moller
[redacted]

ECC: Florida Game and Fish Commission Commissioners
Nick Wiley, Executive Director of the FWC
Manley Fuller, FWF
Bishop Wright, ECC
John Rozier, ECC
Karl Wickstrom
Ted Guy

L Jack Moller
[redacted]

Subject: Public Comment on CEPP; L 67-A CEPP design requirement for support of CEPP.

The following pictures are of a levee in Katy TX that is about 24 feet high, creates a catchment pond for urban run off before the water goes into the Buffalo Bayou. The grates on this weir are required for this area but would not be required in the L67-A.. By leaving out the grates fish, gators and other wildlife could freely swim between units. The SFWMD folks raised concerns about heavy equipment crossing weirs. As one can see, heavy equipment crosses the photographed weir. This weir is designed to hold back about 18 inches of water before it freely flows into the Buffalo Bayou.

The design criteria for the project would follow the performance criteria established by the Sustainable Commission: 1) the uplands and hardwoods in the Everglades, which includes the Water Conservation Areas as well as ENP, would not be harmed, 2) over draining of the Water Conservation Areas would not happen, 3) as much water as possible would freely flow into ENP.

These weirs could be placed for the entire length of that part of L 67-A which is on the northern boundary of the Blue Shanty Flow Way and would allow water to flow through the removed portion of the L-29 into the C-29 unimpeded and into ENP through the new bridges.

The topography from L-5 to L 67-A is known, the east-west topography of WCA3A is known, the number of acre-feet of water being pushed into WCA3A is known, the average ET is known, the high and low average rain fall factors are known, therefore the engineers can design the L67-A with as many weirs, as big or little and with their flow set at the appropriate height from the ground level of WCA3 so that the out come would meet the design criteria stated above.

D. Greg Braun
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October 25, 2013

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0013

RE: CEPP

Dear Dr. Ehlinger:

As a professional ecologist who has conducted a variety of projects in peninsular Florida over the last 20 years, and the owner of a single-family residential property on the Indian River Lagoon in Martin County, I ask that you accept these comments as you continue to refine the Central Everglades Planning Project for ultimate implementation. I have attended several of the public hearings conducted by the CEPP project team, and acknowledge the tremendous amount of time and effort that the Corps and its partners are investing in Everglades restoration in general and the CEPP project in particular.

The above-average discharges from Lake Okeechobee into the St. Lucie River Estuary and Caloosahatchee River that have occurred during 2013 have opened the eyes of many people who were previously unaware of the re-occurring impacts that result from the input of poor-quality water that originates far outside the natural boundary of our watersheds. The ecological impacts of the imbalance of water quality, water quantity and timing that had formerly been known primary by environmental activists has now spread to a much broader segment of the population due to the ensuing impacts on our economy.

Along with many other residents of the communities that surround the St. Lucie and Caloosahatchee Rivers, I recognize that full authorization, funding, implementation and completion of CEPP will address less than 20% of the Lake Okeechobee discharges and that we won't see much positive effect from CEPP for at least ten years. Anything that the Corps can do to move more water toward the south and in a quicker time frame would be much appreciated, particularly by those of us who have voluntarily taxed ourselves to move forward expeditiously with the IRL-South and other projects.

I have reviewed the Draft PIR and its appendices and offer the following comments for consideration by the CEPP team:

1) Johnson's Seagrass. I do not agree that the Corps has fully described the adverse impacts on *Halophila johnsonii* and its designated Critical Habitat that result from the existing system. As an ecologist who has conducted seagrass surveys in the Indian River Lagoon and Lake Worth Lagoon for more than ten years, I have seen first-hand the impacts that elevated Lake Okeechobee discharges have had on the presence, distribution and vitality of Johnson's seagrass, both within designated Critical Habitat areas and outside the Critical Habitat boundaries. Discharges have resulted in quantifiable reductions of this species. The PIR should more directly attribute these re-occurring losses of endangered species and Essential Fish Habitat to the discharges that result from the existing federally-constructed plumbing system, rather than indicate that they are the result "of hurricanes".

   Implementation of the preferred CEPP alternative may reduce adverse impacts to Johnson's seagrass, but re-design of the system to further reduce the discharges through the C-44, C-51 would further reduce the adverse impacts.

2) Wood Storks and other state-listed and federally-listed wading birds. Having conducted avian monitoring at various locations within the Greater Everglades Ecosystem boundary, I must also disagree with the assumptions of impacts to this species and several other state-listed species of wading birds (e.g., herons, egrets …).

   It is the cumulative loss of varying-hydroperiod wetlands within the Greater Everglades Ecosystem that has led to the abandonment of historic nesting colonies and their movement to more coastal colonies. Undertaking hydrologic restoration projects north of Lake Okeechobee and creation of more sparsely-vegetated shallow-water wetlands in areas of south of the Lake, including within areas of the existing Everglades Agricultural Area would benefit this species. Intermittently heavy Lake Okeechobee discharges through the C-44 have resulted in adverse impacts to wading birds and their nesting colonies, a situation that is exacerbated when fresh water discharges result in losses of seagrass and submerged aquatic vegetation around wood stork nest colonies (e.g., at Martin County's Bird Island (aka MC-2).

The PIR may accurately consider and address the potential impacts and benefits of the various CEPP alternatives when compared to one another, but it appears to lack acknowledgment of the adverse ecological and economic impacts that the existing system is having on the coastal estuaries. Although I do not wish to in any way slow down the continuation of the CEPP process, acknowledgment of these additional impacts may be helpful in substantiating the need to allow more water to flow south.

Thank you for considering these comments, and best wishes as you continue to refine the CEPP.

Sincerely,

Greg Braun

Greg Braun
Certified Environmental Professional – Registration # 03040418

From: [redacted]
[redacted]
Subject: [EXTERNAL] FW: CEPP
Date: Tuesday, October 15, 2013 8:34:02 AM

[redacted]
Subject: CEPP

Hopefully these comments get through in time. My name is John Rosier and am currently the President of the Everglades Coordinating Council and The Fulltrack Conservation Club of Dade County. I represent a large number of sportsmen who regularly use the area that CEPP will affect.

First I would like to say that the expedited process that was used for this project was excellent. The public input and interaction with project managers and planners was fruitful and I can say that my fellow sportsmen feel that our input was taken seriously and with productive results. I would hope that this is a model for future projects.

On to the plan. We sportsmen have endorsed the plan because we see first hand the destruction that high water and dry outs that occur in the area have done. The only problem that we have is with the modeling results that show higher water in the area throughout the year. Depth and duration of water is the most important issue to us since we have tried to show that these factors will cause further destruction of habitat in Area 3. We feel that these problems can be controlled during the operation stage with a water regulation schedule that factors in the appropriate water depth and duration. If you want a prime example of high water destruction, look at Area 2B.

.

The water and depth issue also affects the population of fur bearing animals in the area. If the water is too high, habitat will be lost and their food source will gone. Also affected will be the wading bird population. If the water is too high, there will be no wading birds

.

Next is the implementation schedule. We feel that construction should start on the south end since we currently are in a high water situation for the second year in a row. Immediate results would be realized and we would get a good idea how the water would flow into ENP. We currently can put a lot of water into Area 3 with the infrastructure that's in place now. ENP is in need of water now to stop further destruction of the eastern end.

Water quality issues also need to be addressed. The park has stringent standards which may need to modified to ensure a sheetflow process to occur. We don't need the continued ponding of water in Area 3 due to the park refusing water, although in all the meetings they say want all the water they can get.

And finally, We sportsmen consider Area3 more everglades-like than the area that this project wants to improve. I say improve because the restoration moniker has

been put on this project. Restore means putting back to original, and we know that the Everglades as we knew back in the 1800's will never be attainable. Let's take the habitat we have created and improve it. Let's not destroy one habitat to try and bring back another one that will never be like the original.

Thank you, John Rosier

I have tried to send these comments via e-mail. but obviously due to the gov't shutdown, the website is down.

We value your opinion. Please take a few minutes to share your comments on the service you received from the District by clicking on this link.

Scott

It was good to meet you last night in Homestead.

Enclosed is a copy of a booklet with some of Tom Shirley's information and viewpoints regarding our Everglades Eco-System as we discussed.

I would like to also enter the booklet into the comments for CEPP as well as my concerns that from the way I understand the alternatives to choose from I do not see anything in them that would protect the system from extended natural hydro- periods or the increased depth of waters held.

I also understand from an email I received that a participant's line (Jack Moller) was not active when it was his turn to speak. So I will parrot a statement he wished to include in comments to the ACoE make that" we want everyone to understand that putting more water into the WCAs, 15,000 acre feet more, causing more ponding and flooding of the Everglades north of 41 is unacceptable"
"The explanation to Martha about why ALT4R1 was considered an ecological improvement while doing more harm to the WCAs is not supportable.
I agree having witnessed first hand the harm done by the previous and existing water management practices by the principle agencies.

Please enter this correspondence into the public comments for CEPP

Than you for your consideration

Eric Kimmel
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Miami FL 33177
Email Looprd@aol.com
PH 305-345-4202

WILL YOU HELP ?

THIS IS OUR LAST CHANCE TO GET IT RIGHT !

PLEASE APPROVE AN EVERGLADES RESTORATION PLAN, WITH NECESSARY PROTECTION LANGUAGE THAT WILL PROVIDE PROPER SEASONAL WATER DEPTHS THAT WILL REPLENISH LIFE AND NATURAL HABITATS TO THE ENTIRE REMAINING EVERGLADES ECOSYSTEM..

Everglades Coordinating Council

22951 SW 190 Avenue - Miami, Florida 33170

"TO COORDINATE THE CONSERVATION EFFORTS OF SOUTH FLORIDA SPORTSMEN'S CLUBS"

E-Mail: Evcoord@aol.com Tel/Fax: (305) 248-9924

February 10, 2000

The Honorable _____
United States Congress
Washington, D.C. 20501

Subject: The South Florida Everglades Restoration Restudy Plan

Dear :_____

The Everglades Coordinating Council (ECC) is an umbrella organization for almost every sportsmen's/conservation clubs in South Florida. Our membership is concentrated in the South Florida Water Management District (SFWMD) and we have enjoyed these lands/waters since the 1940's. We have been involved with the Everglades's restoration issues before it was popular. Our members worked to save the Everglades and create the laws to protect them from drainage and development. We worked to draw attention the Kissimmee River ditch issues and the pollution of Lake Okeechobee.

We had representation on the Commission that participated in the development of the current restoration plan. We continue to be involved in these issues. Our representative expressed serious concerns with the restudy plan and pointed out many problems. Many of these concerns and problems were corrected. There still remains one big problem that has not been corrected and must be corrected for the ECC to continue its support of the current restoration plan. This restoration plan must significantly improve the environmental quality of the Water Conservation Areas (WCA2 & 3). At the present time these areas are not being restored, but are being used to hold water for other parts of the ecosystem. This action is wrong because there is more natural Everglades habitat north of US 41 then south of US 41. This is wrong because if the Everglades north of US 41 are not restored it will not be long before the Everglades National Park is degraded by the water management practices that has almost completely destroyed the Water Conservation Areas.

We strongly encourage the US Congress to insist that the US Corps of Engineers and South Florida Water Management District restoration plan be able to classify Water Conservation Areas 3A & 3B as "GREEN" and Water Conservation Area 2B as "YELLOW" on their Environmental Quality Control Improvement Chart. If not then Congress should not approve any funding for such a plan that will not restore the Water Conservation Areas. If these improvements are not made we will have to reconsider supporting the restoration plan. Without these improvements in their current plan the majority of the Everglades ecosystem will not be restored but will be completely destroyed.

To help with this process we have attached a number of documents and photographs that show the results of what happens with mismanagement of Florida's waters.

I will take this opportunity to endorse Mr. Tom Shirley whom supplied a lot of the letters, documents, and actual real time photographs. Tom has spent most of his lifetime in the Water Conservation Areas of South Florida and can be considered an expert in the opinion of the ECC. He has become extremely active during these past two years because he knows first hand what is happening in the Everglades. Please take the time to read his enclosed input about the existing problems and his recommendations to make the right decision. The most important document in our report is Tom's seasonal water depth chart. This chart shows the proper water depth to be maintained on a monthly basis to insure a healthy Everglades ecosystem. This is the key to restoring life or bringing final death to the Everglades.

Your decision to authorize and fund the properly developed Everglades Restoration plan as we have so recommended will probably be the final decision to protect what is left of the Everglades ecosystem. So we encourage you to show the utmost leadership in this extremely important State and National issue.

We are looking for strong leadership on this issue from all elected officials in Washington DC. We hope you will ensure the proper plan is approved and funded to restore the remaining Greater Everglades' ecosystem and not just selected portions of the Everglades.

Respectfully,

Wayne Jenkins

Wayne Jenkins
President
Everglades Coordinating Council

WJ/lrc
Enclosures

Copies: US Senators, Chairs
US House of Representatives, Chairs

PS. I would like to thank Tom Shirley, Jack Moller, Lee Chamberlain and all others that contributed to this Everglades project. Hopefully this booklet will help our legislators make the right decision in the restoration plan of the entire Everglades ecosystem.

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(continued)

TOM SHIRLEY
5120 SW 172 AVENUE – FT. LAUDERDALE, FL 33331
Tel: 954-434-8416

February 14, 2000

The purpose of this packet is to inform the Untied States Congress and other conservation organizations of the misguided direction that has been taken by the Everglades restudy team. **The current Army Corps of Engineers recommendations on how to restore the Everglades are not correct.**

It should be clearly understood that I do not object to the 8.4 billion dollar Everglades Restoration Program. **I do object to the restudy team's recommendations concerning water depths. The water depths they are seeking will cause further destruction of the Everglades.** I have extended much effort in assembling a document of written materials with photographs. Some of these photographs were taken in the late 1950's, others from later periods and several during the high water crisis in 1999.

Enclosed is a copy of the US Army Corps of Engineer's (USACE) public relations document they are using to sell their Everglades restoration plan. It is my opinion that this document does not illustrate what they are really about to do under the name of restoration. My documentation accurately shows what the USACE will really accomplish.

I have used copies of the USACE graphs showing water depths taken by me in the 1940's and 1950's. This was before water managers made dramatic high water depth stages in the Everglades. **It is very important for one to understand that water depths of more that fifteen (15") inches for more than a six (6) week period will cause death and destruction to animal and plant life.** It is imperative that everyone working on the Everglades restoration plan to recognized this very important fact. **The proper seasonal water depth creates life or destruction in the Everglades ecosystem.**

The toxic pollution, methyl-mercury and cattails increase due to deeper water is not being addressed in the restoration plan. The high water depths will destroy the Florida Panther (Endangered Species), Everglades Mink (Threatened Species), and sixty-six (66) other animals and plants.

Politics is very strong and effective in Florida thus we find it necessary to go outside of our own state to seek help to **"Save The Everglades".** Floridians need your help to, **" Protect the Remaining Everglades"** and make sure the 8.4 billion dollars of American taxpayers dollars is not spent to make the Everglades Conservation Areas into a water storage area for Florida's rapid urban and agricultural expansion.

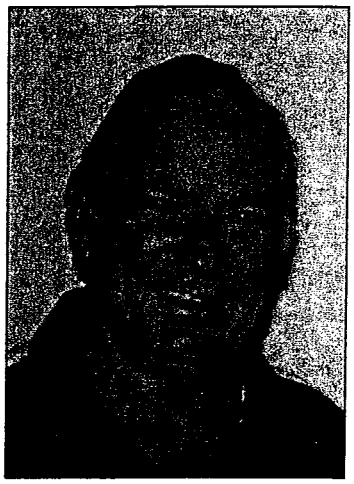
I am asking Congress to show leadership in making sure the US Army Corp of Engineers plan is revised to really save all of the remaining Everglades. If this is not done than the USACE used Everglades Restoration as a sales promotion to get billions of tax dollars to generate jobs and to further destroy the Everglades. I would appreciate each of you to take the necessary time to study and review the contents of this booklet. Your leadership is sincerely needed to protect the remaining Everglades for the enjoyment of future generation. Remember natural seasonal water flows took thousands of years before Christ was born to create this beautiful ecosystem called the Everglades. It has taken the Army Corps of Engineers to destroy most of it only 100 years. **We ask that you take the necessary leadership actions to stop the Everglades from being yet another DEAD ZONE.**

Respectfully Yours, TOM SHIRLEY

Tom Shirley

Francis S. Taylor Outdoorsman of the Year

TOM SHIRLEY



Tom Shirley, this year's winner of the Francis S. Taylor Outdoorsman of the Year award was chosen because of the same concern for conservation and for protecting the Everglades that Franny Taylor is remembered for.

Growing up in the Everglades, Shirley eventually came to work there as an officer of the Florida Game and Fresh Water Fish Commission. His interest in the health and welfare of the Everglades ecosystem has more recently led him to become involved with the Everglades Restudy process.

In that effort, and although now retired from the Commission, Tom still carries a steady stream of government agency representatives into the Everglades to show them firsthand the destruction of the uplands and wildlife caused by bad water management practices. Once he became involved in the Restudy, Tom used his own instruments and knowledge of the area to determine that the plan, as it was originally presented by the U.S. Army Corps of Engineers, would drown many of the upland tree island habitats.

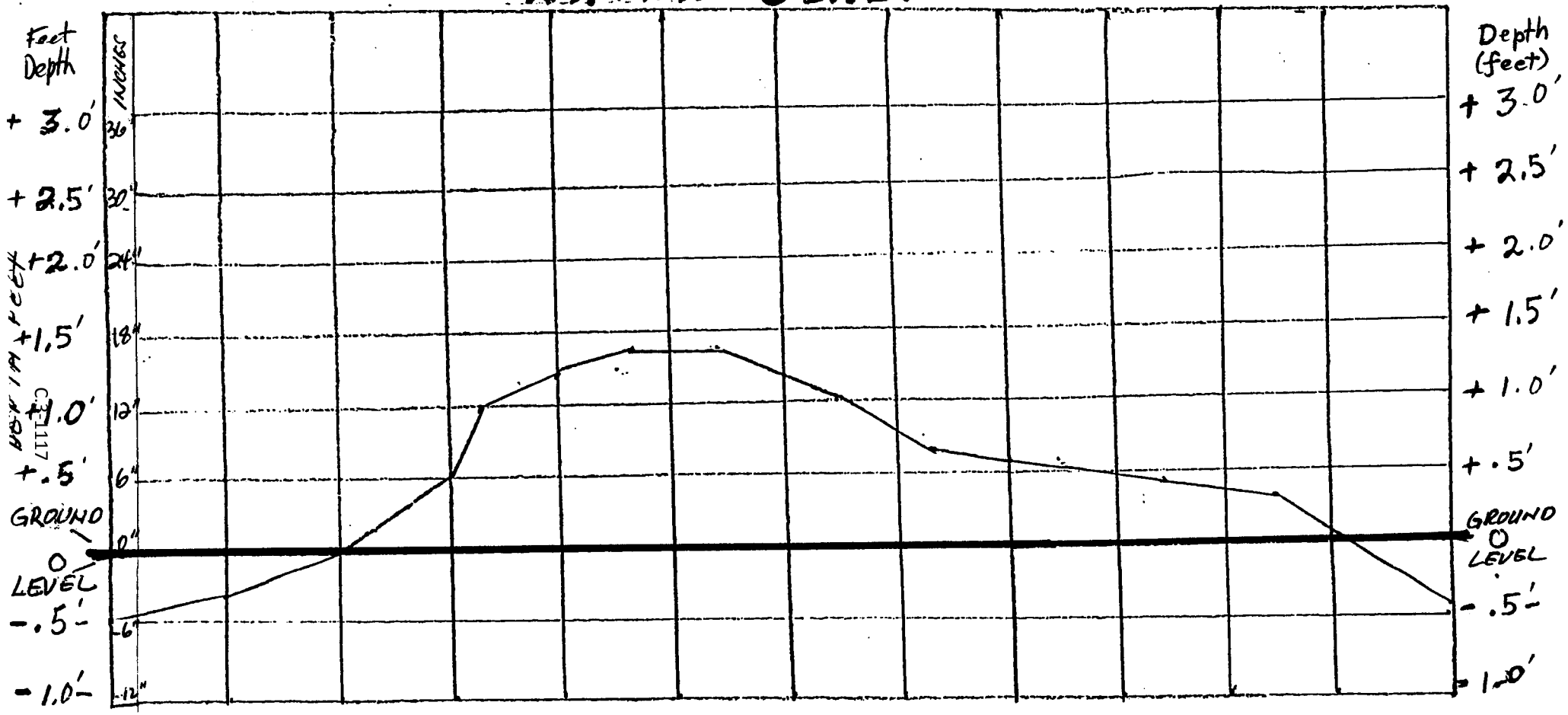
Tom has worked tirelessly to save the Everglades and make sure everyone is aware of the consequences of an improperly constructed Restudy, and he has spent numerous days at his own expense working to educate society about the dangers facing the Everglades.

For these efforts on behalf of conservation, the Florida Wildlife Federation is proud to name Tom Shirley as the winner of the Francis S. Taylor Outdoorsman of the Year award for 1999.

RECOMMENDATIONS FOR CONSERVATION

AREA THREE-A

WATER SCHEDULE DEPTHS



MAY JUNE JULY AUG. SEP. OCT. NOV. DEC. JAN. FEB. MAR. APR.

THIS WATER SCHEDULE RECOMMENDATION REPRESENTS LOCATIONS TEN (10) MILES SOUTH OF THE THE NORTH END OF AREA THREE. THOUGHT IS, THE NORTH IS TWO FT. HIGHER THAN THE SOUTH END. THE WATER TABLE WOULD DEGRADE TO THE SOUTH FOLLOWING 3 MONTHS. GROUND WOULD BE MOIST ENOUGH TO RESIST BURNING DURING NORMAL DRY SEASON.

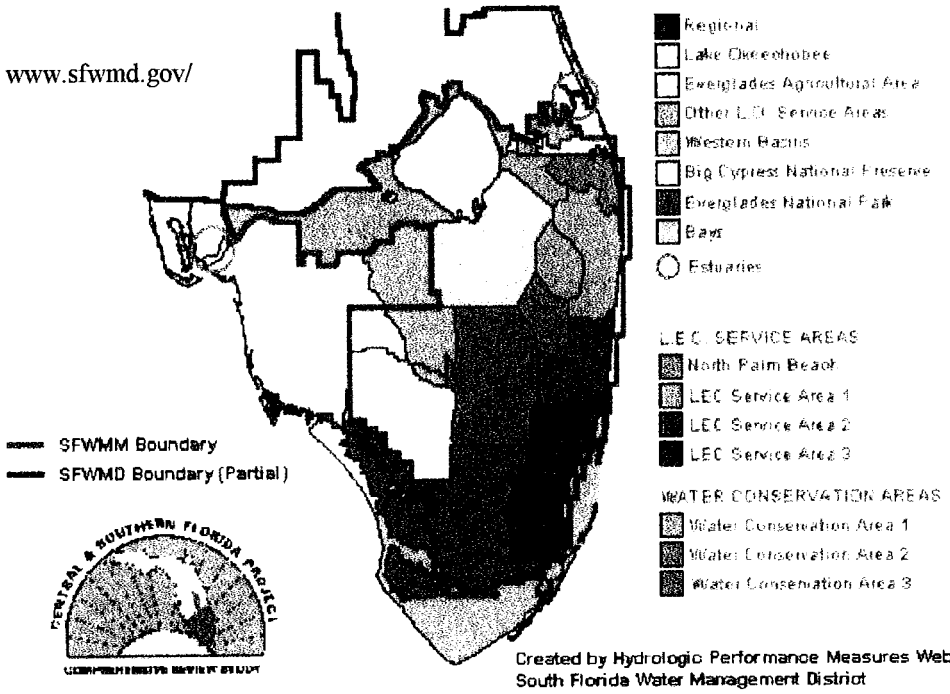
RECOMMENDATIONS FROM TOM SHIRLEY

1-A

Central & Southern Florida Project Comprehensive Review Study

Hydrologic Performance Measures

Web Page: www.sfwmd.gov/



Created by Hydrologic Performance Measures Webteam,
South Florida Water Management District

lick on one of the above areas to view the Performance Measure graphics for that area

OCT 1999 - EVERGLADES RESTORATION AT WORK, AT THIS TIME, WATER LEVELS NEAR RESTORATION RESTUDY DEPTHS AND ARE RAPIDLY KILLING THE EVERGLADES ECOSYSTEM.

The Everglades are drowning in their own tears

JAN 20, 2000

Dexter Lehtinen, a former U.S. attorney, filed the original Everglades lawsuit against the state and South Florida Water Management District and now represents the Miccosukee Indian Tribe.

A tragedy is unfolding in the Florida Everglades. The heart of the Everglades — the 752 square miles of fresh-water Everglades prairie marsh, studded with tree islands and teeming in biodiversity, known as Water Conservation Area 3-A — is drowning. And once its tree islands are washed away and its biodiversity transformed into a dull monoculture, once the area is dead, it cannot be brought back to life.

DEXTER LEHTINEN

In December 1999 a Florida Fish and Wildlife Conservation Commission representative concluded that the conservation area "has degraded more in the last five years than in the entire 40 years before." The threat comes from destructive, high-water levels due to closing the gates along Tamiami Trail and bad water-management policies.

Does anyone care? Will anyone act?

The legal responsibility for protecting this precious resource rests with several state agencies. Ideally the federal government should care as well. Therein lies another problem: The federal government doesn't care, because it doesn't own the conservation area, even though the Everglades within it and within Everglades National Park compose the "River of Grass."

The state agencies responsible for the conservation area include the governor and Cabinet sitting as trustees of the Internal Improvement Fund (it holds the legal title), the Fish and Wildlife Conservation Commission (it's responsible for managing wildlife resources) and the South Florida Water Management District (it's supposed to manage the water). But, in fact, the Central Everglades is an orphan, a beautiful child with unlimited potential but not worth the political trouble of fighting for.

No one expresses the belief that the conservation area isn't worth protecting. No one says that the Central Everglades should die. But all know that the current high-water levels will kill it, and no one will take responsibility for saving it.

Does anyone care? Will anyone act?

We know, of course, that Water Conservation Area 3-A is not a living being, but from the air it appears so — a beautiful living creature struggling in a snare set by a twin sister, Everglades National Park.

Only a metaphor? Rain comes naturally in the Everglades ecosystem like tears; and rain, like tears, flows away naturally. But, if blocked, tears build to deadly levels. That's what's happening: The conservation area is drowning in its own tears.

There is no flood-protection, human-health or property-right reason for holding the water back. Officials simply have found that they can use the artificial barriers along Tamiami Trail to protect the park, requiring Conservation Area 3-A to absorb any natural events or conditions that they don't like.

The conservation area and park were once one, but that relationship is now denied and disavowed as if the conservation area were some distant, no-account relative. The Department of the Interior uses the bridges and gates along Tamiami Trail to hold water levels artificially low south of the trail in the park and artificially high north of the trail.

This is being done so that about 10 percent of a subspecies of a bird that moved into the artificially dry area (away from its 1977 officially declared "critical habitat") will not have to move again. Artificial, unnatural conditions are created in the name of "nature."

It wouldn't take much to save the Central Everglades: Just pull the plugs that block the flow of water, just open the drains, open the gates. The urban and agricultural areas to the east and west would not be harmed. In fact, flood protection would be improved because the water would flow through the Everglades naturally, where it belongs.

The Central Everglades needs a leader who, to paraphrase Abraham Lincoln describing the Mississippi, will enable "the mighty river to once again flow unvexed to the sea."

DEC. 11, 1998

TO: MR JACK MOLLER
610 N.W.93 AVE
PEMBROKE PINES, fla
33024

TOM SHIRLEY
5120 S.W. 172 AVE.
33331

PH. 954 4348416

DEAR MR MOLLER:

IN 1955 I BECAME EMPLOYED BY THE GAME AND FRESH WATER FISH COMMISSION. I RETIRED 30 YEARS LATER IN 1985. I NOW OWN AND OPERATE TOM SHIRLEYS EVERGLADE TRAVEL TOURS INC. DURING MY EMPLOYMENT WITH THE COMISSION I WAS IN CHARGE OF THE EVERGLADES, BIG CYPRESS, 10,000 ISLANDS AND THE FLORIDA KEYS. DURING THIS PERIOD I HAVE WITNESS MUCH DESTRUCTION WHICH WAS NOT NECESSARY. DURING THE PAST 48 YEARS I HAVE GAINED MUCH EXPERIENCE CONCERNING THE VARIATIONS OF THE SEASONAL WATER TABLES AND THE EFFECT IT HAS ON THE ENVIRONMENT. WHEN THE WATER RISES 18 INCHES OR ABOVE, IT HAS A DRASTIC EFFECT ON THE MANY MAMMALS, REPTILES, AND BIRDLIFE. UNDER THESE STRESS CONDITIONS OF SIX WEEKS YOU CAN EXPECT SOME OF THE WILDLIFE TO BEGIN DYING OFF SUCH AS DEER, RACOON, BOBCAT, POSSUM, OTTER, RODENTS AND SNAKES. THE GROUND LOSES ITS SOLID BODY BECOMMING SOFT TO SUPPORT THE TREE. THE ROOTS ROT FROM BENEATH AND THE TREE FALLS AN DIE

THIS CONDITION MENTIOED ABOVE IS NOW TAKING PLACE THROUGHOUT THE CONSERVATION AREA THREE BECAUSE OF THE STRESS CAUSED BY THE EXCEPTIONAL HIGH WATER TABLE.

WHILE REVIEWING THE RESTUDY TEAM RECOMMENDATIONS TO THE ARMY CORPS OF ENGINEERS DRAFT PLAN ALT DI3R IT BECAME VERY OBVIOUS THAT THE WATER SCHEDULE WAS ENTIRELY TOO HIGH WITH-IN THE EVERGLADES. IF THIS SCHEDULE IS FOLLOWED THROUGH IT WILL DESTROY THE WILDLIFE THE ECOLOGY AND THE BEAUTIFUL ISLAND HAMMOCKS THROUGHOUT CONSERVATION AREA THREE. THIS MISTAKE WAS MADE IN AREA TWO AND THERE ARE NO TREE ISLANDS LEFT. AREA TWO HAD MORE TREE ISLANDS THAN AREA THREE BUT ALL TREE ISLANDS WERE DISTROYED FOR EVER. LET US HAVE THE KNOWIEDGE TO NOT DESTROY ANOTHER LARGE SECTION OF OUR NATURES WONDER OF THE EVERGLADES.
ON DECEMBER THE NINTH AND TENTH MYSELF AND OTHERS MADE A TRIP INTO AREA THREE TO SEE WHAT SUCH A SCHEDULE WOULD HAVE ON THE ISLANDS. OUR USE OF A TRANSIT AND VARIOUS MEASUREMENTS REVEALED THAT MOST ALL OF THE ISLANDS WOULD BE UNDER WATER. WE SERVEYED SEVEN ISLANDS WORKING FROM THE NORTH SOUTHWARD.

ISLAND NO. I RECORDS ISLAND 13 INCHES UNDER WATER AT HIGH PERIODS.
ISLAND NO. 2 RECORDS ISLAND 14 INCHES UNDER WATER AT HIGH PERIODS.
ISLAND NO. 3 THE HIGEST ISLAND IN THE AREA RECORDS ½ INCH ABOVE WATER.
ISLAND NO. 4 RECORDS ISLAND 4½ INCHES UNDER WATER AT HIGH PERIODS.
ISLAND NO. 5 RECORDS ISLAND 5 INCHES UNDER WATER AT HIGH PERIODS.
ISLAND NO. 6 RECORDS ISLAND 8 INCHES UNDER WATER AT HIGH PERIODS.
ISLAND NO. 7 RECORDS ISLAND 10 INCHES UNDER WATER AT HIGH PERIODS.
THE GOVERNMENT HAS AUTHORIZED THE CUTTING UP THE EVERGLADES IN PIECES WHICH ONLY DESTROYED THE NATURAL ENVIRONMENT ECOLOGY OF THE EVERGLADES. I WAS A WITNESS TO THIS BECAUSE I WAS THERE DURING ALL THE CRISIS. WITH $9 BILLION BUDGET REQUEST I ONLY HOPE THE U.S. ARMY OF ENGINEERS WILL NOT AGAIN DESTROY ANOTHER PARTIAL BUT RETURN THE ECO SYSTEM BACK THE WAY IT WAS. OUR EVERGLADES IS THE ONLY ONE IN THE WORLD. THIS WATER SCHEDULE REQUEST WILL DESTROY THE AREA THREE EVERGLADES AND ONLY TO BE READ ABOUT IN OUR HISTORY BOOKS.

THE VARIOUS AGENCIES NOW HAVE THE POWER AGAIN TO DESTROY OR TO SAVE IT FOR OUR FUTURE GENERATIONS AND GRANDCHILDREN. I HOPE THAT HISTORY WILL NOT REPEAT ITSELF AGAIN.

IF I CAN BE ANY ASSISTANCE, I AM A PHONE CALL AWAY. SINCERELY YOURS,

Tom Shirley

4

JAN 4, 1999

TOM SHIRLEY
5120 S. W. 172 AVE.
FT. LAUDERDALE, FLA
33331
PH. 954-434-8416

TO WHOM IT MAY CONCERN:

IN REVIEWING THE RESTUDY TEAM AND THE ARMY CORP OF ENGINEERS DRAFT COMPREHENSIVE PLAN ALT D13R CONCERNING THE WATER TABLE DURATION CURVES WITH-IN THE CONSERVATION AREA THREE (3) I FIND THAT IT FAR EXCEEDS THE WATER TABLE CONDITIONS THAT WERE IN PLACE BEFORE THE MAN MADE STRUCTURES WERE PUT IN THE EVERGLADES. IT DOES NOT COME ANYWHERE CLOSE TO REPRESENTING THE EVERGLADES ECO SYSTEM ON A SEASONAL BASIS.

AS I HAVE MENTIONED BEFORE I HAVE PATROLED THIS AREA FROM 1949 UNTIL NOW (49 YEARS). IN THE EARLY YEARS BEFORE THE EVERGLADES WERE EFFECTED BY ALL THE MAN MADE STRUCTURES IT WAS VERY IMPORTANT THAT WE KNEW WHAT THE WATER TABLE WAS THROUGH OUT THE AREA. IF WE MADE A MISTAKE IN JUDGEMENT IT COULD RESULT IN A VERY SERIOUS SITATION, HAVING TO BE STRANDED FOR SEVERAL DAYS OR MORE. WALKING WAS SOMETIMES IMPOSSIBLE BECAUSE OF THE 10 FOOT TALL SAWGRASS STRANDS WHICH WERE BETWEEN YOU AND THE AIRBOAT LANDING MAYBE 50 OR 60 MILES OUT FROM WHERE YOU DEPARTED. IF YOU TOOK A SHORTCUT TO TRY AND SAVE FUEL YOU BETTER KNOW WHAT THE WATER CONDITIONS ARE OR THE RESULTS COULD BE VERY SERIOUS TROUBLE. SPENDING SEVERAL NIGHTS IN THE EVERGLADES WITH THE MISQUITOS CAN BE PRETTY ROUGH. AFTER YEARS OF EXPERIENCE YOU CAN LEARN THAT READING THE WATER TABLE LEVELS AT ONE POINT YOU WOULD KNOW WHAT THE WATER TABLE WOULD BE AT MOST OTHER AREAS.

I AM FORWARDING A WATER STAGE DURATION CURVE WHICH BEST REPRESENTS THE EARLY WATER TABLE OF THE EVERGLADES ECO SYSTEM. THE GRAFT REPRESENTS ONE FULL YEAR FROM MAY TO THE FOLLOWING MAY.

MUCH CONSIDERATION HAS BEEN GIVEN TO ALL THE VARIOUS TYPES OF WILDLIFE, BIRDS, REPTILES, FISH, INSECTS AND THE PLANT LIFE,

MAY THE WATER IS APPROXIMATELY 6 INCHES UNDER THE GROUND, THE GROUND HAS DRIED UP WHICH HAS MADE IT VERY HELPFUL FOR THE ON COMING SEASON. THE SUN HAS NOW DRIED THE GROUND AND KILLED THE HARMFUL FUNGUS AND BACTERIA WHICH EFFECT THE FISH. THE GROUND NOW BECOMES MORE SOLID AFTER THE HIGHER WATER HAS CAUSED IT TO BE TOO SOFT TO PROPERLY SUPPORT THE VARIOUS TREES AND PLANT LIFE. WHEN THE WATER RISES AGAIN THE FISH CAN MOVE INTO THE MARSH LANDS TO SPAWN AND LAY THEIR EGGS WITHOUT THE SILT, BACTERIA AND HARMFUL FUNGUS. THIS IS NATURES WAY TO GIVE THE SUN A CHANCE TO CLEANSE THE RIVER OF GRASS.

JUNE & JULY THE WATER TABLE NOW BEGINS TO RISE AND THE GROUND BECOMES WET AGAIN. THE SUMMER LIGHTENING STORMS ARRIVE STARTING MANY GRASS FIRES THROUGH OUT THE GRASS LANDS. THE CATTAILES HAVE TAKEN OVER MUCH OF THE GRASS LANDS. THE FIRE BURNS THE CATTAILES AND DESTROYS THEM. THE SAWGRASS NOW REPLACES THE HARMFUL CATTAILES. AGAIN THIS IS NATURES WAY.

AUG, SEPT & OCT. THE WATER TABLE WILL RISE TO ITS HIGH POINT OF 15 INCHES, THIS IS GOOD FOR THE FISH TO MOVE FUTHER INTO THE MARSH LAND TO SPAWN.

THE EARLY MIGRATION OF WATER FOWL FROM THE NORTH ARRIVE TO FEED ON THE NEW GROWTH IN THE MARSH. THE WATER TABLE IS NOW 15 INCHES AND HAS BEGAN TO PUT STRESS ON THE HAMMOCKS, ISLANDS, THE DEER, RACOON, BOB CATS, OTTER, REPTILES AND THE ENDANGERED EVERGLADES MINK. IF HIGH WATER TABLE DOES NOT DROP VERY SOON WITH-IN 6 WEEKS THE WILDLIFE WILL BEGIN DYING OFF. THE WATER IS NOW TOO HIGH FOR THE HERONS, IBIS, EGRETS AND OTHER BIRDS. THE WATER IS NOW OVER THEIR HEADS AND MOST OF THE BIRDS CANNOT FEED.

NOV, DEC, JAN, FEB. NOW THE WATER TABLE IS BEGINNING TO RESIDE. NOW THE STRANDED MAMMALS CAN LEAVE THE HAMMOCKS AND BEGIN TO FEED IN THEIR NORMAL FASHION. NOW THE SURGE OF MIGRATORY BIRDS FROM CANADA AND SOUTH AMERICA COME DOWN TO THE EVERGLADES FOOD BASKET OF MANY FISH, CRAYFISH,SHRIMP, INSECTS, SNAKES, FROGS AND MUCH MORE. THE FEEDING CONDITIONS ARE SO GREAT THAT THE BIRDS WILL SURELY COME AGAIN NEXT YEAR.

MARCH, APRIL NOW THE WATER TABLE HAS BEEN GETTING VERY LOW AND THE FISH AND OTHER FOODS ARE GETTING STRANDED IN SHALLOW BODIES OF WATER IN THE SLOUGHS. NOW THE FOOD IS ABUNDANT FOR THE BIRDS, RACOONS, OTTERS,PANTHERS AND THE ALLIGATORS. THE FOOD IS SO ABUNDANT THAT THE ALLIGATORS HAVE ENOUGH FOOD TO BUILD UP ENOUGH FAT WITH-IN HIS BODY TO LAST HIM UNTIL THE NEXT DROUGHT PERIOD. THE ALLIGATOR WILL NOT HAVE TO EAT OTHER ALLIGATORS TO FULFILL HIS HUNGER. THE CONDITIONS HAVE BEEN SO FAVORABLE FOR THE WOOD STORKS, IBIS HERONS AND MANY OTHER BIRDS. THE EVERGLADES IS NOW FAVORABLE AND CAN NOW HAVE THEIR ROOKERIES AND NESTING AREAS FOR THEIR YOUNG. THE MANY REPTILES TURTLES AND INSECTS CAN HAVE THE DRY GROUND TO LAY THEIR EGGS. THE ALLIGATOR CAN NOW BEGIN TO LOOK FOR THE AREA IN WHICH TO BUILD ITS NEST. THE FOOD CHAIN FOR THE WILDLIFE, FISH AND PLANT LIFE HAS BEEN COMPLETED. THE FOLLOWING YEAR WILL BE MUCH MORE PRODUCTIVE, AS THE ADULT AND JUVENILE BIRDS WILL BE ENCOURAGED TO RETURN TO THE EVERGLADES GREAT FEEDING AREA.

I DO NOT BELIEVE THAT THE BEST OF THE COMPUTERS HAS MORE KNOWLEDGE THAN THE DIRECT EXPERIENCE. ONE GREAT ADVANTAGE IT DOES HAVE , IF SOMETHING TURNS OUT WRONG, THE COMPUTER CAN BE CALLED TO BLAME BUT THEN IT WILL BE TO LATE TO BRING LIFE BACK INTO THE EVERGLADES.

I DO NOT BELIEVE THAT IT IS NECESSARY TO DESTROY ANOTHER LARGE SECTION OF THE EVERGLADES TO SAVE ANOTHER PORTION. IT IS NOT NECESSARY TO FLOOD THE AREA NORTH TO PUSH WATER SOUTHWARD TO THE EVERGLADES NATIONAL PARK. WE MUST REMEMBER THAT IT IS ONE ECO SYSTEM AND MUST BE TREATED AS SUCH.

AFTER THE 1947 HURRICANE AND THE FLOOD CONTROL WAS FORMULATED THE UNITED STATES GOVERMENT HAD WRITTEN LAWS VERY SPECIFIC CONCERNING THE PROTECTION OF THE ECOLOGY AND THE WILDLIFE. THE PROBLEM WAS THAT THERE WERE NO LAW ENFORCEMENT TO STEP FORWARD TO FILE CHARGES. NOW THE POLITICIANS HAVE GAINED POWER AND CONTROL AND NOW ARE JUST BEFORE DESTROYING ALL OF THE EVERGLADES NORTH OF HIGHWAY 41.

IF THE CORP OF ENGINEERS AND THE WATER MANAGERS WATER SCHEDULES ARE APPROVED BY CONGRESS THIS WILL MEAN THAT CONGRESS HAS SIGNED A $7.8 BILLION CONTRACT TO KILL THE EVERGLADES ECO SYSTEM. THIS IS THE ONLY EVERGLADES IN THE WORLD LET US KEEP IT.

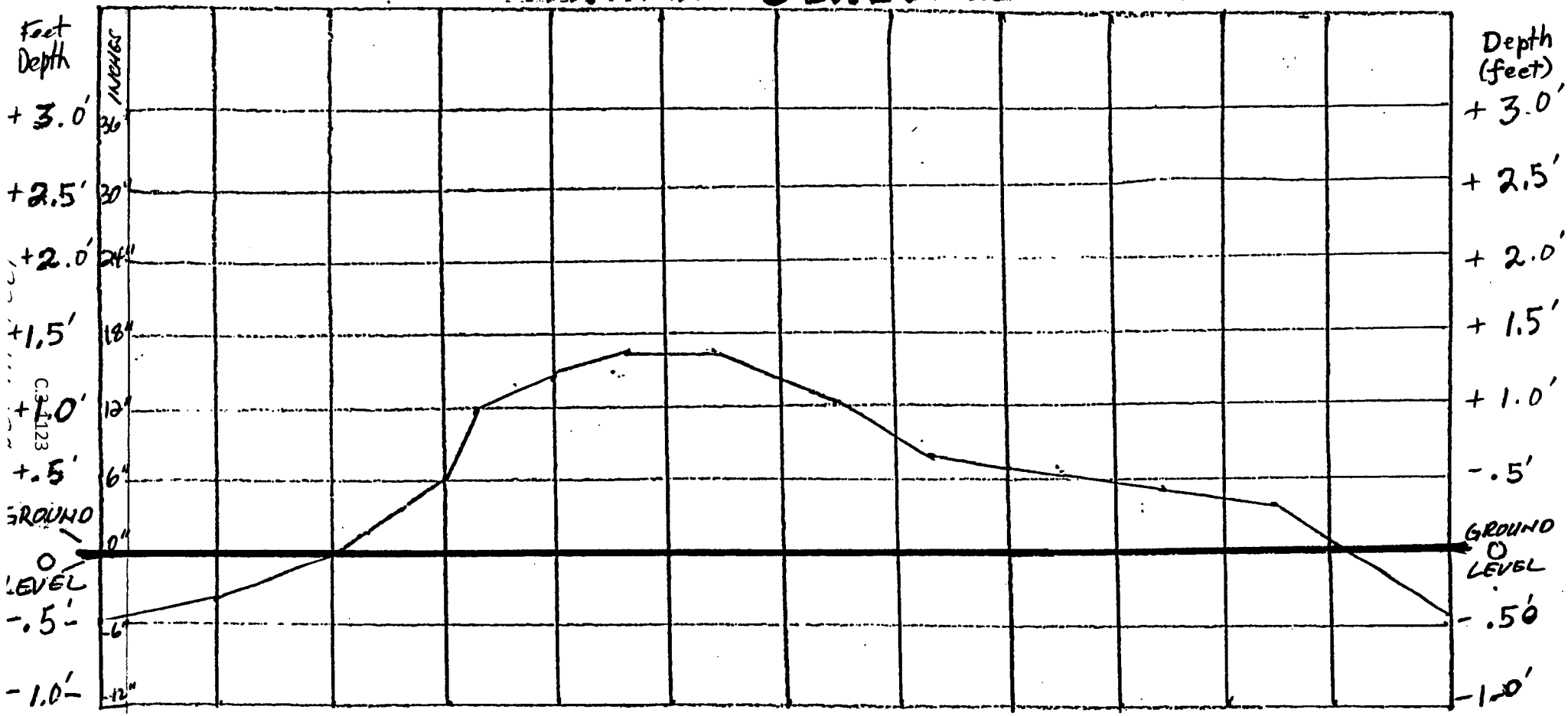
THE FLA. GAME AND FRESH WATER FISH COMM. IS CHIEF CUSTODIAN OF OUR FISH AND WILDLIFE AND WE TRUST THAT THEY WILL HAVE THE KNOWLEDGE AND COURAGE TO NOT LET SUCH A DESTRUCTION OF OUR EVERGLADES TAKE PLACE.

I REMAIN,

TOM SHIRLEY

RECOMMENDATIONS FOR CONSERVATION

AREA THREE-A
WATER SCHEDULE DEPTHS



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RECOMMENDATIONS FROM TOM SHIRLEY

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PICTURE #1 - HENSCHEL'S HAMMOCK - Water Conservation Area 3A North - Photo taken in 1957 of the highest and largest hammock in the Everglades.

PICTURE #2 - HENSCHEL HAMMOCK - Everglades WCA 3A - North
Notice the beautiful foliage with many large trees. Since this picture most of the plants and wildlife have been killed off due to the water being held exceptionally to high and for too long a period.

— FRED GRIMM / Miami Herald

Fresh Water Fish and Game Commission Officer Vic Heller ... *checks yearling deer which apparently starved on an island*

Oct 27 1979

Evidence Deadly As Judge Tours Everglades Water

By FRED GRIMM
Herald Staff Writer

Nature's opening argument was stark and awful. A dead deer, its flesh cleaned away by the buzzards, lay on a little knoll rising out of the sawgrass flats.

Most of the foliage had been eaten way from the tiny Everglades island, surrounded by black water, 20 inches deep. The yearling had finally starved.

Palm Beach Circuit Judge Thomas Sholts waded through the water around the knoll and then on shore to the pile of fur and bones. The judge spent five hours in the Broward Everglades Friday to help him decide the validity of a lawsuit by two conservation groups that want him to order the South Florida Water Management to lower the Everglades water level.

Before

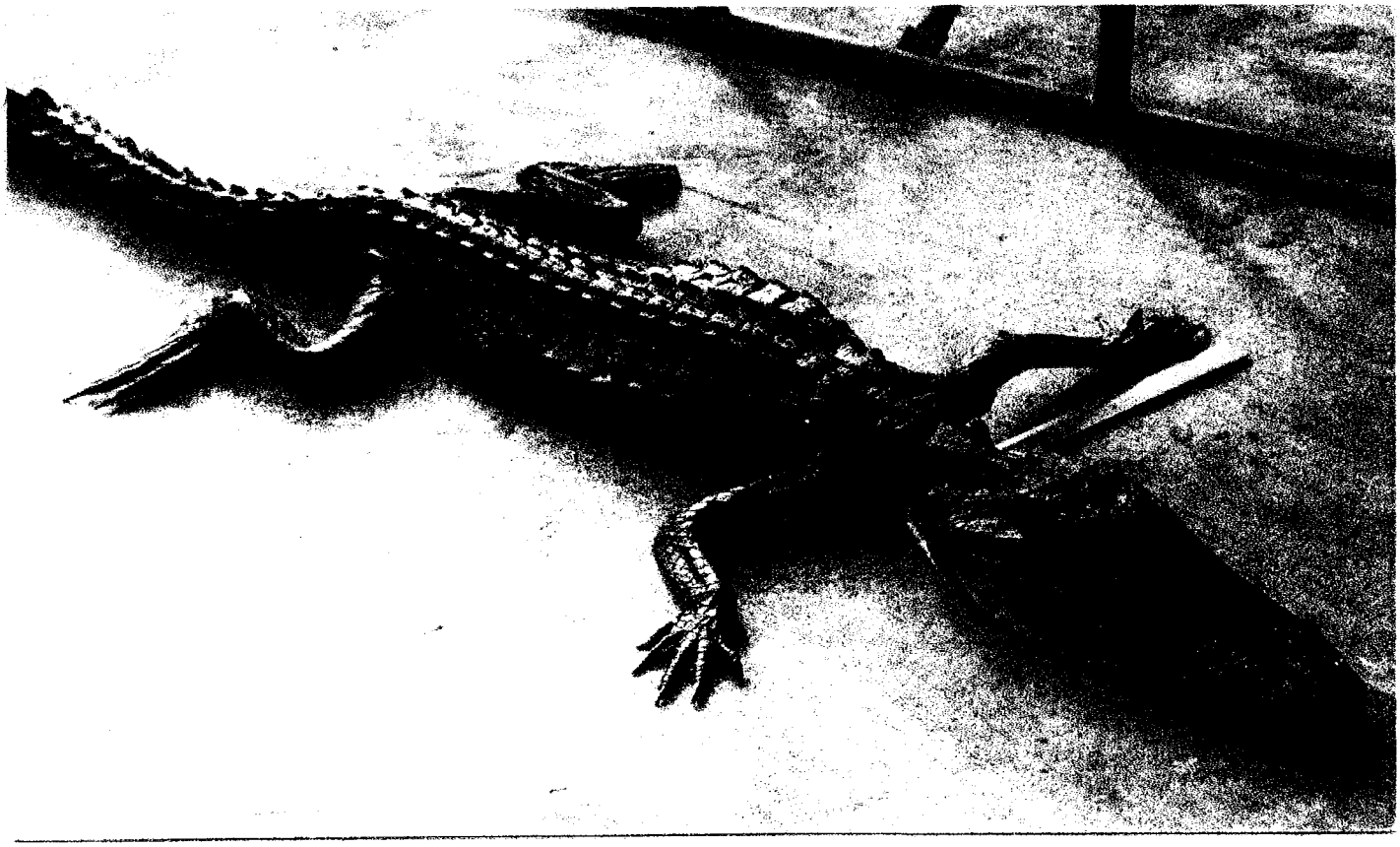
PICTURE #3A - HENSCHELS HAMMOCK - PHOTO TAKEN 1957 - WCA 3A - NORTH
This Fig Tree was several hundred years old. This hammock was flooded when the water managers held back eighteen (18") of water while trying out a new WIER SYSTEM in the Everglades. This Fig tree and several others like it were stunned and killed by excessive high water levels.

PICTURE #3B- HENSCHELS HAMMOCK - WCA 3A North
Photo taken in 1957. A healthy hammock stands for a healthy Everglades ecosystem.

PICTURE #4 - HENSCHELS HAMMOCK TODAY - Tom Shirley standing in water in Front of Henschels Hammock
Photo taken DEC 1999 - WCA 3A North - This is the same hammock as prior pictures #1,2,3A & 3B. Today most of the native plants, shrubs & large trees have been destroyed by high water. Much of the tree island has eroded. This is an example of what has taken place through out the Everglades due to high water levels. Now the US Army Corp of Engineers are for a much higher water schedules.

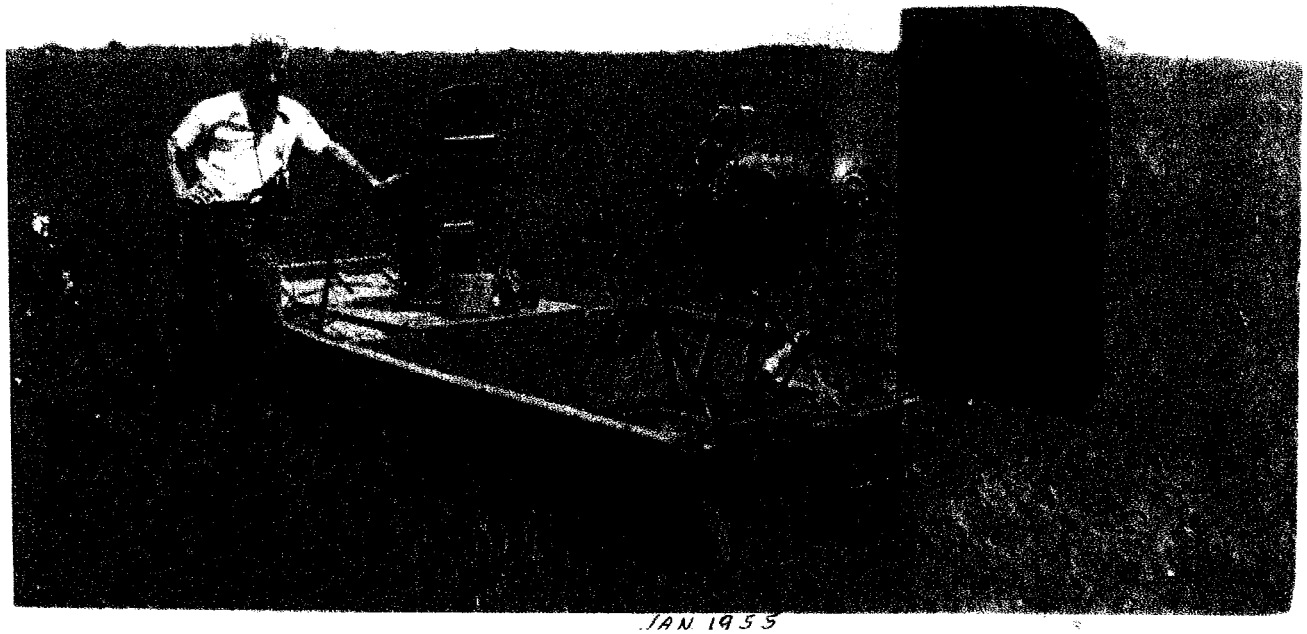
PICTURE #5 - TOM SHIRLEY & FALLEN FIG TREE
Fig tree hundreds of years old fallen because roots have rotted away leaving no support. Note no large roots attached. This problem is now affecting most all fig trees. Higher water schedules are recommended by the water management study team.

PICTURE # 6 –BUCK DEER FEEDS ON TREE - Doe and fawn deer will die before the buck deer. Note the buck deer is now standing and feeding on pepper tree. Note the dead fig tree in the foreground.

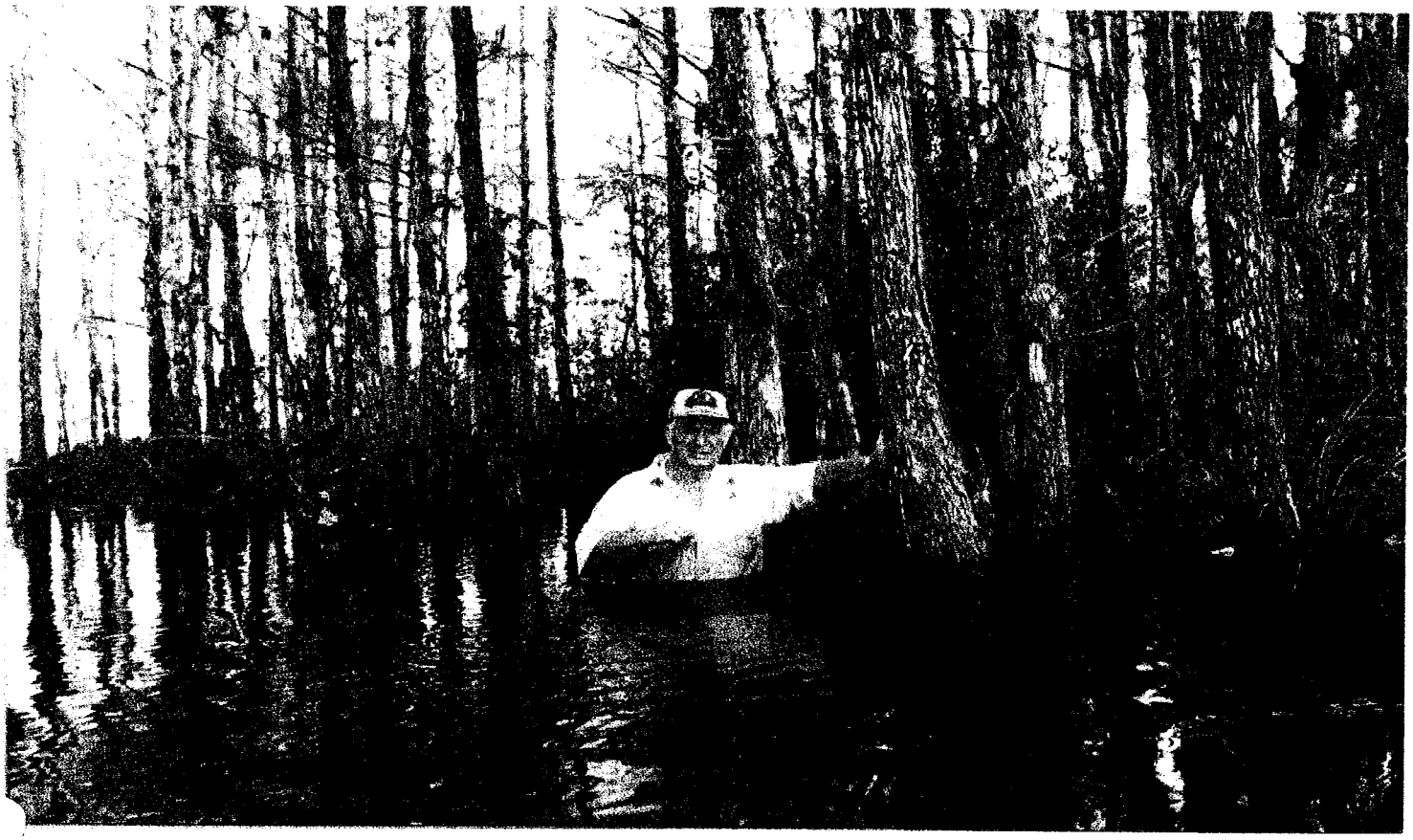


PICTURE #7 - EVERGLADES ALLIGATOR– This 7 ft. Alligator was barely alive. At the present time they have no other vertebrates to feed on and there systems are full of toxic chemicals. The Everglades alligator weighs 30% less than the Central and North Florida alligators. This Alligator was brought in for the state to do a tissue study to determine the cause of death. The state agency rejected the findings for political reasons. High water conditions have seriously affected the Everglades alligator.

PICTURES #8A & 8B— EVERGLADES DEER in WCA's
Wildlife in the Everglades starts to die off when the water level rises to fifteen inches (15") or more, and is stored or held for more that six (6) weeks. The deer herd in the Everglades Conservation Areas have been reduced from thousands to only a few hundred over the past 30 years due to managed high water levels..



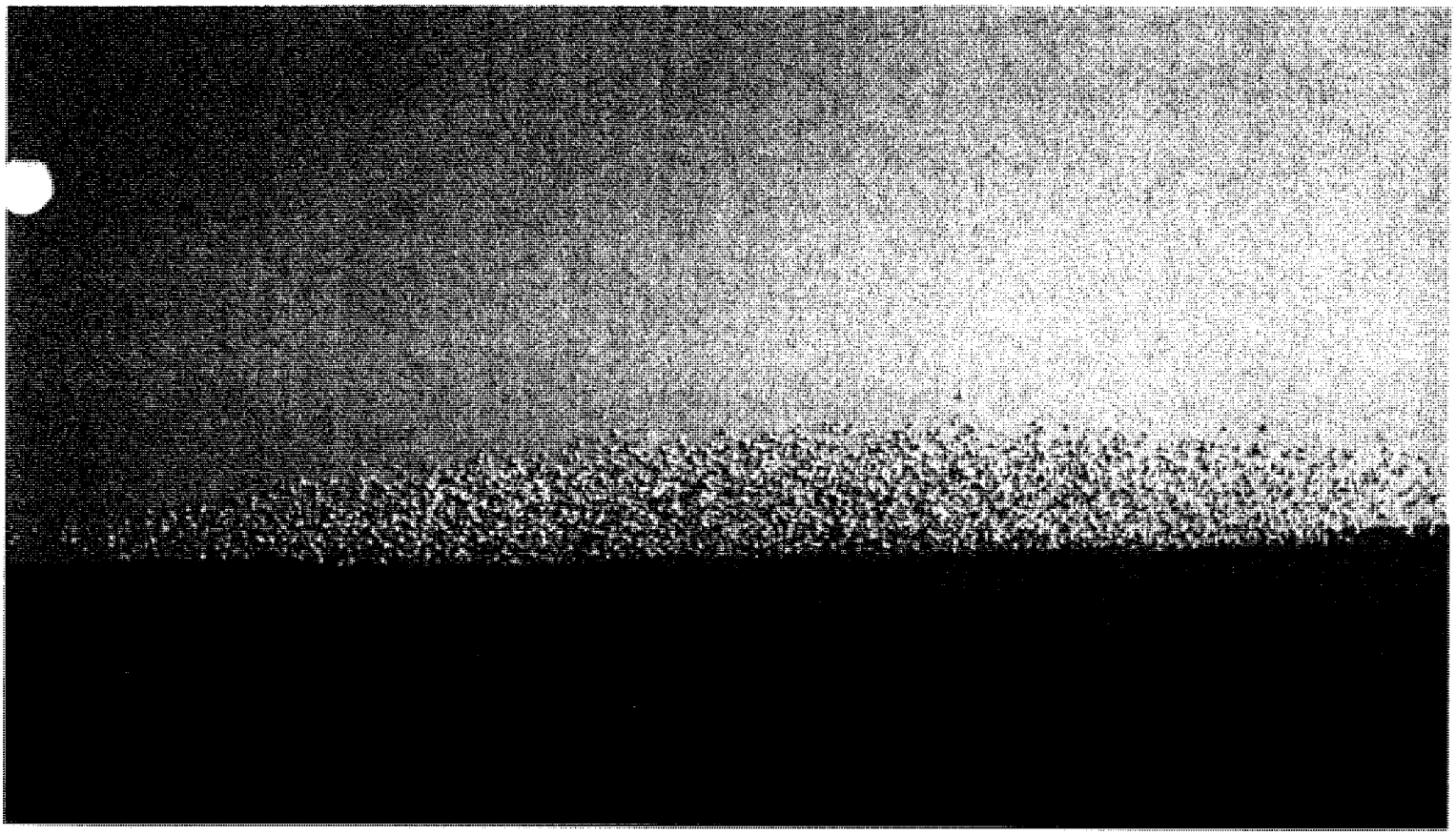
PICTURE #9 - JANUARY 1955 - TOM SHIRLEY & AIRBOAT ON DRY GROUND - WCA 3A NW SECTION- Everglades location was annually dry during this time of year. This area was prime bird and wildlife habitat. Restudy Team recommends 30 inches of water or more for this location.

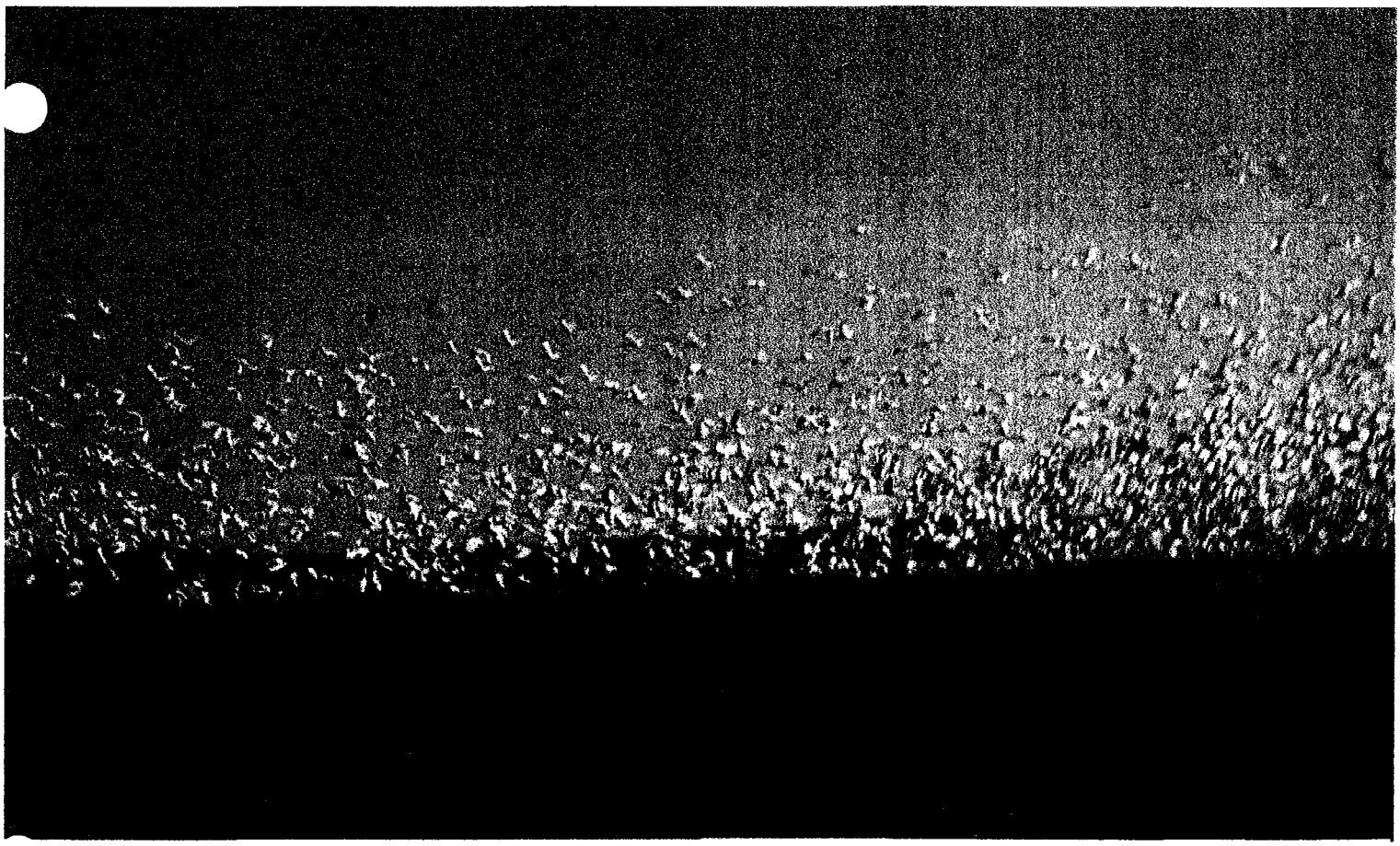


PICTURE #10 - FLORIDA PANTHER HABITAT 1999 - PHOTO taken DEC 1999
The Federal & State Governments have approved millions of dollars for Florida Panther habitat studies. Photo shows what 36 inches of water depth looks like in the Panther habitat. Panthers will not survive in such high water tables.

PICTURE #11 FLORIDA PANTHER
The Florida Panther can tolerate low water tables and schedules as shown in this picture

PICTURE #12 FLORIDA PANTHER
Florida panthers and all vertebrates need dry ground to live, feed and bear their young.





PICTURE #13 & 14 - FLOCKS OF BIRDS– Picture taken in Everglades Water Conservation Area 3A North During the 1940's and 1950's Large flocks of wood storks, Ibis and herons were very common. Many flocks such as these were observed while traveling north of highway 41 to Palm Beach County. Proper seasonal water depth was very productive for many forms of wildlife and vegetation.

PICTURES #15 & 16 A properly restored Everglades can again be a glorious nursery for all the great varieties of wildlife and native plants. If we truly manage the seasonal water flow and depth as it was before man destroyed it

JAN,21, 1999

GOVERNOR BUSH
TALLAHASSEE. FLA.
32399

TOM SHIRLEY
5120 S.W. 172 AVE.
FT. LAUDERDALE, FLA.
33331

PH. 954 4348416

DEAR GOVERNOR BUSH,

I WISH TO CONGRATULATE YOU ON BECOMMING OUR NEW GOVERNOR FOR THE STATE OF FLORIDA. WHILE YOU WERE ON THE CAMPAIGN TRAIL IN DAVIE I WAS PLEASED TO MEET YOU. YOU IMPRESSED ME OF ONE TO BE HONEST AND TO STAND UP FOR THE RIGHT AND HAVE THE COURAGE TO STEP FORWARD TO TRULY PROTECT THE FLORIDAS NATURAL RESOURCES. YOUR BROTHER AND FATHER HAVE EARNED THE HONOR AND RESPECT OF THE AMERICAN PUBLIC. I AM SURE YOU WILL ALSO.

I KNOW THAT YOU HAVE A VERY BUSY SCHEDULE IN CARRING OUT YOUR RESPONSIBILITIES AS GOVERNOR. I FIND IT VERY NECESSARY TO INFORM YOU OF A TRUE CRISIS THAT HAS DEVELOPED CONCERNING THE ARMY CORP OF ENGENEERS AND SOUTH FLORIDA WATER MANAGERS CALLED THE EVERGLADES RESTUDY TEAM. THEY HAVE SUGESTED WATER TABLE REGULATIONS THAT WILL DESTROY THE EVERGLADES FOREVER.

IN EFFORT TO SAVE THE EVERGLADES FOR OUR GRANDCHILDREN AND AMERICAN TO TREASURE AND ENJOY,I FIND IT VERY NECESSARY TO ASK FOR YOUR HELP. I DO NOT WISH TO DRAMATIZE THIS SITUATION BUT TO STRESS THE IMPORTANCE OF IT BEING ADDRESSED AND CORRECTED BEFORE IT IS WRITTEN INTO LAW.

I HAVE SPENT A CONSIDERABLE AMOUNT OF TIME TO MAKE MY OWN STUDY CONCERNING THE FORE-SEEN PROBLEM CONCERNING THE PLANNED DESTRUCTION OF OUR EVERGLADES.I AM FORWARDING TWO ATTACHED LETTERS (DEC. 11 @ JAN.4) WHICH WILL INFORM YOU WHAT HAS TAKEN PLACE.

THE ARMY CORP OF EGENEERS AND THE SOUTH WATER MANAGERS HAVE SUCH CLOUT ABOVE OTHER AGENCIES THAT THEY DO NOT STEP FORWARD AND CARRY OUT THERE RESPONSIBILITIES IN PROTECTING OUR ECO SYSTEM, PLANT LIFE, BIRDS AND WILDLIFE. WITHOUT THERE INVOLMENT THE EVERGLADES WILL BE LOST FOREVER. THE PROBLEM LIES WITH THE TOP MANAGERS OF SAID AGENCIES WHO ARE RESPONSIBLE FOR OUR WILDLIFE AND FISH WITH-IN FLORIDA. THEY ARE NOT PUTTING FORTH THE NECESSARY EFFORT TO PROPERLY REPRESENTING THE EVERGLADES ECO SYSTEM.

THIS PROBLEM MUST BE ADDRESSED AS SOON AS POSSIBLE AS THE FINAL REPORT AND APPROVAL WILL BE SENT TO CONGRESS NEXT JULY. THIS OVERHAUL OF THE EVERGLADES WILL COST THE TAX PAYERS $7.8 BILLION.

THE EVERGLADES DESTRUCTION OR THE KEEPING OF ONE OF THE WORLDS NATURAL WONDERS WILL DEPEND ON SOMEONES STRIKE OF A PEN.

GOVERNOR JEB BUSH, WE ARE ASKING FOR YOUR HELP.

ATT: J ALLISON DEFOOR II

SINCERELY YOURS,

TOM SHIRLEY Tom Shirley

C.3-1134

18

2 March 1999

Governor Jeb Bush
Tallahassee, Florida
32399

Dear Governor Bush,

I find it necessary to inform you of a very serious problem concerning our natural wonder, The Everglades.

The Everglades are now being re-evaluated, again. This 8.4 BILLION DOLLAR project could reproduce our natural Everglades as we once knew it or the project could destroy it forever. Because of my concern I called a meeting. I felt it was very important to acquire valuable information and descriptions from men who had alot of experience with the Everglades. Many of the men have made there living in the Everglades for 40 to 60 years. The older individuals came from many walks of life; froggers, trappers, commercial fisherman, recreational users and older Florida Game and Fish employees. There knowledge is extremely valuable in starting to re-build the vast Everglades before the destruction and modifications made by man.

I feel it is necessary to forward to you our unified thoughts and recommendations concerning the re-building of our Everglades. It is necessary that we be candid with you and relate the good, bad and ugly.

Many years ago Florida Governor Askew, was fighting the battle to save The Everglades. The Governor held a meeting on Miami Beach. All professional people who had knowledge of The Everglades problem were invited to attend. This included water management personnel, hydrologists,biologists, scientists and, many other knowledgable people. The Governor asked all to be non-biased concerning the true thought to save The Everglades from destruction. This body of people was so large that they had to be broken up into three different groups. This meeting was very serious and lasted for three days. All information acquired from the many individuals was formed into one summary. The summary report final analysis recommended that The State of Florida had made a mistake to allow the various farmers to move into the flood plains. They further recommended The State of Florida re-purchase the flood plains and return it to its natural state as The Everglades.

The political power of this union decided to "water down" the summary considerably. They re-wrote the summary three different times, each time the report was "watered down" considerably. The final summary report did not represent the truth. Business went on as usual. Now three to four decades later we are faced with the same battle, only to experience a much smaller Everglades than before, which is ever increasingly dying at a rapid rate.

The Water Management track record speaks for itself. Area number two (2) is a good example. All the islands and hammocks do not exist, and the wildlife is gone.

After the 1947 hurricane and flood control came to be, the water table regulations set forth were not to be harmful to the habitat or The Everglades ecosystem. If it was found to be destructive the water schedules were to be lowered. It would be unlawful for Water Management to willfully cause destruction to The Everglades ecosystem. A cap should

3/2/99 Pg 2

be put on the high water level and persons should be held accountable if they exceed that level. No one should be able to kill The Everglades ecosystem.

The first report from the re-study team water recommendations call for water heights that will drown out tree islands and hammocks the same way that has already killed off Area Two (2). It seems that we connot profit from our mistake. In the part large sections of The Everglades have been killed off to save another section. This approach is not necessary.

The Water Management take away system is not working. The Florida Game and Fresh Water Fish Commission reports that they estimate the deer herd within all of Area Three (3) is 59 deer. The State of Florida should be ashamed to have let this type of thing happen to one of our worlds Natural Wonders, as The Everglades. During the 1960's the deer herd was estimated to be over 10,000. We feel it is well over time to stop the old practices and get serious and truthful by giving a direct approach in saving what little is left of The Everglades.

There is much debate as to what The Everglades water table,wildlife and plant life was during the early years. We highly recommend that we take advantage of the more direct experience that we still have available. The elder men who have spent most all of there lives and livelihood within The Everglades have much direct knowledge of this ecosystem, that would prove to be very beneficial to the natural restoration.

We recommend that a special effort be put forth to locate some of these men who can relate and forward such vital information that may otherwise be overlooked by the study team.

It would be advantageous to appoint a special board of these qualified men to act as advisors to the study team. We are not against spending the 8.4 Billion Dollars, to save The Everglades not destroy it.

Governor Bush, The State of Florida in part has allowed to much destruction of our Everglades. If you as a Texan can address our problem as The Texans did years ago to save your Texas deer herd, we can achieve our goal.

If we can be of any assistance in any manner, please do not hesitate to call on me.

Sincerely Yours,

Tom Shirley

8-26-99

Jeb Bush, Governor
Tallahassee, Florida 32399

Dear Governor Bush:

I find it necessary to inform you of a very serious problem concerning our Florida Everglades. One of the worlds natural wonders is now on the drawing board to be destroyed forever.

The Everglades restudy team has taken on itself to destroy a vast area lying north of Tamiami Trail (Highway 41). Before their plans are completed and written into law, as Governor I believe it paramount that you address this problem.

I have sent you two letters, one on 1-21-99 and 3-2-99, concerning this problem. These letters are attached along with a news article written 10-27,1979. If we can not learn by the history of destruction it is only evident that it will repeat itself.

Conservation groups of South Florida have been fighting this battle for 33 years and are loosing to the politicians who are not concerned of the destruction of The Everglades, but what benefits them personally.

Large portions of The Everglades hammocks (Area 2) have been completely destroyed. Area 3 is now being destroyed because of very high water tables. The deer herd was over 10,000, today the count is about 53.

You do not have to be a rocket scientist to see that continued flooded conditions have killed off trees, plants, fish, birds and most all mammals.

The restudy team is requesting 8.4 billion dollars only to destroy a big section of The Everglades by continuing to flood out all dry ground within its boundaries.

The water depth should not exceed 15 inches. The restudy team is setting 30 inches or more in depth, which will destroy all hammocks and dry islands leaving no place for the wildlife to exist. Science, proven facts, history and common sense are now loosing out again to politics.

The Game & Fresh Water Fish Commission and The Florida Marine Patrol are now combined in what was expected to be a great force movement to protect Florida's fish and wildlife. "WHAT A JOKE". The newly appointed agency The Florida Fish & Wildlife Conservation Commission is not representing the trees, plants, birds, fish and wildlife, but recommending 30 inches or more of water is two times than The Everglades ecosystem should sustain. The new agency has gave way to the clout of The US Army Corp of Engineers and The South Florida Water Management District. This water table recommendation was a great shock and let down to individuals that are acquainted with the natural Everglades ecosystem.

It appears that the word Everglades was an effective way to make a great sales pitch for 8.4 billion dollars for the Army Corp of Engineers. In this modern day of agencies and there advancement, who are we to turn to, to protect our fish, wildlife and ecosystem?

The 8.4 billion dollars to save The Everglades (a worlds natural wonder) is a wonderful investment for future generations to enjoy. The procedures which are now taking place, we can only see its destruction forever. The accountability should be addressed. Individuals or agencies are never held accountable for serious mistakes, therefore business goes on as usual followed by destruction.

In 1955 when I became employed by The Game & Fish Commission, I was requested to take an Oath to Protect The State of Florida's natural resources, this included birds, fish, wildlife, plant life and the ecosystem. I cannot turn my head or ignore the procedures which are taking place. Governor Bush, without your leadership to truly save The Everglades it will be lost forever.

If I can assist you in any manner please do not hesitate to call on me.

Sincerely Yours,

Tom Shirley

Tom Shirley

Tom Shirley
5120 SW 172 Avenue
Fort Lauderdale, Florida 33331
954-434-8416

CC: Frank R. Finch S.F.W.M.D.
Christ Mc Voy S.F.W.M.D.
Col. M. Robson F.F.W.C.C.
Lorraine Heisler F.F.W.C.C.
Steve Coughlin F.F.W.C.C.

20 September 1999

Richard Punnett
U. S. Army Corp Of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

I am forwarding 1965 through 1995 history water tables recorded in conservation Area 2 and 3. In reviewing the water tables in Area 2 to see what killed off the wildlife and destroyed all the islands. It is very apparent that depth of water over 15 inches was the normal procedures. The restudy teams approval of 30 inches is quite evident that it will completely destroy the wildlife and hammocks throughout Area 3, the same as it did in Area 2.

In 1966 I met with the chief hydrologist, Mr. Miller, of The South Florida Flood Control, he advised that there was not to be any water height within Area 3 that would exceed 18 inches. These regulations not to exceed 18 inches were set forth in its original design. The wildlife and the ecosystem were not to be HARMED. This 18 inch depth set forth has been completely over looked with a complete disregard to its destruction of one of the worlds natural wonders.

The Army Corps of Engineers activities of The Everglades area has killed off Area 2. Apparently this is no concern to them to this date. The approval of 30 inches in Area 3 will completely devastate and destroy The Everglades north of Highway 41. 30 Inches would destroy the Hammocks not create them. This procedure of ignoring what history has proven in Area 2 is down right freightening to me that our own government could go forth with such a plan. I am sure the American Citizens throughout America would be outraged as I am.

I am forwarding copies of Hydrographs of water levels on Area 2 and 3 with my drawings of destruction water depth and dates from 1965 to 1995, and hope that we will not let history repeat itself. There has been much discussion on the history concerning water levels and the making of hammocks and islands. Some reports advise that the water table in The Everglades was as much as 4.5 feet. Review the hydrograph 2A-17 central portion of WCA-2A. The islands were destroyed of water depth well under 30 inches or over 18 inches.

The Everglades as I knew it was a wonderful nursery for all migrating bird life from other parts of the world, such as Canada and South America. It was nature working at its greatest effiency and beauty. I know because I was there to witness the worlds natural wonder working at its peak. It was a glorious sight to see. I was there you should have been.

I remain,

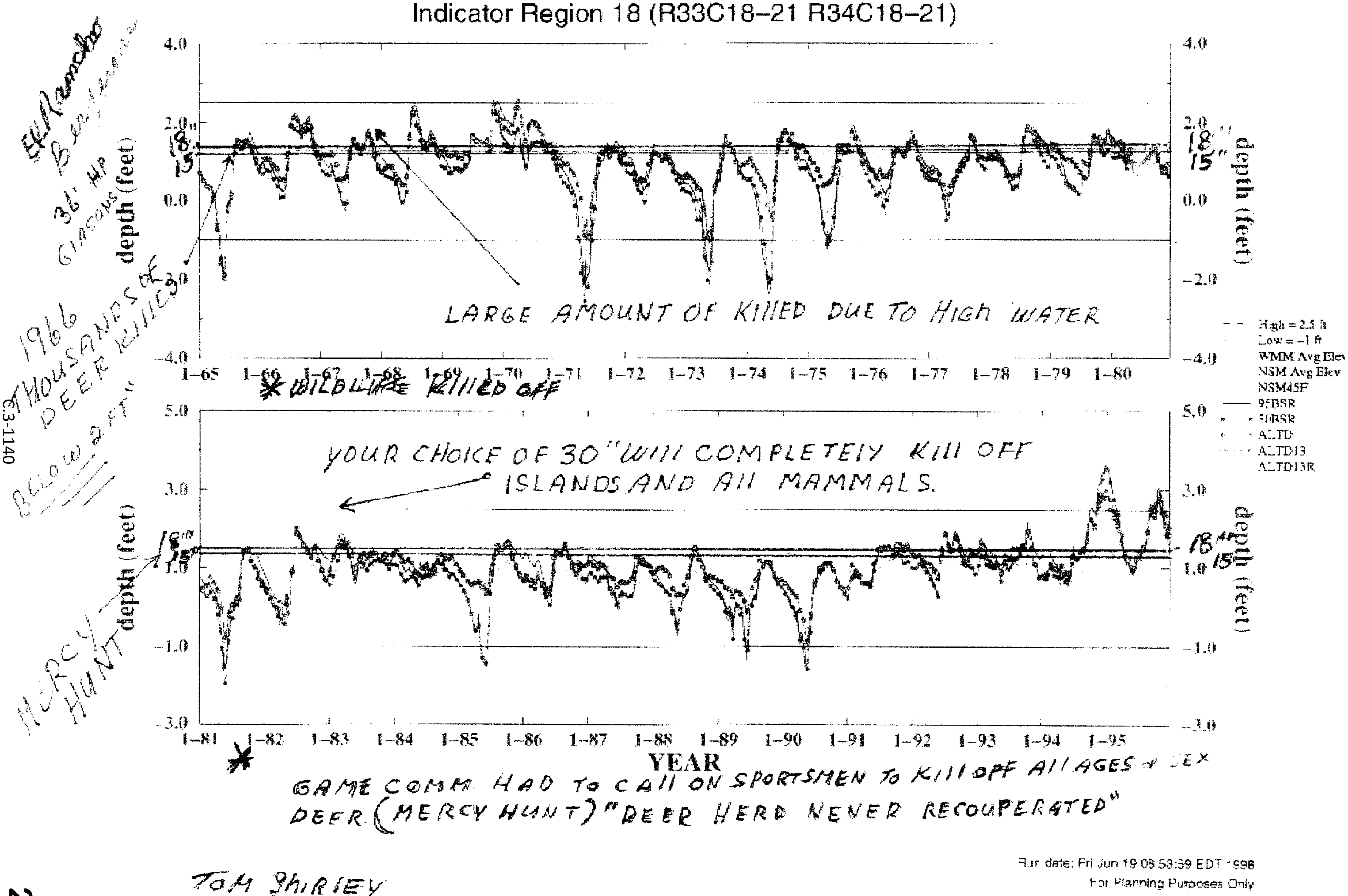
Tom Shirley
Tom Shirley

cc
Col Robson, FFWCC
M. A. Poole, FFWCC
L. Heisler, FFWCC
F. R. Finch, SFWMD
C. McVoy, SFWMD

Billy Cypress
Fuller, FWF
Jack Moller
Wayne Nelson

Normalized Weekly Stage Hydrograph for North Central WCA–3A

Indicator Region 18 (R33C18–21 R34C18–21)

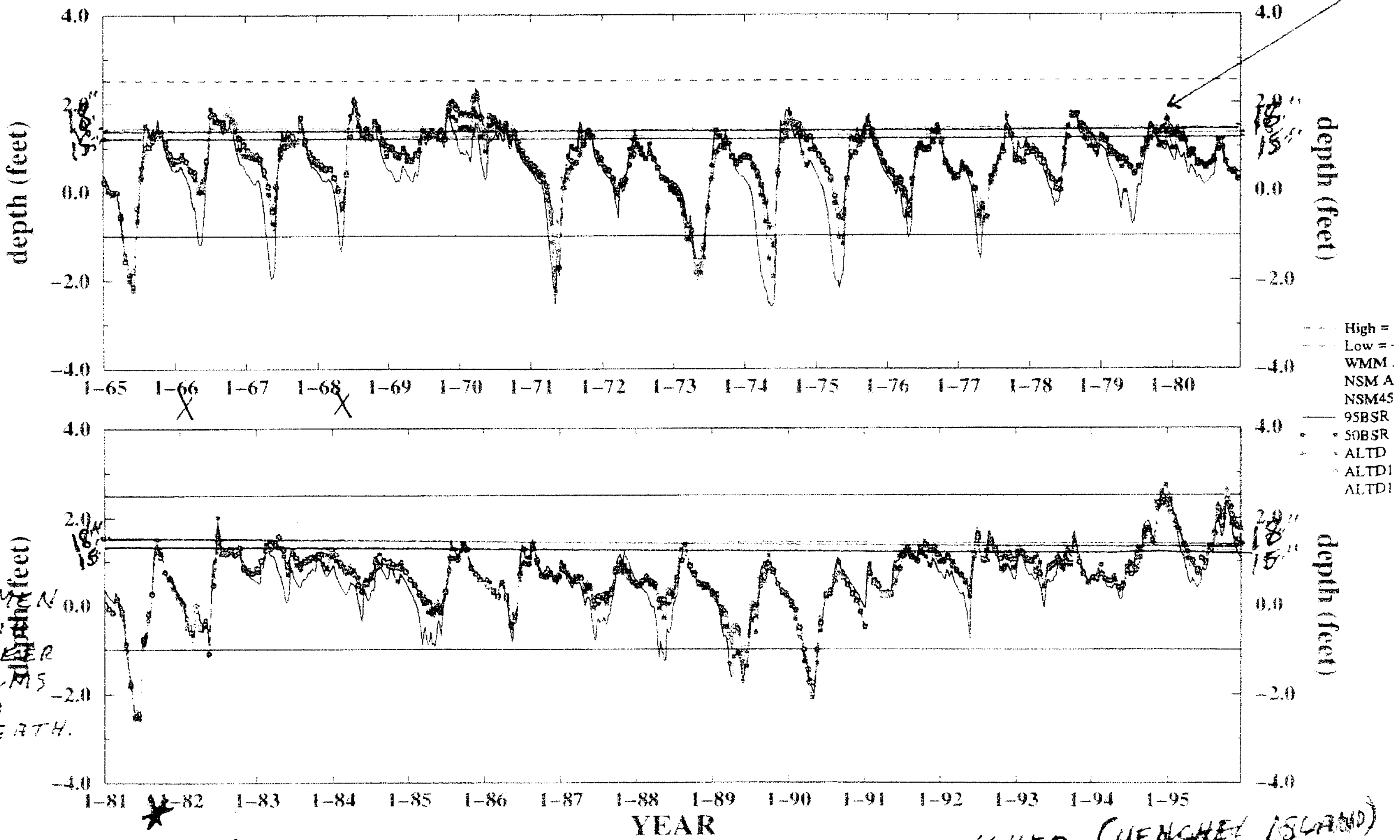


Run date: Fri Jun 19 08:53:59 EDT 1998
For Planning Purposes Only
SFWMM V3.4

MUCH WILDLIFE KILLED. 197' TOOK JUDGE OUT.

Normalized Weekly Stage Hydrograph for NW WCA-3A

Indicator Region 20 (R36C18-18 R37C18-19 R38C17-19 R39C18-18)



1982 KILLED 100 YEAR OLD TREE ON HENCHEL'S ISLAND

MERCY HUNT 1981

SPORTSMEN ALL TO KILL OFF ALL DEER AND FAWNS TO AVOID SLOW DEATH.

* PICTURES OF VERY LARGE PIG KILLED. (HENCHEL ISLAND)
WATER MANAGERS TRIED OUT THE WEIR IN MIAMI CANAL AND BACKED UP WATER 18 INCHES

Run date: Fri Jun 19 08:54:21 EDT 1998
For Planning Purposes Only

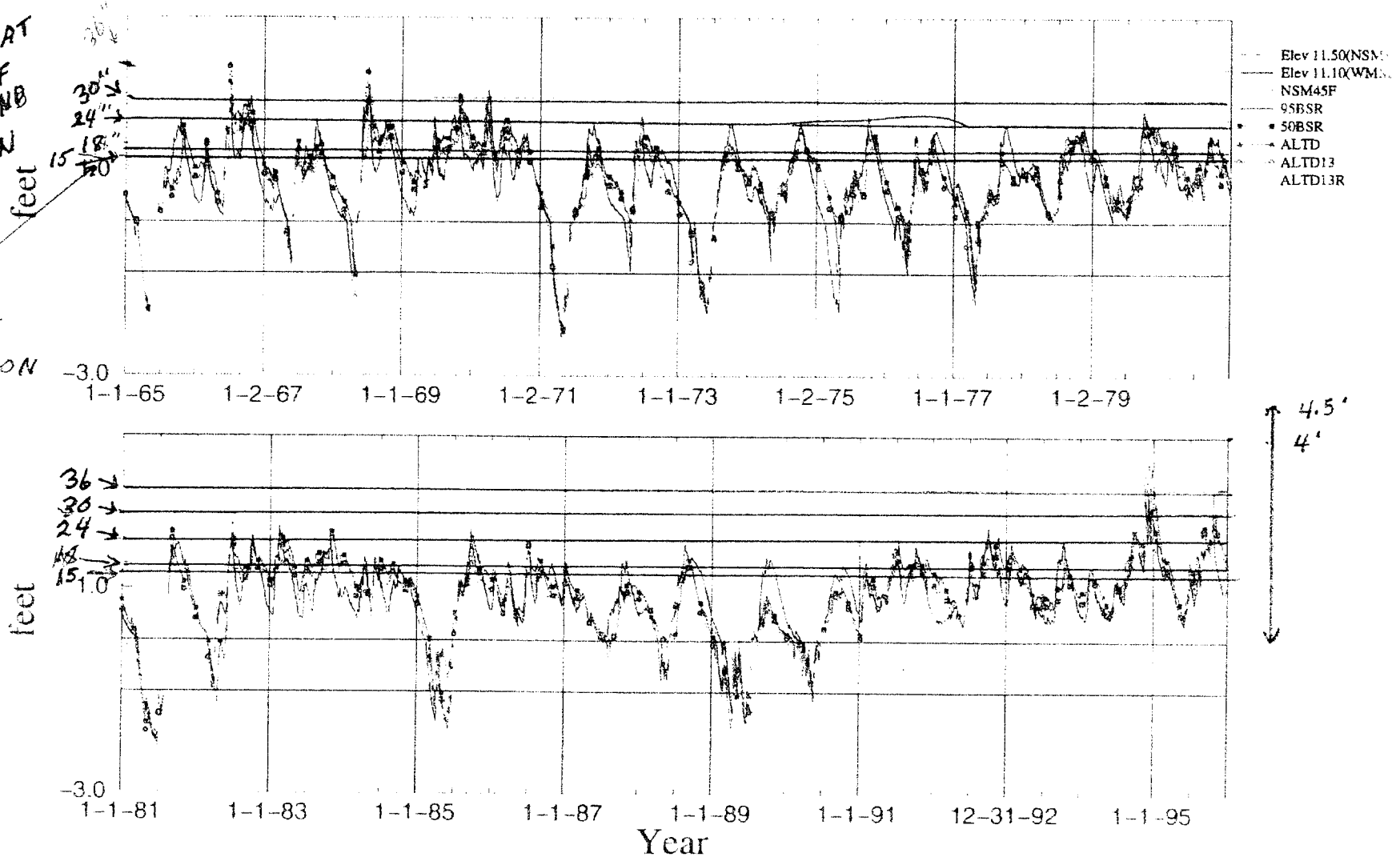
AREA 2 AND 3 WERE ONE ECOSYSTEM

Central

Normalized Marsh Stage Hydrographs at Central Portion of WCA-2A
(2A-17, Cell R40 C29, Proposed Min Lvl 1 ft below ground)

SHOWS WHAT KILLED OFF ISLANDS AND WILDLIFE IN AREA 2A

15" START OF DESTRUCTION



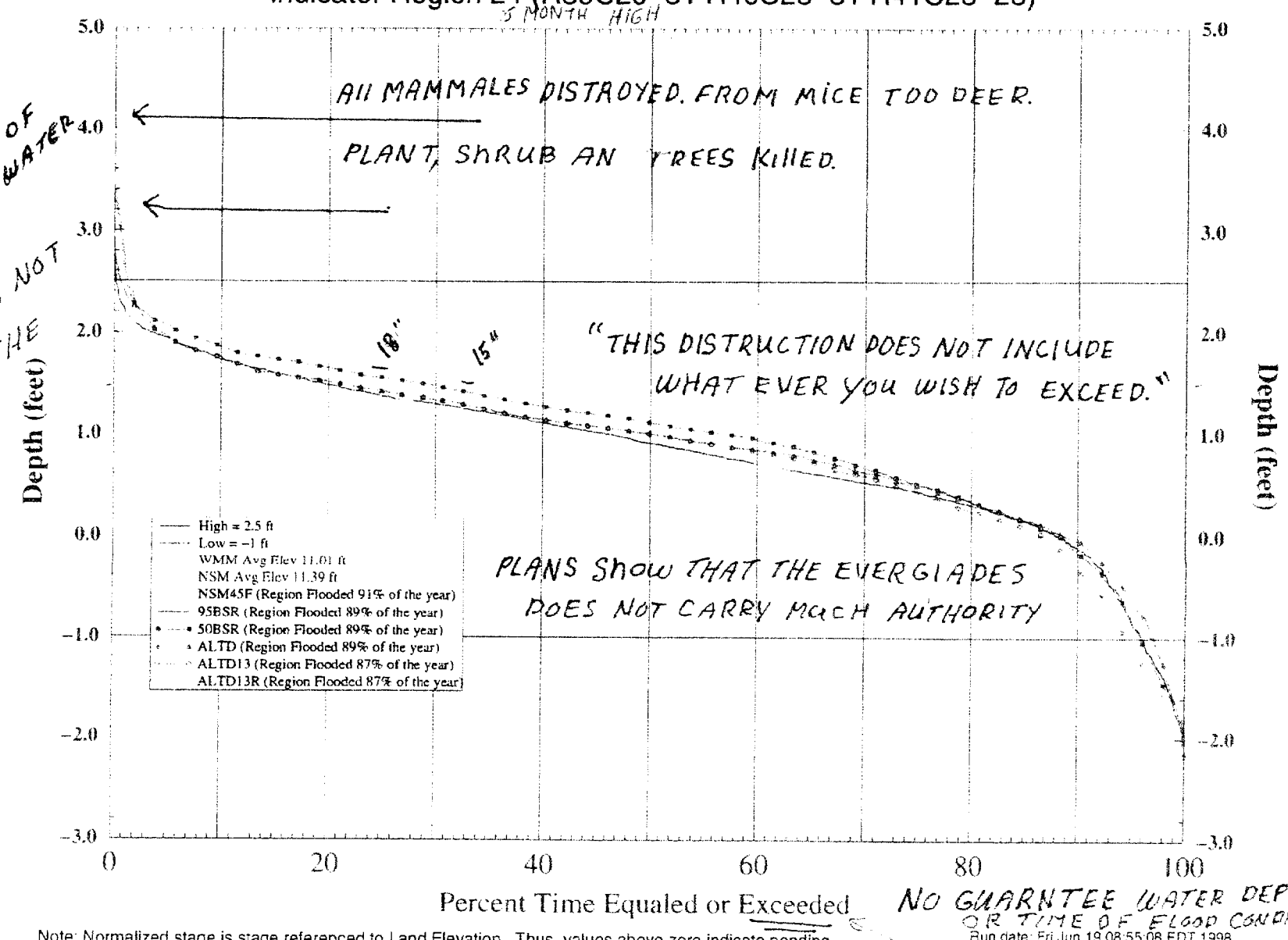
C3-1142

TOM SHIRLEY

Run date: 06/19/98 07:03:14
For Planning Purposes Only
SFWMM V3.5

Normalized Weekly Stage Duration Curves for South WCA–2A

Indicator Region 24 (R39C29–31 R40C28–31 R41C28–28)



Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Fri Jun 19 08:55:08 EDT 1998

For Planning Purposes Only

SFWMM V3.4

C3-1143

RECOMMENDATIONS , OR CONSERVATION

AREA THREE-A

WATER SCHEDULE DEPTHS

MAY JUNE JULY AUG. SEP. OCT. NOV. DEC. JAN. FEB. MAR. APR.

THIS WATER SCHEDULE RECOMMENDATION REPRESENTS LOCATIONS TEN (10) MILES SOUTH OF THE THE NORTH END OF AREA THREE. THOUGHT IS, THE NORTH IS TWO FT. HIGHER THAN THE. SOUTH END. THE WATER TABLE WOULD DEGRADE TO THE SOUTH FOLLOWING 3 MONTHS. GROUND WOULD BE MOIST ENOUGH TO RESIST BURNING DURING NORMAL DRY SEASON.

RECOMMENDATIONS FROM TOM SHIRLEY

28

IT IS VERY IMPORTANT THAT WE RECOGNIZE THE BENEFITS THAT NATURES NATURAL WATER CYCLES OF LOW WATER TABLE HAS WONDERFUL BENEFITS. THIS IS THE PERIOD THAT GIVES THE WILDLIFE AND THE ECOSYSTEM THE STRENGTH TO WITHSTAND THE STRESS PERIOD WHEN HIGHER WATER LEVELS ARRIVE. (15 INCHES)

THE DRY PERIOD IS NATURES WAY OF KILLING OFF UNDERSIRABLE PLANT LIFE SUCH AS THE CAT-TAIL AND VARIOUS CHEMICLALS SUCH AS DDT, ETHION, CHLORDANE AND METHYLMERCURY. IT IS REPORTED THAT METHYLMERCURY IN THE EVERGLADES RANKES THE HIGHEST IN THE WORLD. THIS PROBLEM SHOULD BE RECOGNIZED AND ADDRESSED. THE HIGH WATER AND TOXIC CHEMICALES ARE KILLING THE EVERGLADES NOW.

IT IS NECESSARY TO GIVE NATURE A CHANCE TO RETURN IT LIKE IT WAS BEFORE MAN COMPLETELY DESTROYS THE EVERGLADES FOREVER.

23 October 1999

Lorraine Heisler
F.F.W.G.C.
225 154 Ave
Vero Beach, Florida 32968

Dear Lorraine,

During the past two months I have been making surveys within Conservation Area Three, taking water depth readings, photographing water lines on islands and dead deer. The health of our Everglades is deplorable to say the least.

I received a letter from Professor Harris of The University of Florida. I thought it worthy to forward to you a copy of the letter.

One important question which has never been answered, what do you intend to return The Everglades to?

There is a written plan, Proposed Plans of work for Tree Islands Research Final V.I.O. put out ny The Florida Center for Environmental Studies in South Florida Water Management District. This proposed plan should be activated immediately before all wildlife and fig trees are killed.

I am forwarding some photographs taken prior and after Hurricane Irene. Note these photographs were taken when the slough measured 30 inches. I have tried to let the Restudy Team understand what damage that just 30 inches of water can do. Hopefully the photos will be helpfull. First the deer fall dead second the fig trees fall dead. If Water Management, management practice does not change we will not have any vertebrates or trees left. Maybe the purpose as it was in Area Two. All indications are still moving in that direction swiftly. I am forwarding some photographs and recorded measurements of slough depth and water over islands. I hope you find this information beneficial to your needs.

Photo #1
Was taken on October 19 on EL RANCHO. Which is one of the highest islands south of the The Alley to Highway 41.
On October 19 slough measured 30 inches. Island was 9½ inches under water. Fig trees normally have a strong and vast root system which extend beyond its branches. Note in photo that all roots have completely rotted away. This very serious trend which is taking place throughout Area Three. The only chance for there survival is to manage a natural drought condition to let the soil firm up and air itself which gives the trees a chance to regain its strength to grow a new root system.

Photo #2
September 23. Dead doe off Smoker Island. Slough measured 20"

Photo #3
Dead doe with two fawns, one fawn dead the other alive. Photo was taken before Hurricane Irene on October 14, Slough measured 20".

Photo #4
Taken on October 19 on Bergeron Island. Fawn standing on only dry area is wooden walkway. Dead doe and fawn in water. Seven and a half inches of water over the island. One fig tree fallen, the tree with stop sign can fall anytime. Slough measured 30" NOTICE. This island clearly tells us what 30" of water does to vertebrates and plant life. This is why I have tried so hard to make the Restudy Team understand the seriousness of water depths and time tables. These pictures show exactly what I was trying to avoid.

Sincerely,

Tom Shirley

Tom Shirley

P.S. To say to The Restudy Team "I told you so" does not give me joy, only hurt and bewilderment, that the team can be so far off in understanding the cause of life and death of The Everglades.

UNIVERSITY OF
FLORIDA

Institute of Food and Agricultural Sciences
Department of Wildlife Ecology and Conservation

303 Newins-Ziegler Hall
PO Box 110430
Gainesville FL 32611-0430
Tel. (352) 392-4851
Fax (352) 392-6984

September 29, 1999

Mr. Tom Shirley

Dear Tom,

I promised myself that I would not let another day go by without congratulating you and thanking you for your letters to the Governor regarding the Everglades debacle. I have spent a good part of my teen years and all of my adult life trying to conserve wildlife as we once knew it.

I support you 100% on the water issue, but somehow we have all bought into the "river-of-Grass metaphor so much that indeed, that is all we will get. And, of course you know, sawgrass is absolutely the worst thing possible for wildlife. Everything from tree snails to orchids will be lost as the idiots continue to focus on sawgrass impoundments.

I am doing everything I can up here but even those whom you would thing to be our allies have betrayed us in the name of water. Thank God for people like you, at least they will die with a guilty conscience knowing that they knowingly took out all the significan vertebrates that were formerly necessary to shape and sculpt North America's only subtropical paradise!!!!!

Most humbly yours,

Larry D. Harris

Larry D. Harris
Professor Emeritus

PHOTO #1 EL RANCHO FIG TREE

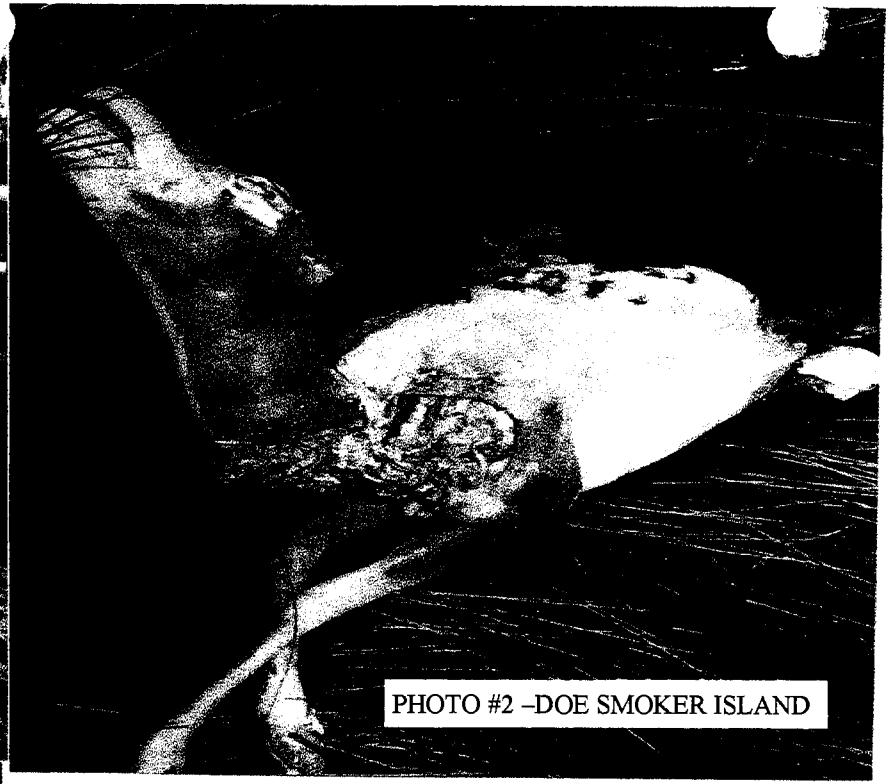


PHOTO #2 –DOE SMOKER ISLAND

PHOTO #3 - DOE WITH FAWNS

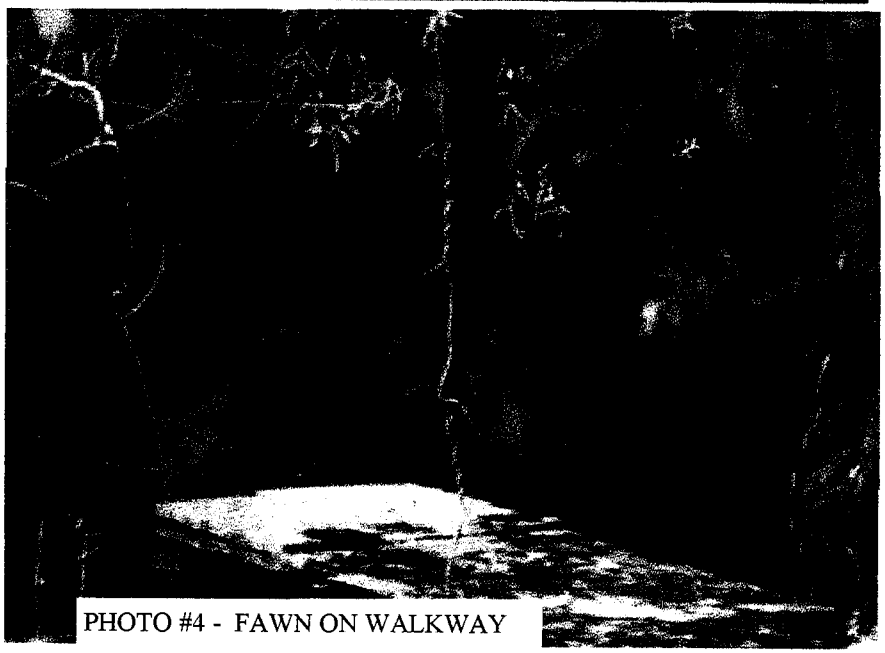


PHOTO #4 - FAWN ON WALKWAY

Flood Control Confusion Ankle Deep

By JOHN PENNEKAMP

IN THE NEXT Legislature meets it might undertake to end some of the confusing contradictions which keep the work of the Central and Southern Flood Control District in turmoil.

Pennekamp

The confusions continue while the cost of the project, originally estimated at $200 million, reaches toward $400 million with an additional $100 million in prospect.

There are 18 counties in the district, yet only five are represented on the governing board. Members are appointed, not elected, but have the right to levy up to one mill tax in the district.

No two members may come from the same county, which means that were two especially able men available from one of the counties, the services of one would not be available.

* * *

SINCE the district was established in 1949 a controlling majority of the board has come from approximately the middle section of the district; this because the work was Lake Okeechobee-related in public and official thinking when the law was adopted.

The way it has worked out is that five unpaid men, who meet once a month, exercise enormous power on a project about which they cannot have the knowledge which comes with day by day application.

Of the present members, one manages his own investments at Kissimmee, one is a real estate operator at Melbourne, one is an agriculturist at South Bay, one is a Chevrolet dealer at Fort Pierce and the fifth, Robert L. Searle, former mayor of Coral Gables, is an insurance man.

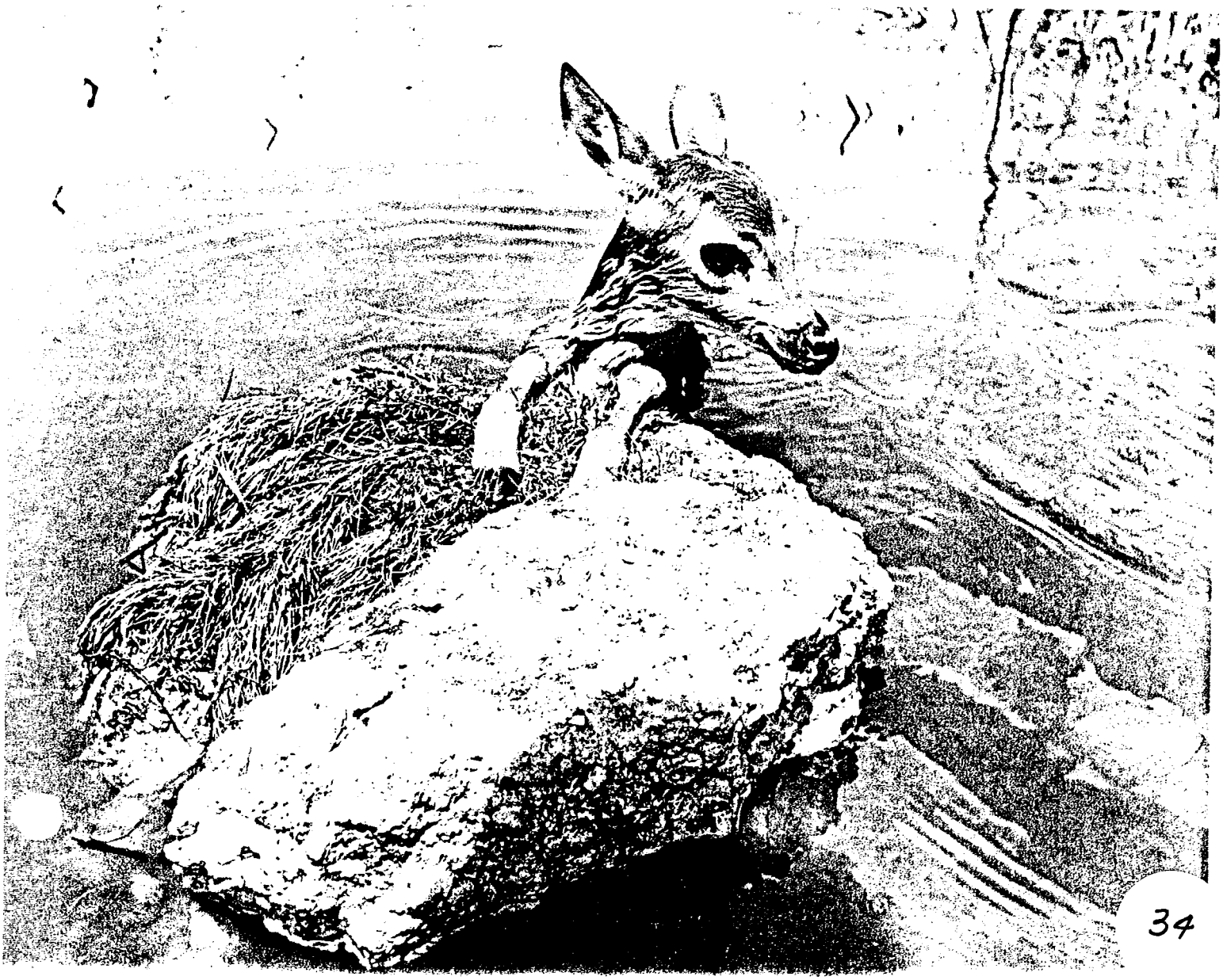
* * *

OUT OF THIS situation, and understandably, has grown a policy hitched primarily to soil reclamation and farm land controls in the general lake area.

Other factors which were endorsed by Congress when Uncle Sam set up the project on approximately an 80 (federal) to 20 (state) per cent participating basis, were secondary such as the fresh water resources of the East Coast cities, the Everglades National Park, the National Wildlife Refuge in the upper sector and the state's fish and wild life area approximately in the middle.

The purposes of the district would be better served if the public interests involved made its policies known through membership on the board. Out of mutual understanding could come better administration.

It might, too, end some confusion in the public mind. The recent controversial water-threatened fawn pictures suggested to many that the Everglades Park drought situation had been solved. The pictures were made far north of the park, in some of the water that the park is being deprived of by the complication of man-made controls in the way of its southward flow.



PETITION

We, the undersigned Petitioners, are gravely concerned over the past and present, as well as future actions proposed, of the South Central Florida Flood Control District as it relates to conservation and protection of natural wildlife. Each of us, as taxpayers, both of the State of Florida and of the United States, is concerned with the expenditures of both Federal tax monies as well as State monies in financing the various operations of the South Central Florida Flood Control District.

In recent months, much notoriety has been given to the fact that wildlife is being destroyed in the western areas of Dade, Broward, and Palm Beach Counties, as well as parts of Hendry and Collier Counties, because of the operation of the FCD in maintaining water levels in conservation areas #2 and #3 to such an extreme height that it causes destruction of the deer, hogs and many other species of natural wildlife. One of the largest deer herds in South Florida has diminished to practically nothing in the last two years because of the intense flooding of conservation area #2.

Inasmuch as it is the tax dollar that makes the operations of the FCD possible in the building of the canals, levees, pumping stations and other projects, the interest of the farmers and developers are being protected by this agency; however, the conservation of wildlife and other natural resources should also be given adequate consideration.

A better understanding and a closer cooperation is imperative among the Corps of Engineers, the FCD and all other State and Federal agencies and officials entrusted with the preservation of the Florida Everglades and the wildlife therein.

It is hopeful that the proposed canal, being considered by the Corps of Engineers and the FCD, to furnish water to the Everglades National Park, be routed around the eastern perimeter of conservation area #3, so as not to destroy or disturb the natural habitat of the wildlife therein.

We are concerned and desire to have brought to the attention of all the citizens of this State, the financial matters and budgets of the FCD, which is responsible to the Corps of Engineers. Originally, this project was estimated in the vicinity of $200 million, and now is close to $400 million with proposals for another $100 million being considered. Since most of these monies (80%) is contributed by the Federal Government, we believe that Congress should take a close look and perhaps conduct a full scale investigation into the financial operations of these agencies.

We as taxpayers and Conservationists strongly urge a full open discussion and study be made concerning the present and future operation of these agencies, both financial as well as operational. This we believe to be in the best interest of all citizens of Florida and the many others who wish to utilize the Everglades and the National Park facilities. There is but one Florida Everglades.

We therefore ask the Governor of the State of Florida and our Congressional Representatives to set forth such measures as are necessary to preserve it in its natural state and to safeguard the natural wildlife therein by regulatory water control levels compatible with their natural habitat.

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Debunk myths on Everglades restoration

Retired Col. Terry L. Rice, a research scientist at Florida International University, previously commanded the U.S. Army Corps of Engineers' Jacksonville District. He also represents the Miccosukee Tribe on the Working Group for South Florida Ecosystem Restoration.

OFTEN, as Jean Jacques Rousseau cautioned in his *Discourse*, "We are deceived by the outward appearance of right." It is this "outward appearance of right" that has fixated the South Florida Water Management District's board on the removal of residents of the 8½ Square Mile Area in the name of restoration, even though restoration can be achieved at less cost and in less time while avoiding the destruction of more than 350 homes. The delay caused by the board's decision will permit the continued destruction of the Everglades and may doom its restoration forever.

TERRY L. RICE

To the board, the removal of the people who live "west" of the Corps levee appears "right," even though it accepts without question tens of thousands on the "east" side, whose negative impact on the Everglades has been much greater. Further, this appearance of right has been transmogrified into "an absolute right," in the minds of even the keenest intellects, by the contrivance and promulgation of myths:

■ The 8½ Square Mile Area must be acquired for Everglades restoration. Not true. As directed by Congress in 1989, the Corps developed a plan to build a levee to protect the area from increased restoration flows in Shark River Slough and submitted it to Congress in 1992.

■ The Corps plan does not work. Not true. The Corps stands behind its plan and two SFWMD consultants recently confirmed that it allows natural flows in the slough.

■ SFWMD taxpayers must pay to fix the Corps plan. Not true. Congress directed that this project be funded 100 percent by the Interior Department. If the Corps plan doesn't work, the Corps is obligated to fix it at federal expense.

■ The 8½ Square Mile Area is blocking the flow of water in the slough. Not true. The area is on relatively high ground on the slough's periphery. Removing the residents would have virtually no effect on restoration. This fact is reinforced by plans to keep the main road through the area for Everglades National Park personnel to reach their homes deeper in the slough.

■ The state supports buyout. Not true. Govs. Bob Graham, Bob Martinez, and Lawton Chiles all considered total buyout and rejected it.

■ The Corps plan will require that Miami-Dade County increase services at great expense. Not true. The plan provides flood mitigation, not flood protection.

■ Removing people is a nonengineering solution. Not true. Whether the increased seepage due to restoration is intercepted at the current boundary or further to the east, significant engineering will be required to handle it.

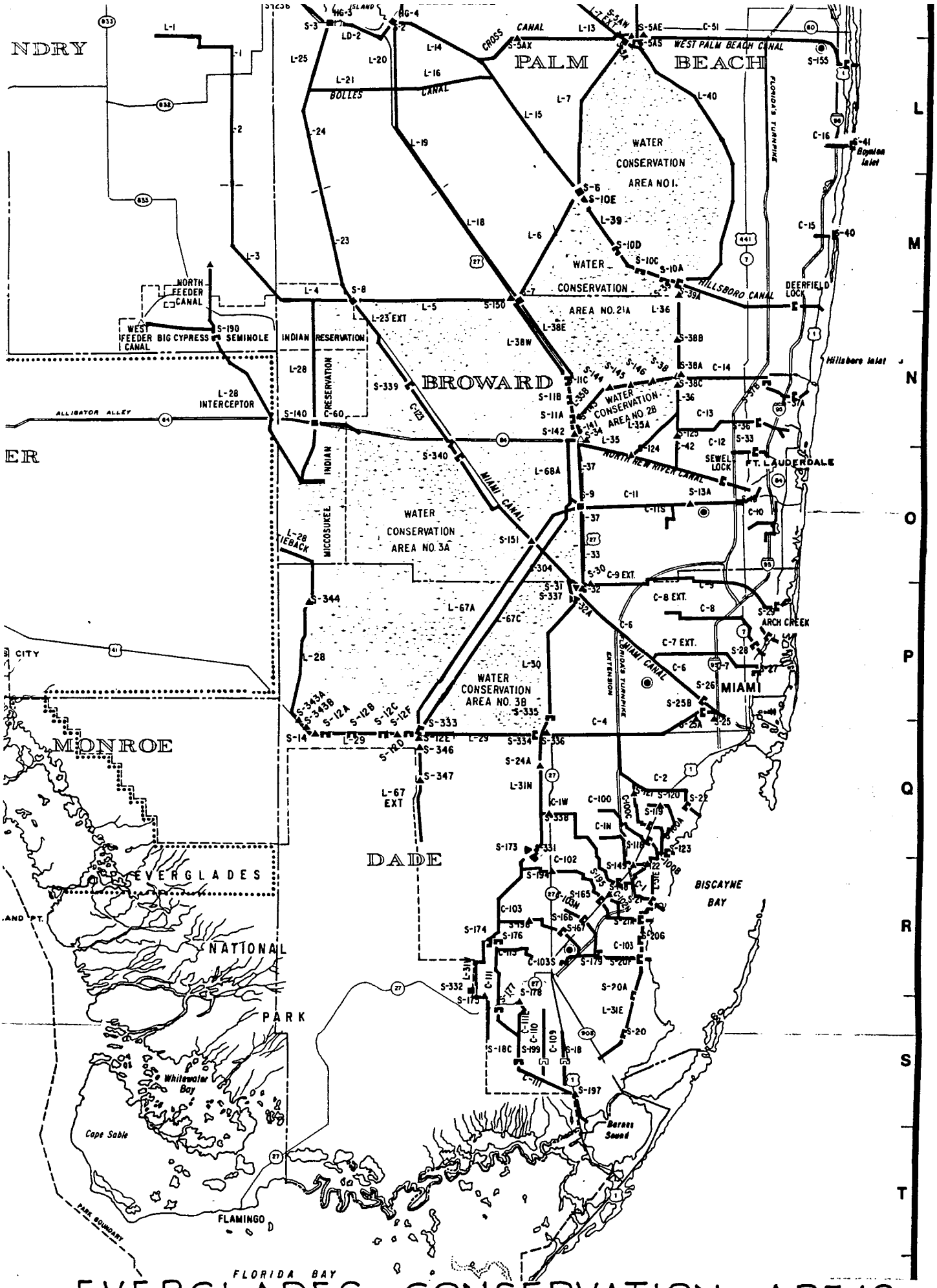
■ The analysis that led to buyout was public and definitive. Not true. The analysis was an example of the use of a quantitative decisionmaking methodology to yield preordained results that affect powerless people without the requisite public input.

■ Most residents want to sell. Not true. Most residents want a version of the Corps plan and their roads raised.

■ Buyout will expedite restoration. Preposterous. It could very well be a dead-end excursion! The vote was to buy from "willing" sellers, not to condemn as is necessary, and hinges on cost-sharing agreements with Interior and the county. It opens a Pandora's box of issues. The Corps project could be complete by 2003, while the board vote provides no certainty that the area ever will be vacated.

Both the Corps plan and buyout will permit the restoration of Shark Slough. The board rejected the Corps plan, which could be completed by 2003 for about $40 million and not adversely affect any people. The board opted for a buyout that will cost at least $112 million and remove about 1,000 people. Why? It was deceived by the "outward appearance of right" and embellished by myth.

Restoration of the Everglades will cost billions of dollars and take decades. Fixation on false objectives waste money, create delay, destroy people's lives, and ultimately will undermine public support. Removing people from the area is a fixation that could doom our efforts to restore the only Everglades in the world.



EVERGLADES CONSERVATION AREAS

III. PROTECT THE WATER CONSERVATION AREAS

BACKGROUND: The Water Conservation Areas (WCAs) are integral components of the Everglades and the water supply for southeast Florida. The 862,800-acre WCAs comprise about half of the Everglades. The WCAs help recharge wellfields, prevent flooding of the urban southeast coast, provide protection for the natural ecosystem and provide about one-fourth of the water for Everglades National Park.

The WCAs are rich in fish and wildlife resources and provide excellent recreational opportunities. The Florida panther, Everglades kite, wood stork, American alligator, and white-tailed deer are only a few of the notable species that inhabit the WCAs.

The plan for protecting the WCAs is to acquire the remaining lands not in public ownership (approximately 62,653 acres), restore more natural hydrology, remove exotic vegetation and protect water quality by implementing the Florida Everglades Forever Act of 1994.

An October 1988, federal lawsuit against the state and the SFWMD alleging that federally owned or leased lands in the Everglades were being damaged by agricultural runoff water containing excess phosphorus was largely settled by agreement among the parties on July 26, 1991. This agreement was approved and entered as a consent decree by the federal court judge on February 24, 1992. However, the litigation shifted to the state administrative arena when the Everglades SWIM Plan and the permits for SFWMD water control structure discharges were challenged by agriculture. Although the litigation did not resolve all the issues, it did lead to an intensive year-long mediation effort. This effort led to development of a "Technical Mediation Plan" dated October 1993. The most important elements of this plan were incorporated into the Florida Everglades Forever Act of 1994. The plan improved upon a March 1992, Surface Water Improvement and Management (SWIM) Plan. Under the SWIM Plan, "Stormwater Treatment Areas" would be constructed in the EAA on some 35,000 acres and a detailed research, monitoring and regulatory program would be implemented to reduce total phosphorous loads by 25 percent. The "Technical Mediation Plan" also included treatment for water discharged to tide (Canal 139 and Canal 51 basins), treatment and diversion of water to the south that is periodically discharged to Lake Okeechobee from the EAA, and improved water quantity benefits. A modified Technical Plan was published in February 1994, which included redesign for Stormwater Treatment Area 5 and excluded publicly owned lands in the Rotenberger Tract for stormwater treatment.

On May 3, 1994, Governor Chiles signed into law the "Florida Everglades Forever Act," passed by the Legislature on April 15. The Act provides for a broad, long-term restoration effort and is expected to bring an end to numerous legal challenges. It will enable implementation of the cleanup program originally embodied in the Everglades SWIM Plan and the Technical Mediation Plan as modified. The comprehensive Everglades restoration program authorized in the Act includes requirements for establishing a numerical water quality standard for phosphorus and an extensive research and monitoring program. It establishes an "agricultural privilege tax" and

other financial provisions to pay for construction, operation and maintenance of the program. It also provides for the restoration of the quantity, timing and geographical distribution of freshwater flows to the Everglades and Florida Bay.

1. On June 4, Colonel Terry L. Rice, Chairman, Federal Task Force Working Group and Chief, Jacksonville District Corps of Engineers, forwarded to Assistant Secretary of the Interior George Frampton a report with recommendations for the expenditure of 1996 Farm bill funds for Everglades restoration projects. The priority list closely correlates to the priorities recommended by the Governor's Commission for a Sustainable South Florida on May 30, 1996.

2. The SFWMD acquired 9,742 acres in the East Coast Buffer project area; approximately 58,312 acres remain to be acquired.

3. Acquisition negotiations are underway on the Talisman Sugar Corporation properties. No agreement on a purchase price has been reached.

4. During the period, conservation intervenors in the Everglades Lawsuit filed in the U.S. Southern District Court copies of the 1996 Farm Bill and its legislative history as evidence supporting their argument that an extension of time to meet water quality standards is not needed and therefore modifications to the lawsuit settlement agreement and consent decree are not necessary. In addition, the Miccosukee Tribe of Indians filed various motions regarding the proposed modifications. The SFWMD and agricultural interests have filed responses to the motions. The court has ruled on several of the Miccosukee Tribe's motions and is expected to soon rule on the earlier motions heard in November and December 1995 (the Miccosukee Tribe's motion to enforce the consent decree, agriculture's motion to dismiss and the settling parties motion for modifications to the settlement agreement).

5. The Florida Department of Environmental Protection (DEP) has been asked by the federal South Florida Ecosystems Restoration Working Group to chair an interagency Water Quality Team. The team is reviewing water quality/stormwater treatment issues in western Broward County (C-11 Basin), western Dade County and the C-111 basin. In Broward County, untreated stormwater is routinely discharged through the S-9 structure directly into WCA-3A. The issue involves the three gaps in the L-67 A and C canal, which were opened experimentally by the Corps and then closed last year because of high rainfall. The untreated stormwater enters the L-67 canals and flows through the gaps into WCA-3B, an area of excellent water quality.

6. On February 14, Colonel Terry Rice informed the SFWMD that the Corps had major concerns regarding the permit applications for the construction of the Stormwater Treatment Areas in the EAA. These are mercury, timing of hydropattern restoration in WCAs 2A, 3A and Holeyland/Rotenberger, possible effects on water quality (if the final

phosphorous discharge standard is less than 50 parts per billion) and whether the STAs are the best solution for treating water to the final standard. A workshop on these issues is scheduled for July 19 in West Palm Beach.

7. On May 30, the DEP published a Notice of Intent to issue a permit to the SFWMD for the operation and maintenance of existing structures not included in the Everglades Construction Program that discharge into, within or from the Everglades Protection Area. The DEP has received a petition for an administrative hearing pursuant to Chapter 120, Florida Statutes, from the Miccosukee Tribe of Indians and Friends of the Everglades. Concerns about the proposed permit have also been recieved from Everglades National Park and Loxahatchee National Wildlife Refuge staff. Changes suggested by these parties are likely to result in minor modifications to the draft permit.

October 9, 2013

The White House
1600 Pennsylvania Ave. N.W.
Washington, D.C. 20502

Subject: Breach of Homeland Security
Violation of the Federal Code of Regulations
Environmental Pollution of Federal Waterways
Endangerment of Federally Protected Species

Attn: Denis McDonough, White House Chief of Staff

Despite my numerous attempts to get cooperation from the Department of Environmental Resources Management **(DERM)**, the South Florida Water Management District (**SFWMD**), Florida Wildlife Commission (**FWC**) and the United Sates Coast Guard (**USCG**) ninth district, the inlet waterway bordering to the south of my residence and the City of Sunny Isles Beach (**SIB**) community is plagued with multiple contaminants, and illegal centrally moored, motorized, unattended and unlit water-craft day and night, all within **a federally protected Manatee Habitat.**

The enclosed photographs document **permanently moored and motorized water-craft that are a possible breach of homeland security. These vessels are routinely repaired illegally and add to the existing bay contamination which I reported to the SIB marine patrol, FWC and USCG (enclosed e-mail dated July13, 2013). The enclosed USCG advanced approval for a proposed bridge in this contaminated area is being violated, because USCG approval was limited to motor less water-craft. If extended beyond its expiration date of January 20, 2014, it will surely create greater pollution and further navigation obstructions in blatant violation of the (enclosed) Code of Federal Regulations, Title 33-Navigation and Navigable Waters, Volume 2 . Title Section 162.65** Chapter 1 - Coast Guard,Department of Homeland Security (continued). Sub chapter P- Ports and Waterway safety Part 162 - Inland Waterways Navigation Regulations,(3)(b),(2)(a)(ii)(iii)(iv)(v)(vi)(vii)(viii) for Town Center Park Canal in the vicinity of mile 1077.6 of the Atlantic Inter-coastal Waterway, located at North Bay Road, Sunny Isles Beach, Miami-Dade County, Florida from the coordinates of: 25 degrees 56.1729 minutes North latitude and 80 degrees 7.58000 minutes West longitude to 25 degrees 56.1530 minutes North latitude and 80 degrees 7.57000 minutes West longitude all the way eastward 25 degrees 56.18000 minutes North latitude and 80 degrees 7.41920 minutes West longitude to 25 degrees 56.15950 minutes North latitude and 80 degrees 7.41500 minutes West longitude.

HISTORICAL AND IGNORED POLLUTION OF THE BAY REQUIRING REMEDIATION:

In a conspiratorial fashion, since 2002 the City of SIB has recklessly squandered **millions of dollars to prepare for a bridge that the SIB Chief of Police coined " a death-trap,"** with his concerns for the resulting panic, injury and death created by the dangerous convergence simultaneously of all emergency, automobile and pedestrian traffic onto two lanes of 174th Street from the six traffic lanes of A1A. It would also choke off, clog and back-up traffic on 172nd Street, which already offers relief as it provides a path for direct access to the expansion bridge on 163rd Street (also known in Sunny Isles Beach as **State Road 826**). SIB has never acknowledged or allocated funding for the remediation of the polluted Town Central Park Canal, as I **documented in great detail in my 129-page complaint and report to SIB Mayor Norman Edelcup dated January2, 2013, which was e-mailed earlier to SFWMD, and which I now enclose within a CD for your review to confirm the following facts:**

On December 20, 2012 SIB Mayor Norman Edelcup and the SIB Commission re-affirmed plans to build the low-level **" North Bay Road Bridge " over Town Center Park Canal** ignoring federal rules, that would impede open navigation **(for which this is the only access by water)** to barges,equipment and materials necessary for the structural repair of adjacent sea walls,which former **SIB City Manager John Szerlag confirmed in his letter** to SIB Mayor Norman Edelcup and the SIB Commission **dated July 20, 2006** that states;

"As a point of information, the city will need to work with Winston Towers for reason of shoring up the sea wall of the bridge because once constructed, a barge will not be able to navigate under the bridge."

It is part of my 129 page letter to SIB Mayor Norman Edelcup of January 2, 2013, previously submitted to the SFWMD staff. Please note **the enclosed CD includes a June 2008 Biological Resources Assessment of the North Bay Road Bridge, prepared for SIB** which documents the negative environmental impact on aquatic endangered species and need for the immediate remediation of this waterway. The report states ; **" It should d be noted that the northern side of the canal contained large quantities of debris, such as lawn chairs, shopping carts, wooden pilings, and tires. Additionally, the south side, containing the mangrove area was equally riddled with garbage and litter."**

To expedite approval of the SIB bridge permit on September 24, 2013, SFWMD ignored over thirty specific environmental concerns in their earlier correspondences to SIB's Engineering contractor EAS and SIB Commissioner Jeanette Gatto dated August 1, 2012, April 2, 2013, May 10, 2013 and June 27, 2013. This permit approval for a low-level bridge will prevent pollution remediation in a protected manatee habitat and open navigation for seawall reconstruction. I am enclosing copies of the SFWMD correspondence.

SFWMD issued a permit despite SIB's failure to resolve their joint ownership, eminent domain issues of disputed submerged and coastal property rights, storm water drainage easement and permission to repair seawalls by their owners. On their own these legal issues prevent bridge construction, but in effect SFWMD exempted SIB from its legal obligation to remove contaminants as the partial property owner of submerged land, which is serving as an underwater toilet for storm-water discharge, and waste produced by unlicensed and non-permitted contractors who dispose unusable construction materials, debris and general pollutants into the Canal, destroying the aquatic endangered species and compromising community health and safety. **Ironically, SIB's own charter requires no less than 18 foot high fencing surrounding new building construction along the Ocean coastline to insure the environmental integrity by containing hazardous construction waste and debris, but intentionally disregards the exposed perimeter of the North Bay Bridge to unlimited contaminants and destruction of endangered aquatic species.** I am enclosing a photo of a WT300 yard garbage dumpster and open containers adjacent to the bay,whose location and low fencing height allowed daily airborne garbage,debris and contractor pollutants to end up in the bay in violation of SIB and Miami Dade County codes.

As early as **March 30, 2004** SIB City Manager Christopher Russo's sent WT300 the enclosed letter pertaining to storm-water in which he stated, **" Further, under Florida statutes this method of water discharge is illegal and it has been since the building was built. Storm-water cannot drain over the surface of an adjoining property that is not owned by the 300 building and into the canal. "** The letter also states, **"Again, please be advised that it is illegal to discharge storm-water over someone else's property and into the canal. Violations have been issued to both property owners and corrective action must be taken. "**

City Manager Russo sent copies of this letter to Mayor Norman Edelcup and all SIB Commission members and to SIB Building Official Clayton L. Parker. In spite of their oath to **"serve and protect," for over ten years** not one SIB Commissioner alerted the community or notified **DERM** of this serious ongoing pollution of Town Center Park Canal by storm-water discharge from the WT300 garage which also degrades Biscayne Bay.

In total disregard for the mandatory DERM approval protocols, SIB Building Code Compliance Officer Clay Parker illegally issued the attached SIB WT 300 master permits #B2007-1020 dated December 10, 2007 for "Gutters and Downspouts (Drainpipes)" and #B2008-900 for "Gutters Revision" dated April 18, 2008, that authorized expansion of illegal storm water drainage that continues to expand the volume of pollution to date.

At our meeting with City of SIB officials on **August 1, 2012** and two meetings at **DERM's Coastal Resources Section on November 3, 2009 and February 8, 2013,** Dr. Duane Finello P.E. and I documented illegal expansion of the WT300 storm water drainage, to which DERM stated that WT300 **couldn't be granted a "grandfathered" exemption for that expansion** and sent WT 300 a Warning Notice dated May 23, 2013 **which they rescinded illegally on October 1, 2013,** based on a (enclosed) report dated **10/19/13** by Albert P. Dettbarn of Biscayne Engineering Corporation's assessment **" The report presented a good justification for not providing water quality treatment based on the assumption that the percolation rate is marginal."**

In response to his report I filed a second (enclosed) complaint against Mr. Dettbarn with the Florida Department of Professional Engineers **(FDPE).**

At our two meetings we also notified DERM that in **December 2009 WT300** Property Manager and Board of Director **Michael Lewis Schnitzer paid Mr. Rene A. Cordero $14,600 to illegally pump concrete (without permits or proper containment procedures) onto and under the seawall** that appears to have created an **illegal "footing"** atop the submerged land at the base of the sea wall which continues to pollute the Canal.

DERM agreed to have underwater divers investigate the concrete footing, but blamed budgetary restraints as justification for deferring investigation and enforcement. DERM also expressed their **assumption and opinion** all storm-water runoff and hazardous waste chemicals going into the Canal were being dispersed and biologically neutralized or decomposed within the Canal, and therefore **no water or submerged land analysis was required.**

The enclosed **Miami Herald article dated 9/25/13 "Miami Workers Scramble to Test Toxic Soil in 112 Parks"** and **Miami Herald article dated 9/29/13, "Contaminants Found at Biscayne Landing Site"** confirms that DERM is even ignoring the alarming results of their own biological assessments.

DERM also demonstrated a total lack of understanding or disregard for the historical navigation rules of **CFR 162.65. in the Code of Federal Regulations, by assuring us permanently moored, motorized, unlit and unattended water- craft had the legal authority to remain in the canal indefinitely.**

It is most likely the federal government excavated the Canal in the early 1950's to provide one of several safe sanctuaries for manatees adjacent to the northern Miami-Dade County portion of the Inter coastal Waterway in Biscayne Bay. SIB refuses to adopt local ordinances and post markings necessary to establish and identify the Canal area east of the proposed bridge construction site as a manatee protection zone and essential manatee habitat, mandated by the Miami-Dade County Manatee Protection Plan **(MDCMPP)**, in fear of delaying or adversely complicating the approval process for their boondoggle North Bay Bridge,

Florida state and county resource management agencies are being allowed to deliberately discriminate in favor of municipalities who routinely enjoy unjustified, illegal exemptions of environmental codes to the detriment of the communities they serve, while private property owners and businesses are held to a higher standard.

The Obama administration is inadvertently allowing federal funding in the Central Everglades Planning Project to be manipulated and used for mitigation by SFWMD that will result in destruction of the beautiful and treasured coastline of Miami-Dade County's Biscayne Bay and its endangered and almost extinct species, as a price for and in favor of restoring with minor impact on the Florida Everglades .

I enclose a copy of my petition to the SFWMD to rescind the SIB bridge permit Dated October 8, 2013, which was denied by the SFWMD ORDER DISMISSING PETITION WITH LEAVE TO AMEND ON October 24, 2013.

Mr. Mc Donough I urge you to intervene on behalf of all us that respect the integrity of our legal system and are trying to protect our abused environment, its endangered species who are threatened by local and state abuse of existing statutes under the mismanagement of agencies supported directly or indirectly with Federal Government Funding.

Respectfully,

Herman Herbert Granek
230 174th St. # 603
Sunny Isles Beach FL 33160

cc: Attorney General of the United States Eric Holder
Rand Beers, Director Homeland Security
Admiral Robert J. Papp Jr., Commandant United States Coast Guard
Gina McCarthy Administrator the United States Environmental Protection Agency
Sally Jewell, Secretary of the Department of the Interior
Lt. General Thomas Bostick Commander General U.S. Army Corps of Engineers
General Kent D. Savre,North Atlantic Division U.S. Army Corps of Engineers
Dr. Gretchen Ehlinger U.S. Army Corps of Engineers
The Honorable Rick Scott, Governor
Miami Dade County Mayor Carlos A. Jimenez
Lee Hefty Dirctor of Department of Environmental Resources Management
Katherine Rundle, Dade County State Attorney
Miami Herald Executive Editor Myriam Marquez

Title 33 CFR 162.65]
[Code of Federal Regulations (annual edition) - July 1, 2005 Edition]
[Title 33 - NAVIGATION AND NAVIGABLE WATERS]
[Chapter I - COAST GUARD, DEPARTMENT OF HOMELAND SECURITY (CONTINUED)]
[Sub chapter P - PORTS AND WATERWAYS SAFETY]
Part 162 - INLAND WATERWAYS NAVIGATION REGULATIONS]
[Sec. 162.65 - All waterways tributary to the Atlantic Ocean south of ...]
[From the U.S. Government Printing Office]
33 NAVIGATION AND NAVIGABLE WATERS 2 2005-07-01 2005-07-01 false 162.65 Sec. 162.65 NAVIGATION AND NAVIGABLE WATERS COAST GUARD, DEPARTMENT OF HOMELAND SECURITY (CONTINUED) PORTS AND WATERWAYS SAFETY INLAND WATERWAYS NAVIGATION REGULATIONS
Sec. 162.65 All waterways tributary to the Atlantic Ocean south of Chesapeake Bay and all waterways tributary to the Gulf of Mexico east and south of St. Marks, Fla.
(a) Description. This section applies to the following:
(1) Waterways. All navigable waters of the United States, natural or artificial, including bays, lakes, sounds, rivers, creeks, intracoastal waterways, as well as canals and channels of all types, which are tributary to or connected by other waterways with the Atlantic Ocean south of Chesapeake Bay or with the Gulf of Mexico east and south of St. Marks, Florida.
(2) United States property. All river and harbor lands owned by the United States in or along the waterways described in paragraph (a)(1) of this paragraph, including lock sites and all structures thereon, other sites for Government structures and for the accommodation and use of employees of the United States, and rights of way and spoil disposal areas to the extent of Federal interest therein.
(3) Vessels and rafts. The term ``vessel'' as used in this section includes all floating things moved over these waterways other than rafts.
(b) Waterways--
(1) Fairway. A clear channel shall at all times be left open to permit free and unobstructed navigation by all types of vessels and rafts that normally use the various waterways or sections thereof. The District Commander may specify the width of the fairway required in the various waterways under his charge.
(2) Stoppage in waterway, anchorage or mooring.
(i) No vessels or rafts shall anchor or moor in any of the land cuts or other narrow parts of the waterway, except in case of an emergency. Whenever it becomes necessary for a vessel or raft to stop in any such portions of the waterway it shall be securely fastened to one bank and as close to the bank as possible. This shall be done only at such a place and under such conditions as will not obstruct or prevent the passage of other vessels or craft. Stoppages shall be only for such periods as may be necessary.
[[Page 593]]
(ii) No vessel or raft will be allowed to use any portion of the fairway as a mooring place except temporarily as authorized above without the written permission from the District Commander.
(iii) When tied up, all vessels must be moored by bow and stern lines. Rafts and tows shall be secured at sufficiently close intervals to insure their not being drawn away from the bank by winds, currents or the suction of passing vessels. Tow lines shall be shortened so that the different parts of the tow shall be as close together as possible. In narrow sections, no vessel or raft shall be tied abreast of another.
(iv) Lights shall be displayed in accordance with provisions of the Navigation Rules, International-Inland, Commandant Instruction M16672.2 (series).
(v) No vessel, even if fastened to the bank as prescribed in paragraph (b)(2)(i) of this section, shall be left without a sufficient crew to care for it properly.
(vi) Vessels will not be permitted to load or unload in any of the land cuts except as a regular established landing or wharf without written permission secured in advance from the District Commander.
(vii) No vessel, regardless of size, shall anchor in a dredged channel or narrow portion of a waterway for the purpose of fishing, if navigation is obstructed, thereby.
(viii) Except in cases of emergency the dropping of anchors, weights, or other ground tackle, within

areas occupied by submarine cable or pipe crossings, is prohibited. Such crossings will ordinarily be marked by signboards on each bank of the shore or indicated on coast charts.
(3) Speed.
(i) Vessels shall proceed at a speed which will not endanger other vessels or structures and will not interfere with any work in progress incident to maintaining, improving, surveying or marking the channel.
(ii) Official signs indicating limiting speeds through critical portions of the waterways shall be strictly obeyed.
(iii) Vessels approaching and passing through a bridge shall so govern their speed as to insure passage through the bridge without damage to the bridge or its fenders.
(4) Assembly and handling of tows.
(i) All vessels drawing tows and equipped with rudders shall use two tow lines or a bridle and shorten them to the greatest possible extent so as to have full control at all times. The various parts of a tow shall be securely assembled with the individual units connected by lines as short as practicable. If necessary, as in the case of lengthy or cumbersome tows or tows in restricted channels, the District Commander may require that tows be broken up and may require the installation of a rudder, drag or other approved steering device on the tow in order to avoid obstructing navigation or damaging the property of others, including aids to navigation maintained by the United States or under its authorization, by collision or otherwise.
(ii) No tow shall be drawn by a vessel that has insufficient power or crew to permit ready maneuverability and safe handling.
(iii) Tows desiring to pass a bridge shall approach the opening along the axis of the channel so as to pass through without danger of striking the bridge or its fenders. No vessel or tow shall navigate through a drawbridge until the movable span is fully opened.
(iv) In the event that it is evident to the master of a towing vessel that a tow cannot be safely handled through a bridge, it will be brought to anchor and the towed vessels will be taken through the bridge in small units, or singly if necessary, or the tow will wait until navigation conditions have improved to such an extent that the tow can pass through the bridge without damage.
(5) Projections from vessels. No vessel carrying a deck load which overhangs or projects over the side of said vessel, or whose rigging projects over the side of the vessel so as to endanger passing vessels, wharves or other property, will enter or pass through any of the narrow parts of the waterway.
(6) Meeting and passing. Vessels, on meeting or overtaking, shall give the proper signals and pass in accordance with the Navigation Rules, International-Inland, Commandant Instruction M16672.2 (series). Rafts shall give to vessels the side demanded by proper signal. All vessels approaching dredges
[[Page 594]]
or other plant engaged on improvements to a waterway, shall give the signal for passing and slow down sufficiently to stop if so ordered or if no answering signal is received. On receiving the answering signal, they shall then proceed to pass at a speed sufficiently slow to insure safe navigation.
Note: The Corps of Engineers also has regulations dealing with this section in 33 CFR Part 207.
[CGD 75-082, 42 FR 51759, Sept. 29, 1977, as amended by CGD 93-072, 59 FR 39963, Aug. 5, 1994; USCG-2000-7223, 65 FR 40058, June 29, 2000]

November 1, 2013

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Ms. Ehrlinger:

These are the formal public comments of Larry E. Fink, M.S., Owner and Principal, Waterwise Consulting ™, LLC, on the Project Implementation Report (PIR) dated August 2013 for the Tentatively Selected Plan (TSP) for the Central Everglades Project Plan (CEPP) public noticed by the U.S. Army Corps of Engineers (USACE)-Jacksonville with its Everglades restoration partner, the South Florida Water Management District (SFWMD) on September 9, 2013. (http://www.evergladesplan.org/pm/projects/project_docs/pdp_51_cepp/dpir/082813_cepp_dpir_main_report.pdf). In the context of the National Environmental Policy Act, the regulations, guidelines, policies, and procedures implementing NEPA, and the judicial precedents regarding the NEPA process, the TSP is also known as the Preferred Action (PA) and the preparation, public notice, taking of public and agency comment, revision, public notice of the revised final PIR must also meet all of the requirements of the NEPA process in the preparation, public notice, taking of public and agency comment, and the public notice of a revised final project-specific Environmental Impact Statement (EIS), Findings of No Significant Impacts (FONSI), and the Record of Decision (ROD) http://www.epa.gov/compliance/resources/policies/nepa/#policies-procedures,
including environmental justice considerations for minorities and the nations of the first peoples. http://www.epa.gov/compliance/nepa/nepaej/index.html. These comments supersede and replace those submitted on October 15, 2013.

Executive Summary

The predominantly drained soil conditions required for sugar cane farming in the Everglades Agricultural Area (EAA) result in the oxidation of roughly half an inch of peat soil each year. Nutrients and non-nutrient toxic substances and their precursors leach out of the oxidizing peat soil into stormwater runoff. Unlike nutrients, these non-nutrient toxic substances and precursors are not treated by the constructed wetlands known as Stormwater Treatment Areas (STAs) sufficiently to eliminate that toxicity, and there are no plans to add superior technologies for that purpose. These inadequately treated toxic substances and precursors are eventually discharged to the remnant impounded Everglades. This results in the presence of toxic substances in toxic amounts, which is precluded by the Federal Clean Water Act and equivalent Florida water law.

In its present configuration, the irreversible consumptive use of peat soil for sugar cane production in the EAA is incompatible with the restoration and protection of South Florida ecosystems in general and the Everglades in particular. Conversely, agricultural practices that require primarily flooded conditions, e.g., rice and aquaculture, are not incompatible with Everglades restoration. Such practices are also not incompatible with the emergency stacking of

emergency releases of water from Lake Okeechobee that would otherwise be routed to tide, where the polluted fresh water is destroying the east and west coast estuaries. Land purchased via eminent domain for purposes of stacking Lake Okeechobee emergency releases could also be leased for flood-compatible uses with deed restrictions that preclude the discharge of nutrients or toxic substances or their precursors at rates that exceed the capacities of the STAs to treat them to safe levels.

Unfortunately, the CEPP process did not identify this alternative as superior to the set of projects that emerged as the TSP/PA, because the CEPP process assumed as convenient expedients that the EAA would continue to be used primarily for sugar cane farming and that STAs would treat nutrients and non-nutrients, including and especially the light-limiting dissolved organic carbon (DOC) and the toxic substance precursor, sulfate, to safe levels, when that is not the case. These and related concerns were brought to attention of the South Florida Ecosystems Task Force in several workshops early in the CEPP process (Attachment 1 and 2), so this is no last-minute surprise. Instead, these legitimate water quality constraints were ignored in the decision-making process, despite the fact that the enabling legislation for CERP, of which CEPP is derivative, the Water Resources Development Act of 1996 and 2000, preclude the violation of any Federal law, regulation, or standard in reconfiguring the Central and Southern Florida (C&SF) Project system for purposes of South Florida ecosystem restoration. Most unfortunately, ignoring water quality constraints on the design, operation, and maintenance of CEPP projects has serious consequences that cannot be ignored by the taxpayers who must pay for this injustice and the people who are exposed to toxic substances toxic amounts in the fish they eat, especially the subsistence consumers and native peoples protected by the Environmental Justice provisions of NEPA created by Presidential Executive Order. This is also true of the fish-eating wildlife and their predators, some of which are listed as threatened or endangered species under the Federal Endangered Species Act and/or its Florida equivalent. Such species include the bald eagle, wood stork, Everglades mink, and Florida panther.

In summary, the TSP/PA and the project-specific PIR/EIS for the TSP/PA are critically deficient, because the process used to develop, screen, and select Everglades restoration project alternatives is administratively, legally, and technically fatally flawed.

(1) It is administratively fatally flawed, because the project-specific PIR/EIS should have been preceded by a revised Programmatic EIS (PEIS) for CERP that considers the broader implications of the changes in the approach to and environmental impacts of CERP as a result of CEPP, including changes to the assumptions, approximations, interpolations, and extrapolations upon which the environmental impact assessment in previous PEISs and project-specific PIRs/EISs were based.
(2) It is legally fatally flawed, because it is a violation of the following laws, regulations, standards, or practices:
(a) Clean Water Act (CWA), because it makes a Water Quality Standards compliance distinction between impacted and unimpacted areas in the same water body, thereby implicitly granting a permanent variance from WQS in already impacted areas, neither of which is provided for in the CWA.
(b) Endangered Species Act, because the excess methylmercury production, bioaccumulation, and risk caused by routing inadequately treated high-sulfate EAA

runoff to the Everglades represents a toxicological barrier to access and use by fish-eating wildlife and their predators, including the endangered wood stork, bald eagle, Everglades mink, and Florida panther, and, thus, constitutes an unlawful taking.
(c) creates an attractive nuisance, because it encourages growth and development in zones where the risk of loss of life, limb, and property is high a result of the rapidly failing Herbert Hoover Dike (HHD).

(3) It is technically fatally flawed, because:
(a) It omits critical selection criteria/performance measures, i.e., non-nutrient water quality constraints, light limitation and time-to-recovery.
(b) It omits viable alternatives to the TSP, i.e.., those that accelerate the time-to-recovery of nutrient-impacted areas by removing or stabilizing contaminated sediments or mechanical harvesting of rooted macrophytes growing in the contaminated sediments in Lake Okeechobee or the impacted Everglades.
(c) It omits known or reasonably anticipated significant adverse environmental impacts, including causing or contributing to:
(i) the presence of toxic substances in toxic amounts, e.g., hydrogen sulfide and methylmercury, caused by routing high-sulfate EAA runoff to the Everglades; and/or
(ii) the irretrievable commitment of resources, e.g., EAA peat soil oxidation, as a result of CEPP facilitating the continuation of the consumptive uses of water quantity and quality to grow EAA crops requiring predominantly drained conditions.
(d) It evaluates stage-duration-frequency contours using a water quantity model that is deficient in representation of resistance to flow and quantification of evapotranspiration, based on presentations made and papers published by the U.S. Geological Survey and the comments of various peer review panels, each of which are incorporated here by reference.
(e) It evaluates compliance with the phosphorus WQS using a water quality model that is deficient in representation, parameterization, calibration, and validation and that cannot model non-nutrient water quality compliance or impacts for non-conservative toxic substances, e.g., mercury.
(f) It did not include a rigorous quantitative uncertainty analysis regarding the probabilities of achieving and not achieving the water quantity, quality, routing, and timing criteria and the probabilities of causing or not causing various adverse impacts, including but not limited to excess methylmercury production, bioaccumulation, and risks to exposed humans and fish-eating threatened or endangered wildlife. The results of the qualitative and semi-quantitative approximations to a rigorous quantitative uncertainty analysis used by the modelers that were appended to the draft PIR/EIS are not sufficient in this regard.
(g) It did not include an adequate margin of safety in the engineering design and adequate operational flexibility sufficient to compensate for the propagated uncertainties in the quantity, quality, timing, and routing of water under routine, extreme weather, and various failure modes, including a catastrophic failure of the Herbert Hoover Dike.

As a consequence of these fatal administrative, legal, and technical flaws, individually and collectively, the work products deriving from this process, including the TSP/PA and the PIR/EIS for the TSP/PA, are themselves administratively, legally, and technically fatally flawed. To correct these serious errors of omission and commission and the consequences thereof, I

recommend issuing a revised PEIS for CERP and a revised project-specific PIR/EIS for a new TSP/PA using water quantity and quality models developed by or for USACE, USGS, and/or USEPA evaluating the benefits and detriments associated with a modification of Alternative 6 which proposes a breaching the Herbert Hoover Dike (HHD) surrounding Lake Okeechobee and a spillway/flow-way to spread and route that flow into the upper portions of Remnant Impounded Everglades. This will allow a more natural quantity, quality, timing, and routing of flow than the present TSP/PA, while reducing the flood risk from dike collapse and the damages to the Indian River Lagoon and Caloosahatchee River estuary from excessive freshwater releases required to relieve pressure on the dangerously failing HHD .

Introduction

Although perhaps 20% of the water flowing into the Everglades originates with Lake Okeechobee releases, 80% comes from stormwater runoff and groundwater recharge from the Everglades Agricultural Area (EAA). In South Florida evaporation and plant transpiration (evapotranspiration) are roughly equal to rainfall, so rainfall dilution is not a reliable solution to pollution. The nutrient-rich overflow from the pre-development Lake Okeechobee resulted in the deposit of a thick layer of peat over the exposed rock over thousands of years. When that peat soil dries out, it is slowly oxidized by the oxygen in the air to carbon dioxide. The oxidizing peat soil leaches dissolved organic carbon (DOC), which absorbs the wavelengths of sunlight required for plant photosynthesis. As a result, nutrient-limited plant growth can switch to light-limited plant growth for submersed aquatic vegetation (SAV) in a few feet of surface water contaminated with EAA leachate. Peat oxidation also releases the toxic substances precursors such as the most stable oxidized form of sulfur (S), sulfate. Peat soil oxidation also releases heavy metalloids and metals, including arsenic and inorganic mercury (IHg). Some of the IHg in EAA soil is inadvertently transformed by sulfate-reducing bacteria (SRB) in wet soils under conditions virtually devoid of oxygen (anaerobic) into a much more toxic and bioaccumulative form, methylmercury (MeHg). Other abiotic and biotic processes convert some of IHg into elemental mercury, which is a liquid at room temperature. The total mercury (THg) in EAA runoff, groundwater, and surface water consists primarily of IHg, MeHg, and elemental mercury (Hg(0). Most of the Hg(0) in soil and some of the Hg(0) in surface water is lost to the atmosphere via a process known as volatilization or evasion.

The sulfate in EAA runoff passes through the STAs virtually untreated into the Everglades, where it is converted into toxic hydrogen sulfide by SRB in anaerobic surficial sediments. The hydrogen sulfide can accumulate to toxic levels in the sediment pore water, but its concentrations in the overlying surface water are rapidly diminished by the process of oxidation in the presence of dissolved oxygen (DO). Nevertheless, the hydrogen sulfide concentrations in the surface water at the sediment/water interface often exceed the 2 micrograms per liter (ug/L) Water Quality Criterion (WQC) published by the U.S. Environmental Protection Agency (USEPA) in its Red Book to protect sensitive aquatic species the feed on or live in the surficial sediments. The set of narrative Water Quality Standards that each state must officially issue (promulgate) and enforce under the Federal Clean Water Act (CWA) precludes the presence of toxic substances in toxic amounts at any time in fishable and swimmable waters like the Everglades, irrespective of whether a numerical WQS has been promulgated for that substance. That also applies to the pesticides in EAA runoff.

The IHg and MeHg in EAA runoff are routed through the STAs, where about 50% to 75% of both are removed by various physical, chemical, and biological processes. Nevertheless, what remains represents an unnatural loading rate of IHg and MeHg to the upper portion of the remnant Everglades. These watershed-specific contribution to the IHg load were not taken into account in FDEP's statewide approach to mercury TMDL development and implementation (Attachment III), despite the fact that the Everglades has been officially listed under the Clean Water Act as mercury-impaired, because the fish are contaminated with levels of MeHg high enough to prompt a public health advisory for humans making recreational or subsistence use of the Everglades or the C&SF Canal system as a fishery. To this unnatural load is added the MeHg that is produced from the IHg in rainfall by the same SRB that convert sulfate to toxic hydrogen sulfide. The high levels of MeHg in mid- and top-predator fish also expose fish-eating wildlife to levels of MeHg sufficient to interfere with normal brain function (neurotoxicity) sufficient to interfere with other life functions, such as hunting for food, avoiding predators, and mating for reproduction. In many cases the MeHg that passes from mother to the embryo in the egg or uterus is at high enough concentrations to cause neurotoxic effects in the next generation and less frequently at levels that are lethal to the developing embryo or fetus.

CEPP is intended to accelerate the planning of key project elements of the Comprehensive Everglades Restoration Plan (CERP), which is authorized and constrained by the Water Resources Development Act (WRDA) of 1996 and 2000. Because CERP subsumes CEPP, by extension, these same constraints apply to CEPP without exception. The constraints include the general proscription against causing or contributing the violation of any applicable Federal law, regulation, or standard , which subsumes the explicit proscription against the violation of any duly promulgated narrative or numerical Water Quality Standard applicable to the Everglades, Biscayne Bay, or Florida Bay, any Total Maximum Daily Load (TMDL) based on that WQS, and any Water Quality-Based Effluent Limit based on that TMDL pursuant to Section 303 of the Federal Clean Water Act (CWA). In this context, the applicable WQS, TMDLs, and WQBELs include those promulgated, derived, and issued by the State of Florida and the sovereign nations of the first peoples living in or discharging to the Everglades, Biscayne Bay, or Florida Bay, including the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida.

The acceleration of CERP planning process for CEPP necessarily required the adoption of assumptions, approximation, interpolation, and extrapolations that necessarily increased the uncertainties associated with the likelihood of attaining and maintaining the target stage, flow, duration, and frequency specifications associated with the various physical, chemical, and biological performance measures adopted by the USACE-Jacksonville and SFWMD over the area to be restored and avoiding unacceptable adverse impacts within and downstream of the restored areas with the required magnitudes, durations, and frequencies at the required confidence levels for avoiding committing unacceptable Type I error, concluding that the project is not attaining performance objectives when it is or is causing significant downstream adverse impacts when it is not, and unacceptable Type II error, which is the opposite of Type I error. In such circumstances, it is standard professional practice for engineers to increase the margins of safety in project element designs, operating plans, and maintenance schedules under routine, extreme weather, and various failure modes to increase the likelihood of achieving the desired outcome and to decrease the likelihood of causing or contributing to adverse impacts, including

but not limited to the loss of life, limb, or property. This was not done. This also results in the systematic underestimate of the cost of the construction, operation, and maintenance of these project elements and the systematic underestimate of the unreasonable risks associated with the various alternatives, including that eventually recommended as the PA/TSP. The appropriate Florida licensing board should determine whether this constitutes a significant violation of professional standards of practice and ethics that puts the professional engineering licenses of those involved in jeopardy. Being ignorant of or having been ordered by a government agency or private entity to violate these professional norms is not a defense for professional irregularities or the consequences that flow therefrom.

Violations of the Clean Water Act: Nutrients

CEPP planners claim that they did evaluate the downstream water quality impacts of the various CEPP alternatives selected for detailed analysis based on the concentration of total phosphorus (TP) in the areas to be restored using some modified version of the Dynamic Model for STAs (DMSTA). However, I am unaware of any graphs or maps that displayed the magnitude, duration, and frequency of exceedance of the 10 ppb TP WQS at key compliance nodes over time, especially in areas in the upper portions of the impounded remnant Everglades already impacted by inadequately treated EAA runoff.

To circumvent this problem, with the complicity of FDEP and USEPA Region 4, SFWMD and USACE-Jacksonville make a distinction between the water quality of unimpacted areas, where the discharge cannot cause further impairment, and the impacted areas, where the discharge can be higher, because the area is already polluted. Unfortunately, the CWA makes no such distinction, and, where the historically contaminated sediment is contributing to the pollution of the overlying water, without a commitment to remediate that condition, the discharge of pollutants to that area must be lower, not higher, to allow the system to recover naturally by burying out the contamination with clean sediment or peat soil.

By allowing SFWMD and USACE-Jacksonville to adopt this unlawful subterfuge, FDEP, with the complicity of USEPA Region 4, has created an implicit permanent zone of variance from the TP WQS. Under the CWA, there is no provision for an implicit variance, and an explicit variance must be requested and granted for a period of no more than three years, after which it can be reissued only if the discharger has made a good faith effort to reduce the discharge and/or to remediate the sediments by dredging, stabilization, or harvesting of rooted macrophytes for bioremediation to prevent recycling of the contaminants. No CEPP alternative includes contaminated sediment remediation. That being the case, in areas where the contaminated sediment is causing the overlying water column to violate a WQS, the assimilative capacity of the receiving water has been exceeded, and the Water Quality Based-Effluent Limit is 0, which is enforced at the method detection limit of the USEPA-approved analytical method for that pollutant. The NPDES permits for the STAs by USEPA Region 4 do not take this into account.

Violations of the Clean Water Act: Non-Nutrients in the Form of Mercury

All of the Everglades and portions of Florida Bay are listed under the Clean Water Act as mercury-impaired, as a consequences of the public health advisories issued by the State of

Florida and the Everglades National Park, beginning in 1989 and 1995, respectively. While the majority of the planners, scientists, and engineers in the Federal, State, and Local government agencies were focusing on regulating the excess TP in EAA stormwater runoff, a consortium of government, academic, and private sector scientists organized as the South Florida Mercury Science Program were conducting monitoring, research, and modeling to understand and solve the Everglades and Florida Bay mercury problems.

In the period 1995-1999 recognized experts in the field determined that the methylmercury was being produced from inorganic mercury (IHg) primarily by sulfate-reducing bacteria (SRB) and primarily in the surficial sediments under anoxic conditions where dissolved oxygen is essentially absent but organic carbon is abundant. The addition of sulfate in excess of natural background levels stimulated inorganic mercury methylation up to a maximum, beyond which the sulfide produced as a byproduct of SRB metabolism inhibits methylation by a mechanism that has not been explained to scientific certitude. Solving the Everglades methylmercury problem by driving it into sulfide inhibition is not a viable option, however, because sulfide in its hydrogen sulfide form is toxic in its own right and the sulfur cycle interacts with the P cycle in ways that could decrease its storage and increase its release from the pre-ECP contaminated sediments.

Subsequent controlled field studies conducted in large open containers (mesocosms) were able to reproduce these conditions, while determining that almost all of the inorganic mercury that was available to SRB for methylation was coming from the atmosphere, primarily in rain. In one of the great achievements of applied science of this or any other age, these phenomena were then reproduced at the watershed scale by pulse-dosing the watershed and lake in the Experimental Lakes Region in Canada with those same stable mercury isotope tracers and monitoring the lake's methylmercury production and bioaccumulation in fish over time.

By the late 1990s SFMSP scientists had concluded that it was more likely than not that the unnatural concentrations of sulfate in EAA runoff were causing or contributing to the downstream Everglades mercury problem and that the engineered wetlands constructed to remove excess nutrients, what we know as Stormwater Treatment Areas (STAs), were not able to remove the excess sulfate. At the turn of the 21st Century the high-sulfate water from EAA stormwater runoff was rerouted out of WCA-3A and into the C&SF Project canal system to avoid violation of the TP WQS and to protect the habitat of the Cape Sable Seaside Sparrow, while still providing water to keep ENP hydrated. Subsequently, the methylmercury production and bioaccumulation "hot spot" moved from the bottom one-third of WCA-3A to the top of the ENP in an area supplied with water from the L-67A stub canal. Now correlation is not causation, but the results of dosing of the mesocosms located at the new "hot spot" with a combination of stable mercury isotopes, sulfate, and dissolved organic carbon suggest that the rerouting of the EAA runoff from WCA-3A to ENP caused the recovery of WCA-3A at the expense of the degradation of the ENP.

The rerouting of high sulfate water out of WCA-3A and into the northern portion of the ENP has caused or contributed to the rerouting of the MeHg hotspot in largemouth bass from the center of WCA-3A to the top of ENP. However, although it has been discussed in South Florida Environmental Reports

(http://www.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/2013_sfer/v1/chapters/v1_ch3b.pdf;http://www.sfwmd.gov/portal/page/portal/xweb%20about%20us/agency%20reports) and perhaps USEPA Region 4's REMAP reports (http://www.epa.gov/region4/sesd/reports/epa904r07001.html), neither the Corps nor SFWMD has officially recognized this phenomenon, and neither FDEP nor USEPA Region 4 has officially acknowledged that sulfate in excess of natural background levels is causing the unacceptable impacts on recreational and wildlife uses associated with the observed excess methylmercury (MeHg) production and bioaccumulation effects.

In contrast, to prevent a third, first-flush MeHg anomaly in STA-2 Cell 1 from becoming an endangered species disaster when it was scheduled to be reflooded in the summer of 2003, SFWMD officially invoked the influence of the sulfur cycle on the mercury cycle to justify a deviation from the standard start-up protocol. The permit-mandated protocol involves holding the flood water until the total mercury (THg) and MeHg concentrations in the interior are less than the inflow. Unfortunately, this maximizes the short-term bioaccumulation, exposure, and risks to fish-eating wildlife, while fostering long-term recycling from dying plants that absorbed the undiluted first-flush pulse, resulting in a reservoir effect that could perpetuate the problem for a decade or several. As a consequence, SFWMD petitioned FDEP for a temporary modification or variance that would allow SFWMD to operate STA-2 Cell 1 in flow-through mode during start-up until sulfide in sediment pore water built up to inhibitory levels, thereby putting the sulfide brake on excess MeHg production from the bioavailable inorganic mercury flux from the oxidized wet soil.

FDEP officially approved that petition with the review and approval of USEPA Region 4, so both agencies have gone on public record as recognizing the influence of the sulfur cycle on the mercury cycle and the substantial risks that sulfate-mediated first-flush MeHg anomalies present to wildlife, including and especially endangered fish-eating species and their predators. (http://www.law.miami.edu/library/everglades/reports/2002/01/Everglades_Cons_Report/Appendices/App4A-7.pdf). I was the sole author of the report supporting that petition. The start-up alternative was successful, as evidenced by the reduction in the peak MeHg concentrations in trophic level 2, 3, and 4 fish and the corresponding risks to fish-eating wildlife, including the bald eagle with a nest in Cell 1 (http://link.springer.com/article/10.1007%2Fs10661-006-0767-4#page-1; http://www.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/2006_sfer/volume1/appendices/v1_app_4-7.pdf; http://www.tandfonline.com/doi/abs/10.1080/10807030590925768#.Ulty7VBptZ0), despite the then world record peak MeHg concentration of 20 ng/L in surface water set by the third, first-flush MeHg anomaly in STA-2 Cell 1. Conversely, if STA-2 had not stabilized in response to sulfide inhibition, Cell 1 would have had to have been abandoned, setting Everglades restoration back by years and the taxpayers by tens of millions of dollars. Thus, sound policy and permit decision-making flowed from the comprehensive analysis, integration, and synthesis of the results of well-designed, carefully executed, and peer-reviewed mercury monitoring, research, and modeling studies (http://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/ecr2003/appendices/app2b-5.pdf), some of which were outlined in the Programmatic EIS issued by USACE-Jacksonville for the Everglades Construction Project (ECP)

((http://mwaldon.com/Loxahatchee/GrayLiterature/ECP-EIS-1996/)) and mandated by the Section 404 Dredge and Fill permit issued to SFWMD for construction and operation. These unacceptable risks extend to the downstream Everglades (http://www.ncbi.nlm.nih.gov/pubmed/18679795). The Florida Fish and Wildlife Conservation Commission is well-aware of the monitoring, research, and modeling that supports the findings, conclusions, and recommendations of unreasonable risk to fish-eating wildlife in general and endangered species and their predators in particular (http://research.myfwc.com/publications/publication_info.asp?id=57831). This is also true of the U.S. Fish and Wildlife Service, which has been monitoring THg as MeHg in Florida panther fur and blood with FDEP assistance since 1989 (http://www.panthersociety.org/mercury.html).

USACE-Jacksonville recognized these potential adverse mercury impacts in is Programmatic EIS for the Everglades Construction Project (ECP) it published as final in 1996 (http://mwaldon.com/Loxahatchee/GrayLiterature/ECP-EIS-1996/) and the need to conduct monitoring, research, and modeling of the mercury cycle in the constructed wetlands and the downstream impounded Everglades in the 404 Dredge and Fill permit it issued to the construction and operation of the STAs in 1997. As the Corps notes in its own summary of its authorities and responsibilities:
http://www.evergladesplan.org/facts_info/sywtkma_corps_faq.aspx

2. Does the Corps regulate water quality?

No. Congress granted that authority to other agencies. Under the Clean Water Act, the Environmental Protection Agency (EPA) and authorized state and tribal governments promulgate and enforce water quality standards. The Corps cannot issue an individual permit until the applicant obtains water quality certification from EPA or the appropriate state or tribal government and does not issue the permit until all water quality concerns raised by the EPA have been addressed.

Under the organization of the multi-agency, multi-entity South Florida Mercury Science Program, which began in the mid-1990s, world-class scientists have conducted well-designed, quality controlled, and peer-reviewed monitoring, research, and modeling studies within a mass balance framework to understand and solve the Everglades mercury problem. These studies and annual reports also fulfilled the permit compliance mandates in the Section 404 Dredge and Fill permit issued to SFWMD by USACE-Jacksonville for the Everglades Construction Project (ECP) and the Section 402 NPDES permits issued by USEPA Region 4 and Everglades Protection Act permits issued by FDEP for the Everglades Nutrient Removal Project and each of the STAs as they came on-line. The main chapter and supporting appendices in the Everglades Interim Report published by SFWMD in 1999 (http://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/interimrpt_98/chpt7.pdf) and every annual report thereafter (incorporate by reference all main chapters and supporting appendices 2000-2013:

http://www.sfwmd.gov/portal/page/portal/xweb%20about%20us/agency%20reports) has analyzed, integrated, and synthesized the results of those and other relevant studies conducted by, for, or in conjunction with SFWMD staff on the mercury and sulfur chemical species distributions, sources, biogeochemistries, bioaccumulation, and effects, including but not limited to the influence of the sulfur cycle on the mercury cycle.

At the turn of the 21st Century, the state-of-the-science of the influence of the Everglades sulfur cycle on the Everglades mercury cycle was compiled in a report in an appendix to the mercury chapter in the 2003 SFER prepared by SFWMD's Mercury Program Manager (http://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/ecr2003/appendices/app2b-5.pdf). At the beginning of the second decade of the 21st Century, the publication of a paper by the leading experts in the USGS, FDEP, USEPA and Smithsonian represents the state-of-the-science on the distribution, sources, biogeochemistry, effects, and management of sulfur in the Everglades (http://water.usgs.gov/nrp/proj.bib/Publications/2011/orem_gilmour_etal_2011.pdf). Their key findings, conclusions, and recommendations are consistent with what FDEP and SFWMD scientists have published in the annual South Florida Ecosystem Reports on mercury and sulfur in the Everglades over the last decade, the most recent credible manifestation of which is the 2013 report co-authored or edited by FDEP's Don Axelrad, Florida's Statewide Mercury Coordinator (http://www.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/2013_sfer/v1/chapters/v1_ch3b.pdf).

The analysis, integration, and synthesis of the results of sound empirical science based on well-designed, carefully conducted, and peer-reviewed monitoring, research, and modeling studies within a mass balance framework support the following key findings, conclusions, and recommendations:

- Based on sulfur isotope and mass budgets, excess sulfate in the Everglades originates primarily with the continuing use of sulfur and sulfate soil amendments in the EAA and the release of legacy sulfur from the oxidation of drained peat soils, not connate sea water from the breaching of the confining layers during the construction of the primary canal system or secondary canal networks for the C&SF Project.
- Excess sulfate in EAA runoff causes or contributes to the presence of toxic substances in toxic amounts in the Everglades in the form of excess hydrogen sulfide.
- Excess sulfate in EAA runoff causes or contributes to a disruption of other natural cycles in the Evergaldes, including the carbon and phosphorus cycles.
- Excess sulfate in EAA runoff exerts a deterministic influence on the mercury cycle in the Everglades, stimulating excess methylmercury production up to a maximum, beyond which excess sulfide inhibits methylmercury production.
- The risks to humans and fish-eating wildlife and their predators exposed to this excess methylmercury bioaccumulating in the Everglades food chain are in excess of safe levels in some locations.

Based on these key findings, conclusions, and recommendations, the increase in the excess MeHg production, bioaccumulation, exposures, and risks associated with the routing of

inadequately treated excess sulfate in EAA runoff into the downstream Everglades to rehydrate it, irrespective of how well-intentioned, is unlawful. The Everglades should not be rehydrated with EAA runoff unless and until it is treated to remove sulfate in excess of the Everglades Restoration Performance Objective of 1 mg/L, because to do so would cause or contribute to a violation of duly promulgated and enforceable antidegradation provision, the narrative and numerical Class III Water Quality Standards (WQS) and the Federal Court-ordered Total Maximum Daily Loads (TMDLs) developed to implement them under the Federal Clean Water Act. Because the rerouting of inadequately treated sulfate in EAA runoff into the Everglades causes or contributes to an unacceptable risk to threatened and endangered species and their predators in the downstream Everglades, Big Cypress National Preserve, Biscayne Bay, and Florida Bay, and is, therefore, an unlawful taking under the Federal Endangered Species Act and the Marine Mammal Protection Act. That being the case, the TSP/PA violates the prescriptions and proscriptions in WRDA 1996 and 2000, both of which preclude the violation of any Federal law, regulation, or standard in the process of restoring the Everglades.

Moreover, the PIR/EIS prepared to justify the TSP/PA over viable alternatives does not comply with NEPA. First, there is no provision in NEPA that allows a Federal agency to suspend the requirement for reasonable assurances that there will be no significant adverse environmental impacts or irretrievable commitment of resources from the TSP/PA. To conform to the requirements of NEPA, the PIR/EIS must identify and evaluate all foreseeable adverse environmental impacts associated with the TSP/PA explicitly. They include all the foreseeable adverse environmental impacts identified above associated with rehydrating the Everglades with inadequately treated EAA runoff. If, subsequent to the finalization of the revised PIR/EIS, FONSI, and ROD, the required permits for the TSP projects are issued by the responsible Federal, Florida, and local agencies without the required reasonable assurances based on a claim of net benefit to the Everglades, the permit application process must still make that explicit rather than implicit, as is now the case in the Draft PIR/EIS for the proposed TSP/PA for CEPP. Second, such an approach presupposes that resource managers can reverse the consequences of the adverse impacts of all of the foreseen problems, including the failure to remediate contaminated sediments in Lake Okeechobee and the impacted areas of the Everglades, retarding the recovery of both; the creation of a permanent zone of variance in the upper portion of the Everglades where inadequately treated EAA runoff will be discharged; and the presence of toxic substances in toxic amounts, use impairment, and unacceptable risks to humans and wildlife subsisting on methylmercury-contaminated Everglades fish, shellfish, reptiles, or birds.

Clearly, the process and approach adopted by USACE-Jacksonville and SFWMD to develop, select, and evaluate the environmental impacts of the TSP/PA and various viable alternatives has resulted in the selection of a TSP/PA that is unlawful. The TSP/PA is also dangerous, because it assumes that the Everglades can survive the damage that will be done by rehydrating it with inadequately treated EAA runoff and that any serious harm that arises is reversible. If not, by the time anybody can prove beyond reasonable doubt that the agencies did irreversible harm to the Everglades with this gambit, the officials who blundered in their resource restoration decision-making will be long retired. Just as clearly, the CEPP process and approach adopted by the agencies to expedite the selection of the TSP/PA ignores the history of environmental disasters, many of which were the result of the unintended consequences of otherwise well-intentioned

actions, where haste made waste, and/or where sound science was trumped by sound politics. Thus, what they are proposing is also profoundly unwise.

Neither the USEPA Region 4 nor FDEP in its Federal or Florida review of and comment on this Draft PIR/EIS for the CEPP TSP/PA or its subsequent water quality certifications for the proposed CEPP projects can suddenly develop adverse environmental impact amnesia as regards the influence of the excess sulfate in EAA runoff on the downstream mercury cycle for purposes of preparing a scientifically accurate and legally defensible PEIS for CERP or CEPP, any project-specific PIR/EIS, or for purposes of establishing the required reasonable assurances needed to issue the various permits required for the various infrastructure elements of CERP or CEPP (http://www.saj.usace.army.mil/Portals/44/docs/regulatory/Items%20of%20Interest/Everglades%20A-1/Chapter%208%20-%20Permits%20and%20License.pdf). Just asserting that water quality will not be a problem for the TSP/PA or any of its viable alternatives in the draft project-specific PR/EIS for the TSP/PA does not make it so. If one wants to make a net benefits argument, that is, the benefits of rehydrating the Everglades with a polluted water supply outweigh the detriments, that assertion must be explicit, not implicit, and it cannot result in the irretrievable commitment of resources in the form of an irreversibly damaged Everglades if the agencies responsible for restoration guess wrong and the detriments outweigh the benefits.

These comments are intended to jog the institutional memories of all of the responsible agencies in these regards to avoid administrative and judicial challenges to CEPP and then CERP that could delay these projects for years, even if the benefit of complete build-out to the Everglades, Biscayne Bay and Florida Bay will not be felt in what remains of my lifetime, while the MeHg and hydrogen sulfide detriments of rerouting high-sulfate runoff and leachate water from the EAA into the Everglades to rehydrate it will be almost immediate.

L-8 Reservoir Project

One of the environmentally significant changes in Everglades restoration engineering design and operation that has occurred between the preparation of the PEISs for the Everglades Construction Project (ECP) and the EAA Reservoir Project then and the preparation of the PIR/EIS for CEPP now is that EAA stormwater runoff and Lake Okeechobee release load-leveling for the STAs was to be accomplished by one large, deep, above-ground reservoir that dries out and rewets infrequently but is now to be accomplished by three, low-head, above-ground reservoirs that dry out and rewet frequently. One of these three shallow reservoirs has subsequently been replaced by the L-8 Reservoir Project (L8RP), a ~1,000-acre, ~40-ft deep, below-ground reservoir created by repurposing a series of limestone quarry pits that would otherwise have been abandoned and allowed to fill as an artificial lake by the owner, Palm Beach Aggregates (PBA).

As a consequence of breaching the confining layer during mining, the water quality of the water in the L8RP is substantially and inherently different than the water quality in EAA stormwater runoff and Lake Okeechobee releases, even after being flushed out with EAA stormwater runoff and Lake Okeechobee releases. The most problematic of these differences is the irreducibly high levels of sulfate and its influence on the downstream Everglades sulfur and mercury cycles. However, these differences were ignored in making this substitution and in the draft PIR/EIS for

CEPP that incorporates this substitution. Even if the draft PIR/EIS is revised to acknowledge these differences, the water quality model that was used to model nutrient removal in the reservoirs, reservoir-assisted STAs, and the nutrient-impacted and nutrient-unimpacted areas downstream, DMSTA, cannot model the influence of excess sulfate on the downstream sulfur or mercury cycles.

The set of limestone quarry cells that comprise the approximately 40,000 acre-ft L8RP was originally purchased by SFWMD from PBA to store excess wet-season water from L-8 Basin runoff and Lake Okeechobee releases to meet dry season minimum flows and levels of the Northwest Fork of the Loxahatchee River, an Outstanding Florida Water, portions of which are protected as Wild and Scenic. It is also officially listed as mercury-impaired with USEPA Region 4 by the State of Florida under Section 303(d) of the Clean Water Act (http://iaspub.epa.gov/tmdl/attains_waterbody.control?p_list_id=FL3226A&p_state=FL&p_cycle=2010). The various cells of this below-ground, man-made reservoir were left behind after the lawful mining of limestone under applicable county, state, and federal permits without any discharge to surface waters.

During and after mining, the 40-ft deep cells filled with a combination of net rainfall, water used and produced in the mining process, and seepage of connate water through the unconfined, high permittivity layer beneath the confining limestone layer that was breached toward the end of the active mining period. Concerns about the effect of this seepage on the viability of the L8RP as a storage reservoir prompted SFWMD to include the requirement that PBA conduct a water budget study to demonstrate that the seepage rate was acceptable prior to final transfer of the property to complete the sale. In the weeks preceding the test, which began on February 9, 2009, the L8RP was drawn down about 10 feet by a temporary pump, rather than the 20 feet specified in the purchase agreement, because that is all the temporary pump could deliver. The test was completed three weeks later at the end of February, and the test demonstrated to SFWMD satisfaction that the seepage rate was within contract specifications, even after the estimate was doubled to approximate the effect of a 20-ft draw-down. However, according to the relevant stage and flow data in DBHYDRO (http://www.sfwmd.gov/portal/page/portal/xweb%20environmental%20monitoring/dbhydro%20application), no pumping in or out of the L8RP occurred until June 2009, so the increase in stage, less rainfall plus ET, is the seepage rate during that 119 day period. From February 9, 2009, to May 31, 2009, there was 13.7 inches of rainfall recorded at S-5A, an average of 0.24 inches per day of pan evaporation, while the stage increased from -0.13 ft NGVD to 9.83 ft NGVD on May 31, 2009. Assuming ET averaged 85% of pan evaporation during that period, the seepage rate of about 0.087 feet per day at a 10' drawdown, and likely exponentially higher as the overlying head is reduced, because seepage is likely to be coming predominantly from the bottom of the quarry pits, not the sides, which PBA stipulated had a very low transmissivity. The results of unpublished studies by SFWMD staff conducted in the winter, spring, and summer of 2011 support this inference. The new, full-size pump will no doubt be able to move the L-8 Canal water contaminated with EAA runoff in and out of the L8RP much more rapidly than the temporary pump used in the seepage study.

The seepage contribution from surficial and deep aquifer sources was also evaluated for the Everglades Nutrient Removal Project by Judson Harvey and co-workers at the USGS-Reston

(http://sofia.usgs.gov/publications/papers/quantgwdisnrech/methodology.html). The ENR Project is across Southern Boulevard from the L8RP. In addition to water budget studies, Dr. Harvey was able to infer the relative contributions of shallow and deep aquifers from the ratios of isotope tracers in the water. This was not done for the L8RP. One of Dr. Harvey's USGS-Reston colleagues from the South Florida Mercury Science Program, William Orem, Ph.D., used the ratio of del shifts in sulfur isotopes in groundwater and surface water to demonstrate that sulfur from EAA soil amendments, and not connate water seepage, was the predominant source of excess sulfate to the Everglades (http://water.usgs.gov/nrp/jharvey/pdf/jenvironqual.pdf). This was also not done for the L8RP.

This combination of net rainfall, mining process wastewater, and mining-related groundwater seepage has resulted in average concentrations of chloride and sulfate well above the levels present in surface waters receiving EAA stormwater runoff and Lake Okeechobee releases. Despite the presence of untreated mining process wastewater, the Florida Department of Environmental Protection (FDEP) issued a CERPRA permit in March 2007 for the discharge of untreated wastewater from this industrial category to the L-8 Canal, a Class III water, but not the required NPDES permit under Section 402(b) of the CWA. When the chloride concentrations exceeded the Florida numerical WQS for Class III surface waters, FDEP granted a mixing zone to SFWMD for two years that was extended for another two and is now a permanent feature of the five-year CERPRA permit reissued in January 2012. The permit-mandated downstream monitoring of largemouth bass in the Grassy Waters Preserve (GWP) for total mercury (THg) as methylmercury (MeHg) in edible flesh detected concentrations frequently in excess of USEPA's WQC of 0.3 ppm in fish flesh and occasionally in excess of Florida's action level of 0.5 ppm THg. Nonetheless, FDEP ignored the potential for excess sulfate in the L8RP discharge to exacerbate the mercury impairment of downstream fishable uses and subsequently allowed the permittee, SFWMD, to reduce the frequency of downstream fish mercury monitoring in GWP rather than increase the frequency to detect statistically significant trends.

So problematic was the water quality in the L8RP that USACE-Jacksonville refused to authorize the reimbursement of its cost to SFWMD under CERP as one of the approved Northern Everglades Restoration Projects. Subsequently, to issue NPDES permits for the STAs that would conform to the Judge Gold's Final Judgment, the proposed use of the L8RP was repurposed from storing excess wet-season stormwater runoff and lake releases for dry-season rehydration of the NWFLR to storing those same waters for load-leveling and subsequent routing through the STAs for removal of nutrients prior to discharge of the Everglades. An approximately $60M pump station was approved by SFWMD's GB for the latter purpose in the summer of 2013. The rehydration of the NWFLR is now to be effected by a new reservoir constructed on partially developed Mecca Farms land. The runoff water used to fill the Mecca Farms reservoir is unlikely to contain the same high levels of sulfate present in connate sea water and EAA runoff, because the canals are generally shallower than those in the central Everglades and because the agricultural lands in the watershed do not control soil pH using sulfur as a soil amendment or oxidize nearly as fast as the rates occurring in the EAA.

Ultimately, only modeling of the sulfate quality of the water under various operational scenarios will be able to quantify the range of sulfate concentrations and loads that will be delivered from the L8RP to the STAs in the eastern flow-way over the CEPP design horizon. Only a mercury

cycling model coupled with a toxicological risk model will be able to translate the excess sulfate into excess risks of methylmercury exposure to humans and wildlife subsisting on fish, shellfish, amphibians, reptiles, and/or birds in the Everglades over that same period. This includes members of the Miccosukee Tribe of Indians who wish to live in a traditional manner in the Everglades. The required modeling for CEPP environmental impact assessment has not been done by or for SFWMD and USACE-Jacksonville in the evaluation of the environmental impacts of the TSP/PA and the viable alternatives associated with routing inadequately treated high-sulfate water from whatever source into the Everglades.

The CERPRA permit-mandated annual water quality compliance report for the L8RP is contained in Appendix 2-2 of SFER 2013: http://www.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/2013_sfer/v3/appendices/v3_app2-2.pdf. The monitoring results reported by SFWMD staff to FDEP demonstrate a persistent sulfate problem in the L8RP, with the monitored outflow averaging 132.3 mg/L roughly twice the monitored inflow averaging 65.7 mg/L. The outflow average has slowly declined over time, however, suggesting that the unlawful flushing of untreated mining-related process wastewater and seepage diluted with L-8 Canal water back into the L-8 Canal without an NPDES permit is slowly asymptotic to a new steady state sulfate concentration, albeit one still substantially in excess of the average inflow concentration and even more so the RECOVER performance objective of < 1 mg/L. This excess sulfate will then be routed through the STAs virtually untreated into the northern Everglades, where it will cause or contribute to the excess MeHg production, bioaccumulation, exposure, and risks (Fink^3), contrary to the CWA and equivalent Florida water law, as well as WRDA 1996 and 2000. Therefore, the use of the L8RP as a load-leveling reservoir to improve the nutrient removal efficiencies of the STAs is contrary to sound science and engineering concepts, principles, and practices, as well as being unlawful, and unwise.

If it is determined that the breached area is so extensive that it is impractical to reisolate the limestone quarry pits from the unnatural connate seawater flux with a synthetic barrier, then the water quality of these repurposed limestone quarry pits has been irretrievably compromised. If that is the case, FDEP should formally rescind their designation as waters of the state and restore them to the status of abandoned limestone quarry pits, again isolate them from the waters of the state, and only permit them to be used as a water supply for closed system use, e.g., cooling water for the adjacent gas-fired power plant with subsequent deep-well injection of the spent cooling water. If, instead, they are to be used for flood control and water supply, the waters stored therein should only be used to flush out water bodies naturally high in sulfate, e.g., the Lake Worth Lagoon, not the NWFLR or the Everglades. Apparently, USACE-Jacksonville reached the same conclusion as regards the L8RP serving as a water supply for the rehydration of the NWFLR, but not yet for the Everglades.

With or without reservoir assistance, the STAs are not designed to remove sulfate, do not remove sulfate in the mg/L concentration range when operated as designed, as evidenced by more than ten years of inflow and outflow monitoring data, and no minor or major modification of the design or operation will make it possible to remove sulfate in that concentration range. That means that the routing of high-sulfate water from whatever source in excess of the RECOVER performance objective of < 1 mg/L through the STAs and thence to the Everglades is inherently

incompatible with Everglades restoration, because it will cause or contribute to the presence of toxic substances in toxic amounts, e.g., hydrogen sulfide, and/or the exacerbation of the Everglades mercury problem. The sources of excess sulfate in the proposed TSP include sulfate released in oxidizing EAA peat soil, the L8RP, and those canal segments where the confining layer was breached during construction and the flux of connate sea water is substantial. The PIR/EIS for the TSP did not give adequate consideration to the nature, extent, magnitude, duration, and frequency of violations of the general narrative prohibition against the presence of toxic substances in toxic amounts due to the presence of excess hydrogen sulfide or the impairment of the use of the Everglades as a sport fishery or the unacceptable risk of reproductive failure of threatened or endangered fish-eating wildlife species or their predators due to the presence of excess methylmercury to which excess sulfate will contribute.

Therefore, the proposed TSP for CEPP, which makes use of the L8RP, EAA runoff, and the canals of the C&SF Project canals, is inherently incompatible with Everglades restoration. However, if the no toxic substances in toxic amounts and no impairment water quality constraints must be relaxed on the basis of net benefit, a modification of Plan 6, the spillway/flow-way alternative, provides a greater net benefit to the Everglades than the TSP. This is because the breach of the Herbert Hoover Dike at the southern tip of Lake Okeechobee will deliver water to the Everglades of a more natural quantity, quality, routing, and timing than the proposed TSP for CEPP. This alternative will also reduce the reversible and irreversible damages being done to the estuaries from the emergency releases of excess water from Lake Okeechobee, as well as the risk of the loss of life, limb, and property from the catastrophic failure HHD during a 100-year storm when Lake Okeechobee is at the 100-year stage. The PIR/EIS for the CEPP TSP need to be revised to reflect these considerations, ramifications, and implications.

In support of the preceding, please also incorporate by reference the relevant and applicable hardcopy and softcopy records in the files and databases under the immediate control of, centralized files and databases accessible to, and archived files and databases that have been archived and that can be recalled by Ashie Akpoji, Larry Fink, Guy Germain, Boyd Gunsalus, Nirmala Jeyakumar, Beth Kackvinsky, Melissa Meeker, Matthew Morrison, Davies Mtundu, Laura Reilly, David Swift, Robert Verrastro, Michael Voich, and John Zahina and any private contractors for which any of these individuals was the project manager.

Water Quality Modeling

CEPP planners claim that they did evaluate the downstream water quality impacts of the various CEPP alternatives selected for detailed analysis based on the concentration of total phosphorus (TP) in the areas to be restored. The default water quality model used for this purpose was the Dynamic Model for STAs (DMSTA) or some modification(s) thereof. Unfortunately, DMSTA is incapable of modeling any pollutant other than total phosphorus (TP) and has not been peer-reviewed and validated even for that limited purpose. A more detailed list of the capabilities and limitations of DMSTA are summarized in a report from an independent contractor to SFWMD in Attachment IV.

Prior to approval of the EAA Reservoir Project construction and operation permits, the USACE-Jacksonville conducted an extremely limited assessment of the water quality impacts of the alternatives plan formulations and evaluation for the then proposed EAA Reservoir Project, including a side-by-side comparison of the results of the Eutromod and Vollendweider nutrient water quality models with the COE Walker reservoir model, none of which could model dissolved oxygen, sulfate, or mercury, despite these parameters having been identified as of concern for the design and operation of the EAA Reservoir Project, and despite the fact that there were a number of off-the-shelf water quality models, including USEPA's WASP 6, that could simultaneously model TP, TN, chlorophyll-a, DO, and methymercury production and bioaccumulation for input into human health and wildlife risk assessment modules. The link to that report is:
http://wetlandsolutionsinc.com/files/paper_reports/EAA_Water_Quality_Assessment_Report_Prelim_Draft.pdf

A 11/14/04 presentation by Robert L. Knight, Ph.D., to SFWMD evaluated the process of plan development and evaluation as regards water quality for the EAA Reservoir Project in general and the performance of DMSTA in particular. Among his recommendations was the need for a dynamic water quality modeling capability for all water quality constituents of concern beyond the capability of DMSTA, then and now.

DMSTA has severe limitations that preclude its use for application to downstream CERP and CEPP water quality impacts. DMSTA cannot distinguish between soluble, particulate, and colloidal P, omits critical processes for P cycling, including the effect of turbidity and color on the transmission of photosynthetically active radiation (PAR) in sunlight as a function of water depth governed by the Beer-Lambert Law, which is critical when evaluating the effect on water quality of storing and treating highly colored EAA runoff at various depths, and the recycling of P from sediments back to the water column by various physical, chemical, and biologuical processes, including particle resuspension, redox-sensitive desorption, and the release of P mined from the root zone from senescing leaves. Instead, these processes are lumped together in a net, long-term average TP setting rate. This long-term average TP settling rate obtained via calibration are then used to calculate dynamic aquatic ecosystem responses on a daily basis. This is both physically unrealistic and contrary to sound modeling practices. This is especially problematic when one is concerned about accurately representing the physics, chemistry, and biology of extreme events far from long-term average conditions that occur only infrequently but can have a cumulative adverse impact on downstream water quality that persists long after the pulse has passed. None of these limitations would have gone unnoticed in a rigorous peer review of the model structure and performance, including the results of a model validation.

As to the importance of using peer-reviewed models in evaluating the water quality impacts of CERP and CEPP, I quote from Page 160 of 267 of the NAS CROGEE Biennial Report on Everglades Restoration
(http://www.nap.edu/openbook.php?record_id=13422&page=9):

"ELM appears to be the only water quality model that has been approved for use by the USACE and that is actually used in CERP project planning (although not widely so). However, it is not listed among the modeling tools for use in the Central Everglades Planning Project

(USACE and SFWMD, 2012). Other water quality models that seem essential to an ongoing Central Everglades Planning Project, such as the Dynamic Model for Stormwater Treatment areas (DMSTA), have not undergone a formal, external peer review. External peer review is important, particularly for models that are used extensively in the planning process, and peer review of the DMSTA is a high priority."

This did not occur prior to, during, or following the use of various versions of DMSTA as the default water quality model for evaluating the water quality impacts of the various CEPP alternatives. Nor was DMSTA demonstrated to be valid for this application by comparing the post-calibration predictions to actual TP data collected along various flow paths in the Remnant Impounded Everglades for a sufficient period of time to encompass a typical range of normal and extreme conditions. That being the case, DMSTA cannot be used to discriminate between alternatives regarding the likelihood of exceeding the magnitude, duration, and frequency of exceedance of the TP WQS in the downstream Everglades, let alone the WQS of other non-conservative water quality constituents of concern, including and especially the production, bioaccumulation and risks from methylmercury. This is especially disconcerting because FDEP and SFWMD partnered to develop a wetlands version of the Dynamic Mercury Cycling Model (DMCM) that had been developed by TetraTech under contract to the Electric Power Research Institute for application to lakes. The Everglades Mercury Cycling Model version I was applied to the well-studied Water Conservation Area -2A (WCA-3A) in the impounded Everglades (http://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/consolidated_01/chapter%2007/chapter%207%20appendices/a07-03.pdf) and version II, which added bottom-up bioenergetics,, cells-in-series, and probabilistic analysis capabilities, was applied to the ENR Project, STA-2 Cell 1, and the flow path along the nutrient gradient in WCA-2A.

Therefore, no weight can be placed on the results of the evaluation of water quality impacts associated with each alternative using DMSTA even just for TP, so the draft PIR/EIS must be considered fatally flawed in this regard. These fatal flaws must be corrected by redoing the water quality modeling for evaluating CEPP alternatives using a general water quality model developed by of for USACE, USGS, or USEPA, augmented by a mercury cycling module. The most recent version of USEPA's WASP model includes a mercury module. In the alternative, the Version II of the Everglades Mercury Cycling Model (EMCM-II) can be run with the general water quality model as input. EMCM-II was developed by TetraTech, Inc., under contract to FDEP, co-managed by Don Axelrad of FDEP and Larry Fink of SFWMD. So SFWMD is well-aware both of its existence and its capabilities.

Findings, Conclusions, and Recommendations

- The CEPP process used to develop, evaluate and select the TSP/PA is administratively, legally, and technically fatally flawed.
- The water quantity and quality modeling tools used to implement the CEPP process cannot be demonstrated to be accurate and precise with levels of confidence sufficient to discriminate reliably between alternatives in a quantitatively rigorous way. The qualitative and semi-quantitative assertions that the CEPP can reliably discriminate between alternatives despite the propagated uncertainties in the assumptions, approximations, interpolations, and extrapolations are unconvincing in this regard.

- The water quality modeling tool used is only applicable to non-nutriuents, so the decision-making process was oblivious to adverse environmental impacts from toxic substances in toxic amounts, including but not limited the extremely toxic and bioaccumulative methylmercury (MeHg).
- As a consequence, the work products that were produced by that fatally flawed process, using these deficient modeling tools, including the TSP/PA, are also fatally flawed.
- A revised Programmatic Environmental Impact Statement (PEIS) is required for this precedent-setting administrative action, because the previous applicable PEISs incorrectly assume that the water supply for rehydrating the Everglades, Biscayne Bay, and Florida Bay will comply with all applicable nutrient and non-nutrient WQS, which is not now the case, but the project-specific PIR does not meet the requirements of a revised PEIS.
- The revised PEIS would have evaluated the legal and policy implications and ramifications of the precedent-setting environmental restoration programmatic approach that involves improving the quantity, timing, and routing of flow of an outstanding water resource at the expense of degrading water quality by using a contaminated water supply.
- The legal ramifications include causing or contributing to the violation of the National Environmental Policy Act, the Clean Water Act, the Federal Endangered Species Act, and the Marine Mammals Protection Act and to the violation of the Environmental Justice Executive Order by placing minorities and tribal members at disproportionate risks.
- An evaluation of the policy implications of this precedent-setting approach would have found that the process results in a systematic violation of Water Quality Standards, Total Maximum Daily Loads based on attaining and maintaining WQS at appropriate compliance points in the receiving waters, and the creation of implicit variance zones for nutrient pollutants, including but not limited to phosphorus, and non-nutrient pollutants, including but not limited to methylmercury (MeHg) and hydrogen sulfide.
- By ignoring these water quality constraints, projects that facilitated the continued use of the EAA for growing crops under drained conditions cause or contribute to the irretrievable commitment of resources in the form of irreplaceable peat soil that will be unavailable for future generations of farmers to use.
- Farming practices that result in peat oxidation and the release of non-nutrient toxic substances or their precursors that cannot be treated to safe levels by the STAs are incompatible with South Florida ecosystem restoration.
- Viable alternatives missed as a result of releasing CEPP from its water quality constraints include buying up the remaining privately owned lands in the EAA under eminent domain for emergency flood water storage with a lease agreement that requires farming practices that are compatible with flooded conditions, e.g., rice and aquaculture, and whose discharges are compatible with Everglades restoration, because the contaminants can be treated to safe levels by the existing STAs without superior technology augmentation.
- A spillway/flow-way emergency and routine Lake Okeechobee releases with spreader canals is compatible with Everglades restoration, and because Lake Okeechobee water is less polluted than EAA runoff, it is less water quality-constrained for the pollutants that the STAs cannot treat than is the TSP/PA.

Decades of overfilling of Lake Okeechobee and under-maintaining of the Herbert Hoover Dike (HHD) surrounding it have combined to undermine the HHD to the point that it is now an imminent threat to human life, limb, and property for those living in the flood zones from an uncontrolled catastrophic failure under the combined influence of a high stage and a major storm. This is a plea for the immediate reallocation of U.S. Army Corps of Engineers staff, physical, and fiscal resources from the routine and emergency maintenance, repair, and reinforcement of Lake Okeechobee's HHD to the construction of an emergency release outlet/relief valve to provide a controlled alternative to uncontrolled catastrophic failure of the HHD and the required downstream infrastructure to manage those emergency releases. This new infrastructure includes a spillway/flow-way, levees, diversion canals, and dikes to impound the emergency releases of flood water to be able to prevent a catastrophic uncontrolled failure of the HHD absent that capability. When the spillway is not being operated for the flood water management of Lake Okeechobee emergency releases, it can be operated to convey routine releases from Lake Okeechobee down the spillway/flow-way into the upper portion of the Remnant Impounded Everglades, also known as the Everglades Protection Area. This is a minor modification of the Plan 6 alternative to the TSP.

The modified Plan 6 alternative to the TSP creates a flow-way to carry water directly from Lake Okeechobee to the upper portion of the Remnant Impounded Everglades. Plan 6 also substantially increases the flow into the Remnant Impounded Everglades, but only via bypassing the R-STA system. However, some or all of the nutrient removal provided by the R-STA system could be achieved by spreading the flow over a wider area and allowing it to sheet-flow more slowly through appropriate types and densities of wetlands vegetation before reaching the upper portion of the Remnant Impounded Everglades. Unfortunately, the higher the rate of release, the shorter the contact time, and the higher the concentrations and loads of nutrients that will reach the Everglades, potentially violating the 10 ppb TP WQS promulgated by the State of Florida under the Clean Water Act. In contrast, the wastewater discharge permits already issued for the reservoir-assisted STAs by USEPA Region 4 allow a systematic violation of the TP WQS, effectively creating an implicit variance from the TP WQS at least for the five years the permits are in effect, while the Clean Water Act (CWA) only allows an explicit variance that must expire in three years. For non-nutrient contaminants, e.g., sulfate, arsenic, mercury, and various pesticides, dilution is the solution to pollution, CWA, WRDA 1996 and 2000 prescription and proscriptions to the contrary notwithstanding.

The modified Plan 6 emergency relief valve/outlet and spillway/flow-way alternative to the CEPP TSP is not perfect, but it will prevent the unnecessary loss of life, limb, and property of people living in the shadow of the rapidly failing HHD, which is one major storm away from catastrophic failure. It will also reduce the magnitudes, durations, and frequencies of emergency releases of Lake Okeechobee flood waters to both estuaries, diminishing the danger to threatened and endangered species, marine mammals, and their habitats, as well as decreasing the damage to the recreational, commercial, and aesthetic uses of and services provided by the estuaries and the economic values assigned to both. Waterwise Consulting, LLC, commends the modified Plan 6 alternative (Attachment V) to the attention of USACE-Jacksonville and its local sponsor, SFWMD.

Attachment I: (A) Letter of Larry E. Fink, M.S., Waterwise Consulting to Shannon Estenoz and (B) Her Reply and (C) Larry E. Fink's Response regarding the water quality constraints imposed on the selection of the TSP/PA as a result of the deterministic influence of excess sulfate in EAA runoff on the Everglades sulfur and mercury cycles.
Attachment II: E-Mails to and From Walter Wilcox identifying deficiencies in the water quality models in general and mercury modeling in particular.
Attachment III: Formal Public Comments Submitted to FDEP on the Draft Statewide Mercury TMDL Report, including but not limited to the need for waterbody-specific mercury TMDL for the Everglades and Florida Bay that take into account the influence of the sulfur cycle on the mercury cycle.
Attachment IV: Evaluation of Water Quality Model and Modeling for Plan Development and Alternatives Evaluation
Attachment V: Modified Alternative 6

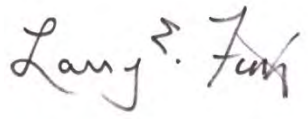
To support these written public comments, please also incorporate by reference the following into these written public comments:

- All of the meteorological, hydrological, and water quality data in the DBHYDRO.
- All interim and final water quantity and quality model runs to support the design and evaluation of CEPP alternatives and the preparation of the draft project-specific PIR/EIS for the TSP.
- Every reference in the main report and appendices of the draft project-specific PIR/EIS for the TSP/PA.
- The Everglades Interim Report 1999 and all subsequent South Florida Environmental Reports published through 2013.
- All formal peer review comments on any aspect the CEPP process and interim and final work products, including but not limited to the draft project-specific PIR/EIS for the TSP.
- All Federal, Florida, and local agency review comments, informal and formal, internal and external, unofficial and official, unpublished and published, interim and final, on any aspect the CEPP process and interim and final work products, including but not limited to the draft project-specific PIR/EIS for the TSP.
- All of the interim and final questions and comments submitted and presentations made by Larry E. Fink, M.S., Owner and Principal, Waterwise Consulting, LLC, on any aspect of the CEPP process or its interim or final work products.
- All formal responses prepared by or for SFWMD staff to any of the questions or comments submitted by Larry E. Fink, M.S., Owner and Principal, Waterwise Consulting, LLC, on any aspect of the CEPP process or its interim or final work products (a) published on the South Florida Ecosystem Task Force (SFERTF) website; and (b) prepared but never published on the SFERTF website.
- All internal public records created by or for SFWMD staff discussing or commenting on any of the questions or comments submitted by Larry E. Fink, M.S., Owner and Principal, Waterwise Consulting, LLC, on any aspect of the CEPP process or its interim or final work products.
- All public records produced by SFWMD in response to a public records request regarding the selection of DMSTA as the default water quality model for

evaluating the downstream water quality impacts of the various combinations of infrastructure design and operating alternatives for CEPP.

Thank you for this opportunity to comment on the Draft PIR/EIS for the TSP/PA for CEPP.

Sincerely,



Larry E. Fink, M.S.
Owner and Principal
Waterwise Consulting, LLC
1601 S. Ocean Drive
Suite 406
Hollywood, FL
33019-2405

Attachment I: (A) Letter of Larry E. Fink, M.S., Waterwise Consulting to Shannon Estenoz and (B) Her Reply
Attachment II: E-Mails to and From Walter Wilcox
Attachment III: Formal Public Comments Submitted to FDEP on the Draft Statewide Mercury TMDL Report
Attachment IV: Evaluation of Water Quality Model and Modeling for Plan Development and Alternatives Evaluation
Attachment V: Modified Alternative 6

Attachment I

Subject: Re: Increasing Vulnerability of CEPP to Third-Party Challenges on the Mercury Issue
From: Larry E. Fink (larryfink@waterwiseconsulting.com)
To: Shannon_Estenoz@ios.doi.gov; evergladesrestoration@yahoo.com; mjmorris@sfwmd.gov; Robert_Johnson@nps.gov; dduke@sfrestore.org;
Cc: achildress@sfrestore.org; barry_rosen@usgs.gov; greg.knecht@dep.state.fl.us; Nick_Aumen@nps.gov;
Date: Monday, March 26, 2012 1:33 PM

March 26. 2012

Shannon Estenoz, Director
Office of Everglades Restoration Initiatives
United States Department of the Interior
Florida International University
11200 SW 8th Street, OE 165
Miami, FL 33199

Phone: (305) 348-1665
Direct Line: (305) 348-1660
Cell Phone: (786) 350-9401
Fax: (305) 348-1667

Dear Ms. Estenoz:

The set of questions I posed to SFWMD and USACE-Jacksonville staffs at the January 25, 2012, public workshop on the PIR/EIS went to the heart of the matter of how sound science guides sound restoration decision-making in the accelerated CEPP process. The absence of a timely and substantive response from SFWMD and USACE staffs is problematic. I will continue to escalate the issue until a substantive response from support staffs is forthcoming, even if it is no longer timely.

The exception to the unresponsiveness of USACE and SFWMD staffs is SFWMD's Walter Wilcox, who replied at the January 25, 2012, meeting that a rigorous probabilistic uncertainty analysis had not been and could not be performed on the hydrology models used in planning Everglades and Florida Bay restoration infrastructure design, operation, maintenance, and repair. Follow-up questioning at and between subsequent meetings revealed this was also true of the water quality models.

Thus, decision-makers were, are, and will be uninformed as to the quantitative probabilities of incorrectly concluding that Everglades will meet its water quantity and quality performance objectives when it will not. Instead, restoration decision-makers will have to rely on qualitative representations of the confidence the modelers have in their own work. Not surprisingly, the modelers are comfortable with their results, even after USGS staff brought to their attention the uncertainties introduced by their mathematical

representations of such fundamental properties as evapotranspiration and resistance to flow. The former significantly impacts the Everglades water budget and the latter the flow-stage relationship.

Therefore, your reliance on SFWMD and USACE staffs for CEPP technical support is also problematic. Nevertheless, if you are relying on the experts in other Federal agencies for oversight and peer review on issues such as mercury and sulfate, I recommend that SFERTF hold a public workshop on the issue with presentations and Q&A session with recognized experts on the Everglades mercury and sulfate problem, including USGS's David Krabbenhoft, Ph.D. and William Orem, Ph.D.

Thank you for your attention to these concerns and recommendation for a public workshop on the mercury and sulfate issue.

Sincerely,

Larry E. Fink, M.S.
Waterwise Consulting, LLC

From: "Estenoz, Shannon A" <Shannon_Estenoz@ios.doi.gov>
To: Larry E. Fink <larryfink@waterwiseconsulting.com>
Cc: "mjmorris@sfwmd.gov" <mjmorris@sfwmd.gov>; "Johnson, Robert" <Robert_Johnson@nps.gov>; "dduke@sfrestore.org" <dduke@sfrestore.org>; "achildress@sfrestore.org" <achildress@sfrestore.org>; "barry_rosen@usgs.gov" <barry_rosen@usgs.gov>; "greg.knecht@dep.state.fl.us" <greg.knecht@dep.state.fl.us>; "Aumen, Nick" <Nick_Aumen@nps.gov>
Sent: Monday, March 26, 2012 11:58 AM
Subject: RE: Increasing Vulnerability of CEPP to Third-Party Challenges on the Mercury Issue

Dear Mr. Fink,

Thank you for your e-mail dated March 15, 2012 regarding the US Army Corps of Engineers Central Everglades Planning Project. You indicate in this e-mail that the SFWMD has not yet answered technical questions that you posed through the SCG sponsored public workshop on February 13-14, 2012. At this time I do not know the status of the SFWMD staff's responses to your questions, however I am copying Matt Morrison at the SFWMD so that he knows you have communicated with me on the subject. I do know that the CEPP staff is extremely busy and that they are working very hard to be responsive to the public while managing the considerable workload and schedules imposed by CEPP.

You also asked how I intend to ensure that mercury and sulfate are given due consideration by scientists and technical staff employed by or under contract to the federal and state government who are working on CEPP. Of course, I represent the Department of the Interior and therefore am better acquainted with DOI's CEPP efforts than I am with those of other state or federal agencies. I rely entirely on the expertise and counsel of the
Department of the Interior's technical staff on scientific and technical matters and try hard not to interfere with the concerns they choose to raise or not to raise while discharging their duties at PDT meetings, public workshops, Task Force sponsored meetings or in the preparation of formal or informal comment letters or documents. This is particularly true on issues about which I personally have little or no expertise, like mercury and sulfate. In keeping with this general approach, I have copied Bob Johnson, DOI's CEPP lead so that he is aware that you have raised this specific issue and so that he can share it with the DOI CEPP team.

Thank you again for contacting me.

Sincerely,

Shannon Estenoz

Shannon Estenoz, Director

Office of Everglades Restoration Initiatives
United States Department of the Interior
Florida International University
11200 SW 8th Street, OE 165
Miami, FL 33199

Phone: (305) 348-1665
Direct Line: (305) 348-1660
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Fax: (305) 348-1667
shannon_estenoz@ios.doi.gov

From: Larry E. Fink [larryfink@waterwiseconsulting.com]
Sent: Thursday, March 15, 2012 3:14 PM
To: Estenoz, Shannon A
Cc: evergladesrestoration@yahoo.com
Subject: Increasing Vulnerability of CEPP to Third-Party Challenges on the Mercury Issue

March 15, 2012

Shannon Estenoz, Director
Office of Everglades Restoration Initiatives
South Florida Ecosystem Restoration Task Force
c/o Florida International University
11200 SW 8th Street, OE 165
Miami, FL 33199

RE: Increasing Vulnerability of CEPP to Third-Party Challenges on the Mercury Issue

Dear Ms. Estenoz:

The U.S. Environmental Protection Area (USEPA) has identified various South Florida water bodies as mercury-impaired, including the Everglades, Biscayne Bay, and Florida Bay: http://iaspub.epa.gov/tmdl_waters10/attains_watershed.waterslist_by_causes?p_state=FL&p_huc=03090202&p_cause_name=MERCURY%20IN%20FISH%20TISSUE&p_cycle=2010 Mercury-impaired portions of the Everglades watershed include an L-67 Canal http://iaspub.epa.gov/tmdl_waters10/attains_waterbody.control?p_list_id=FL3289J&p_cycle=2010&p_state=FL&p_report_type=T. segment in Everglades National Park. The rerouting of EAA stormwater runoff and Lake Okeechobee releases containing sulfate concentrations in excess of the CERP performance objective of 1 mg/L http://www.evergladesplan.org/pm/recover/recover_docs/et/ge-10.pdf out of WCA-3A and into ENP via the L-67 Canal is or may be causing or contributing to that mercury impairment. Conversely, the rainfall-influenced water chemistry of WCA-3A no longer manifests excess methylmercury production and bioaccumulation in the aquatic food chain, so atmospheric deposition alone is not the cause of the Everglades mercury problem. The State of Florida has listed the Everglades as a mercury-impaired water body pursuant to Section 303(d) of the Federal Clean Water Act that (CWA) requires a mercury Total Maximum daily Load (TMDL) pursuant to CWA Section 303(d)(1)C). The Florida Department of Environmental Protection (FDEP) intends to develop and implement the mercury TMDL with a statewide plan by the court-ordered deadline of August, 2012 http://www.dep.state.fl.us/water/tmdl/merctmdl.htm under a 1999

Consent Decree in the matter of Florida Wildlife Federation, et al. v. Carol Browner, et al. (Case. No. 98-356-CIV-Stafford).

In the context of the preceding, at the January 25, 2012, session of the SFERTF-sponsored public workshop on the development of the PIR/EIS for the Central Everglades Planning Project (CEPP), I asked the following set of questions regarding mercury:

" How will the effects of changes in the timing, distribution, quantity, and quality of water on methylmercury production, bioaccumulation, exposure and toxic effects be taken into account explicitly in the PIR/EIS for the preferred option and the various viable alternatives? ... as constraints for project design, operation, maintenance, and repair, especially that which causes or contributes to a drying and rewetting cycle and/or the use of high-sulfate water? ... in the Federal, Florida, and county permitting process for the required reasonable assurances?

Thanks.

Larry E. Fink, M.S.
Waterwise Consulting, LLC"

Due to their complexity, with the concurrence of his U.S. Army Corps of Engineers-Jacksonville counterpart, the South Florida Water Management District's Matt Morrison indicated that SFWMD staff would post their responses to this and the other sets of questions I posed after the workshop. It is now approaching 60 days since those questions were posed and answers were promised with no indication of whether or when those answers will be forthcoming. That is unacceptable, especially in light of the responses of scientist, modelers, and resource, program, and project manager to mercury-related questions I posed since then at public workshops held on February 13-14, 2012, and March 9, 2012.

More disconcerting is your failure to disabuse the agencies and entities of the presumption that CEPP is going to get a pass on mercury as a constraint on the design, operation, or maintenance of Everglades and Florida Bay restoration infrastructure, because the source of the problem is atmospheric deposition originating with global sources uncontrollable under Federal or Florida water pollution control law. This ignores the ability of sulfate to stimulate excess methylmercury production up to a point when present in excess of the CERP/RECOVER sulfate restoration objective of 1 mg/L http://www.evergladesplan.org/pm/recover/recover_docs/et/ge-10.pdf . The excess sulfate derives from Lake Okeechobee releases and EAA stormwater runoff. The excess sulfate in Lake Okeechobee originates with stormwater runoff from farms and ranches in the Kissimmmee River watershed. The sulfate in EAA stormwaster runoff originates primarily from ongoing uses of sulfate cation soil amendments and oxidation of peat soil contaminated with legacy sulfur from its use as a soil amendment, and not seepage of high-sulfate connate water. http://www.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/2011_sfer/v1/chapters/v1_ch3b.pdf

The applicable portions of the Water Resources development Act of 1996 (PL 104-303; 110 STAT. 3770): http://www.fws.gov/habitatconservation/Omnibus/WRDA1996.pdf include the following

Section 528: Everglades and South Florida Ecosystem Restoration
(b) Restoration Activities
(4) General Provisions
(A)Water Quality – In carrying out the provisions of this section and sections 315 and 316, the Secretary--
(i) shall take into account the protection of water quality by considering applicable State water quality standards; and
(ii) may include in projects such features as are necessary to provide water to restore, preserve, and protect the South Florida ecosystem.
(B) Compliance With Applicable Law
In carrying out the activities of this subsection and subsection (c), the Secretary shall comply with any applicable federal law, …
(c) Integration of Other Activities
(1) In General—In carrying out the activities described in subsection (b), the Secretary shall integrate such activities with ongoing Federal and State projects and activities, including--
(D) The Everglades Construction Project of the State of Florida
…

So the design, operation, and maintenance of Everglades restoration infrastructure cannot cause or contribute to a violation of any applicable narrative or numerical water quality standard, including those for mercury, and CEPP planning process is constrained by those requirements. Neither the Dynamic Model for Stormwater Treatment Areas Version 2 (DMSTA2) http://wwwalker.net/dmsta/ or its reservoir counterpart nor the Everglades Landscape Model (ELM) include modules to simulate the production and bioaccumulation of methylmercury in response to the excess sulfate present in EAA stormwater runoff and Lake Okeechobee releases. Therefore, any CEPP-related plan, impact statement, engineering design, operation plan, maintenance plan, permit application, water quality-based effluent limit, or compliance monitoring program based on either is inherently deficient as regards water quality constraints. If USEPA Region 4's used DMSTA to develop plans and schedules for attainment of total phosphorus water quality-based effluent limits its Amended Determination, one can infer nothing about the appropriateness of using DMSTA or ELM to address other water quality impacts within or downstream of the reservoirs, including excessive turbidity, dissolved oxygen sags, and methylmercury production and bioaccumulation.

Please advise how you intend to ensure that water quality constraints in general and mercury and sulfate in particular are given due consideration in the CEPP planning process and the technical support being provided by scientists, engineers, and modelers employed by or under contract to the various Federal and State of Florida agencies involved in CEPP. Otherwise, CEPP is increasingly vulnerable to third-party mercury-related challenges at various points of entry into the regulatory process, including the publication of the PIR/EIS and restoration infrastructure permitting.

Thank you for your immediate attention to this concern.

Sincerely,

Larry E. Fink, M.S.
Owner and Principal
Waterwise Consulting, LLC

Attachment II

March 15, 2012

Walter:

Would that it were true.

DMSTA cannot model any pollutant other than phosphorus, but, as noted by John Arthur Marshall, reservoirs have water quality problems other than nutrients, including those associated with turbidity, dissolved oxygen, and mercury. The P and N cycles influence the manifestations of these other water quality problems and vice versa. Hence the need to use an agency-approved model of the appropriate complexity to accurately simulate these influences and effects, both within the reservoirs and downstream in the STAs and the Everglades flow-way.

The mercury problem in reservoirs is so widespread that is often referred to as the reservoir effect. http://www.deq.state.va.us/air/vamercury/gen_rpt_and_state/Fink_Florida_Everglades_Hg.pdf The effect appears to be exacerbated when wetlands are inundated to create the reservoir. http://ecologia.icb.ufmg.br/~rpcoelho/Congressos/DGL2008/Reservoirs%20GHG%20emiissions/Environm%20Sci%20Technol_1997.pdf

Unfortunately, neither WRDA 1996 nor EFA 1994 relieves the South Florida Water Management District of water quality constraints other than nutrients. Nor is mercury an exception to the rule because the problem is caused by atmospheric deposition. To the contrary, where sulfate is below the CERP RECOVER performance objective of 1 mg/L because the water body water chemistry is solely under the influence of rainfall, there is no mercury impairment. Conversely, where high-sulfate waters originating with EAA runoff and Lake Okeechobee releases were rerouted from WCA-3A to ENP via the L-67 Canal, the methylmercry bioaccumulation hot spot in largemouth bass moved in tandem, impairing the ENP waters in the vicinity of the US 41 Culvert. http://iaspub.epa.gov/tmdl_waters10/attains_waterbody.control?p_list_id=FL3289J&p_cycle=2010&p_state=FL&p_report_type=T

DMSTA was used by William W, Walker, Jr., Ph.D., under contract to USEPA Region 4 to develop and evaluate compliance with total phosphorus water quality-based effluent limits for the STAs per Appendix H of the Amended Determination (attached). DMSTA cannot model any of the other water quality standards as constraints on CEPP infrastructure design, operation, maintenance, impact assessment, permit application, or compliance monitoring, including

turbidity, dissolved oxygen, and mercury. This is also true of ELM as regards mercury.

As an expedient to keep the CEPP planning process moving briskly, it should be possible to adapt the Lake Okeechobee water quality model from the USEPA WASP modeling series for use in a shallow reservoir that will be filled not infrequently with Lake Okeechobee releases. SFWMD's Tom James should be consulted in that regard. WASP now also includes a mercury module. The most recent version of TetraTech's Dynamic Mercury Cycling Model can also be used for mercury modeling in subtropical lakes and reservoirs. SFWMD's Mercury Program Manager, Ben Gu should be consulted in that regard.

I will address the deficiencies of DMSTA with respect to P modeling in a separate communication.

Thanks.

Larry E. Fink, M.S.
Waterwise Consulting, LLC

From: "Wilcox, Walter" <wwilcox@sfwmd.gov>
To: 'Larry E. Fink' <larryfink@waterwiseconsulting.com>
Cc: "Estenoz, Shannon" <shannon_estenoz@ios.doi.gov>; "'Murika.Davis@usace.army.mil'" <Murika.Davis@usace.army.mil>; "'Daniel.E.Crawford@saj02.usace.army.mil'" <Daniel.E.Crawford@saj02.usace.army.mil>
Sent: Monday, March 12, 2012 6:01 PM
Subject: RE: Modeling Water Quality Impacts

To the contrary – DMSTA has been specifically developed and applied to deal with some of the unique challenges of south Florida hydrology / water quality and due to its ability to handle the subtleties of the most critical element of STA design in the EAA (Phosphorus) is ideally suited to answer the questions of CEPP in an expedited schedule. We have frequently found that so called "off the shelf" models, while nationally approved (and very good at what they do), have some limitations when applied to the extremely flat topography and low nutrient south Florida system and frequently require significant effort to create reasonable outputs. A similar line of thinking is evident in the recent application of DMSTA by USEPA in developing the Amended Determination rather than using one of their "approved" tools.

Walter M. Wilcox

Hydrologic and Environmental Systems Modeling
South Florida Water Management District
Work: (561) 682-2527
Cell: (561) 718-4039

From: Larry E. Fink [mailto:larryfink@waterwiseconsulting.com]
Sent: Monday, March 12, 2012 5:41 PM
To: Wilcox, Walter
Cc: Estenoz, Shannon; 'Murika.Davis@usace.army.mil'; 'Daniel.E.Crawford@saj02.usace.army.mil'
Subject: Modeling Water Quality Impacts

March 12, 2012

Walter:

This is a follow up question to one posed by John Arthur Marshall of the Arthur R. Marshall Foundation at the SFERTF-sponsored public workshop on restoration alternatives. His question regarded the impact of deep reservoirs on downstream water quality. In response you noted that DMSTA had been applied to STA design and was being applied by CEPP for the assessment of combined reservoir-STA water quality impacts. This prompts the question: How does the District decide whether to make or buy a water quantity or quality model? When the District makes a new model, is it's substantial equivalence demonstrated to an agency-approved model with recognized scientific, regulatory, and judicial pedigree?

So, for example, there are many USEPA-, USGS-, and USACE-approved water quantity and quality models available in the public domain that model reservoir hydrodynamics and water quality, including phosphorus (P), dissolved oxygen, mercury, and sedimentation, but the District decided instead to pay a contractor to adapt the DMSTA model to reservoirs, despite DMSTA being limited to the modeling of P removal by abiotic and biotic particle sedimentation and dissolved P sediment sequestration. http://www.docstoc.com/docs/81113869/Design-Models-for-Treatment-Wetland-Systems-at-Low-Phosphorus-

One might naively conclude that an inferior version of the wheel was being reinvented in this example, with unnecessary delay and expense, neither of which CEPP cannot afford.

Thanks.

Larry E. Fink, M.S.
Waterwise Consulting, LLC

From: "Wilcox, Walter" <wwilcox@sfwmd.gov>
To: 'Larry E. Fink' <larryfink@waterwiseconsulting.com>
Cc: "Estenoz, Shannon" <shannon_estenoz@ios.doi.gov>; "'Murika.Davis@usace.army.mil'" <Murika.Davis@usace.army.mil>; "'Daniel.E.Crawford@saj02.usace.army.mil'" <Daniel.E.Crawford@saj02.usace.army.mil>
Sent: Monday, March 12, 2012 1:37 PM

Subject: RE: Implications of the Sensitivity of Restoration Decision-Making to Canal Groundwater Capture Efficiency Assumptions

Larry,

Thanks for the feedback. At this time for CEPP, we are not envisioning any further model refinements due to the pace of the effort. We have done a comprehensive review of the project intent and associated model capabilities (this is what led to the L31N update that I presented at the 3/9 PDT) and at least I personally feel that we are in good shape. As I have previously mentioned, robust quantifications of model uncertainty are not yet readily available, although efforts on development of this set of tools continue within HESM as resources are available.

Related to the idea to utilize ionic strength as a means of determining groundwater/surface water interaction, I think that has some merit and you are hitting close to my personal areas of interest. I actually performed a stable isotope study in the vicinity of L31N as part of my Master's work at University of Miami. Since standing water is more subject to evaporative processes which tend to enrich water with higher ratios of deuterium, tritium and oxygen-18, Everglades water that has been subject to these processes is readily distinguishable from the local rapid infiltration water observed in the eastern developed areas. As such, it is possible to trace the flow of water and relative contributions of various sources to canal flow, wellfield intakes, etc…

This type of validation with field experimentation is known in my field as "model benchmarking". While we always strive to get data from all available sources, in some cases controlled experimentation is needed to truly understand the physics of the processes that we are trying to model. To that end, we have actually be able to acquire some monitoring equipment this fiscal year specifically for this purpose. They are portable water level data loggers that we can take around the south Florida system and coordinate with operations to create specific hydraulic conditions that tell us extensive information about the physical parameters of the surrounding area. The great thing is that since these loggers are portable and do not require remote telemetry, we can perform this work at minimal cost to the taxpayers and simultaneously target specific areas to help increase the certainty of our predictions. Lots of thing to keep on the radar, but we keep making forward progress…

I will forward your e-mail to some of the hydraulic experts on my team so that they can begin to ponder how this idea may fit into future model refinement beyond CEPP. Thanks again for your continued engagement.

Walter M. Wilcox
Hydrologic and Environmental Systems Modeling
South Florida Water Management District
Work: (561) 682-2527
Cell: (561) 718-4039

From: Larry E. Fink [mailto:larryfink@waterwiseconsulting.com]
Sent: Monday, March 12, 2012 1:01 PM
To: Wilcox, Walter
Cc: Estenoz, Shannon; 'Murika.Davis@usace.army.mil'; 'Daniel.E.Crawford@saj02.usace.army.mil'
Subject: Implications of the Sensitivity of Restoration Decision-Making to Canal Groundwater Capture Efficiency Assumptions

March 12, 2012

Walter:

I enjoyed your modeling presentations at the public meeting on design alternatives for Everglades and Florida Bay restoration sponsored by the South Florida Ecosystem Restoration Task Force on Friday, March 9, 2012. I greatly appreciate the clarity and candor with which you are able and willing to communicate what the models are designed to do, what the models assume, how the models work, what the models tell us, and where the modeling results get soft.

I was especially interested in your finding that the design and operation of Everglades and Florida Bay restoration infrastructure is sensitive to the uncertainty in the percentage of groundwater captured by the canals that interdict the surficial aquifer. Regarding the Miami Canal segment, the original assumption was that it captured 90%, but subsequent studies determined that it was closer to 70%, so there was less water gained while that segment was in operation and less water lost when it is backfilled and taken out of operation. It is also not clear whether this correction should apply to other segments of the canal system or whether it is limited only to the segment studied. Please correct any misunderstandings of your findings or their implications in this regard.

This finding underscores the importance of identifying the uncertainties in the modeling assumptions, approximations, interpolations, and extrapolations to which restoration decision-making is most sensitive and using those findings to guide adaptive monitoring, special studies, and research to reduce the compounded uncertainty to an acceptable level within the decision-making timeframe. It also underscores why we need greater margins of safety in the capacities and flexibilities of design, operation, and maintenance of restoration infrastructure when the decision-making process is accelerated and the period of adaptive feedback between modeling and measurement is greatly foreshortened.

With that in mind, it would appear necessary to measure the rate of influx of groundwater into the canal system as a function of water table depth and canal stage. It occurs to me that this could be effected most efficiently by taking advantage of the difference in the ionic strength of groundwater and surface water to infer the seepage rate by the magnetic field generated by that ionic flux. The method with which I am familiar obtained the measurements by recording the induced current in a conductive cable dragged along the lake shoreline. It also occurs to me that the cost of obtaining these data could be greatly reduced by taking advantage of automated monitoring systems based on RoboBoat, the patent for which is held by the District. The chief developer of RoboBoat, Anier Sosa, may be available to assist in its adaptation to groundwater ion flux monitoring in the District's canal system. This approach could/should be supplemented with surficial groundwater monitoring using ground-penetrating radar. To calibrate and validate these alternative methods, both would be used in representative segments in combination with more traditional methods, e.g., seepage meters, including the design innovated by the

District's Steve Krupa, all within a water budget mass balance framework.
http://www.hydrol-earth-syst-sci.net/10/873/2006/hess-10-873-2006.pdf

Good luck and keep up the great work.

Sincerely,

Larry E. Fink, M.S.
Owner and Principal
Waterwise Consulting, LLC

We value your opinion. Please take a few minutes to share your comments on the service you received from the District by clicking on this link.

We value your opinion. Please take a few minutes to share your comments on the service you received from the District by clicking on this link.

August 27, 2012

Jan Mandrup-Poulsen, Administrator
Watershed Evaluation Section
Florida Department of Environmental Protection
3900 Commonwealth Blvd., M.S. 10
Tallahassee, FL 32399

RE: Public Comment on the Revised Draft Mercury TMDL for the State of Florida Report to USEPA Region 4, published on July 6, 2012. http://www.dep.state.fl.us/water/tmdl/merctmdl.htm

Dear Mr. Mandrup-Poulsen:

This is set of formal public comments from Waterwise Consulting, LLC, on the Revised Draft Mercury Total Maximum Daily Load for the State of Florida Report to USEPA Region 4: http://www.dep.state.fl.us/water/tmdl/merctmdl.htm, which was published on July 6, 2012, and the scientific, administrative, and legal deficiencies in the statewide approach to the restoration and protection of mercury-impaired Florida waters that was adopted by the State of Florida for the purpose of developing and implementing a mercury Total Maximum Daily Load (TMDL) pursuant to Clean Water Act (CWA) Section 303(d)(1)(C) and the point source Waste Load Allocation (WLA) and Water Quality-Based Effluent Limitations (WQBELs) deriving therefrom to restore and protect mercury-impaired Florida waters. As a consequence of these serious deficiencies, the U.S. Environmental Protection Agency (USEPA) Region 4 cannot approve this statewide mercury TMDL, WLA, or WQBELs, and USEPA Region 4 as is and will have abused its discretion by doing so.

Please acknowledge the timely submittal of these formal public comment regarding the need to correct these serious deficiencies and make the required substantial revisions to this Revised Draft Report and any subsequent formal administrative actions deriving therefrom. I reserve the right to amend and extend my formal public comments on this administrative action in response to information obtained via one or more of the outstanding formal public records requests that have not yet been fulfilled in a reasonable period of time. Hereinafter the Revised Draft Mercury Total Maximum Daily Load for the State of Florida is also referred to as the Revised Draft Hg TMDL Report, the Hg TMDL Report, the Hg Report, or the Report.

Exhibit A incorporates by link the Federal Clean Water Act and contains the excerpt of its TMDL provision, Section 303(d)(1)(C). Exhibit B incorporates the internet links to the regulations and technical guidance promulgated and published to implement CWA Section 303(d)(1)(C) and the related Glossary of Terms. Exhibit C incorporates the link to the USEPA WQC Document for Methylmercury to Protect Human Health that USEPA published in January 2001. Exhibit D contains the link to guidance for implementing the revised mercury WQC for methylmercury in fish flesh. Exhibit E is the link to reference and technical guidance for the use of USEPA-approved analytical methods in general and USEPA Methods 1630 and 1631 for ultra-trace MeHg and THg analysis, respectively, in water, sediment, and fish. Exhibit F is the link to the Revised Draft Report that is the subject of this formal public comment, Exhibit G are the References contained therein, and Exhibit H is the link to Appendix H to the Revised Draft Report containing the water, sediment, and sport fish data collected by or for FDEP in the one-tine, statewide mercury monitoring campaign in the period 2008-2010. Exhibit I is the link to Florida's impaired waters statute and rules and relevant excerpts from the rule.

This is also a formal request that FDEP demonstrate that the State of Florida's statewide mercury development and implementation approach, assumptions, approximations, extrapolations, interpolations, methods, procedures, quality assurance and control criteria and failure rates, record-making, record-

keeping, auditing, peer review, and recusal comport with all applicable Federal and State statutes, regulations, rules, technical guidance, required accreditations and certifications, accepted professional standards of technical and ethical practice, and common sense regarding the development and implementation of an enforceable TMDL for an impaired waterbody in general and mercury-impaired waterbodies in particular, including but not limited to the use of USEPA-approved or recommended analytical methods in monitoring, water quality modeling, TMDL calculation, and/or the waste load allocations and water quality-based effluent limitations deriving therefrom.

Executive Summary

(1) The Contamination of the Human Food Supply with Toxic Amounts of Toxic Methylmercury Constitutes an Imminent and Growing Threat to the Public Health, Safety and Welfare and a Violation of the State of Florida's Narrative "No Toxic Substances in Toxic Amounts" Water Quality Standard for the Protection of Human Uses of Fishable and Swimmable Waters

The contamination of the human food supply with toxic amounts of toxic methylmercury constitutes an imminent and growing threat to the public health, safety and welfare and a violation of the State of Florida's Narrative "No Toxic Substances in Toxic Amounts" Water Quality Standard (WQS) for the protection of human uses of fishable and swimmable waters. There is an unacceptable risks of cognitive impairment to the developing fetus in the third trimester from the exposure of pregnant women to toxic methylmercury in toxic amounts when fish are consumed by pregnant women at Florida average rates, let alone subsistence rates, from most Florida lagoons, estuaries, and bays and many of Florida's lakes and rivers. According to FDEP's calculations, the median backrgound methylmercury dose rate from the consumption of salt water fish and shellfish species for Florida women of child-bearing age exceeds USEPA's methylmercury reference dose for the protection of the developing fetus of 0.0001 mg/Kg-day. If the Florida mercury WQS were calculated in the same way as the USEPA WQC, the allowable concentration in freshwater fish is < 0. In fact the background concentrations in salt water fish and shellfish species in Florida would have to be reduced by 24.3% just so that the median exposure to methylmercury in Florida women of childbearing age equals USEPA's reference dose. Based on the results contained in Appendix H of the Hg TMDL Report, the flesh of largemouth bass collected from 72 (29%) of the 249 of the lakes and streams sampled out of the thousands that are mercury-impaired averaged twice the water quality target of 0.3 ppm total mercury as methylmercury in fish flesh on a wet-eight basis and 26 (10%) of 249 averaged three times that target. Many coastal waters average four and five times the mercury water quality target for prized, large-bodied, long-lived, top-predator sport fish species.

(2) There Is No Margin of Safety for Florida Women of Child-Bearing Age, the Developing Fetus, or the Nursing Infant

Because the half-life of methylmercury in a woman's blood stream is about 50 days, a pregnant woman and her fetus approach steady state with the average concentration of methylmercury in her diet by the beginning of her third trimester, so consuming the flesh from a typical largemouh bass from roughly one-third of the lakes and streams during her pregnancy at the state average rate of 21 grams per day (about an ounce and a quarter) doubles the risk of impairing the brain function of her developing fetus and in 10% of the lakes and streams that risk is tripled. It then takes roughly five half-lives to clear the excessively high methylmercury levels from her system once she stops eating that fish. Sadly, the clearance rate from a woman's body is measurably faster for nursing women, because they are dumping methylmercury into their breast milk, continuing the exposure of the nursing infant to methylmercury that began in the womb. Thereafter, it doesn't matter whether this woman of child-bearing age ever consumes another fish, because the neurological damage has already been done That being the case, FDEP's conceptual model of exposure of women of child-bearing age and their fetuses to methylmercury is flawed, because it

assumes that the exposures from the consumption of fish with high and low methylmercury concentrations average out over a woman's child-bearing years, thus justifying the use of average values rather than the actual concentration probability distribution function for each salt water fish and shellfish species consumed by Florida women of childbearing age in the probabilistic analysis used to calculate the median background methylmercury dose rate and the margin of safety in the water quality target. This may be true of a hypothetical statistic, but nor for real women playing toxic roulette with their unborn child. The risks of cognitive deficit in the developing fetus are magnified for women of child-bearing age who subsist on fish from a local canal, pond, lake, stream, estuary, or bay, because they consume fish at rates typically 5 times the Florida average rate. For them, there is no margin of safety in the 0.3 ppm water quality target. Whether this inequity constitutes a form of discrimination that violates the environmental justice provisions of applicable Federal law or Presidential Executive Order will be left to the judgment of the Federal courts.

(3) Informational and Educational Efforts are Necessary But Not Sufficient to Protect the Public Health, Safety, and Welfare

Informational and educational efforts by the Florida Department of Public Health, the Florida Department of Environmental Protection, and the Florida Fish and Wildlife Conservation Commission to limit exposure to methylmercury in toxic amounts by asking the public to self-limit the consumption of excessively contaminated fresh and salt water sport and commercial fish and shellfish originating from Florida waters have been less than fully effective in preventing human methylmercury toxicosis. This is evidenced by the number of cases of physician-reported neurotoxic effects in patients observed in the period 2001-2010. This is documented in the revised draft Hg TMDL Report. The decision by the DOH Secretary, in his capacity as Florida's Chief Medical Officer, to tighten the reporting criteria will reset the reporting baseline, but the number of cases meeting those tighter criteria will continue to rise as more and more people are driven to subsist on fresh and canned sport and commercial fish from Florida's fresh and salt waters. Whether this decision was made in good faith in the best interests of the public health, safety, and welfare or to undermine the epidemiological necessity for mercury regulatory action at this time will be left to judgment of the Florida courts.

(4) Threatened and Endangered Species are Not Adequately Protected by USEPA's Water Quality Criterion to Protect Human Health

Threatened and endangered fish-eating wildlife and their predators cannot read or heed the real or virtual warnings and avoid exposure to toxic amounts of methylmercury in their contaminated forage, so there has been, is, and will be an unacceptable risk of compromised reproductive success from which threatened and endangered species are explicitly protected under the Federal Endangered Species Act and for which there are potentially serious legal consequences, even if there are none for endangering humans. Those unacceptable risks are also documented in Section 2.4 and Appendix E of Hg TMDL Report, as well as data, reports, and publications in the possession of FDEP or to which it has ready access in the scientific, regulatory, or consultant literature. However, FDEP failed to calculate wildlife protection WQC following USEPA technical guidance but using the fish data collected in the one-time, statewide mercury monitoring campaign. When that is done, the unenforceable 0.3 ppm THg as methylmercury in a representative top-predator sport fish species, the largemouth bass, cannot be demonstarted to be adequately protective of representative fish-eating mammals, such as the otter and mink, or fish-eating avians, such as the eagle and osprey.

(5) FDEP has Failed to Timely Promulgate a Revised Class III Numerical Mercury WQS Adequately Protective of Human Health and Fish and Shellfish-Eating Wildlife and Their Predators

FDEP has been on public record that the existing duly promulgated numerical Class III WQS for mercury of 12 ng/L total mercury (THg) was not adequately of protective of the public health since the agency assumed responsibility for authoring or co-authoring the mercury chapter of the annual report to the Governor, the Legislature, and the Secretary of the Department of Environmental Protection on the status and trends of Everglades restoration, recovery, and permit compliance, now known as the South Florida Environmental Report (SFER). FDEP has known that Florida's existing mercury WQS was not adequately protective of human health since January 2001, when the USEPA WQC document was published. In the last triennial review cycle, FDEP proposed a revised mercury WQS of 0.2 ppm THg as methylmercury in fish flesh on a wet-weight basis to protect human health to reflect the higher average fish consumption rate and background methylmercury dose rate than the national averages used by USEPA to derive the 0.3 ppm value. That effort was subsequently abandoned without adequate notice or justification.

(6) Florida State Agencies Were Arbitrary, Capricious, and Abused Their Discretion in Assigning a Low Priority to the Development of Enforceable TMDLs for Mercury-Impaired Fresh and Salt Waterbodies in Florida for a Toxic Substance Present in Toxic Amounts in the Human Food Supply

FDEP's only formal administrative action to date regarding mercury was for the Environmental Regulation Commission to adopt at FDEP's request a revised impaired waters rule in December 2006 to designate mercury-impaired waters as a low priority because of the current lack of understanding of the mercury cycle in the environment. The Legislature's only contribution in this regard was to exempt the listings, priorities, and schedules for TMDL development and implementation from public challenge as a matter of Florida law.

(7) FDEP Has Not Proposed to Promulgate a Revised Mercury WQS in this Triennial Review Cycle or Committed to a Plan and Schedule for Same in 2012

On April 27, 2012, Florida Department of Environmental Protection (FDEP) public noticed its intent to conduct a limited Clean Water Act-mandated triennial review of its duly promulgated Water Quality Standards to protect the various uses of its fresh and salt waters. This limited review did not include mercury. https://www.flrules.org/gateway/ruleno.asp?id=62-302.530 This occurred about the same time that FDEP was preparing to release for public comment a Draft Statewide Mercury Total Maximum Daily Load (TMDL) Report to USEPA Region 4 on the extent, significance, status and trends, and proposed mercury load reduction strategy to restore mercury-impaired state waters, which, among other things, found that fishable uses were impaired even in waters where the existing THg WQS was nowhere being violated based on the one-time statewide mercury monitoring campaign of lakes and streams but not wetlands or salt waters. This decision was made despite being under a Federal Court Consent Decree to develop and implement enforceable TMDLs for all impaired waters listed pursuant to CWA Section 303(d) by September 30, 2012, including mercury-impaired waters. Instead of revising the deficient existing Class III numerical mercury WQS, Florida is proposing to adopt general technical guidelines for the derivation of WQS for the protection of human health using the same probabilistic approach adopted http://www.dep.state.fl.us/water/wqssp/docs/tr_review/human_health_073112.pdf; http://www.dep.state.fl.us/water/wqssp/docs/tr_review/hhc_tsd_071112.pdf in the Hg TMDL Report. The failure of FDEP to petition the ERC to revise the numerical Class III mercury WQS during this triennial review cycle will be the subject of inquiry before the Federal court.

(8) FDEP's Proposed Statewide Mercury Total Maximum Daily Load (TMDL) and the Waste Load Allocations (WLAs) and Water Quality-Based Effluent Limitations Deriving Therefrom are Scientifically, Administratively, and Legally Deficient.

There are serious scientific, administrative, and legal deficiencies in the design, methods, implementation, and interpretation of the results of the one-time, statewide mercury monitoring campaign, the calculation of the water quality target, the calculation of the load allocation, the consideration of the seasonal variation and the margin of safety in the calculation of the proposed load reduction required to attain and maintain the unenforceable water quality target in the absence of a duly-promulgated, enforceable revised Class III numerical Water Quality Standard for mercury, and the fair and equitable distribution of the mercury assimilative capacities between states, fresh and salt waters, point and nonpoint sources, and amongst point sources. The statewide approach to mercury TMDL development and implementation also, in effect, adopts a policy whereby not all mercury-impaired waters need be restored to unimpaired status. CWA Section 303(d)(1)(C) requires a waterbody-specific approach to TMDL development, and it makes no allowance for a statistical approach where 1%, 5%, or 10% of the state's mercury-impaired waters can be sacrificed as an administrative expedient. I refer to this as the "No Waterbody Left Behind" letter and spirit of CWA Section 303(d)(1)(C). Nor does the statewide approach even commit to follow-up monitoring of the sacrificed waters to evaluate their responses to the mercury load reduction intended to restore most but not all of Florida's mercury-impaired waters. To the contrary, state law requires that all mercury-impaired waters be delisted as soon as the statewide mercury TMDL is published. These are fatal flaws in the development and implementation of the statewide approach to the Florida mercury TMDL that must be corrected prior to submittal of the Revised Draft Hg TMDL Report to USEPA Region 4 for review and comment. If these fatal flaws are not corrected prior to submittal, USEPA Region 4 cannot approve this statewide mercury TMDL, and USEPA Region 4 will have abused its discretion by doing so.

(9) The Implicit Combined Margin of Safety Claimed by FDEP for Its Proposed Approach to Statewide Mercury TMDL Development and Implementation is Not Adequate to Compensate for the Propagated Errors and Compounded Uncertainties in the Proposed Statewide Mercury TMDL, WLAs, and WQBELs Deriving Therefrom

FDEP has adopted an implicit margin of safety to compensate for any lack of knowledge about the relationship between the mercury loading rate and the methylmercury bioaccumulating in the reference freshwater sport fish species, the largemouth bass. However, the implicit margin of safety is in the assumptions used to derive and apply the water quality target, not the load-concentration relationship. This is the same approach recommended by Florida's Allocation Technical Advisory Committee. This approach is contrary to relevant technical guidelines for implementing Section 303(d)(1)(C). USEPA Region 4 erred in the past by approving TMDLs based on this approach to the implicit margin of safety. This fatal administrative deficiency withstanding, the implicit margin of safety in the derivation of the unenforceable water quality target and the state's approach to its implementation is not adequate to compensate for the uncertainties in the mercury load-concentration relationship to protect the average Florida consumer of sport fish, let alone a subsistence consumer protected by the Environmental Justice provisions of applicable Federal statutes, regulations, and Presidential Executive Orders. This deficiency is further magnified by the adoption of a statewide approach to mercury TMDL development and implementation because of the greater variation in the reference sport fish THg concentrations between waterbodies sampled in the same season than within the same waterbodies sampled in different seasons. As a consequence of the inadequacy of the implicit margin of safety in the statewide mercury TMDL, there is an unacceptable probability of concluding that the fishable uses of a mercury-impaired waterbody will have been restored by the proposed 90% reduction in controllable point and nonpouint sources of mercury when it has not at the 95th percentile confidence level.

(10) As a Consequence of (9), There is an Unacceptable Likelihood of FDEP Concluding that It Has Reasonable Assurance that the Mercury-Impaired Waterbodies Will Recover and Attain Mercury-Unimpaired Status when They Will Not

Due to the seasonal variation that was ignored in the design of the one-time, statewide mercury monitoring campaign and the analysis, integration, and synthesis of its results, there is a statistically significant probability that a resource manager will incorrectly conclude from the results of the study that a waterbody is not mercury-impaired when it is or that it has recovered from that mercury impairment as consequence of the proposed mercury atmospheric load reduction when it has not. The use of age, size-, or weight-standardized transformations of the fish data is unlikely to reduce the rate of committing such a critical error in judgment to acceptable levels. The unacceptable probability of committing such resource management decision-making errors is a consequence of the flawed study design that followed from the faulty assumption that seasonal variation could be ignored as an administrative expedient. The validity of that assumption is contradicted by the study results for a subset of lakes that were resampled in a different season. This negates the value of the study results and the mercury resource management and point source regulation decisions deriving therefrom. The margin of safety in the compounded assumptions adopted by FDEP to develop and implement the statewide mercury TMDL approach is inadequate to compensate for the tendency of resource managers to draw incorrect conclusions of such critical consequence from the study results.

(11) As a Consequence of (10), There Is an Unacceptable Likelihood that FDEP Will Prematurely and Incorrectly Delist Mercury-Impaired Waters Merely Because FDEP Has Published a Statewide Mercury TMDL

CWA Section 303(d)(1)(C) requires a waterbody-specific approach to TMDL development and implementation to ensure that the waterbody attains its duly promulgated WQS. No mercury-impaired waterbody shall be left behind in the process of developing or implementing a statewide mercury TMDL as an administrative expedient. And no mercury-impaired waterbody shall be delisted until all of its statewide and watershed-specific mercury source controls and best management practices have been implemented, the waterbody has had sufficient time to respond to the mercury load reduction, and follow-up monitoring demonstrates the long-term attainment and maintenance of mercury-unimpaired status. If state law requires otherwise, then the state law must be changed to comport with Federal law.

(12) USEPA Region 4 Will Have Abused Its Discretion If It Approves The State of Florida's Scientifically, Administratively, and Legally Deficient Statewide Mercury TMDL and the WLAs and WQBELs Deriving Therefrom

Florida's statewide approach to mercury TMDL development is contrary to CWA Section 303(d)(1)C) and the regulations and technical guidelines promulgated and published to implement that provision. It is based on restoring mercury-impaired waters to an unenforceable water quality target rather than a duly promulgated, revised Class III numerical mercury WQS. The unenforceable target is demonstrably inadequately protective of the median Florida woman of child-bearing age consuming salt water fish and shellfish species with median concentrations of total mercury as methylmercury, including fish and shellfish originating from Florida waters, at median consumption rates, let alone a subsistence consumer protected by treaty or the environmental justice provisions of applicable Federal law or Presidential Executive Order. The approach adopted by the state assumes without proof that restoring its lakes and streams will restore its wetlands, when some wetlands can be demonstrated to be more mercury-susceptible than lakes and streams, as evidenced by the Everglades. It also assumes that restoring Florida's fresh waters will restore its salt waters, when many lagoons, estuaries, and bays have higher methylmercury concentrations in their flesh than the fresh waters flowing into them under the same

mercury atmospheric deposition loads, as evidenced by the Lake Okeechobee-Everglades-Florida Bay system.

Florida then calculates the required mercury load reduction to restore the unimpaired status of all fresh waters up to the 90th percentile level of methylmercury contamination. In effect this sacrifices 10% of Florida's most mercury-susceptible, mercury-impaired waters as an administrative expedient. Section 303(d)(1)(C) makes no such provisions. No waterbody shall be left behind using the statewide approach to mercury TMDL development and implementation. In particular, because the results of the one-time, statewide mercury monitoring of a subset of lakes and streams demonstrates that streams are more mercury-susceptible than lakes, so roughly 15% of the streams are being sacrificed using this approach. The margin of safety with seasonal variation is insufficient to ensure that even these statistical targets will be hit. Nevertheless, when a corrected 90th percentile Florida stream LMB THg as MeHg concentration is adopted, the required load reduction from all air emissions sources is 99%, not 86%.

The incorrectly calculated mercury TMDL was then not fairly and equitably distributed between states for inter-state fresh and salt waterbodies and then between and among controllable in-state point and nonpoint sources. The WQBELs were not correctly calculated for mercury over-allocated Florida waters where the TMDL - LA - M.O.S. < 0. The mercury over-allocated waters require zero discharge of mercury. For point sources regulated under CWA Section 402, this translates into no detectable discharge of THg at the method detection limit of the duly promulgated, USEPA-approved method for ultra-trace mercury analysis, Method 1631, not the enforceable but deficient existing mercury WQS of 12 ng/L, the unenforceable water quality target of 1.25 ng/L, or any variation on that theme.

As a consequence of these errors of omission and commission, Florida's statewide mercury TMDL is so seriously scientifically, administratively, and legally deficient that it must be considered fatally flawed, and USEPA Region 4 will have abused its discretion by approving it. Instead, Florida's Hg TMDL Report must be substantially revised to correct these errors to comport with letter and spirit of CWA Section 303(d)(1)(C) and the regulations and technical guidelines promulgated and published by USEPA to implement that provision.

Introduction

The contamination of the human food supply with toxic amounts of toxic methylmercury constitutes an imminent and growing threat to the public health, safety and welfare and a violation of the State of Florida's narrative "no toxic substances in toxic amounts" Water Quality Standard for the protection of human uses of fishable and swimmable waters. There is an unacceptable risks of cognitive impairment to the developing fetus in the third trimester from the exposure of pregnant women to toxic methylmercury in toxic amounts when fish are consumed at Florida average rates, let alone subsistence rates, from most Florida lagoons, estuaries, and bays and many of Florida's lakes and rivers. According to FDEP's calculations, the median backrgound methylmercury dose rate from the consumption of salt water fish and shellfish species for Florida women of child-bearing age exceeds USEPA's methylmercury reference dose for the protection of the developing fetus of 0.0001 mg/Kg-day. If the Florida mercury WQS were calculated in the same way as the USEPA WQC, the allowable concentration in freshwater fish is < 0. In fact, the background concentrations in salt water fish and shellfish species in Florida would have to be reduced by 24.3% just so that the median exposure to methylmercury in Florida women of childbearing age equals USEPA's reference dose. Based on the results contained in Appendix H of the Hg TMDL Report, the flesh of largemouth bass collected from 72 (29%) of the 249 of the lakes and streams sampled out of the thousands that are mercury-impaired averaged twice the water quality target of 0.3 ppm total mercury as methylmercury in fish flesh on a wet-eight basis and 26 (10%) of 249 averaged three times that target. Many coastal waters average four and five times the mercury water quality target for prized, large-bodied, long-lived, top-predator sport fish species.

Because the half-life of methylmercury in a woman's blood stream is about 50 days, a pregnant woman and her fetus come to a steady state with the average concentration of methylmercury in her diet by the beginning of her third trimester, so consuming the flesh from a typical largemouh bass from roughly one-third of the lakes and streams during her pregnancy at the state average rate of 22 grams per day (about an ounce and a quarter) doubles the risk of impairing the brain function of her developing fetus and in 10% of the lakes and streams that risk is tripled. It then takes roughly five half-lives to clear the excessively high methylmercury levels from her system once she stops eating that fish. Sadly, the clearance rate from a woman's body is measurably faster for nursing women, because they are dumping methylmercury into their breast milk, continuing the exposure of the nursing infant to methylmercury that began in the womb. Thereafter, it doesn't matter whether this woman of child-bearing age ever consumes another fish, because the neurological damage has already been done That being the case, FDEP's conceptual model of exposure of women of child-bearing age and their fetuses to methylmercury is flawed, because it assumes that the exposures from the consumption of fish with high and low methylmercury concentrations average out over a woman's child-bearing years, thus justifying the use of average values rather than the actual concentration probability distribution function for each salt water fish and shellfish species consumed by Florida women of childbearing age in the probabilistic analysis used to calculate the median background methylmercury dose rate and the margin of safety in the water quality target. This may be true of a hypothetical statistic, but nor for real women playing toxic roulette with their unborn child. The risks of cognitive deficit in the developing fetus are magnified for women of child-bearing age who subsist on fish from a local canal, pond, lake, stream, estuary, or bay, because they consume fish at rates typically 5 times the Florida average rate. For them, there is no margin of safety in the 0.3 ppm water quality target. Whether this inequity constitutes a form of discrimination that violates the environmental justice provisions of applicable Federal law or Presidential Executive Order will be left to the judgment of the Federal courts.

Efforts by the Florida Department of Public Health (FDOH), the Florida Department of Environmental Protection (FDEP), and the Florida Fish and Wildlife Conservation Commission (FFWCC) to inform and educate the public in general and women of child-bearing age in particular to reduce their risk of exposure to toxic methylmercury in toxic amounts by avoiding or limiting the consumption of fresh and salt water sport and commercial fish and shellfish have been less than fully effective in preventing human methylmercury toxicosis, as evidenced by the number physician-reported cases of methylmercury neurotoxic effects in the period 2001-2010. The policy switch from posting signs in the field to distributing brochures with fishing licenses and posting warnings on the DOH, DEP, and FFWCC Internet websites has diminished the effectiveness of this information and education campaign with the most exposed subpopulation of subsistence-level fishers. When surveyed and asked whether they were concerned about the mercury contamination of the fish they were catching and consuming, most subsistence fishers said they assumed if there were no signs, the fish were safe to eat. All of this is documented in the Revised Draft Mercury TMDL for the State of Florida Report to USEPA Region 4 (hereinafter the Hg TMDL Report).

In any case, threatened and endangered fish-eating wildlife and their predators cannot read or heed the real or virtual warnings and avoid exposure to toxic amounts of methylmercury in their contaminated forage, so there has been, is, and will be an unacceptable risk of compromised reproductive success from which threatened and endangered species are explicitly protected under the Federal Endangered Species Act and for which there are potentially serious legal consequences, even if there are none for endangering humans. Those unacceptable risks are also documented in Section 2.4and Appendix E of Hg TMDL Report, as well as data, reports, and publications in the possession of FDEP or to which it has ready access in the scientific, regulatory, or professional literature. The 0.3 ppm THg as methylmercury value is not adequately protective of all fish-eating wildlife-species, including threatened or endangered species such as the wood stork, the bald eagle, or the Everglades mink, or predators of fish-eating wildlife,

including the highly endangered Florida panther. Following the procedures used by USEPA in its Mercury Report to Congress (1997) but substituting Florida-specific Trophic Level 3 and 4 data in the statewide mercury monitoring campaign, the corresponding mammalian no adverse effect level (NOAEL) in fish is 0.17 ppm vs. 0.3 pppm to protect human health. If the mallard duck LOAEL is divided by 3 to approximate the NOAEL, as was done by Darren Rumbold, Ph.D., in SFWMD's STA-2 Methylmercury Anomaly Ecotoxicological Risk Assessment approved by FDEP in 2004, the bird WQC now controls at 0.08 ppm THg as methylmercury. http://www.tandfonline.com/doi/abs/10.1080/10807030590925768 A screening-level ecotoxicological risk assessment of the Florida panther indicates that a panther foraging at typical rates on Everglades-like juvenile alligator, otter, and raccoon, will be at an elevated risk of reproductive failure, and if a pregnant female shifts progressively to such prey species as her pregnancy progresses, the elevated risks may approach or exceed unacceptable levels, while the avian NOAEL-based WQC is likely to be protective of the reproductive success of the typical Florida panther female and will reduce the likelihood of reproductive failure of the atypical female.

The recent decision by the DOH Secretary, acting in his capacity as Chief Medical Officer for the State of Florida, to tighten the criteria for physician reporting of methylmercury neurotoxic effects will reset the reporting baseline, but the reporting incidence will still be on the rise relative to that new baseline, because more and more people are living near or below the poverty line as a consequence of the Great Recession and more and more people are being driven to subsistence consumption of fresh and canned salt and fresh water fish and shellfish contaminated with toxic methylmercury in toxic amounts when consumed at Florida average, let alone subsistence rates. Whether this decision was made in good faith in the best interests of the public health, safety, and welfare or an arbitrary and capricious abuse of discretion to undermine the epidemiological necessity for mercury regulatory action at this time will be left to the judgment of the Florida courts. The nutritional desperation of those near or in poverty is exacerbated by the foreshortening of the period during which the formerly employed can collect unemployment compensation and the tightening of criteria for state assistance with the costs of shelter, food, and medicine. Perhaps all people on welfare should be tested for the methylmercury residues in their hair in addition to the illegal recreational drug residues in their urine.

When then Secretary of the then Florida Department of Environmental Regulation, Carol Browner, was confronted with the choice of continuing to permit the construction and operation of new mercury emissions sources or of imposing a moratorium on the issuance of new source permits until more information was obtained about the effects of their mercury emissions, she erred on the side of protecting the public health, not profit, in the face of uncertainty, and imposed the moratorium. As a consequence, Florida became a world leader in the monitoring, research, and modeling of the mercury cycle in the environment. I was privileged to lead that multi-agency, multi-entity effort from 1996 to 2000, when the South Florida Water Management District, at the direction of its Governing Board, officially opted out of Florida's mercury research program, because the mercury was coming from the air, over which SFWMD had no authority or interest. This status persisted until it became obvious that an oxidized form of sulfur, sulfate, in stormwater runoff from the Everglades Agricultural Area was causing or contributing to the downstream Everglades mercury problem, at which point SFWMD opted back in to more effectively represent local interests in the design, implementation, interpretation, and application of the results of the relevant mercury research.

As a consequence of this noble mercury pedigree, no Federal, state, or local agency was, is, or will be more able or in a better position to regulate mercury emissions to protect the public health and endangered wildlife than FDEP. The Federal Court Consent decree was issued in 1999 in the matter of Florida Wildlife Federation et al.vs. (ironically) Carol Browner et al., and USEPA published its revised methylmercury Water Quality Criterion (WQC) in fish flesh to protect human health in January 2001. Since then, FDEP has failed to promulgate a revised mercury WQS as or more protective of human health than the USEPA WQC to replace the duly promulgated WQS of 12 ng/L total mercury in

unfiltered water, which FDEP has officially acknowledged is not adequately protective of humans exposed via fish and shellfish consumption since 2001. In the face of an imminent and growing threat to the public health, safety, and welfare, FDEP has done less than the absolute minimum required to fulfill its official responsibilities. Instead, since 2001, FDEP's only relevant formal administrative action regarding this imminent and growing threat to the public health, safety, and welfare is the promulgation of a December 2006 revision to the impaired waters rule via the Environmental Regulation Commission that designates mercury-impaired waters to be a low priority for mercury TMDL development, because of, parenthetically, the current lack of understanding about the cycling of mercury in the environment. The Florida Legislature compounded the problem by exempting this prioritization scheme from public challenge. It would appear that a well-lobbied fix is in to ensure that Florida lags rather than leads the nation in protecting the public health, safety, and welfare from the mercury threat.

FDEP has failed to promulgate in a timely manner a revised Class III numerical WQS to protect human health and fish-eating wildlife or their predators as or more protective than USEPA's methylmercury Water Quality Criterion (WQC) to protect human health that would replace the existing mercury WQS, despite being under a Federal Court Consent Decree to develop and implement enforceable TMDLs for all impaired waters listed pursuant to CWA Section 303(d) by September 30, 2012, including mercury-impaired waters. Florida's existing mercury WQS was not violated in any lake or stream sampled in the one-time mercury monitoring campaign that began in 2007 and was completed in 2010. FDEP has known that Florida's existing mercury WQS was deficient since January 2001, when the USEPA WQC document was published. In the last triennial review cycle, FDEP proposed a revised mercury WQS of 0.2 ppm THg as methylmercury in fish flesh on a wet-weight basis to protect human health to reflect the higher average fish consumption rate and background methylmercury dose rate than the national averages used by USEPA to derive the 0.3 ppm value. That effort was subsequently abandoned without adequate notice or justification. Why a water quality target of 0.3 ppm THg is now considered adequately protective of human health when the more Florida-appropriate 0.2 ppm THg had been proposed for promulgation in the previous triennial review cycle will be the subject of inquiry before the Federal court.

Having abandoned its effort to promulgate a revised mercury WQS, FDEP's only formal administrative action to date regarding mercury was for the Environmental Regulation Commission to adopt a revised impaired waters rule in December 2006 to designate mercury-impaired waters as a low priority because of the current lack of understanding of the mercury cycle in the environment. The Legislature's only contribution in this regard was to exempt the listings, priorities, and schedules from public challenge as a matter of Florida law. Nothing in the Revised Draft Mercury TMDL for the State of Florida Report to USEPA Region 4 commits the State of Florida to the adoption of duly promulgated revised mercury WQS adequately protective of human health and threatened or endangered fish-eating wildlife and a set of duly promulgated mercury TMDLs to attain and maintain the duly promulgated revised mercury WQS or even a plan and schedule for their promulgation.

Ultimately, it will be up to the State Courts to determine whether the failure of past and present responsible Florida officials to act with due diligence in a good-faith effort to protect the health, safety, and welfare of all the people of the State of Florida rises to the level of gross negligence and dereliction of duty for which legal sanctions are both appropriate and necessary. If the courts so rule, this will send a message to future occupants of these high offices that Federal, Florida, and local agencies have a responsibility to protect people over profit. People and the resources held in public trust upon which they depend are not expendable as an administrative expedient. Concurrently, it will be up to the Federal Courts to determine whether USEPA Region 4 again abused its discretion in failing to carry out its responsibilities and exercise its authorities to promulgate a revised mercury WQS as or more protective than USEPA's WQC and a mercury TMDL for all mercury-impaired Florida waters when Florida failed to do so in a timely manner, as required by statute, regulation, and court precedent in the matter of Scott vs. the City of Hammond et al.

I also had the privilege of participating in the implementation of Scott vs. City of Hammond et al. while working for USEPA's Great Lakes National Program Office and with USEPA Region 5 in Chicago, so I am well-versed in what constitute valid technical limitations to TMDL development and implementation based on the current lack of understanding about the sources and cycling of toxic substances in aquatic ecosystems and the plans and schedules required to remove those technical barriers under a Federal Court Order. If USEPA Region 4 approves this scientifically, administratively, and legally deficient mercury TMDL for the State of Florida as captured in the Hg TMDL Report, it will have abused its discretion and become complicit in Florida's flouting of the Federal Consent Decree for which Federal Court sanctions are appropriate and necessary.

Background

According to the language of CWA Section 303(d)(1)(C) and the USEPA regulations and technical guidance promulgated and published to implement that provision, a Total Maximum Daily Load (TMDL) is calculated to attain and maintain the water quality standard, not an unenforceable target, taking into account seasonal variation in water quality and with an adequate margin of safety to compensate for any lack of knowledge about the relationship between the pollutant loading rate and the pollutant concentration in the receiving water under those seasonally appropriate infrequent conditions. The TMDL is then reduced by the required adequate margin of safety and then further reduced by the uncontrollable background sources, both natural and anthropogenic, including contributions from atmospheric deposition and groundwater recharge, and uncontrollable anthropogenic nonpoint sources, including unremediable soils and groundwater in the watershed and sediments in the water body, and man-induced irretrievable conditions, e.g., from abandoned mine drainage. This is the load allocation (LA). What remains is distributed fairly and equitably between and then among controllable nonpoint sources and all point sources. This is the Waste Load Allocation (WLA). The WLA formula used by both USEPA and FDEP is: WLA = TMDL - MOS - LA. If the LA is > TMDL - MOS, there is nothing left to allocate to controllable point and nonpoint sources, and the default water quality-based effluent limitation is non-detectable THg using USEPA-approved method 1631, not the water quality target. No delegated state has the authority to reduce the emissions of any pollutant from any air source or source category regulated under the Clean Air Act and cannot invoke the prospect of same to reduce the LA to increase the WLA. However, while a state's mercury reduction strategy may make reference to the reductions expected from the eventual implementation of new technology-based and/or air quality-based air emissions regulations, one can only subtract from the LA the actual reduction in their contributions to the LA only after those new CAA regulations take effect and the reductions are achieved that benefit a state's fresh and/or salt waters.

FDEP's Proposed Statewide Mercury TMDL and the WLA Deriving Therefrom are Scientifically, Administratively, and Legally Deficient

Critical Waterbody Categories and Potential Limiting Waterbodies Have Been Omitted from Florida's Statewide Mercury TMDL

The proposed statewide approach to the development and implementation of the mercury TMDL for in-land fresh waters omits wetlands, no doubt because they are depauperate in large-bodied Trophic Level 3 and 4 sport fish species, except when rising stages reconnect the wetland with a permanent lake or stream. However, wetlands may have also been omitted because their surface area-to-volume ratios and flushing times, perimeter oxidation-reduction cycles, and sedimentation rates are inherently seasonal, as are the food webs that bioaccumulate the excess methylmercury generated in seasonal pulses following reinundation of oxidized soils, so there would be neither a scientific basis for ignoring seasonal variation, as was the case in lakes and streams, nor for assuming that the waterbody has reached a steady-state

condition relative to its long-term average mercury loading rate. Nevertheless, waterbodies in watersheds with upland wetlands tend to have higher methylmercury concentrations than waterbodies that don't, suggesting that the seasonality of wetlands and the seasonality of the lakes and streams under their runoff influence cannot be completely deconvolved.

All in-land and coastal waters will benefit from a reduction in the contributions from all point and nonpoimt sources of mercury deposition to inland lakes and streams, but there is no guarantee that mercury-impaired salt waters will attain the water quality target, because the mercury load-methylmercury concentration relationships in freshwater lakes and streams and brackish and coastal marine waters are likely to be very different, and the methylmercury bioaccumulation potential for largemouth bass is not representative of the slow-growing, large-bodied, top-predator prized salt water sport fish. Some estuarine and coastal marine waterbodies are the limiting waterbody in the lake-stream-estuary series. See, for example, Lake Okeechobee-Everglades-Eastern Florida Bay. http://www.evergladeshub.com/lit/pdf11/Rumbold11estuarCoasts34-494-513-HgFLbayDeposition.pdf

The Water Quality Target Is Nor Adequately Protective of Human Health

The calculation of the TMDL is not based on a duly-promulgated, legally enforceable WQS but rather on an unenforceable water quality target based on USEPA's WQC of 0.3 ppm total mercury (THg) as methylmercury in fish flesh to protect human health, which FDEP recognizes is not adequately protective of the average Florida consumer, because it proposed a lower value of 0.2 ppm in the last triennial review cycle, let alone the subsistence consumer protected by the environmental justice provisions of Executive Order and Federal law. The probabilistic derivation of the daily average background methylmercury dose rate in ug/Kg bw-day uses the average concentrations of total mercury as methylmercury in each of a variety of salt water fish species consumed by Floridians, based on the assumption that exposure to fish methylmercury concentration extremes will be balanced over the course of the life of a woman of child-bearing age, but because the half-life of methylmercury in the human female is about 50 days, a pregnant woman comes to near steady state with the methylmercury in her diet by the third trimester, when the developing fetus is most susceptible to the neurotoxic effects of methylmercury, so one "hot" background fish consumed during her pregnancy can cause short-term, reversible cognitive deficit and perhaps long-term, irreversible cognitive deficit in the developing fetus in response to consuming that fish at the average Florida rate of 22 g/day, irrespective of what happens during the rest of her life, let alone at subsistence rates 5x the Florida average fish consumption rate.

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The Water Quality Target Is Not Adequately Protective of Fish- or Shellfish-Eating Wildlife or Their Predators

Even if the posting of mercury-impaired fresh and salt water lakes and streams were eventually determined by the courts to be considered adequate for the protection of the public health, safety, and welfare, the fish- and shellfish-eating wildlife held in trust by and for the citizens of Florida cannot read or heed the signs, both real and virtual. Section 2.4 on page 20 and Appendix E of the Revised Draft Mercury TMDL for the State of Florida Report to USEPA Region 4 discuss the methylmercury contamination status and trends and associated exposures and ecotoxicologically significant risks to fish-eating wildlife and their predators in general and migratory and endangered species in particular. However, nowhere is there a reference to an ecotoxicolological risk assessment conducted by or for the State of Florida demonstrating that the proposed 0.3 ppm water quality target to protect human health will also be adequately protective , of individual threatened or endangered species on the Florida and Federal Government lists at the 95th percentile confidence level. The fact that USEPA in general and Region 4 in

particular has approved TMDLs that take this approach does not mean that it comports with the requirements of the Federal Clean Water Act or the Federal Endangered Species Act. To the contrary, USEPA Region 4 has abused its discretion in approving such deficient waterbody-specific mercury TMDLs in other states and was derelict in its duty to promulgate a mercury TMDL for each state containing this fatal flaw. That should and will be the subject of subsequent litigation. In the alternative, Florida can revise the final draft Report to include the required trust species ecotoxicological findings, conclusions, and recommendations regarding the adequacy the 0.3 ppm target to protect the public trust in general and Florida and Federal wildlife trust species in particular.

FDEP now has in its possession or ready access to data, analyses, toxicodynamic/toxicokinetic (TDTK) models, ecotoxicological risk assessments, and reports demonstrating that the reproductive success of sentinel wildlife species will not be protected at a methylmercury concentration calculated by dividing the 0.3 ppm THg as MeHg water quality target by the 50th percentile (median) LMB BAF. This information includes the Great Lakes wildlife protection water quality criteria adopted by USEPA Region 5 for implementation of the Great Lakes Initiative published in the mid-1990s and the wildlife protection criteria derived by USEPA in its Mercury Report to Congress published in 1996 http://www.epa.gov/ttn/atw/112nmerc/volume6.pdf. The wildlife protection WQC in water was 48 pg/L as unfiltered methylmercury based on the protection of the mink and the otter, and the equivalent Trophic Level 3 (T3) and Trophic Level 4 (T4) fish concentrations based on national median T3 and T4 BAFs are 0.077 mg/Kg THg as MeHg and 0.325 mg/Kg THg as MeHg. Using the same exposure assumptions, but substituting the median T3 and T4 BAF values from the one-time Florida mercury monitoring campaign, the corresponding WQC for MeHg is 54 pg/L and the T3 and T4 BAFs are 0.093 and 0.17 mg/Kg THg as MeHg to protect representative fish-eating mammals, the otter and mink. If an inter-species adjustment factor of 1/3 is applied to the mallard duck NOAEL estimate, as was done by Darren Rumbold, Ph.D., in an ecotoxicological risk assessment accepted by FDEP for the STA-2 Cell 1 start-up MeHg anomaly http://www.tandfonline.com/doi/abs/10.1080/10807030590925768, the average bird value controls instead of the average mammal value at 0.026 ng/L MeHg in water, which translates into 0.047 and 0.082 mg/Kg THg as MeHg in Florida freshwater T3 and T4 fish, respectively. However, wildlife exposures are based on the consumption of whole fish, while the protection of human health is based on consumption of fish flesh. FDEP did not report and whole fish-to-fillet ratio for THg as MeHg in LMB or sunfish species, so a default vale of 0.69 is adopted here for purposes of illustration (Ted Lange, FFWCC, personal communication). After the whole-to-fillet correction is applied to the T3 and T4 fish, without a LOAEL-to-NOAEL correction, the Florida mammals still control, albeit at 0.13 and 0.25 THg as MeHg in fish flesh-equivalents for T3 and T4 fish, respectively. If the corrected mallard duck value is used, the birds control at 0.07 and 0.12 for T3 and T4 fish, respectively. That being the case, the human health water quality target of 0.3 ppm THg as MeHg in fish flesh is not protective of birds, including the threatened or endangered bald eagle or wood stork, or mammals, including the endangered Everglades mink.

Focusing on the Florida panther, it has been well-documented in the peer-reviewed scientific literature: http://www.ncbi.nlm.nih.gov/pubmed/15217246, the Federal and Florida environmental and wildlife protection agency literature: http://nature.nps.gov/air/Permits/aris/ever/studiesMonitoring.cfm; http://www.floridapanthernet.org/index.php and wildlife protection organization literature: http://www.panthersociety.org/mercury.html that exposure to methylmercury via foraging on methylmercury-contaminated prey foraging on methylmercury-contaminated aquatic life is a threat to the Florida panther subpopulations that frequent the Everglades National Park and Big Cypress National Preserve. The latter is now protected as Florida panther habitat under court order. FDEP now has in its possession or ready access to data, analyses, ecotoxicological risk assessments, transport-fate-bioaccumulation models, and reports demonstrating that the reproductive success of the endangered Florida panther is significantly compromised by a diet that includes a substantial portion of raccoons, otters, and/or small alligators at methylmercury concentrations equivalent to 0.3 ppm THg as MeHg in the

reference freshwater top-predator sport fish species, the largemouth bass. USEPA was unable to calculate a wildlife WQC to protect the Florida panther in USEPA's Mercury Report to Congress, because it would be strongly influenced by local food webs and foraging preferences rather than national averages: http://www.epa.gov/ttn/atw/112nmerc/volume6.pdf . However, it is possible to perform a Florida panther ecotoxicological risk assessment using local food web contamination and individual animal foraging preferences appropriate to the Everglades/BCNP: http://books.google.com/books?id=aUBcpzi4NF4C&pg=PA40&lpg=PA40&dq=Mace+Barron+Florida+panther&source=bl&ots=BH2hhdcjAf&sig=YXaBip6m55DJqUBVhw5jd_E_4Z4&hl=en&sa=X&ei=Zc8yULj1PIfY2gWQroDICQ&sqi=2&ved=0CDMQ6AEwAw#v=onepage&q=Mace%20Barron%20Florida%20panther&f=false. Florida panther exposure is especially problematic for the reproductive success of the Florida panther when that predation occurs during her pregnancy, when she is increasingly less effective in obtaining access to larger prey animals due to loss of habitat or insurmountable barriers to habitat and/or intra-species competition with larger, more aggressive males and/or less effective and efficient in the hunt and kill once such prey are located. Based on the observation by USEPA Region 4 staff that there has been no substantial decline in the atmospheric deposition of mercury http://www.epa.gov/region4/sesd/reports/epa904r07001/epa904r07001.pdf to the ENP between 1994 and 2007, one would not expect the concentrations in herbivores to have decreased, as well. I used the domestic cat NOAEL of 0.02 mg/K-day obtained by Charbonneau and co-workers (Charbonneau et al. 1976, the results of which were tabulated in the Florida Panther Interagency Committee Report, 1989), an inter-species protection factor of 3, methylmecrur BAFs appropriate to the Everglades, and foraging preferences identified by the USFWS as typical of the Florida panther to perform screening-level, steady-state, range-of-values ecotoxicological risk assessment for the Florida panther. It indicates that that toxic effects can be anticipated within typical ranges of exposure to methylmercury concentrations equivalent to 0.3 ppm in LMB, with a Hazard Quotient of approximately 2:1. If the pregnant female forages atypically disproportionately on raccoon, juvenile alligator, or otter, the HQ increases substantially. That being the case, FDEP has an affirmative duty and obligation to carry out the more rigorous dynamic, probabilistic ecotoxicological risk assessment for the Florida panther, as well as a reference threatened or endangered fish-eating bird species (e.g., the bald eagle and the wood stork), an endangered mammal species (e.g., the Everglades mink), and an endangered reptile (e.g., the North American crocodile). To do otherwise is a violation of the Federal Clean Water Act and Federal Endangered Species Act. http://www.crcnetbase.com/doi/abs/10.1201/9781420032505.ch16

Based on that dynamic, probabilistic ecotoxicological risk assessment, the State of Florida has an affirmative duty to find officially that the proposed 0.3 ppm target is or is not also fully protective of all threatened and endangered species, migratory bird species, and any other Florida or Federal trust wildlife species. If not, Florida has an affirmative duty to derive, promulgate, and implement a methylmercury Water Quality Criterion to protect fish- and shellfish-eating wildlife that is more protective than that for the protection of human health. Instead, the Revised Draft Report does not even commit to anything more than the importance of somebody continuing to monitor mercury bioaccumulation in wildlife other than FDEP. The failure of the Federal Government to act in a meaningful way to protect Federal trust wildlife species from an inadvertent taking by methylmercury contamination is no justification for the State of Florida not to act in this regard under its equivalent Florida statutes and rules. Until that is done, the statewide mercury TMDL must be considered scientifically, administratively, and legally deficient and a point of third-party contention and legal entry to the regulatory process.

The Statewide Mercury TMDL Omits Significant Sources That Are Not Under CWA Control: Groundwater Discharge into Drainage Lakes and The Land Application of Biosolids

The Contribution of Groundwater Discharge

The calculation of the TMDL and the LA omits significant natural sources of mercury species, i.e., lakes and streams receiving various proportions of seasonally appropriate low flow via groundwater discharge to the lake. A majority of Florida's lakes are seepage lakes, yet the one-time statewide mercury monitoring campaign omitted groundwater monitoring altogether and aggregated seepage and drainage lakes for purposes of evaluating the chemical factors that influence the mercury loading rate-methylmercury bioaccumulation relationship. Thus, one is left to infer from a review of the limited relevant literature what the concentrations of THg and MeHg in surficial aquifers might be. For this screening-level exercise, the average values from the Biscayne aquifer studies in South Florida will be used to fill this critical gap. However, surficial groundwaters receiving leachate from land-applied biosolids are likely to contain higher than background concentrations in both mercury species.

Lake Annie, which was omitted from the one-time statewide mercury monitoring campaign, is a well-studied sink-hole lake in Central Florida with a "do not eat" fish consumption advisory for mercury in largemouth bass http://www.doh.state.fl.us/floridafishadvice/2012Brochure.pdf. During the course of a USGS water budget study, the annual rainfall was 43", ET was 53", and groundwater inflow was estimated to be 240" in water depth equivalents. http://fl.water.usgs.gov/PDF_files/wri98_4133_sacks.pdf This may have been an atypical year for Lake Annie, because for most lakes in the region, evapotranspiration equals or exceeds rainfall by a few inches, not ten. However, it underscores the importance of taking into account abnormal and normal antecedent physical, chemical, and biological conditions and the abnormal and normal seasonal variations in water chemistry associated with those antecedent conditions to understand where the lake is in its biogeochemical trajectory for purposes of developing a waterbody-specific mercury load-methylmercury bioaccumulation relationship from which a waterbody-specific mercury TMDL and WLA derive.

If the rains contain a depth-weighted annual average THg concentration of, that is equivalent to a an annual mercury load of 14.5 ug/m^2-yr. Dry deposition may increase the wet atmospheric deposition contribution value of 25% to 50%. The value calculated for Central Florida in a study of runoff from a paved area was 22% http://etd.fcla.edu/CF/CFE0000959/Fulkerson_Mark_200605_PhD.pdf, but that could have been biased low due to the preferential retention of reactive mercury species, so a value of 35% would appear more appropriate for this screening-level exercise. Based on a USGS study of groundwater in South Florida http://pubs.usgs.gov/sir/2007/5240/ the average concentrations of THg and MeHg in the surficial Biscayne aquifer were 0.42 ng/L THg and 0.058 ng/L MeHg. The corresponding loading rate of THg to Lake Annie was calculated to be roughly 15% and 12% of the combined total without and with a dry deposition contribution of 35%. However, if, as others have calculated and FDEP has adopted, natural background is only 30% of wet and dry atmospheric deposition to the State of Florida on average, the groundwater inflow contribution in the Lake Annie case is roughly 45% of the statewide average contribution from wet and dry atmospheric deposition to the irreducible natural background THg load and 31% of the new combined natural background contribution total. Thus, groundwater makes a very substantial contribution to the irreducible natural background load and a substantial contribution to the mercury budget upon which is to be based the mercury load-methylmercury bioaccumulation relationship or the multivariate regression analysis of the influences of water quality on that relationship. The rate of methylmercury production in Lake Annie is not known, so it is not possible to compare the significance of the allocthonous and autocthonous contributions of methylmercury to Lake Annie at this time. Nevertheless, if wet deposition of MeHg is typically 2.5% of that for THg statewide per the work of Hammerschmidt and co-workers for the continental U.S. as a whole http://www.met.sjsu.edu/faculty/bornstein/old/papers/AqueousMethylation.pdf , although the Florida

value may be lower by a factor of 5 (Tom Atkeson, FDEP, personal communication). If the same proportion holds for dry deposition of MeHg as for THg, then the groundwater contribution for this specific circumstance is about 1.8 times the contribution from wet and dry atmospheric deposition or 64% of the new combined total allocthonous contribution, and, if the same ratios hold for natural background for MeHg as for THg, the groundwater contribution is 6 times the natural background contribution from wet and dry atmospheric deposition or 86% of the new combined total MeHg natural background contribution. This biases the groundwater contribution high, however, because there is no accounting for the direct runoff contribution of MeHg to Lake Annie, but for watersheds in which there is no land application of fertilizer or biosoilds, the MeHg in stormwater runoff originates primarily with the inorganic mercury in wet and dry atmospheric deposition with subsequent methylation in the surficial soil or sediment in upland wetlandsin the watershed, so from the state's perspective, this is double-counting of the wet and dry atmospheric deposition contribution to the lake's methylmercury production and bioaccumulation, and only the waterbody-specific ratio of mercury load-methylmercury bioaccumulation is affected, not the linearity of its response to a load reduction. However, if the lake is receiving more of its mercury load from an uncontrollable natural background source such as groundwater, then the corresponding reduction of the controllable load must be greater than the 86% calculated by FDEP to reduce the concentration of MeHg in LMB flesh in the 90th percentile lake to the water quality target of 0.3 ppm THg as MeHg in fish flesh. When this calculation is carried out taking into account the observed natural background contribution that groundwater made to the Lake Annie mercury budget under the hydrological conditions observed during the USGS study, Lake Annie is over-allocated by 5%. So, the groundwater contribution does affect not only the water-body specific THg and MeHg mass budgets but the responsive of the lake to a reduction in the wet and dry atmospheric deposition contribution from air emissions sources controlled under the CAA.

In addition, an accurate waterbody-specific mercury mass budget for Lake Annie would also have to account for the direct runoff contribution, and that, in turn, should be one of the variables in the statewide mercury water quality model. Unfortunately, while the author of the multivariate regression analysis was able to cleverly infer and partially but not completely account for the relative contributions of direct deposition and runoff on lake water quality and the mercury load-methylmercury bioaccumuation relationship from the ratios of the concentrations of natural and anthropogenic tracers in the sediment, it would have been more direct to include the ratio of watershed to waterbody surface area as one of the independent variable in the development of the statewide mercury "water quality model." This is also true of the parsing of seepage and drainage lakes, the for which the author was also able to partially but not completely account. Moreover, the %MeHg in filtered groundwater in the Biscayne aquifer (~14%) is only slightly higher than the corresponding %MeHg in filtered water from the lakes studied by FDEP (12%) in its one-time statewide mercury monitoring campaign, so it is possible that the biogeochemical control of the distribution of MeHg amongst dissolved, complexed, and particulate phases is predominated by the same influential chemical factors in groundwater and surface water, especially in seepage lakes, with the shielding of MeHg from the sunlight-driven physical, chemical, and biological processes extant in open surface waters playing only a secondary role. The use of stable mercury isotope analysis should clarify the origin of the inorganic mercury and methymercury in groundwater: (1) wet and dry atmospheric deposition, (2) land application of fertilizers or biosolids, and/or (3) leaching from aquifer material and *in situ* MeHg production. Clearly, there are lakes where the contribution of groundwater to the mercury species mass budgets cannot be ignored. Perhaps the sources, fate, and contributions of groundwater recharge to mercury cycling in seepage lakes can be made a research priority.

The Contribution of Legacy Sediments

The calculation of the TMDL and the LA omits significant contributions of uncontrollable nonpoint sources, including soil and sediments containing legacy inorganic mercury residues contaminated by

historically much higher anthropogenic sources of inorganic mercury. Using a diffusive exchange calculation, the median THg concentration in sediment, and the median log $K(Hg(II)^{+2}$ value of 5.1 calculated from the water quality data collected in the one-time statewide mercury monitoring campaign, the calculated flux from the active sediment layer of 4 cm is 9% of the annual average wet and dry atmospheric deposition flux of 22 ug/m^2-yr. That increases to 52% when one invokes a six-fold enhancement of the $Hg(II)^{2+}$ flux attributable to dense bioturbation, as was measured in flux chamber experiments in a well-characterized reservoir environment http://www.clu-in.org/download/contaminantfocus/mercury/Fate-Transport-and-Transformation-of-Mercury.pdf; http://www.dissertations.wsu.edu/Thesis/Fall2011/s_cox_112911.pdf When the USEPA nationwide average og $K(Hg(II)^{+2}$ value for sediment is substituted for the water column value obtained in the FDEP study, the undisturbed and highly bioturbated sediment/water exchange flux increases to 40% and 238% of the annual average wet and dry deposition flux. If the water column Kp value is reduced by the same proportions as USEPA's national average water column and sediment Kp values (4.9/5.3)*5.1, the undisturbed and bioturbated values increase to 83% and 500%, respectively.

Clearly the release of legacy $Hg(II)^{2+}$ from historically contaminated sediments can make a substantial contribution to the inorganic mercury budget of a lake and stream, and this could have a substantial influence on MeHg production and bioaccumulation, unless it is assumed that it is in a form that is not bioavailable to methylating bacteria. This phenomenon was reproduced in a stable isotope dosing study of an experimental lake in Canada for the METAALICUS Project, where less than 1% of the legacy $Hg(II)^{2+}$ in the sediment reservoir was methylated. Whether this phenomenon is generalizable from one northern temperate lake to all subtropical Florida lakes remains to be observed and calculated in a representative set of drainage and seepage lakes with a measured or calculated rate of sedimentation from which to infer the clearance rate of legacy $Hg(II)^{2+}$. This also underscores the importance of biogeochemical kinetics over equilibrium thermodynamics in dictating the pathways and rates of transport, speciation, and transformation of mercury species in the aquatic environment. This is also proof of the concomitant logical fallacy of simultaneously assuming that a lake or stream has reached steady-state conditions in response to the long-term average wet and dry mercury deposition flux, when those assumption are mutually exclusive. In the interim, however, it would seem prudent to include the contribution of the present-day sediment/water exchange flux of dissolved $Hg(II)^{2+}$ from sediment pore water to the overlying water column as one of the influential factors in the statewide mercy water quality model obtained via multivariate regression analysis.

This $Hg(II)^{2+}$ flux may be offset to some, a great, or a complete extent by the net evasion of Hg(0) generated by the photoreduction of DOC-complexed $Hg(II)^{2+}$, as was also observed for the simulated wet and dry atmospheric deposition in the METAALICUS study. However, that cannot be assumed to be the case for the median or representative worst-case 90th percentile lake or stream, especially in deep lakes and/or lakes with a high dissolved organic carbon (DOC) concentration, without further analysis, integration, and synthesis that can only be achieved through mechanistic mathematical modeling. Such models have been available to FDEP since the turn of the new millennium. http://www.clu-in.org/download/contaminantfocus/mercury/Fate-Transport-and-Transformation-of-Mercury.pdf

The Florida Mercury TMDL Ignores the Contribution of Anthropogenic Land Uses, including Land-Applied Fertilizers and Biosolids

Known mercury sources of air emissions to Florida include coal-fired power plants, medical waste incinerators, crematoria that do not remove mercury fillings before cremation, dental amalgam: http://www.epa.gov/region5/mercury/pdfs/dentaloptions3.pdf, municipal landfills: http://www.bvsde.paho.org/bvsacd/cd48/4658.pdf and land-applied municipal sewage sludge: http://www.scribd.com/doc/64712811/Biosolids-Application; http://www.weao.org/assets/docs/residualsBiosolids/final_report.pdf This last is not only a source of

stormwater runoff to nearby lakes and streams and seepage of leachate containing inorganic mercury, methylmercury, and elemental mercury to the underlying surficial aquifer, it is also a source of evasion of the gas phase of elemental mercury and methymercury http://web.visionlearning.com/carpi/Hg.htm and dry deposition of dust particles suspended by wind, predominantly but not exclusively within the watershed. http://www.scribd.com/doc/72647699/Morrison-R-2005-Environmental-Forensics-Contaminant-Specific-Guide ;http://www.newmoa.org/prevention/topichub/22/Hg_Report_Vol_3_Conclusions_References&Appendices.pdf A mercury soil transport-fate model adapted by USEPA's Office of Research and Development from the GLEAMS platform for small catchment areas, which includes evasion, leaching, and runoff and was parameterized and calibrated to South Florida conditions, has been available to FDEP since its publication in 1999: http://www.sciencedirect.com/science/article/pii/S0045653598006018.

The calculation of the statewide mercury TMDL and the WLA omits the contribution of significant controllable nonpoint sources within the watershed, including the local atmospheric deposition of wind-eroded THg- and methylmercury-contaminated particles and stormwater runoff of leached and particle-bound THg and methylmercury from decommissioned and active sites of land application of biosolids, which FDEP's own permit-mandated monitoring data document substantial contamination with THg above natural soil background levels. For quantitative perspective, according to a Florida Department of Commerce Report, in 2010 there were 37,691 dry English tons of imported and 217,303 dry English tons of Florida-originating land-applied biosolids in Florida. The average THg concentrations from each source were by FDEP to be 0.88 and 0.68 mg/Kg dry weight, respectively. That amounts to 73 of lbs of THg per year in imports and roughly 325 lbs of THg in land-applied biosolids of Florida origin. For a sense of mass proportion, the corresponding contribution from all point sources in Florida discharging at a water concentration equivalent to the existing Class III numerical mercury WQS of 12 ng/L is about 88 lbs/yr, while that is reduced by an order of magnitude when one substitutes for the existing mercury WQS the water quality target equivalent to LMB fish flesh of 0.3 ppm, which FDEP calculates to be 1.25 ng/L THg in unfiltered surface water, and by another order of magnitude if one substitutes the method detection limit routinely achievable by FDEP of 0.1 ng/L in surface water. Clearly one must take into account waterbody-specific and statewide median and upperbound contributions to biosolids application-related aerosol deposition, evasion, leaching to groundwater, and stormwater runoff in excess of the permit-mandated on-site stormwater retention capacity, the condition, transport, application, cover, and monitoring of which is regulated under appplicable waste and wastewater statutes, regulations, standards, and guidelines. The omission of mercury species originating with land-applied biosolids from the waterbody-specific and statewide mercury TMDLs is a fatal flaw that must be corrected prior to submittal of a new Revised Draft Hg TMDL Report to USEPA Region 4 for review and comment.

The Mercury Loading Rate-Methylmercury Bioaccumulation Relationship Is Not Accurately Calculated

The assumption that all lakes and streams have reached a steady state condition with respect to their long-term average mercury wet and dry atmospheric deposition loading rates is an administrative expedient not based on sound science and contradicted by the relevant facts:

- presupposes that there are no significant mercury sources in the watershed unrelated to atmospheric deposition, which is not true;
- presupposes that the contributions from wet and dry atmospheric deposition have not changed significantly over the response time of each waterbody, which is highly unlikely, based on the fact that Florida led the nation in local source mercury emissions reduction in the 1980s and early 1990s;
- ignores the potentially substantial contribution of the flux of inorganic mercury from sediments contaminated with historically higher mercury deposition fluxes;

- one can infer from the mercury monitoring, research, and modeling literature and data by or for FDEP or accessible to FDEP in the scientific, regulatory, and consulting literature that the response time of a waterbody to mercury load reduction is on the order of the time it takes a waterbody to deposit a few millimeters of undisturbed sediment, which is one the order of months to years, not decades or centuries;
- unfortunately, the one-time, statewide mercury monitoring campaign omitted a measurement of the sedimentation rate and the statewide mercury TMDL development process omitted the modeling of the sedimentation rate;
- the sedimentation rate is also strongly influenced by trophic status, but the study design failed to parse phosphorus, nitrogen, and light-limited lakes or measure C:N:P ratios in algae or photosynthetically active radiation (PAR), which also influences the pathways and rates of photoxidation of methylmercury to inorganic mercury and the photoreduction of inorganic mercury to elemental mercury with subsequent evasion.

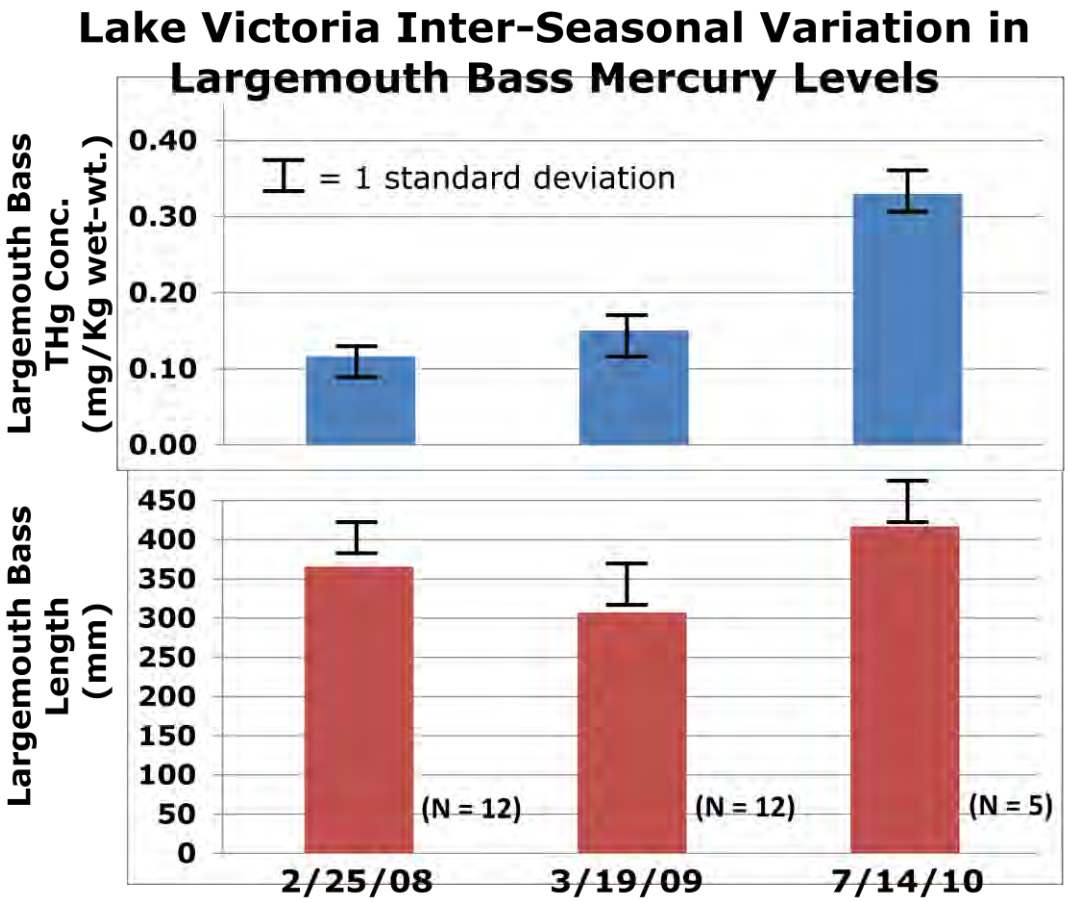
If it were true that every water body has reached a steady state between its long-term average mercury atmospheric deposition loading rate and the rates of methylmercury production and bioaccumulation, then to integrate out the water quality variation at every time scale, the long-term averages of the water quality parameters should have been substituted for the one-time sampling results. This was not done, because it would have substantially reduced the number of parameters that one could take into consideration in the multivariate regression. So the water data are inherently "noisy". The calculation of the TMDL fails to take into account that the physical, chemical, and biological influences on the relationship between the mercury species loading rates and methylmercury production and bioaccumulation in a water body vary in magnitudes, durations, and frequencies, such that one-time sampling cannot reveal those influence on that relationship. The calculation of a statewide mercury load-methylmercury bioaccumulation relationship fails to take into account the biogeochemical cycles of carbon, oxygen, sulfur, iron, manganese, and the limiting nutrient, which is frequently but not always phosphorus in fresh waters and nitrogen in salt waters. The influence of those cycles cannot be extracted from data collected by multivariate linear regression analysis of water, sediment, and fish data collected in a one-time statewide mercury monitoring campaign that omitted the sampling of sediment pore water where the mercury methylation and demethylation action is.

The Statewide Mercury TMDL Fails to Account for Seasonal Variation

Clean water Act Section 303(d)(1)(C) requires that a TMDL be calculated taking into account seasonal variation in water quality. The statewide mercury monitoring campaign cannot account for seasonal variation in water quality, because with only a few exceptions, each waterbody was only sampled one time. There was no systematic attempt to sample the waterbodies in the same season to factor out seasonal differences within and between waterbodies, because seasonal differences were a matter of no consequence, so the study design was fatally flawed. The calculation of the statewide mercury TMDL fails to account for seasonal variations in mercury species loading rates and physical, chemical, and biological conditions mediating the loading rate-concentration relationship in selecting the design conditions that represent a seasonally appropriately infrequent minimum in the mercury assimilative capacity of various categories of standing and flowing receiving waters.

If it were true that every water body in Florida has reached a steady state between its long-term average mercury atmospheric deposition loading rate and the rates of methylmercury production and bioaccumulation, then to integrate out the water quality variation at every time scale, the long-term averages of the water quality parameters should have been substituted for the one-time sampling results in the state's "water quality model". This was not done, because it would have substantially reduced the number of parameters that one could take into consideration in the multivariate regression. So the water data are inherently "noisy". A random sampling of various waterbodies included in the study indicates that there were substantial differences between the one-time sampling results and the long-term average

values for many of the parameters in the statewide routine lake and stream monthly water quality monitoring program. Based on the results in the eight lakes that were resampled in two distinct seasons, there are sufficiently significant differences in the average LMB concentrations between seasons that increase the probability of concluding that the waterbody is not mercury-impaired when it is in 4 of 8 lakes. When the LMB concentrations are size-standardized to 15" length using a waterbody-specific regression relationship of the log-transformed data, the frequency of that administrative error decrease from 4 to 3 lakes. Thus, the data obtained in the few excursions from one-time sampling demonstrate administratively significant seasonal variation that cannot be ignored and that can only be accounted for in a scientifically rigorous way by long-term seasonal sampling of water, sediment, and fish. The assumption that all lakes and streams have reached a steady state condition with respect to their long-term average mercury wet and dry atmospheric deposition loading rates is an administrative expedient that is not based on sound science, is contradicted by facts in evidence, and is contrary to the letter and intent of Section 303(d)(1)(C) of the CWA. See unlabelled figures 1, 2, and 3 below.



Statewide Mercury Monitoring Campaign Inter-Seasonal Variation: Largemouth Bass THg Concentrations

	Un-Standardized 1st Sampling Event		Standardized 1st Sampling Event	No. of Fish	Un-Standardized 2nd Sampling Event		Standardized 2nd Sampling Event	No. of Fish
	Average	Std. Dev.			Average	Std. Dev.		
Lake Victoria	0.12	0.03	0.22	12	0.15	0.06	0.12	12
Lake Dexter	0.22	0.12	0.44	9	0.19	0.08	0.20	12
Lake Weir	0.32	0.10	0.60	9	0.42	0.16	0.50	12
Lake Yale	0.18	0.03	0.20	10	0.18	0.09	0.21	12
Lake Jackson	0.21	0.10	0.26	12	0.46	0.22	0.40	8
Lake Ellen	1.26	0.18	1.17	6	0.67	0.26	0.78	12
Suwanee Lake	0.17	0.03	0.27	12	0.29	0.11	0.34	12
Lake Parker	0.08	0.03	0.16	9	0.10	0.03	0.08	12
Lake Thonotosassa	0.05	0.02	0.05	9	0.15	0.07	0.14	12
Lake Catherine	0.90	0.20	1.50	8	1.05	0.26	1.32	8
Lake Kerr	0.36	0.17	0.66	8	0.62	0.22	0.63	12
Mildam Lake	0.24	0.10	0.50	9	0.44	0.19	0.38	12

Standardized = LMB THg Conc. Calculated at 15" Using LN-Linear Regression Relationship between THg Conc. and Length

Statewide Mercury Monitoring Campaign Inter-Seasonal Variation: Largemouth Bass THg Concentrations

	Un-Standardized Maximum Perecnt Difference between 1st & 2nd Sampling Event	Un-Standardized Type I Error	Un-Standardized Type II Error	Standardized Maximum Perecnt Difference between 1st & 2nd Sampling Event	Standardized Type I Error	Standardized Type II Error
Lake Victoria	-28.99		X	-78.49		X
Lake Dexter	15.31			-114.75		
Lake Weir	-28.17			39.43		
Lake Yale	0.33			-65.71		
Lake Jackson	-119.19		X	56.84		X
Lake Ellen	47.36			-30.33		
Suwanee Lake	-68.78		X	70.52		X
Lake Parker	-17.23			8.57		
Lake Thonotosassa	-214.45			68.33		
Lake Catherine	-16.99			24.20		
Lake Kerr	-70.25			21.75		
Mildam Lake	-87.94		X	45.07		

Standardized = LMB THg Conc. Calculated at 15" Using LN-Linear Regression Relationship between THg Conc. and Length

Due to the seasonal variation that was ignored in the design of the one-time, statewide mercury monitoring campaign and the analysis, integration, and synthesis of its results, there is a statistically significant probability that a resource manager will incorrectly conclude that a waterbody is not mercury-impaired when it is or that it has recovered from that mercury impairment as consequence of mercury atmospheric load reduction when it has not. The use of age, size-, or weight-standardized transformations of the fish data is unlikely to reduce the rate of committing such a critical error in judgment to acceptable levels. See the unlabeled figures 1, 2, and 3 above. The unacceptable probability of committing such resource management decision-making errors is a consequence of the flawed study design that followed from the faulty assumption that is contradicted by the study results, thereby negating the value of the study results and the mercury resource management and point source regulation decisions deriving therefrom. The margin of safety in the compounded assumptions adopted by FDEP to develop and implement the statewide mercury TMDL approach is inadequate to compensate for the tendency of resource managers to draw incorrect conclusions of such critical consequence. I amplify on this key finding below.

<u>The Margin of Safety Is Improperly Accounted For and Is Not Adequate to Compensate for the Compounded Errors and Uncertainties in Statewide Mercury TMDL Development and Implementation</u>

CWA Section 303(d)(1)(C) requires that the TMDL be calculated taking into account seasonal variation in water quality with an adequate margin of safety to compensate for any lack of knowledge about the relationship between the pollutant loading rate and its concentration in the receiving water. The applicable USEPA regulations and technical guidance allow for an explicit or implicit margin of safety in the pollutant loading rate-concentration relationship. As a matter of policy, Florida has chosen to invoke an implicit margin of safety in the various assumptions used in TMDL derivation. However, USEPA's applicable TMDL technical guidance requires that the sources and magnitudes of the margins of safety in the load-concentration relationship from those assumptions be made explicit. Florida calculates the statewide mercury TMDL improperly by including an allegedly adequate implicit margin of safety in the water quality target, not the mercury load-methylmercury bioaccumulation relationship. The implicit margin of safety in the water quality target is not adequate to compensate for any lack of knowledge about the mercury load-methylmercury bioaccumulation relationship.

p. 42:

This section purports to set forth the USEPA-approved approach to TMDL development and implementation. Step 5 in the allegedly USEPA-approved process is as follows:
"
(5) Establishing a margin of safety of the TMDL to address the uncertainties associated with the target development

This is not consistent with the language of CWA Section 303(d)(1)(C), which requires a margin of safety to compensate for any lack of knowledge about the relationship between the effluent limitation and receiving water quality after taking into account seasonal variation in the assimilative capacity of the waterbody for the pollutant of concern. See Exhibit A. It is also inconsistent with the USEPA TMDL regulations and technical guidance promulgated and published to implement that provision. See Exhibits B-E. According to the language and intent of the CWA TMDL provision, the margin of safety is supposed to be in the assumptions, approximations, interpolations, and extrapolations regarding the pollutant loading rate-receiving water concentration relationship, not in the water quality target. The margin of safety in the WQS promulgated to protect the public health, safety, and welfare is supposed to compensate for uncertainties in the toxicological sensitivity of the most exposed, most susceptible life stage of the most exposed, most susceptible humans. If the margin of safety were adequate in the water quality target of 0.3 ppm THg as MeHg in the flesh of the reference freshwater sport fish species, the

LMB, why in the last CWA-mandated WQS triennial review cycle did FDEP propose to replace the existing, deficient mercury WQS of 12 ng/L unfiltered THg in surface water by public noticing a lower proposed revised mercury Water Quality Standard of 0.2 ppm THg as MeHg in fish flesh to take into account the greater fresh and salt water fish consumption rates and background exposures to MeHg of the average Florida woman of child-bearing age (15-44) vs. the national average assumed in the derivation of USEPA's WQC of 0.288 ppm rounded up to 0.3 ppm (21 g/day for a 63 Kg woman vs. 17.5 g/day for a 70 Kg woman and 1.32 E-4 vs 2.7E-5 mg/Kg-day.) FDEP claims a 10-fold margin of safety in the use of USEPA's WQC as the target value relative to the threshold of effect value of 0.058 mg/L in cord serum blood. However, when one uses the same one-compartment uptake and depuration model used by USEPA in the derivation of the 0.3ppm WQC, the ratio is closer to 6:1, because the actual WQC derived in this way is 0.288 ppm, not 0.3 ppm, and when Florida's higher average fresh and salt water fish consumption rates are substituted for USEPA's 17.5 g/day and 1.7E-5 mg/Kg-day, that ratio diminishes to about 3:1, assuming, as USEPA did, that the percentage of THg as MeHg in fish is 95% and the absorption efficiency is 95%. If FDEP's assumptions of 100% and 100% are used instead, that ratio decreases to about 2.5:1. If one multiplies the 0.3 ppm value by the median seasonal variation of 1.93: 1 for size-standardized 15" LMB observed in the 8 lakes that were resampled in the statewide mercury monitoring campaign in two seasons to take into account seasonal variation, that margin of safety diminishes to about 2:1. If the statewide ratio of the 92th percentile fish to the 1/12th percentile fish is used to compensate for the tendency tfor people to bias what they consume to larger fish, a similar 2:1 ratio is obtained. If one combines the seasonal variation and fishing high bias, the margin of safety disappears.

If one uses the higher subsistence fish consumption rate of 135 g/day documented in a large, multi-year study conducted by academic researchers of African-American women living in the Southeast http://www.ncbi.nlm.nih.gov/pubmed/22225823, the margin of safety for this cohort disappears, even for the national average exposure assumptions used by USEPA in the derivation of the nationwide WQC of 0.3 ppm. Therefore, the subpopulation of childbearing-age minority women that are subsistence consumers of fish are at a substantial risk of giving birth to a child with a methylmercury-induced cognitive deficit that may or may not diminish as the child ages, contrary to environmental justice considerations. As the average income has declined relative to the increase in the cost of living over time, even prior to the onset of the Great Recession, there has been a concomitant increase in the magnitude, duration, and frequency of subsistence fish consumption and the increased health risks that portends, and this is one of the hidden costs of the loss of jobs that pay a living wage.

Finally, FDEP is assuming that exposure to MeHg is occurring in a consumer, occupational, and environmental vacuum, when one is being exposed simultaneously to multiple neurotoxic heavy metals, including lead, organometallics, including trubutyltin and its environmental degradates, and polychlorinated organic molecules bioaccumulating in fish and shellfish, including polychlorinated dioxins, furans, and biphenyls (PCBs). In fact, USEPA had to derive the methylmercury reference dose by deconvolving the influence of PCBs to which the study population was being simultaneously exposed assuming a linear additivity to the contribution of PCBs and MeHg to the observed neurotoxic effect of cognitive deficit. One must acknowledge that there is greater uncertainty as to the pathways, rates, mechanisms of action, and toxicological consequences of exposures to neurotoxic pollutants other than MeHg, including whether the additivity model is accurate for all such combinations. In the context of all of the preceding discussion regarding the erosion in the margin of safety as one systematically substitutes Florida-specific for national exposure assumptions, one's confidence in the adequacy of the margin of safety in the MeHg reference dose has been substantially undermined on the toxicological side, so FDEP cannot then invoke its adequacy on the mercury load-concentration relationship side. Thus, the implicit margin of safety that FDEP claims is adequate as a consequence of how the 0.3 ppm THg as MeHg in fish flesh water quality target is derived and implemented is both administrative deficient and scientifically inadequate, so FDEP must adopt a margin of safety in the derivation of the mercury load-concentration

relationship such that the contributions to the combined margin of safety made by the set of assumptions, approximations, interpolations, and extrapolations are made explicit, even for an implicit margin of safety.

So, for example, if I assume that every waterbody in the state has reached a steady state with its long-term average mercury loading rate from all direct and indirect in-state, national, continental, global, and natural background mercury air emissions sources to justify the use of a linear load-concentration relationship and load reduction, one cannot then use the results of a one-time statewide mercury monitoring campaign to reduce the uncertainty introduced by that assumption, because one can only reduce that uncertainty by conducting seasonally relevant long-term monitoring of the reference sport fish THg as MeHg concentrations. FDEP has data and reports in its possession or to which it has access in the scientific, regulatory, or consultant literature demonstrating significant inter-seasonal and inter-annual variation in LMB THg as methylmercury concentrations that does not disappear when the fish are standardized by age, size, or weight. Nor can one ignore results contrary to that assumption, including the observed substantial and statistically significant difference in LMB THg concentrations for fish collected from the same waterbody in different seasons for the fish data in Appendix H, so the seasonal dynamics in fish reproduction status, growth rates, and foraging preferences preclude the attainment of steady state conditions or at least the assumption that one-time sampling of water and fish is representative of those steady state conditions, when only long-term monitoring can appropriately average out those seasonal fluctuations.

Some of that variability is due to the large range of the LMB, such that not all of the LMB harvested from a waterbody have spent all or the majority of their time foraging in that waterbody. In addition, precisely because LMB only slowly depurate the methylmercury they bioaccumulate, the methylmercury body burden they acquired while foraging during their rapid growth phase is their methylmercury contamination and concentration destiny, so even if the water column concentration of methylmercury subsequently increases or decreases by an order of magnitude, the large-bodied, slow-growing, prized lunker LMB have locked in the methylmercury to which they were exposed before the change. In essence it takes a LMB a lifetime for a methylmercury pulse to clear from the system and a new cohort of young-of-the year LMB to begin to bioaccumulate methylmercury under the changed conditions. However, while most LMB will regress the mean, some will have hot and cold streaks, so the within population variability will never disappear, even when a waterbody has achieved the hypothetical methylmercury production and bioaccumulation steady state condition with its long-term average external and internal mercury loading rates.
Only long-term monitoring of these inherently biogeochemically and biologically dynamic systems will average out these oscillations and allow one to calculate an accurate mercury loading rate-methylmercury bioaccumulation relationship using the LMB as the reference T4 sport fish species. Hence the need for a substantial margin of safety on the mercury load-concentration side separate from the nonexistent one invoked on the exposure-effects side.

p.82, Chapter 8: Determination of the TMDL

8.4 Margin of Safety
There are multiple lines of evidence to support the use of an implicit margin of safety in this TMDL. Consistent with the recommendations of the Allocation Technical Advisory Committee (Department, 2001), an implicit MOS was used in the development of this TMDL. Included in this implicit MOS is the assumption that all of the mercury in fish tissue is in the form of MeHg (the harmful fraction) and it is not. As discussed in Section 2.2, the application of a multifold increase in setting of the reference dose for MeHg is another significant component of the Margin of Safety (MOS). As noted previously, compared to other fish species, Largemouth Bass have higher overall tissue MeHg concentration because their position in the food chain dictates a longer food chain length for bioaccumulation. Use of Largemouth

Bass for the TMDL target development provides another margin of safety to the TMDL as all other fish living at lower trophic levels will also benefit.

There Is No Margin of Safety in the Assumption that All of the THg is MeHg in LMB Flesh

In the late 1990s USEPA published a method for ultra-trace total mercury (THg) analysis in fresh and salt water, sediment, and fish as Method 1631 for use in the NPDES permit program. The link to the set of USEPA-approved methods is contained in Exhibit E. The corresponding method for ultra-trace MeHg analysis in water, sediment, and fish, Method 1630, was published in draft for comment but was never formally adopted for application in the NPDES permit program. Instead, USEPA decided to regulate exposure to MeHg using fish and shellfish flesh as the representative medium for regulation rather than the water itself and total mercury (THg) rather than MeHg as the representative analyte for regulation. This made sense because (1) fish and shellfish are the predominant pathway of MeHg exposure to humans and wildlife, (2) most of the THg in fish flesh is MeHg, and (3) analyzing THg is more accurate and less expensive than analyzing MeHg in fish flesh. so analyzing for THg as MeHg in fish flesh would implement the revised mercury WQS without being overly burdensome in terms of a regulatory margin of safety, that is, there is an acceptable probability of committing Type I error: concluding that the waterbody is mercury-impaired when it is not. In fact, more than 90% of MeHg is THg in more than 90% of the LMB from at least 90% of Florida's freshwaters, so there is no margin of safety introduced by the assumption that all of the THg is MeHg in a mercury TMDL based on that assumption. FDEP claims to the contrary are contradicted by the facts, including common knowledge, data already in its possession, and data it could obtain if it analyzed a representative randomly selected subset of the LMB archived in its ultra-cold freezer at FWC's Eustis office. However, the ultra-trace MeHg analytical method used by FDEP for surface water and sediment but not fish flesh is not substantially equivalent to the ultra-trace MeHg analytical method used by Region 4 in states that could not or would not conduct the required ultra-trace MeHg analysis in surface water: USEPA Method 1630. So it is not clear whether USEPA Region 4 will approve FDEP's use of this alternative method in calculating LMB MeHg BAFs and MeHg-to-THg ratios in surface water, especially in light of the fact that an earlier petition for substantial equivalence was rejected by USEPA and USEPA Region 4 staff declined FDEP's offer to conduct ultra-trace THg and MeHg analyses for REMAP III at a competitive price relative to commercial laboratories with ultra-trace mercury analytical capabilities because of FDEP's unapproved ultra-trace MeHg analytical method.

There Is No MOS in the Use of LMB to Define Mercury Impairment and Recovery

Regarding the use of LMB as the representative indicator species for mercury impairment in freshwater sport and commercial fisheries, the question is not whether LMB have higher average concentrations than all lower trophic level sport and commercial fish and shellfish species in Florida's fresh waters, but whether (a) LMB are adequately representative of all harvestable fish species at the same trophic level and (b) whether using the average, median, or 90th percentile THg concentration in LMB to define mercury impairment, calculate the required mercury load reduction, and monitor recovery is adequately protective of sport fish consumers, because the sport fishers bias their fish collection to the older, larger fish with the highest methylmercury concentrations, while the state statutes biases the determination of and recovery from impairment to the population mean for each waterbody, and the statewide 90th percentile fish is not equivalent to the water body-specific 90th percentile fish.

Even If All of the Sport Fish Harvested and Eaten Were at Trophic Level 3, the Use of Largemouth Bass Would Only Compensate for Within-Lake Seasonal Variation

The ratio of the median concentrations of THg as MeHg in the edible flesh LMB to sunfish species for Florida streams is 2.18. In general, LMB is a more popular sport fish than the sunfish species, but people

will only consume what they or a relative or friend who shares their bounty can catch, so even if a greater percentage of otherwise legal sunfish species are thrown back when a LMB is caught, nevertheless, some sunfish species will be caught and consumed, if only out of necessity than preference. However, even if 50% of the sport fish caught and consumed were at Trophic Level 3, the statewide diet-weighted average combined T3 and T4 sport fish BAF would be reduced by 36% and the corresponding water quality target would be increased by 36%, which is not sufficient even to take into consideration seasonal variation, as required by CWA Section 303(d)(1)(C), let alone to adequately compensate for the compounded uncertainties in the mercury load-concentration relationship.

The Statewide Mercury Load Reduction Was Not Accurately Calculated

I used the freshwater lakes and streams large-bodied sport fish data obtained by FDEP in Appendix H http://www.dep.state.fl.us/water/tmdl/docs/tmdls/mercury/merc-tmdl-appendix-h.pdf from the statewide, one-time mercury monitoring campaign to calculate the statewide descriptive statistics for the lake, stream, and combined waterbodies for the total mercury (THg) concentration in largemouth bass (LMB) fish flesh on a wet weight basis. The lake-specific and stream-specific averages for all LMB were calculated using all of the LMB collected in the study period, even if that included multiple samplings in the same season in the same year, the same season in different years, different seasons in the same year, and different seasons in different years. The seasonal variation in the LMB observed in waterbodies sampled in multiple season and its implications for the calculation of the statewide mercury TMDL, WLA, and point source WQBELs will be addressed in a separate formal public comment per subject.

I omitted sunfish species from the calculation of these statistics, because sunfish are smaller, faster-growing, and typically feed at trophic level three (T3), one trophic level lower than LMB (T4). That being the case, the average THg concentrations in sunfish species are almost always lower than the THg concentrations in LMB collected from the same waterbody at the same time. The inclusion of sunfish species would thus skew the fish concentration statistics low, as well as reduce the magnitude of the implicit margin of safety (M.O.S.) FDEP is claiming for its statewide mercury TMDL calculation, thereby undermining the credibility of the assertion of its adequacy. I will submit separate formal public comments on the deficiencies in the implicit statewide mercury TMDL M.O.S. per subject.

Based on the preceding data inclusion, exclusion, and analysis scheme, the statewide median THg concentrations in LMB on a wet weight basis in lakes, streams, and combined are, respectively, 0.34, 0.39, and 0.42 mg/Kg THg, while the corresponding 90th percentile values are, respectively, 0.74, 0.99, and 0.91 mg/Kg THg. Please confirm that the statewide 90th percentile LMB THg concentration value for all lakes and streams combined is 0.91 mg/Kg THg, not 0.74 mg/Kg THg used in the calculation of the required reduction in the controllable load allocation. Please make the needed corrections to the 90th percentile statewide LMB THg concentration and the corresponding revisions to the text prior to submitting the final draft Mercury TMDL for the State of Florida Report to USEPA Region 4 for review and comment.

One is also able to infer from this correction that the required statewide mercury loading rate reduction from the control of all in-state, in-nation, and global mercury air emissions sources of wet and dry atmospheric deposition to Florida waters must increase from 85% to 96% to attain and maintain the water quality target of 0.3 ppm THg in LMB flesh on a wet-weight basis in 90 percent of the freshwater waterbodies statewide. Please make the needed correction to the calculation of the required statewide mercury loading rate reduction of controllable air emissions sources and please make the corresponding revisions to the text wherever that erroneous value occurs or is used in a TMDL, LA, WLA, or WQBEL prior to submitting the final draft Mercury TMDL for the State of Florida Report to USEPA Region 4 for review and comment.

The unenforceable reduction in the loading rate of inorganic mercury wet and dry atmospheric deposition from all controllable in-state, U.S., continental, and global air emissions sources to attain the unenforceable water quality target of 0.3 ppm THg was calculated using an erroneous status quo reference value of 0.74 mg/Kg THg wet-weight as the 90th percentile concentration for all LMB in all the waterbodies surveyed in the one-time statewide mercury monitoring campaign, instead of the correct value of 0.91 mg/Kg THg wet-weight. If the statewide value for lakes and streams combined is used instead of the stream-specific value, greater than 10% of the streams will remain impaired after the target load reduction is effected. That being the case, it is more appropriate to use the 90th percentile value for streams, and when that is done, an impaired stream reference value of 0.99 mg/Kg THg wet-weight, which translates into a load reduction to achieve 0.3 mg/Kg wet-weight of 99%.

However, this is not an endorsement of the statewide approach to mercury TMDL development and implementation adopted by the State of Florida, where 1%, 5%, or 10% of Florida's lakes an drivers are sacrificed to administrative expediency. Nor is the margin of safety in the TMDL adequate to ensure that even those statistical targets will be hit. CWA Section 303(d)(1)(C) requires a waterbody-specific approach to attain the duly promulgated WQS. No waterbody shall be left behind in the process of developing or implementing a mercury TMDL at any scale. And no waterbody shall be delisted until all of its statewide and watershed-specific mercury source controls and best management practices have been implemented, the waterbody has had sufficient time to respond to the mercury load reduction, and follow-up monitoring demonstrates the long-term attainment and maintenance of mercury-unimpaired status. If state law requires otherwise, then the state law must be changed to comport with Federal law.

The Statewide Mercury TMDL-Related Load Allocation (LA) Was Not Properly Calculated

According to the USEPA regulations and technical guidance promulgated and published to implement CWA Section 303(d)(1)(C), the Load Allocation (LA) includes all uncontrollable nonpoint sources, both those over which nobody can exert control, e.g., natural background sources and sources from man-induced irretrievable conditions, e.g., abandoned mines and large-scale soil contamination in the watershed or large-scale sediment contamination in the waterbody, as well as sources originating outside of the jurisdiction of the United States of America, e.g., continental and global air emissions sources, and those within the jurisdiction of the U.S. but regulated under the authority of another statute, e.g., air emissions regulated by national technology-based and air quality-based standards promulgated under the Clean Air Act (CAA) in permits issued under the CAA. The CWA makes no provision for and claims no authority over nonpoint sources originating from air emissions sources regulated under the CAA, so the portion of the TMDL that is available for allocation to controllable point and nonpoint sources under the authority of the CWA is what remains after the combined loading rate contribution from all mercury sources outside the control of the CWA is subtracted from the TMDL with an adequate margin of safety. When the LA is recalculated to account for all nonpoint sources of mercury over which the CWA has no control, most Florida lakes and streams are over-allocated by the LA for mercury, that is the mercury TMDL - LA - M.O.S. $\leq$ 0, and for all such waterbodies the mercury WLA = 0, so the point source Water Quality Based Effluent Limitation (WQBELs) based on that WLA are 0, not the surface water-equivalent target value. This translates into no detectable discharge for purposes of monitoring point source permit compliance under the state-delegated National Pollutant Discharge Elimination System (NPDES) authorized by CWA Section 402(b). The routinely achievable method detection limit (MDL) for the analytical method for ultra-trace total mercury (THg) used by FDEP is 0.1 ng/L. Using the FDEP-approved ultra-trace THg analysis method, the effective point source mercury WLA is 0.7 lbs/yr, not 8.8 lbs.

The THg Concentration in Water Equivalent to the Water Quality Target in Fish Flesh is Not Adequately Protective of Florida's Water Resources: No Waterbody Left Behind

The water quality-based effluent limitations (WQBELs) for all point sources to a waterbody for which fishable and swimmable uses are otherwise attainable are calculated based on the TMDL - LA - M.O.S on a waterbody-specifc basis to attain and maintain the applicable numerical Water Quality Standard (WQS) with an acceptable magnitude, duration, and frequency of recurrence under appropriate conditions representing a seasonal minimum in the pollutant assimilative capacity to ensure the restoration and protection of its fishable and swimmable uses. There is no interpretation of the language of CWA Section 303(d)(1)(C) or the regulations or technical guidance promulgated or published to implement that provision that authorizes a statewide approach to pollutant TMDL development and implementation, even for a pollutant the predominant pathway for which is atmospheric deposition. However, if a statewide approach were to be taken, it would be unlawful to leave any pollutant -impaired waterbody impaired by any pollutant as a consequence of the way the statewide TMDL is calculated or implemented. The only lawful way to develop and implement a TMDL on a statewide basis would be to identify the waterbody in the state that has the greatest susceptibility to mercury-impairment, that is, the waterbody with the highest ratio of LMB THg as MeHg to the mercury species loading rates from all sources with a margin of safety in all of the assumptions that is considered adequate to protect a waterbody that was not studied but is more susceptible than the most susceptible waterbody studied. I refer to this as the no waterbody left behind philosophy and policy of the statewide approach. Unless and until that is done with an adequate margin of safety, the statewide approach is contrary to the letter and spirit of the CWA.

The Waste Load Allocation Was Not Properly Calculated

FDEP translated the unenforceable water quality target of 0.3 ppm THg as methylmercury in fish flesh on a wet weight basis into the equivalent target surface water concentration of THg in unfiltered surface water using the statewide median largemouth bass methylmercury bioaccumulation factor (2.67×10^6) and statewide median ratio of methylmercury to THg (0.093). The 90th percentile value (9.41×10^6) and 90th percentile ratio of methylmercury-to-total mercury (0.257) to take into consideration seasonal and statewide variation within and between water bodies and to provide a greater implicit margin of safety in the loading rate-concentration relationship. If the more protective approach is used, the state's 1.25 ng/L value is reduced by an order of magnitude. However, both values are above the routinely achievable method detection level claimed by FDEP's ultra-trace mercury analysis laboratory of 0.1 ng/L THg using USEPA-approved Method 1631 or a substantially equivalent method. When the LA > TMDL - MOS, the WLA = 0, and the default water quality-based effluent limitation (WQBEL) is no detectable concentration in the discharge using the most sensitive, USEPA-approved analytical method for THg in wastewater, Method 1631, not an unenforceable WQBEL based on attaining and maintaining a water concentration equivalent to the unenforceable water quality target.

The Waste Load Allocation Was Not Fairly and Equitably Distributed Between and Among States, Salt and Fresh Waters, and Point and Nonpoint Sources

The mercury TMDLs for inter-state water bodies were not fairly and equitably distributed between states prior to distributing Florida's far share of the remainder among controllable nonpoint sources and point sources. The mercury WLA was not fairly and equitably distributed between controllable nonpoint sources. e.g., land application of biosolids and point sources. The unenforceable reduction in the loading rate of inorganic mercury wet and dry atmospheric deposition from all controllable in-state, U.S., continental, and global air emissions sources to attain the unenforceable water quality target of 0.3 ppm THg assumes a linear relationship between the long-term average mercury deposition load and the long-term average methylmercury bioaccumulation in fish flesh, but the bioaccumulation values were based on a one-time, statewide monitoring campaign in fresh waters, so no long-term average values of LMB and

sunfish THg concentrations were obtained, and no effort was made to adjust those values to reflect and correct for observed inter-seasonal and inter-annual variation.

The One-Time, Statewide Mercury Monitoring Program Upon Which the Statewide Mercury TMDL Was Based Was Fatally Flawed in Design, Implementation, and Interpretation of Results

The one-time statewide mercury monitoring campaign was deficient in design, implementation, and analysis, integration, and synthesis of results. Among its many deficiencies:

- it omits all freshwater wetlands;
- it omits all brackish and salt water swamps, wetlands, lagoons, estuaries, and bays, in part because the method FDEP's laboratory uses for ultra-trace methylmercury analysis is no applicable to salt waters;
- it omits outstanding largemouth bass sport fisheries such as Lake Okeechobee and Lake Trafford;
- it cannot be demonstrated that the lakes and streams selected adequately span the relevant combinations of physical, chemical, and biological conditions and factors governing susceptibility to mercury impairment or the mercury load-methylmercury bioaccumulation relationship;
- it cannot be demonstrated that the number of lakes and streams sampled in each subcategory provides the required power and confidence levels to identify mercury-impaired waters with acceptable probabilities of committing Type I and II errors, let alone the physical, chemical, and biological conditions and factors that govern the mercury load-concentration relationship;
- in all but twelve lakes, sampling only occurred once in one season;
- it omits sediment solids acid volatile sulfide (AVS) and/or chromate reducible sulfide (CRS), both of which quantify the trace metal sulfides that are known or have been inferred to influence inorganic mercury bioavailability to methylating bacteria;
- it omits the sediment pore water compartment altogether, which is the only compartment in which the parabolic relationship between sulfate, sulfide, and methylmercury production is expected to be observed;
- none of the largemouth bass (LMB) were analyzed for methylmercury to validate FDEP's claim that the assumption that all THg is methylmercury in LMB flesh provides an adequate margin of safety;
- 49% of the sediment data were below the method detection limit of the FDEP's ultra-trace methylmercury analytical method, which has not been approved by USEPA for water, sediment, or fish as substantially equivalent to USEPA-published Method 1630.

The Ultra-Trace Methylmercury Analytical Method Used by FDEP for One-Time, Statewide Mercury Monitoring Campaign is Not Substantially Equivalent to USEPA Method 1630

USEPA Method 1630 is not published for compliance application in the Clean Water Act Section 402 NPDES permit program. That being the case, a regulatory agency cannot establish or enforce water quality-based effluent limits for methylmercury. However, Method 1630 is listed by USEPA as appropriate for other Clean Water Act applications. Such applications include mercury TMDL development under Clean Water Act Section 303(d)(1)(C). Using the example of Florida's statewide mercury TMDL development process, FDEP first calculates a largemouth bass-to-surface water ratio or bioaccumulation factor (BMF) for each water body and an unfiltered methylemercury-to-unfiltered total mercury (THg) ratio in water for each water body, and then uses the median values for both to back-calculate a statewide median THg concentration in unfiltered surface water equivalent to the 0.3 ppm THg as methylmercury in fish flesh on a wet-weight basis. In developing waterbody-specific mercury TMDLs

for the State of Georgia, Mississippi, and North Carolina, USEPA Region 4 used Method 1630 to obtain the required waterbody-specific methylmercury-to-THg ratios. The waste load allocations (WLAs) deriving from the TMDL are enforceable as water quality-based effluent limitations (WQBELs) in NPDES permits and those WQBELs enforceable using USEPA-approved Method 1631. A methylmercury analytical method that is not demonstrably substantially equivalent to USEPA Method 1630 would open a legal point of entry for a third-party challenge to a water body-specific or statewide mercury TMDL and any mercury WLA/WQBELs deriving therefrom. In addition to the preceding application, FDEP is claiming that the ample margin of safety in the statewide mercury TMDL includes the assumption that all of the THg in largemouth bass flesh is methylmercury, when it is not. In fact, it is common knowledge that > 95% of the THg is methylmercury in legal-sized, top-predator fish in general and in largemouth bass from Florida waters in specific. That would not constitute an ample margin of safety to offset the compounded uncertainties in the mercury loading rate-methylmercury concentration relationship in surface water. I believe FDEP has data in its possession that supports this common knowledge. Nevertheless, to demonstrate an ample margin of safety based on this assumption, FDEP must be capable of analyzing methylmercury in fish flesh in archived fish samples using a valid analytical method substantially equivalent to USEPA Method 1630.

The Statistical Water Quality Model Was Not Used In the Development of Implementation of the Statewide Mercury TMDL, Because the Model Failed

The so-called mercury water quality model, which is nothing more than a multivariate regression analysis of the log-transformed water, sediment, and fish data obtained in the one-time, statewide mercury monitoring campaign, combined with earlier data collected by FWC's Ted Lange, is the product of subjective professional judgment, not an unbiased, systematic statistical analysis, because it includes further transformations or nomalizations of some data but not others in order to linearly approximate inherently non-linear relationships, e.g., the sulfate-methylmercury relationship, or improve the linearity of the presumed relationships, e.g., the use of a Monod transformation of pH, in carrying out the multivariate linear regression analysis. Despite the best efforts of the analyst to obtain an adequate fit between the dependent variable, the concentration of THg as methylmercury in LMB flesh and various potentially influential independent water quality variables through these subjective transformations, the model failed, because known influences did not emerge, such as the influence of sulfate on the rate at which sulfate-reducing bacteria methylate the bioavailable fraction of inorganic mercury up to the point of sulfide inhibition of the methylation rate, probably via complexation. This is understandable, because the relationship between sulfate concentration and the methylation rate is parabolic, not linear, and it is only detectable in sediment pore water, not the overlying water column. However, had FDEP collected the requisite samples of pore water from the lakes it sampled, the difference between surface water and pore water sulfate concentrations could be used to infer the metabolic rate of sulfate reducing bacteria with which to evaluate its relationship to various water quality parameters governing inorganic mercury bioavailability, including theeffect of the daily redox cycle on the formation and dissolution of iron and manganese sulfides and polyslufides in the surficial sediment layer where methylation is occuring.

The Mechanistic Mercury Water Quality Models Available to FDEP Were Not Used for the Development of the Statewide Mercury TMDL

FDEP has had at its disposal since the late 1990s a mercury transport-fate model developed by USEPA's Office of Research and Development based on a modification of the GLEAMS model that is applicable to small watersheds and could have been used to evaluate the watershed runoff contributions of mercury to the receiving water from fertilized farmlands and biosolids application sites. FDEP has at its disposal since 2003, E-MCM(II), a mercury model capable of modeling methylmercury production and bioaccumulation in lakes, streams, and wetlands, as evidenced by the publication of the results of the application of a less sophisticated version, E-MCM(I), to quantify the mercury load-methylmercury

bioaccumulation relationship in Water Conservation Area-3A in the Everglades Mercury TMDL Pilot Study: http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/everglades_fs.cfm

Key Findings

The Mercury TMDL for the State of Florida Report to USEPA Region 4 that embodies the statewide approach to the development and implementation of a mercury TMDL, Waste Load Allocation, and wastewater points source Water Quality-Based Effluent Limitations:
-- sacrifices the most mercury-susceptible waterbodies as an administrative expedient, when the CWA Section 303(d)(1)(C) makes no such provision and requires that no waterbody be left behind in attianment of mercury-unimpaired status
-- fails to include a Florida-specific water quality target derived following USEPA guidelines, because the Florida women of childbearing age of median weight consuming salt water fish and shellfish at median rates with median concentrations of methylmercury are already over-exposed to methylmercury in excess of the USEPA reference dose to protect the developing fetus from cognitive impairment, so the allowable methylmercry concentration in freshwater fish is 0
-- fails to mention, let alone adequately consider seasonal variation in water quality in the derivation and implementation of the statewide mercury TMDL, when FDEP's own data demonstrate seasonal variation
-- claims an adequate margin of safety in the derivation and implementation of USEPA's methylmercury reference dose that disappear with the realization that USEPA calculated the reference dose assuming a 1:1 relationship between the blood of the fetus and the mother, when the actual value is closer to 1.7:1 according to USEPA's Kate Mahaffey
-- omits significant natural background sources of mercury species over which FDEP can exert no regulatory control under the CWA that must be included in the load allocation, i.e., groundwater discharge to seepage lakes
-- improperly assumes that others will reduce the nonpoint mercury source contribution to the mercury load allocation (LA) from air emissions sources over which it has no regulatory control under the CWA
-- when the load allocation is recalculated, the TMDL - LA - M.O.S. < 0, so the WLA = 0, and the water quality-based effluent limitations (WQBELs) deriving thereform are 0 and the effluent limitation equivalent to 0 is no detectable discharge using the most sensitive USEPA-approved analytical method promulgated for that purpose, i.e., Method 1631, not the THg concentration in water equivalent to the unenforceable mercury water quality target of 0.3 ppm in fish flesh
-- omits significant sources of mercury over which it can exert regulatory control under the CWA, i.e., land-applied biosolids
-- incorrectly calculates the mercury load reduction required to achieve the water quality target-equivalent surface water concentration
-- fails to fairly and equitably distribute the mercury assimilative capacities of shared surface waters with other states
-- fails to consider the impacts of the proposed administrative action on subsistence fishers protected by the environmental justice provisions of applicable statutes and Presidential Executive Orders
-- fails to demonstrate adequate protection of fish-eating wildlife and their predators in general and highly-exposed, threatened, endangered, and migratory species in particular, and
-- improperly allocates all of the unused mercury assimilative capacity to wastewater point sources;
-assumes that the statewide mercury TMDL is controlled by its in-land lakes and streams, when Florida's estuaries, lagoons, and bays are demonstrably more susceptible to mercury impairment under the same wet and dry mercury atmospheric deposition loads impacting its tributaries, as evidenced by Florida Bay;
-- adopts the mutually exclusive assumptions that lakes, streams, lagoons, estuaries, and bays will rapidly recover in response to mercury source reduction, because biogeochemical dynamics and kinetics favor the methylation of new inorganic mercury in atmospheric deposition over the old inorganic mercury in sediments, while assuming at the same time that all lakes and streams have reached a steady-state relationship between the long-term average wet and dry mercury deposition flux and the methylmercury

concentration in slow-growing, large-bodies, long-lived, top-predator sport fish represented by the prized largemouth bass (LMB), which is assumed to conveniently integrate out all of the seasonal variation in mercury species loading, transport, transformation, and bioaccumulation rates governed by the seasonal variation in biogeochemical dynamics and kinetics, such that sampling any lake or stream at any time of the year will conveniently yield the same mercury load-methylmercury bioaccumulation result; and
-- FDEP's own data contradict the steady-state assumption, as evidenced by the observed significant seasonal variation in the small subset of lakes that had to be resampled to fill their LMB quotas, so it follows that all lakes and streams have not reached a steady-state relationship between the long-term average wet and dry deposition mercury loading rate and the average methlymercury concentration in LMB flesh, so the seasonal variation in water quality and its influences on mercury species transport, disposition, transformation, bioavailability, and bioaccumulation cannot be ignored, and only long-term seasonal sampling of water, sediment, and fish can yield an appropriate load-concentration relationship for mercury TMDL development and implementation at every scale from water body-specific to statewide.

These are fatal flaws in the development and implementation of the statewide approach to the Florida mercury TMDL that must be corrected prior to submittal of the Revised Draft Hg TMDL Report to USEPA Region 4 for review and comment.

Key Recommendations

-- Obtain the background dose rate probability distribution function for women of child-bearing age from the consumption of fresh, frozen, and canned saltwater fish species using the probabilistic approach but now including the lognormal concentration distributions rather than average values of the concentrations of THg as MeHg by fish species.
-- Promulgate an enforceable, revised mercury WQS for total mercury as methylmercury in fish flesh on a wet-weight basis in this triennial review cycle that is adequately protective of the health of a typical subsistence consumer of salt and freshwater fish to replace the existing numerical Class III WQS of 12 ng/L total mercury in unfiltered water, which FDEP acknowledges is not adequately protective of human health.
-- Promulgate a revised mercury WQS for total mercury as methylmercury in whle fish on a wet-weight basis that is adequately protective of fish- and shellfish-eating wildlife species, including threatened species such as the bald eagle and endangered species such as the wood stork, the Everglades mink, and the Florida panther.
-- Develop an enforceable statewide mercury TMDL based on the more protective of the enforceable human health or wildlife WQS.
-- Properly recalculate the Load Allocation by accounting for the daily mass contribution rates from all mercury source categories outside of CWA control, including all in-state, out-of-state, continental, and global mercury air emissions sources and groundwater inflow under seasonally appropriate low-stage conditions.
-- Properly account for the mercury loading rates to waterbodies in watersheds in which one of the land uses is land-application of biosolids.
-- Allocate what remains of the unused mercury assimilative capacity between point and controllable nonpoint sources under the CWA, including the deposition of wind-eroded particles, leaching to the underlying surficial aquifer with subsequent inflow to the waterbody, and stormwater runoff in excess of the permit-mandated stormwater storage capacity to the waterbody.
-- If the TMDL-LA-MOS < 0, the WLA is 0 for all point sources and controllable nonpoint sources and set the point source water quality-based effluent limitations (WQBELs) to 0, which translates into no detectable discharge using USEPA Method 1631 or a method substantially equivalent to USEPA Method 1631.

-- If the WLA $\leq$ 0, impose a moratorium on the land-application of biosolids contaminated above Florida soil background levels.
-- During the biosolids land application moratorium, conduct an intensive study of a representative set of decommissioned and active biosolids land application sites in a representative set of watersheds containing a representative set of mercury-impaired and mercury-unimpaired streams and lakes, quantify the absolute and relative contributions of the aerosol, evasion, leachate, and runoff pathways to the seasonally appropriate mercury loading rates of a representative set of seepage and drainage lakes and streams using appropriate models, and back-calculate maximum allowable mercury concentrations in the biosolids from the unused mercury assimilative capacities of these representative lakes.
-- Use the statewide mercury LA as leverage with CAA programs to reduce mercury air emissions from sources over which the CAA has control to free up some of the over-allocated mercury assimilative capacity of the majority of Florida's fresh and salt waterbodies for the point and nonpoint sources over which the CWA has control.
-- Include a factor of 2 in the margin of safety in the statewide mercury TMDL to compensate for within water-body one-time sampling error of the representative long-lived, large-bodied freshwater sport fish, the largemouth bass.
-- Include another factor of 2 in the margin of safety in the statewide mercury TMDL to compensate for seasonal variation within waterbodies.
-- Include another factor of 2 in the margin of safety in the statewide mercury TMDL to compensate for variation between fresh waterbodies.
-- Include a factor of 3 as a margin of safety to ensure the protection of freshwater wetlands and salt waters omitted from the statewide mercury TMDL that are more mercury susceptible than the lakes and stream included in the one-time mercury monitoring campaign.
-- Rather than delisting mercury-impaired waterbodies upon completion of the statewide mercury TMDL, provide for follow-up mercury monitoring of a representative set of freshwater wetlands, lakes, and streams and brackish and salt water wetlands, lagoons, estuaries, and bays.
-- Calculate the required mercury load reduction to restore 95% of the states fresh waters with an adequate margin of safety for the inherently more uncertain statewide approach.

Thank you for this opportunity to review and comment on this most important administrative action or lack thereof.

Sincerely,

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Exhibit A

The Clean Water Act

http://www.epa.gov/oecaagct/lcwa.html

The TMDL Provision of the Federal Clean Water Act

"Section 303(d)(1)(C): Each State shall establish for the waters identified in paragraph (l)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality."
http://water.epa.gov/lawsregs/guidance/303.cfm

Exhibit B

TMDL Regulations and Technical Guidance

General:
http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=68611527d82e2dcf115ba1a29e84efca&tpl=/ecfrbrowse/Title40/40cfr130_main_02.tpl

http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/index.cfm

Mercury:

http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/mercury.cfm

Exhibit C

USEPA Water Quality Criteria Document for Methylmercury in Fish Flesh to Protect Human Health

http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/pollutants/methylmercury/index.cfm

Exhibit D

http://nepis.epa.gov/Adobe/PDF/P1003RPA.pdf

Guidance for Implementing the
January 2001 Methylmercury
Water Quality Criterion

Final

United States Environmental Protection Agency
Office of Science and Technology (4305T)
1200 Pennsylvania Ave., NW
Washington, DC 20460
EPA-823-R-09-002
www.epa.gov/waterscience
January 2009

Exhibit E

USEPA-Approved Analytical Methods for Use In Implementing Clean Water Act Regulatory Programs at 40 CFR 136
http://water.epa.gov/scitech/methods/cwa/

Method 1631: Ultra-Trace Mercury Analysis in Water, Sediment, and Fish
http://water.epa.gov/scitech/methods/cwa/metals/mercury/index.cfm

Other CWA Methods of Interest *not* Currently Approved for use at 40 CFR 136

Method 1630: Ultra-Trace Methylmercury Analysis in Water, Sediment, and Fish

http://water.epa.gov/scitech/methods/cwa/metals/mercury/upload/2007_07_10_methods_method_mercury_1630.pdf

Exhibit F

Revised Draft Mercury TMDL for the State of Florida Report to USEPA Region 4, published on July 6, 2012. http://www.dep.state.fl.us/water/tmdl/merctmdl.htm

Exhibit G

The References in the Revised Draft Mercury TMDL for the State of Florida Report to USEPA Region 4, published on July 6, 2012. http://www.dep.state.fl.us/water/tmdl/merctmdl.htm

Exhibit H

Appendix H of the Revised Draft Mercury TMDL for the State of Florida Report to USEPA Region 4, published on July 6, 2012

http://www.dep.state.fl.us/water/tmdl/docs/tmdls/mercury/merc-tmdl-appendix-h.pdf

Exhibit I

Impaired waters

http://www.dep.state.fl.us/legal/rules/shared/62-303/62-303.pdf

62-303.470 Fish and Shellfish Consumption Use Support.
(1) In order to be used under this part, the Department shall review the data used by the DOH as the basis for fish consumption advisories and determine whether it meets the following requirements:
(a) The advisory is based on the statistical evaluation of fish tissue data from at least twelve fish collected from the specific water segment or water body to be listed,
(b) The data are collected in accordance with DEP SOP FS6000 (General Biological Tissue Sampling) and FS 6200 (Finfish Tissue Sampling), which are incorporated by reference, the sampling entity has established Data Quality Objectives (DQOs) for the sampling, and the data meet the DQOs, and
(c) There are sufficient data or other information from within the last 7.5 years that would support the continuation of the advisory. The Department shall document any decision to list waters with advisories older than 7.5 years, including the data supporting the continuation of the advisory or information demonstrating that older data are representative of current conditions.
(2) Waters with advisories determined to meet the requirements of this section or waters where scientifically credible and compelling information meeting the requirements of Chapter 62-160, F.A.C., indicates the applicable human health-based water quality criteria are not met shall be listed on the verified list. Any determinations to list waters based on this provision shall be documented, and the documentation shall include the basis for the decision.
(3) Class II waters shall be included on the verified list for coliform impairment if, following review of the available data as described in subsection 62-303.460(2), F.A.C.
(a) The number of samples above 43 counts per 100 ml meet the requirement in subsection 62-303.420(6), F.A.C., with the exception that paragraph 62-303.320(4)(a), F.A.C., does not apply and samples collected on different days within any four day period will be assessed as daily samples,or
(b) The water segment includes a sampling location that has a median fecal coliform MPN value that exceeds 14 counts per 100 ml for the verified period. To calculate a median value for a sampling location, there shall be at least 20 samples collected during the verified period.
(4) Waters that qualify for placement on the planning list based on shellfish harvesting classification information shall be verified as impaired for fecal coliforms. Specific Authority 403.061, 403.067 FS. Law Implemented 403.062, 403.067 FS. History–New 6-10-02, Amended 12-11-06, 9-4-07.

62-303.500 Prioritization.
(1) When establishing the TMDL development schedule for water segments on the verified list of impaired waters, the Department shall prioritize impaired water segments according to the severity of the impairment and the designated uses of the segment, taking into account the most serious water quality problems; most valuable and threatened resources; and risk to human health and aquatic life. Impaired waters shall be prioritized as high, medium, or low priority.
(2) The following waters shall be designated high priority:
(a) Water segments where the impairment poses a threat to potable water supplies or to human health.
(b) Water segments where the impairment is due to a pollutant regulated by the CWA and the pollutant has contributed to the decline or extirpation of a federally listed threatened or endangered species, as indicated in the Federal Register listing the species.
(3) The following waters shall be designated low priority:

(a) water segments that are listed before 2010 due to fish consumption advisories for mercury (due to the current insufficient understanding of mercury cycling in the environment).
(b) Man-made canals, urban drainage ditches, and other artificial water segments that are listed only due to exceedances of the dissolved oxygen criteria.
(c) Water segments that were not on a planning list of impaired waters, but which were identified as impaired during the second phase of the watershed management approach and were included in the verified list, unless the segment meets the criteria in paragraph (2) for high priority.
(4) All segments not designated high or low priority shall be medium priority and shall be prioritized based on the following factors:
(a) The presence of Outstanding Florida Waters.
(b) The presence of water segments that fail to meet more than one designated use.
(c) The presence of water segments with greater than twenty-five percent of the samples not meeting an applicable water quality criterion or alternative threshold with a minimum of a 90 percent confidence level.
(d) The presence of water segments that exceed more than one applicable water quality criteria.
(e) Administrative needs of the TMDL program, including meeting a TMDL development schedule agreed to with EPA, basin priorities related to following the Department's watershed management approach, and the number of administratively continued permits in the basin..Specific Authority 403.061, 403.067 FS. Law Implemented 403.062, 403.067 FS. History - New 6-10-02, Amended 12-11-06.

62-303.720 Delisting Procedure.
(1) Waters on planning lists developed under this chapter that are verified to not be impaired during development of the verified list shall be removed from the State's planning list. Once a water segment is verified to not be impaired pursuant to Part III of this chapter, the data used to place the water on the planning list shall not be the sole basis for listing that water segment on future planning lists.
(2) Water segments shall be removed from the State's verified list only after completion of a TMDL for all pollutants causing impairment of the segment or upon demonstration that the water meets the water quality standard that was previously established as not being met.
(a) For waters listed due to failure to meet aquatic life use support based on water quality criteria or due to threats to human health based on single sample water quality criteria, the water shall be delisted when:
1. The number of samples that do not meet an applicable water quality criterion due to pollutant discharges is less than or equal to the number listed in Table 4 for the given sample size, with a minimum sample size of 30. Waters shall be delisted when 10% or less of the samples do not meet the applicable criterion with a minimum of a 90% confidence level using a binomial distribution, or
2. Following implementation of pollution control activities that are expected to be sufficient to result in attainment of applicable water quality standards, evaluation of new data indicates the water no longer meets the criteria for listing established in Rule 62-303.420, F.A.C., or
3. Following demonstration that the water was inappropriately listed due to flaws in the original analysis, evaluation of available data indicates the water does not meet the criteria for listing established in Rule 62-303.420, F.A.C. New data evaluated under subparagraph 62-303.720(2)(a)1., F.A.C., must meet the following requirements:
a. They must include samples collected during similar conditions (same seasons and general flow conditions) that the data previously used to determine impairment were collected, with no more than 50% of the samples collected in any one quarter,
b. The sample size must be a minimum of 30 samples, and
c. The data must meet the requirements of subsections 62-303.320(4), (6) and (7),

F.A.C.
(b) For waters listed due to failure to meet aquatic life use support based on biological data, the water shall be delisted when the segment passes two independent follow-up bioassessments and there have been no failed bioassessments for at least one year. The follow-up tests must meet the following requirements:
1. For streams, the new data may be two BioRecons or any combination of BioRecons and SCIs.
2. The bioassessments must be conducted during similar conditions (same seasons and general flow conditions) under which the previous bioassessments used to determine impairment were collected.
3. The data must meet the requirements of subsections 62-303.330(1) and (2), F.A.C.
(c) For waters listed due to fish consumption advisories, the water shall be delisted following the lifting of the advisory or when data complying with paragraphs 62-303.470(1)(a) and (b), F.A.C., demonstrate that the continuation of the advisory is no longer appropriate.
(d) For waters listed due to their shellfish bed management classification, the water shall be delisted upon reclassification of the shellfish harvesting area to approved, or for conditionally approved areas, when the only source identified by SEAS for the harvesting area is wildlife.
(e) For waters listed due to bathing area closure or advisory data, the water shall be delisted if the bathing area does not meet the listing thresholds in subsection 62-303.360(1), F.A.C., for five consecutive years.
(f) For waters listed based on impacts to potable water supplies, the water shall be delisted when applicable water quality criteria are met as defined in paragraph 62-303.380(1)(a), F.A.C., and when the causes resulting in higher treatment costs have been ameliorated.
(g) For waters listed pursuant to paragraph 62-303.460(3)(b), 62-303.470(3)(b), or 62-303.480(3)(b), F.A.C., the water shall be delisted when:
1. The criteria applicable to those sections are met for three consecutive years and there are sufficient new data available to calculate monthly values for at least the same seasons in which the exceedances occurred, or
2. Following a demonstration that the water was inappropriately listed due to flaws in the original analysis, including the use of a non-representative sample set.
(h) For waters listed pursuant to paragraph 62-303.460(3)(a), 62-303.470(3)(a), or 62-303.480 (3)(a), F.A.C., the water shall be delisted upon meeting the delisting provisions in paragraph 62-303.720(2)(a), F.A.C.
(i) For waters listed based on a human health-based annual average criterion, the water shall be delisted when the annual average concentration is less than the criterion for three consecutive years.
(j) For waters listed based on nutrient impairment, the water shall be delisted if it does not meet the listing thresholds in Rule 62-303.450, F.A.C., for three consecutive years.
(k) For any listed water, the water shall be delisted if, following a change in approved analytical procedures, criteria, or water quality standards, evaluation of available data indicates the water no longer meets the applicable criteria for listing.
(l) For waters listed based on paragraph 62-303.420(7)(b) or subsection 62-303.470(3), F.A.C., the water shall be delisted if the Department determines the water is no longer impaired, based on scientifically credible and compelling information comparable in quantity and quality to the information used to make the initial listing decision. Any determinations to delist waters based on this provision shall be documented, and the documentation shall include the basis for the decision.
(m) For waters listed pursuant to paragraph 62-303.320(6)(b), F.A.C., the water shall be delisted when the applicable criteria are met for at least three consecutive years and there are new data available for the same seasons in which the previous exceedances occurred.
(3) Any delisting of waters from the verified list shall be approved by order of

the Secretary at such time as the requirements of this section are met.
Specific Authority 403.061, 403.067 FS. Law Implemented 403.062, 403.067 FS.
History–New 6-10-02, Amended 12-11-06, 9-4-07.

Attachment IV

INTERIM June 2003

CENTRAL AND SOUTHERN FLORIDA PROJECT

COMPREHENSIVE EVERGLADES RESTORATION PLAN

G.1 – WATER QUALITY MODELING

G.1.1 – RESERVOIR PHOSPHOROUS UPTAKE MODEL

EVERGLADES AGRICULTURAL AREA STORAGE RESERVOIRS - PHASE 1

US Army Corps of Engineers South Florida Water
Jacksonville District Management District

Assisted By:

(SFWMD Consultant Task 2.1.1)

http://www.evergladesplan.org/pm/projects/project_docs/pdp_08_eaa_store/060103_pdp_08_reservoir_phosphorous_model.pdf

G.1.1.3.1 DMSTA

DMSTA Overview

DMSTA is currently being used to support the evaluation of STAs, as part of the Everglades Construction Project (ECP) Basin-Specific Feasibility Studies. DMSTA provides a framework for integrating experimental and field-scale monitoring data for designing the next generation STAs. The phosphorous removal performance of the STAs has also been evaluated with DMSTA. This model was prepared by William Walker and Robert Kadlec for the U.S. Department of Interior (Walker and Kadlec 2002).
The DMSTA model has been prepared to provide a single platform for estimating the performance of a variety of treatment wetland options, including wetlands dominated by emergent macrophytes (classic STA), submerged aquatic vegetation (SAV), and periphytic algae (PSTA). This model provides an extremely flexible set of options for parameter selection, water balance issues, water flows, and internal hydraulics, and cell configurations.

DMSTA Formulation

DMSTA simulates daily water and mass balances in a user-defined series of wetland treatment cells, each with specified morphometry, hydraulics, and phosphorus cycling parameters. Up to six treatment cells can be linked in series and/or parallel to reflect compartmentalization and management to promote specific vegetation types. Each cell is further divided into a series of continuous stirred tank reactors (CSTR's) to reflect residence time distribution. Water-Balance terms for each cell include inflow, bypass, rainfall, evapo-transpiration, outflow, seepage in, and seepage out. Parameter estimates for the phosphorus cycling model have been developed for various vegetation types. The model is coded in Visual Basic for applications; the user interface is an Excel workbook. The DMSTA phosphorus cycling model contains three parameters that require calibration to each vegetation type. Two parameters (C0, C1) define the effective concentration range and scale of biomass phosphorus (P) storage. These are calibrated using biomass P and water column P data from several systems. Another key parameter (Ks) reflects the turnover rate of biomass P. Turnover rate is calibrated to outflow concentration time series data.

DMSTA Required Input Parameters

A list of the DMSTA model input data requirements includes the following:
Morphometry (Length, Width, Area, Cell Configuration)
Hydraulic Efficiency (Number of Stirred Tanks in Series)
Daily Time Series:
- Inflow and Outflow Volume
- Inflow and Outflow Concentration

- Mean Depth
- Rainfall
- Evapotranspiration

Descriptive Data:

- Seepage Rates
- Community Description
- P Storage (metadata: macrophytes, periphyton, soil)

Daily time series data used for model calibration include:

- Outflow Volume
- Depth
- Velocity
- Inflow Concentration (flow-weighted, un-weighted)
- Outflow Load (using observed or predicted flows)

DMSTA Capabilities

The DMSTA can simulate the phosphorus load reduction of wetland systems. DMSTA can be used to model flows and phosphorus through existing and modified STAs. DMSTA can also be used to route flows through flow equalization basins and other components associated with chemical treatment facilities. The DMSTA model offers the following factors that are not included in a steady-state STA design model:

- Temporal Variations in Inflow Volume, Load, Rainfall, and ET
- Hydraulic Compartments (Cells, Internal Levees for Flow Redistribution)
- Hydraulic Efficiency (Number of Stirred Tanks in Series)
- Cell Aspect Ratio (Length/Width)
- Water Level Regulation
- Outflow Regulation (Discharge vs. Water Level)
- Compartmentalization of Biological Communities
- Dry-Out Frequency and Supplemental Water Needs
- Bypass Frequency, Quantity, and Quality
- Seepage Collection and Management

DMSTA Limitations

The following are some know limitations of the DMSTA model:

- DMSTA lacks level of detail in modeling reservoir hydrology.
- One important limitation of the DMSTA model is that certain SAV types that may have relatively low uptake rates (such as hydrilla) are not represented in the data sets. Therefore, they cannot be represented properly with DMSTA.
- The model is bound by the limitations of the available datasets (e.g., spatial scale, duration, and/or relatively steady inflows), so, for example, it cannot currently model reservoir performance
- DMSTA has not been calibrated for deep-level pools as those associated with
- reservoirs.
- DMSTA can only model phosphorus removal by a generalized (lumped) process

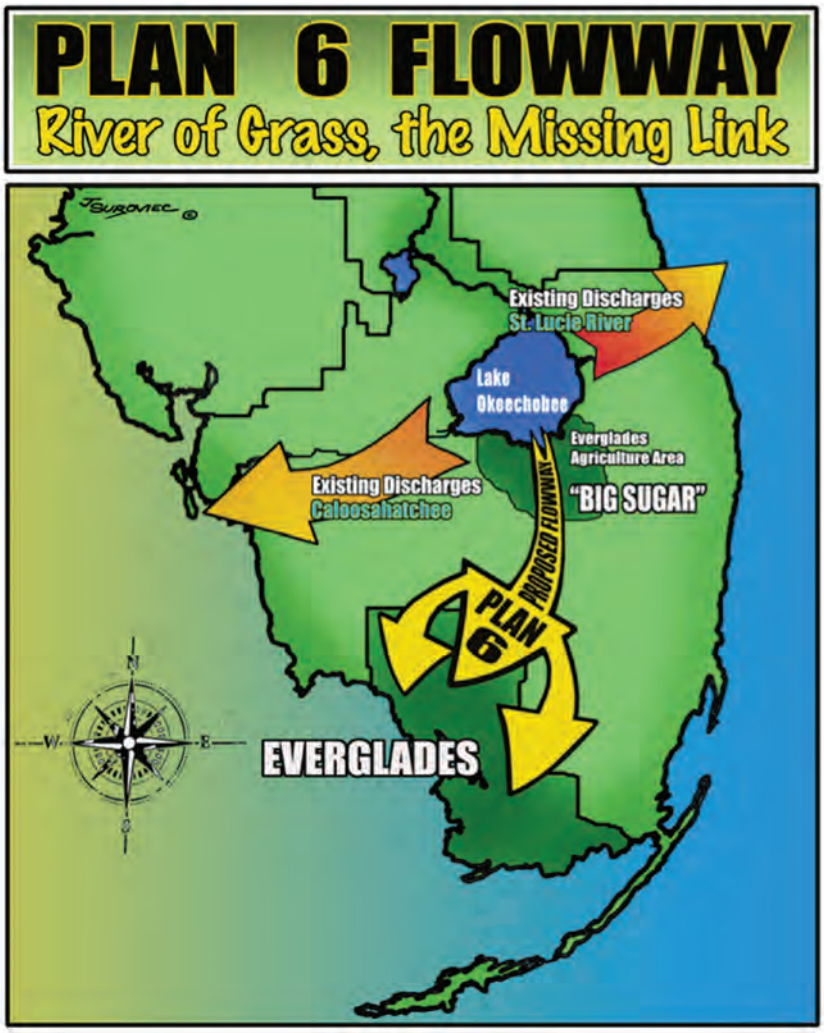
of transfer from a labile pool to a refractory pool. It cannot model phosphorus removal by the individual processes of particle settling, biological uptake and net refractory biomass storage, or chemical precipitation as a function of pH, alkalinity, redox, or temperature. It cannot model release of labile phosphorus from the sediment back to the water column as a function of wind, flow, depth, redox, or temperature.

- Although the model can be run on a daily time step, the empirically derived coefficients are long-term annual average values.
- It systematically overestimates the TP removal efficiency and underestimates the TP outflow concentrations in the low TP concentration range (< 50 ppb), e.g., STA-2.

DMSTA Developer/Distributor

William Walker
Department of Interior

Executive Summary



New and Broader

Plan 6 Flowway

Overview of an expansive Plan Six Missing Link Flowway that incorporates the flowway as first described by the U.S. Army Corps of Engineers, the acquisition of limited agricultural property and inclusion of some projects outlined in the Central Everglades Planning Project.

– Rivers Coalition Defense Fund, 2013

JUST WHAT IS PLAN 6?

Facing sieges of disastrous discharges from inland, the St. Lucie river estuary, as well as the Caloosahatchee river to the west, must gain emergency measures to stem the releases permanently.

This "New and Broader Plan 6 Flowway" program would simply create a vitally needed flowpath to let water move south from Lake Okeechobee to the Everglades instead of to the coastal estuaries.

A broadened approach includes acquisition of about 50,000 acres of the 700,000 acres in the Everglades Agricultural Area (7%). The new acreage would be tied into lands already in public hands to form the overall Plan 6 flowway.

WHAT ABOUT OTHER PLANS?

The new Plan 6 program also would embrace the most helpful features in the Central Everglades Planning Project (CEPP), recognizing, however, that the CEPP changes by themselves will reduce discharges by no more than 14%. A much greater reduction is necessary if estuary life and benefits are to be brought back.

The Rivers Coalition Defense Fund concludes that the broader Plan 6 Missing Link Flowway would be simpler, faster and less expensive than alternatives.

It should be emphasized that two-thirds of the Plan 6 path is *already* in public hands.

The remaining one-third is potentially available under a state option to purchase lands from the U.S. Sugar Corp. or other sources.

Although present state officials have not pursued the sugar purchase, it had been strongly supported by the previous state administration and South Florida Water Management District. Funding was found to be practical via restructured bonding. Potential benefits were judged to be far greater than costs.

The Water Management District's website includes this 2008 statement regarding the purchase:

***"Acquiring the enormous expanse of real estate offers water managers the opportunity and flexibility to store and clean water on a scale never before contemplated to protect Florida's coastal estuaries and to better revive, restore and preserve the fabled* River of Grass."**

A majority of other public and non-government entities also supported the purchase, which drew international favorable attention. Political changes and the economic recession, however, led to setting aside the Missing Link purchase, while preserving an option to buy that extends to 2020.

The Defense Fund finds that the option, or similar acquisition, must be implemented in order to provide a meaningful solution to the estuary and Everglades drainage woes that

beset us. It is now up to the Water Management District, coordinating with other state officials, to execute the purchase and flowway.

Continuing damages to our eco-system, to our quality of life and to our economy are far too severe to accept do-little measures or distractions that only preserve the destructive status quo.

WHO OPPOSES PLAN 6?

Resistance to the flowway comes basically from industry lobbyists and allied political forces, who make two main claims.

One is that a series of aquifer storage and recovery (ASR) wells proposed for locations around Lake Okeechobee could drain, store and supply water, negating the need for the flowpath south.

The deep-well technology is highly controversial, however. Many scientists contend that the wells would handle only a tiny fraction of the water involved and that they would be subject to dangerous exposures of pollution such as arsenic.

Moreover, the wells would preclude vitally needed re-hydration and re-creation of historic wetlands.

Costs estimates for ASR run to $1.8 billion, whereas Plan 6 outlays are estimated to be less than half of that.

The state of Georgia has banned ASR injections into the same Floridan Aquifer present in Florida. A wealth of information about ASR is readily available via web search engines.

WHAT ABOUT THE 'BOWL EFFECT'?

A second claim against the flowway concept is that the natural downward slope through the agricultural area has been disrupted by loss of soil, causing a supposed blockage of potential flow.

This claim is still voiced by some key officials, although it has been thoroughly discredited for many years. A careful analysis of the topography involved shows that the Plan 6 flow would work well. An evaluation of the bowl claim may be seen at RiversCoalition.org

WILL PLAN 6 REALLY STOP THE NASTY WATER?

Plan 6 can do more than any other program to curtail the discharges and restore wetlands. It was originated by the Corps itself and is supported by a host of veteran engineers and conservationists.

The public must demand real action for a new and broader Plan 6 Flowway, as well as support any other potential remedies.

For more information see the Plan 6 Concept report at RiversCoalition.org, the Florida Oceanographic Society and other sources.

SO HOW DO WE MAKE ALL THIS HAPPEN? WHO MAKES THE DECISIONS?

It is up to both state and federal authorities to move the ball. Your insistence and support can make it happen.

The contracting party for purchasing the Missing Link land is the South Florida Water Management District, headquartered in West Palm Beach. It operates as an arm of the Florida Legislature. The District's Board of Governors is appointed by the governor.

The state SFWMD works in partnership with federal entities, notably the U.S. Army Corps of Engineers and Department of Interior, which in turn operate under the U.S. Congress.

Yes, it's complex and there are numerous players. In the end, all of us must demand the flowway and drainage reforms.

---

10 Key Points

PLAN 6 FLOWWAY

River of Grass, the Missing Link

- **Stops polluted discharges from Lake O to estuaries**
- **Needs just 15% of "Big Sugar" fields**
- **Simpler and cheaper than current plans**
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- **Helps recharge Biscayne Aquifer and cuts waste to ocean**


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LAKE OKEECHOBEE
Clewiston
THE MISSING LINK
27
Public Land
West Palm Beach Canal
Hillsboro Canal
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EVERGLADES AGRICULTURAL AREA
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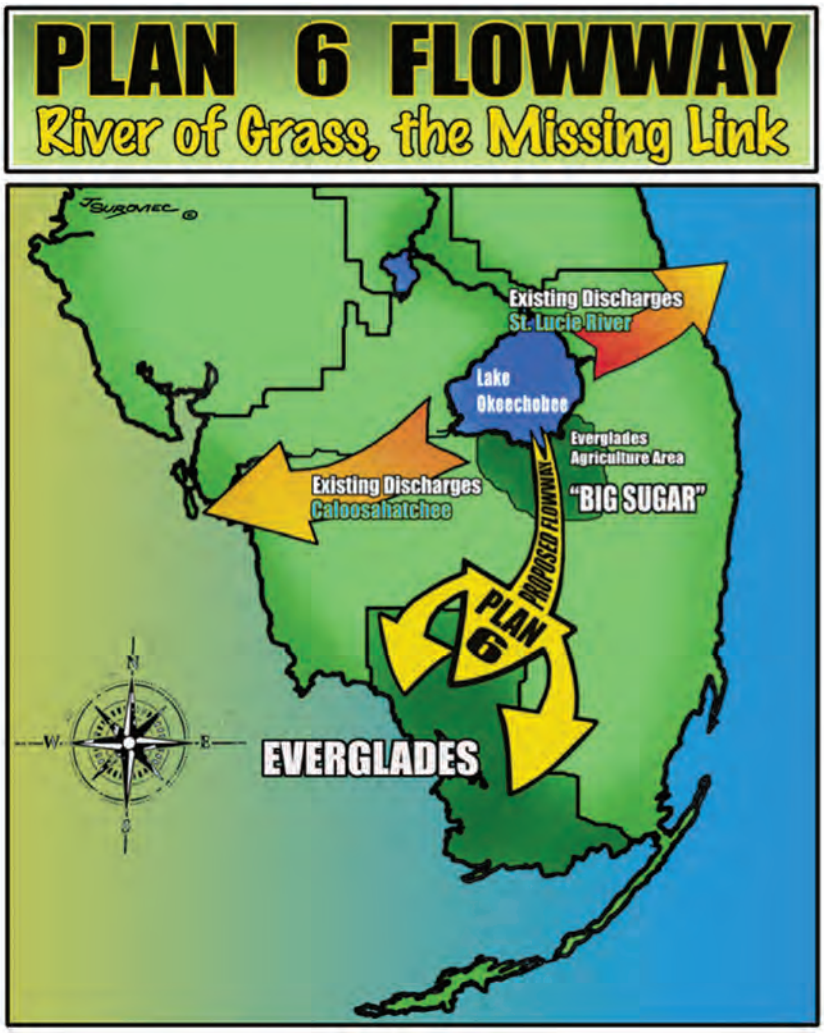
Executive Summary



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EVERGLADES AGRICULTURAL AREA
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Approximate Miles

Dr. J. William Louda
Environmental Biogeochemist
B.S., Ms. Biological Sciences, Ph.D. Marine Science*
* major in organic geochemistry
(** Senior Scientist Florida Atlantic University
Department of Chemistry and Biochemistry
And The Environmental Sciences Program)
**This letter is from me personally.

TO: Commissioners, Managers, Directors, Editors and others as it may apply

Board of County Commissioners, Palm Beach County
Board of County Commissioners, Broward County
United States Geological Survey
Palm Beach County Environmental Resources management
South Florida Water Management District
United States Army Corps of Engineers
State of Florida Department of Environmental Regulation
Florida Power and Light
Florida Audubon
1000 Friends of Florida
Everglades Foundation
Friends of the Loxahatchee Wildlife Refuge
Palm Beach Post
The Wellington Town Crier
Senator Joe Negron
Representative Patrick Murphy
Governor Rick Scott

DATE: 4 October 2013
SUBJECT: Leap-frog (over) Development and the Everglades Protection Area

Dear Governor, Senator, Representative, Commissioners, Directors, mangers, Editors and others as it may apply;

Palm Beach County presently has a few high impact development proposals before the Commission. It is my contention that **these developments should first be considered in total, not separately, and viewed collectively as Development(s) of Regional Impact.** In fact, their impacts go way beyond creating traffic / infrastructure stresses and economic burdens on Palm Beach County. Two of these proposed developments, Highland Dunes and Via-Arezzo (sod farm) are located at the juncture of the L8 andC51 canals which places them only a few hundred yards from the northern tip of the Arthur R. Marshall / Loxahatchee National Wildlife Refuge, also known as Water Conservation Area #1 (WCA-1) and its adjacent Storm Water Treatment areas (STA-1E and -1W). That proposal is at the end of this cover letter. The density and intensity of that (Highlands Dunes) proposal is beyond comprehension.

US-ACE and SFWMD are being pressured to find alternate routes for the release of water from Lake Okeechobee in order to relieve the nutrient and salinity decreasing impacts on both he Caloosahatchee and St Lucie estuaries, including the full Indian River Lagoon. These water woes are making national and international headlines. At Water Module conference last month, I heard that the filtering marshes, STA-1E and 1W are performing excellently (~15-17 ppb P output) when they are allowed to function properly. Proper function, in no small part, includes not having to process more water than biology allows. As we may fully expect that more water will be sent down the L10, L12 and especially the L8 canals which join to form C51. This water current and future has but 2 directions to go, other than back pumping to Lake Okeechobee. That is, it can go south through the filtering marshes (aka storm water treatment areas) STA-1E/-1W or east down the C51 and enter the Lake Worth Lagoon as untreated nutrient laden water. In either case, environmental degradation will occur. In the latter case, increased phosphorus pollution heading into Lake Worth Lagoon may in fact lead to decreasing nitrogen to phosphorus ratios (N:P) which favor nitrogen fixing cyanobacteria (aka blue-green algae). In addition to changing the biological communities in Lake Worth Lagoon, it is these blue-green algae that can become toxic and create severe human health problems.

Now, most of you are very used to receiving letters, phone calls and emails that contain only complaints and offer no solutions. Therefore, after what is above, all of which is very real, I do have a few suggestions to help the future of the Central Western Communities, the Everglades, Lake Worth Lagoon, Lake Okeechobee and even green solar energy.

Following these opening comments are a series of figures using Google-Earth to graphically detail the areas in question. This dialog is given in three parts:

First, concerns centered on traffic impacts on surrounding communities and the fiscal burden to taxpayers in both Palm Beach County and the State in general.

Second, the need to provide more water detention and cleansing in order to directly protect the Everglades and Lake Worth Lagoon and indirectly ease the stress on the Caloosahatchee and St. Lucie estuaries.

Third, I resurrect a proposal for solar energy linked to filtering marshes that I first presented in 2007 and again in 2008. However, due to recent highly significant advances in solar panels that transmit as well as absorb light, is now very much possible. As my research in the Everglades for well over a decade is with the algae and periphyton, I know very well that presently these primary producers are receiving way more light than they need. How do I know this? They synthesize enormous amounts of sunscreen pigments that are not found in the same species grown under light levels. Following the general conceptual introduction is the original (2007) full concept proposal* as peer-reviewed and supported by other scientists.

I thank you for your time and consideration not only of my proposals, the lives and lifestyles of those in the rural areas of central Western Communities of Palm Beach County as but also of the environments affected by the waters that move through this region.

Sincerely,

Dr. J. William Louda
blouda@fau.edu
561-297-3309
FAX 561-297-2759

- ***NOTE-I have NO financial interest in this *concept nor is it patented.***

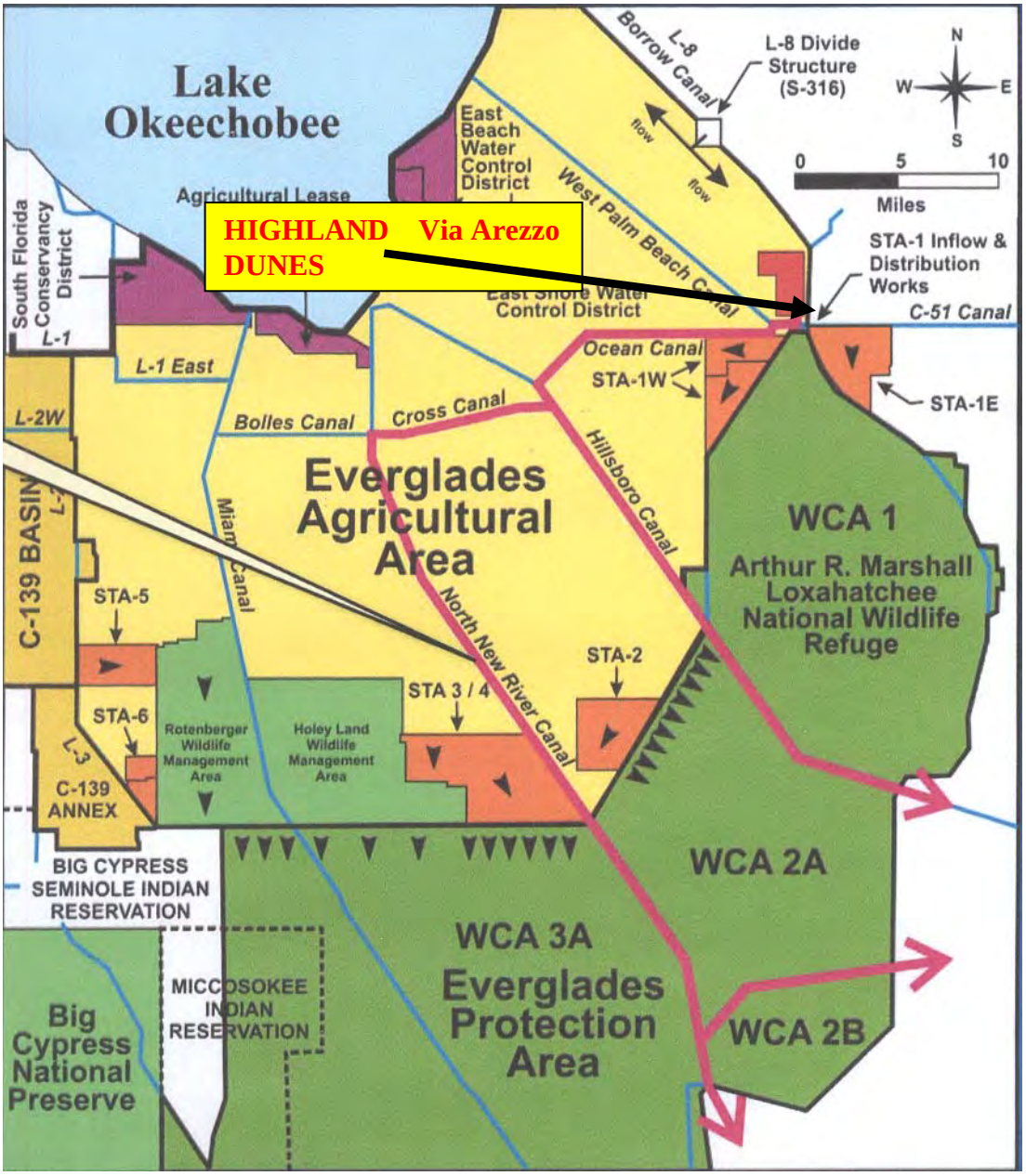
"The Preliminary Master Plan indicates 1,209.96 acres of development area which includes 1,252 Single Family Units; 628 Zero Lot Line Units; 120 Townhouse Units, which are designated as Workforce Housing; a 5.68-acre Commercial Pod to allow a maximum of 50,000 square feet of commercial or retail uses; a 24.22-acre Public Civic Pod which includes a 20-acre Park and 50,000 square feet of Offices for Government Services; and, a 15.66-Civic Pod to allow a 970-student Public Elementary School. Also proposed is 516.37 acres of open space which includes 96.51 acres of Lake Management tracts, 17.71 acres of Public Trails, and 13.61 acres of Private Recreation area. Two access points to the development will be from Southern Boulevard to the south, one access to the future extension of Okeechobee Boulevard to the north, and one cross access to a future development to the east from Via Arezzo."

Ex:

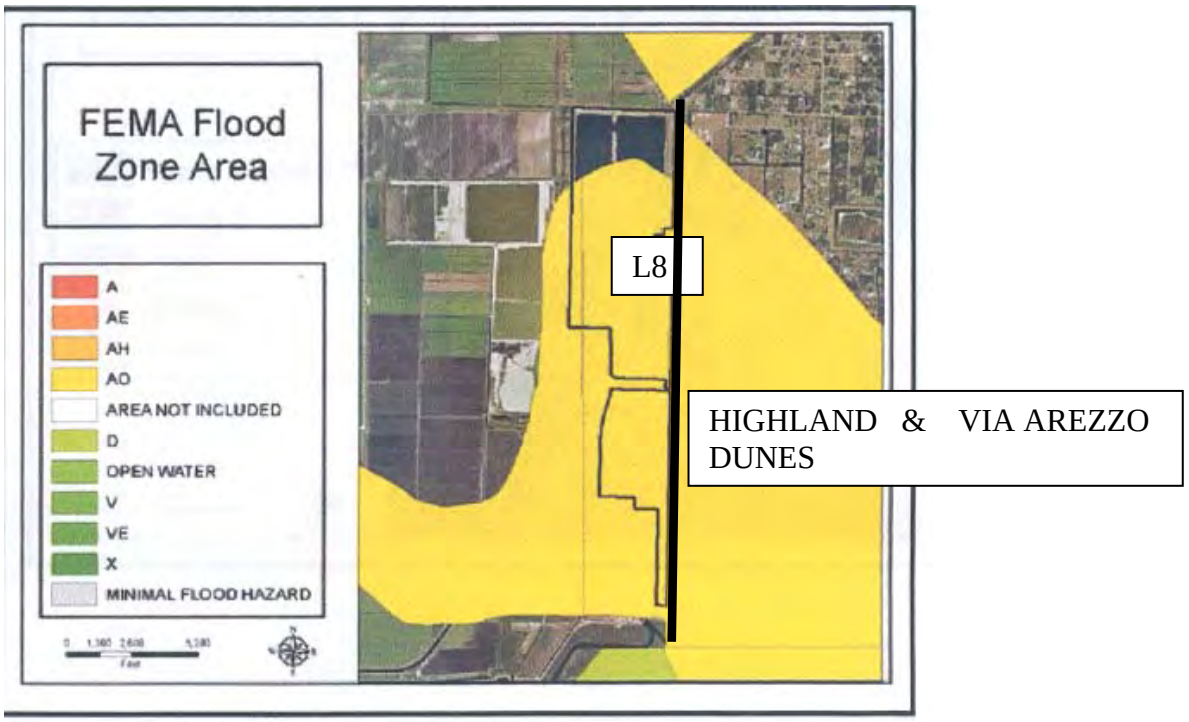
PALM BEACH COUNTY
PLANNING, ZONING AND BUILDING DEPARTMENT

ZONING DIVISION Application No.:	ABN/PDD/R-2013-00499
Application Name:	Highland Dunes PUD
Control No.:	2005-00394
Applicant:	PBA Holdings Inc - Enrique Tomeu
Owners:	Palm Beach Aggregates Inc
Agent:	Urban Design Kilday Studios - Kieran J Kilday
Telephone No.:	(561) 366-1100
Project Manager:	Carrie Rechenmacher, Senior Site Planner

A small jog from Cheetham Hill Blvd. to link with Deer Run Blvd. & then on to the northern link of Highland Dunes. These developments, Minto to the North, Highland Dunes and Via-Arezzo to the west, will force the extension and expansion of Okeechobee Blvd. This will greatly impact the Village of Royal Palm Beach, The Loxahatchee Acreage, Deer Run, Fox Trail and White Fences. Also note that these developers do not have any obligation to pay for infrastructure improvements to satisfy concurrency.



NOTE: The Highlands Dunes and Via Arezzo proposed developments at exactly at a very critical juncture of waters associated with the Everglades Restoration project. This is NOT a place to put thousands of homes leaching fertilizer, herbicides, petroleum products and other pollutants-rather it IS a place to put additional water detention and cleansing filtering marshes.

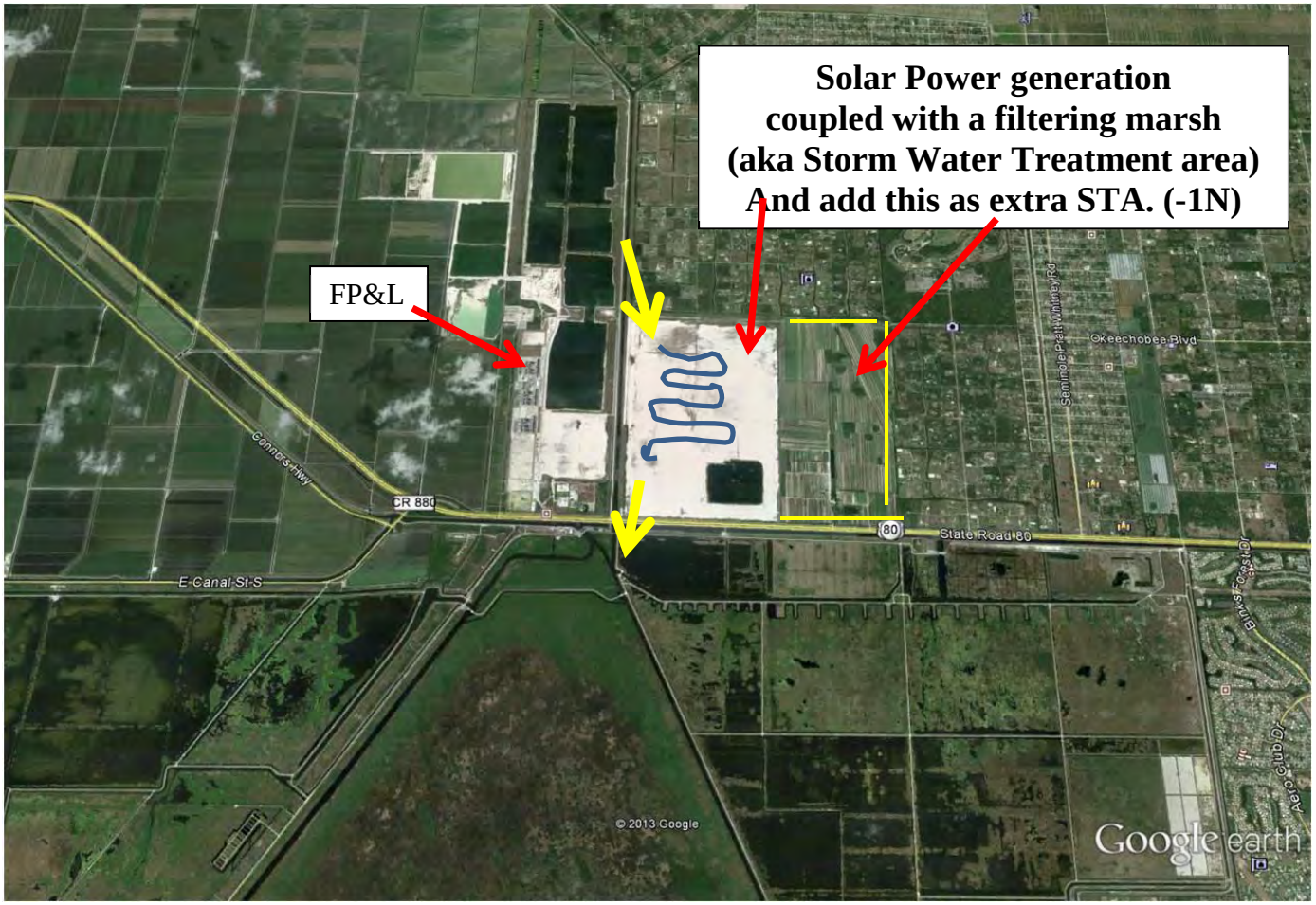


FEMA Flood Zone Area amp of the area around the L8 reservoir.
Source: http://www.sfwmd.gov/portal/xrepository/sfwmd_repository_pdf/land_assessment_study_process.pdf

It makes little sense to allow new high density development that is first out of character with the communities immediately to the east. However, to even consider this within a known FEMA level "AO" flood zone is ludicrous. The Highland Dunes proposed project is immediately adjacent to the L8 canal and the L8 reservoir and these lands would serve a much better public purpose if they were converted to water cleansing filtering marshes (aka Storm Water Treatment Area (e.g. STA-1N).

Rather, if these lands were purchased for the requisite water cleansing / storage functions requisite for adequate Everglades restoration (actually 'rejuvenation) then a public service would be accomplished. Simple measurements from Google Earth show that these lands are about 6,060 x 8,559 feet (= 51,813,000 ft^2: Highland Dunes) and about 4,750 x 8,559 feet (= 40,612,500 ft^2: Via Arezzo). At 43,560 ft^2 per acre that is approximately 2,121 acres which at a depth of 3 feet, using 325,851 US gallons per acre-foot, would the hold about 2.01 Billion gallons of water.

Note that I used a depth of only 3 feet in order to allow adequate photosynthetically active radiation (PAR, λ = 400 – 700nm) to reach the bottom for plentiful subaquatic vegetation (SAV) and periphyton growth, the active nutrient sequestering biological agents of such a filtering marsh. I purposefully omitted emergent macrophytes as these marshes are also being suggested as co-locating photovoltaic (PV) solar-powered electrical generation sites. This will be detailed in the next page or two..

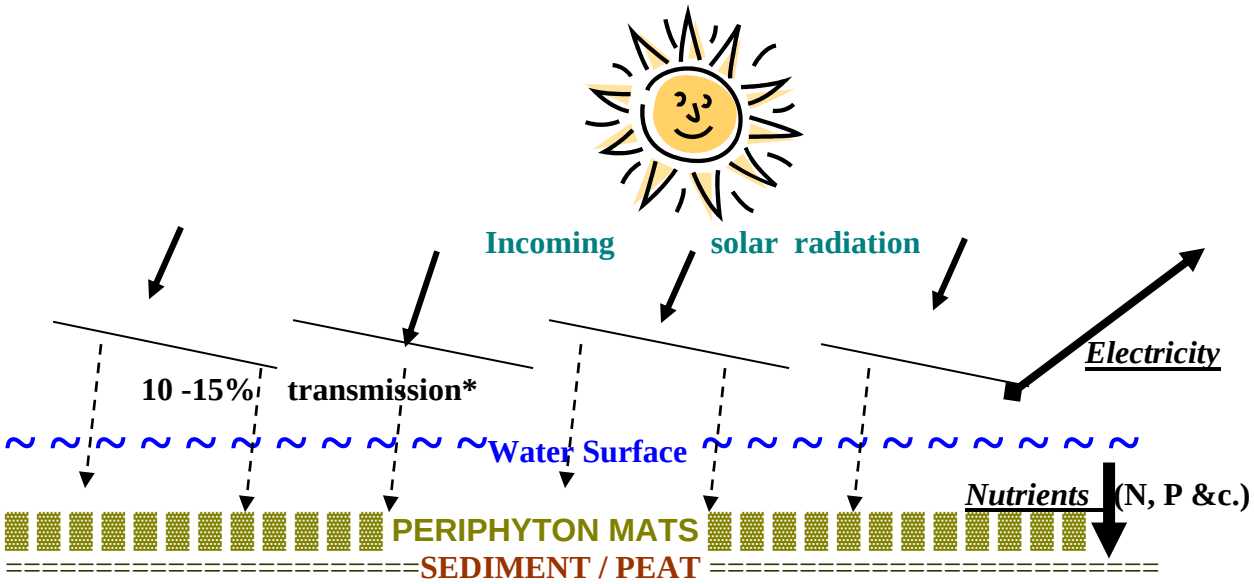


Now is the perfect time and opportunity and location to join two needed functions to help the economy and the environment.

A combined solar polar (photovoltaic cells that allow 15-20% of INSOLATIO N {INcoming SOLar radiATION} to pass through and provide PAR {Photosynthetically Active Radiation} to a periphyton assisted stormwater treatment marsh below. Would start the cleansing of L8 and L8 reservoir waters.

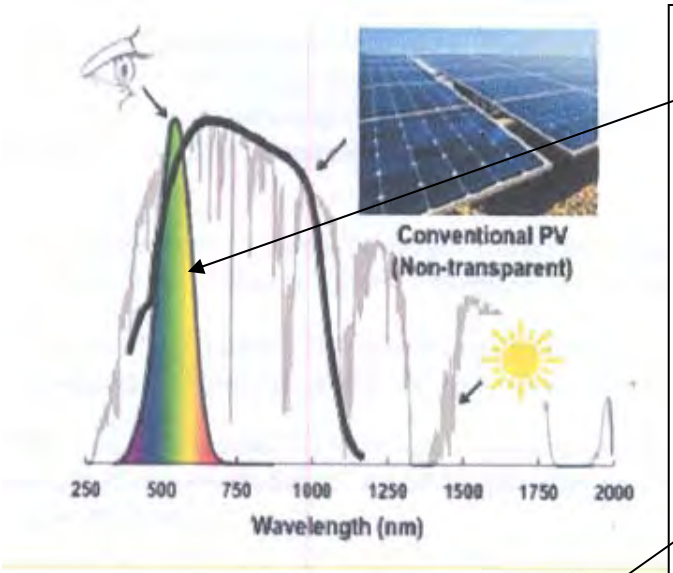
Yes this would be novel but this IS the perfect place to try it.

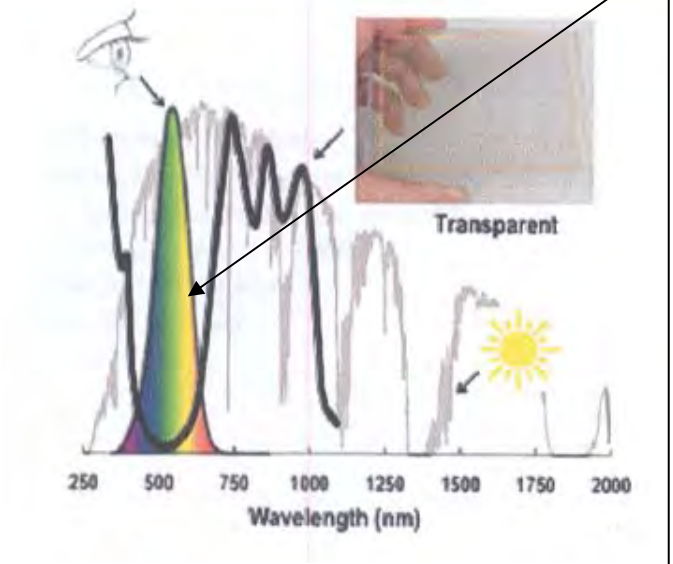
GRAPHIC REPRESENTATION OF THE VERICAL PROFILE OF THE PROPOSED "SOLAR MARSH"



** Or about 100% transmission of photosynthetically active radiation (PAR, 400-700nm) using the MIT-Energy Initiative panels when commercially available. Presently PV solar panels that transmit light ARE available.

- Panels self-power to track the sun.
- Panels should be able to be lowered during hurricane events.
- Panels should be able to rotate into a fully perpendicular position with respect to the ground in order to allow for maintenance of both the panels and the marsh.
- If FAU Ocean Engineering can transmit electricity from offshore through salt water, insulating these transmission lines would be facile.





"They" also told Wilbur and Orville that it wouldn't work!

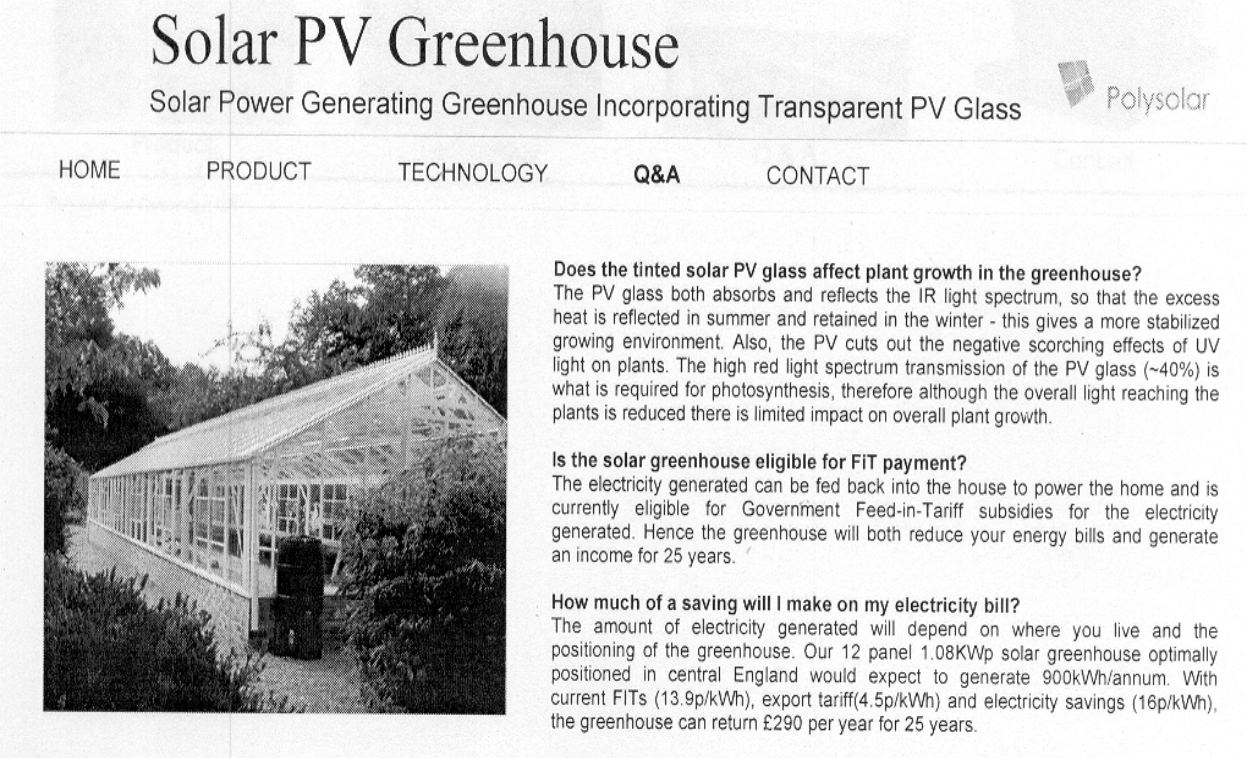
Using conventional PV solar cells over water bodies, such as the failed experiment in India {covered a canal}, will indeed not allow photo-synthesis to occur underneath.

However, there are products on the market now that transmit a percentage of incident solar radiation. Additionally, the MIT-Energy Initiative is in the process of readying for commercialization a product which will selectively allow visible light to pass through. This visible light (wavelengths of 400-700 nm) is also called Photo-synthetically Active Radiation (PAR).

Now, by readying south Florida for a paradigm shift in PV solar arrays Florida Power and Light (FP&L) could partner with the South Florida Water Management District (SFWMD) and create the world's first solar power electric generating – water filtering marsh.

Given that a huge part of the cost of either PV solar array fields or filtering marshes (aka stormwater treatment areas) is the land, such a partnership would split the coast between the partners.

The proposed site of the Highland Dunes development is the PERFECT place to initiate the solar-marsh concept since the FP&L West County Energy Center is but 2/3 mile to the west.



Solar PV Greenhouse

Solar Power Generating Greenhouse Incorporating Transparent PV Glass

Polysolar

HOME PRODUCT TECHNOLOGY **Q&A** CONTACT

Does the tinted solar PV glass affect plant growth in the greenhouse?
The PV glass both absorbs and reflects the IR light spectrum, so that the excess heat is reflected in summer and retained in the winter - this gives a more stabilized growing environment. Also, the PV cuts out the negative scorching effects of UV light on plants. The high red light spectrum transmission of the PV glass (~40%) is what is required for photosynthesis, therefore although the overall light reaching the plants is reduced there is limited impact on overall plant growth.

Is the solar greenhouse eligible for FiT payment?
The electricity generated can be fed back into the house to power the home and is currently eligible for Government Feed-in-Tariff subsidies for the electricity generated. Hence the greenhouse will both reduce your energy bills and generate an income for 25 years.

How much of a saving will I make on my electricity bill?
The amount of electricity generated will depend on where you live and the positioning of the greenhouse. Our 12 panel 1.08KWp solar greenhouse optimally positioned in central England would expect to generate 900kWh/annum. With current FITs (13.9p/kWh), export tariff(4.5p/kWh) and electricity savings (16p/kWh), the greenhouse can return £290 per year for 25 years.

http://solarpvgreenhouse.com/qa.php

The United Kingdom (UK, aka Britain) is doing it.

Same concept with a Solar Marsh except that the panels would be more or less parallel to the ground and would track the sun, if needed.

CONCEPT: SOLAR POWER GENERATION COUPLED WITH PERIPHYTON-BASED STORMWATER FILTERING MARSH.

Dr. J. William Louda, Senior Scientist
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and the Environmental Sciences program
Florida Atlantic University
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blouda@fau.edu
(561) 297-3309 office, (561) 297-3398 lab

April 20, 2007

CONCEPT SUPPORTED BY:

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Department of Electrical Engineering
Florida Atlantic University
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Southeast Environmental Research Center
Florida International University
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Palm Beach Gardens, FL 33410-4228

(Blue type added / changed in Feb. 2008)

Summary proposal: It is proposed that Florida Power and Light (FP&L), in fiscal and managerial cooperation with the State of Florida (the State), Palm Beach County (the County), the Army Corps of Engineers (the Corp, US-ACE) and South Florida Water Management District (the District, SFWMD), with academic support from the State University System, investigate, design, build and operate a co-operative solar power generation array over several hundreds of acres of constructed wetlands in western Palm Beach County.

Reasons: (a) Increasing demand for electrical power in southern Florida obviously parallels the quite large increases in population in this area. (b) This increasing demand is forcing FP&L to promote coal powered electrical generation (Glades County) which, regardless of claims to the contrary, will pollute the atmosphere and aeolian fallout will then contaminant (NO_x, SO_x, Hg, As etc.) the Everglades and its watersheds. (c) ~~Both~~ the proposed ~~coal (Glades Co.)~~ and natural gas (Palm Beach Co.) power plants contribute huge amounts of green house gases (carbon dioxide and unburned hydrocarbons) to the atmosphere. (d) Once solar plants are constructed, there will never be increases in fuel (sunlight) costs. (e) Placement over a filtering marsh allows for a combined use of valuable land: stores water, cleans water and acts as a flow-way.

Advantages: (a) Totally non-polluting. (b) Unlimited energy supply (sun). (c) Would show the World that America can care about the future (no CO_2 emissions). (d) Offers large expansion of filtering marshes for Everglades Restoration and related projects. (e) Enormous local, state, national and international public relations benefit to all governmental and NGO organizations involved. ***Siting would be the same (WCEC) for distribution(20 mile bend) and a solar array / filter marsh flow-way would be a great addition to the K-O-E system for CERP.***

Growth Management Advantage: Hundreds of acres of land would be required. The lands in western Palm Beach County that are presently in agricultural production (AP) are owned by several corporations that have already expressed interest in development. Thus, purchase of these lands would get the landowners profits immediately and would remove these lands from any future development.

Disadvatage: (a) Costs (design, land and construction). (b) Reluctance of the power companies and government to get off the "fossil fuel" standard.

Some Recent Solar Energy Advances:

(1) Massey University in New Zealand (Dr. Wayne Campbell) has developed a synthetic chlorophyll (energy absorbing / transforming molecule in plants) analog containing titanium from titanium dioxide. The process is much less expensive that silicon based solar cells. Disadvantage is that this is not yet a technology.

(2) CIGS (copper indium gallium selenide) thin films are an existing technology. CIGS based solar arrays exist on a commercial scale, such as the "Rote Jahne" power plant in Germany. Thin film solar collectors are getting much closer to the so-called "critical tipping point" cost per megawatt. The cost of fossil fuel electricity can only go up in direct parallel with inflation and increased demands for cleaner technologies to remove NO_x, Hg and other emissions.

Thin films also have an advantage that factors directly into this proposal. This is transmissivity. In other words, not all of the incoming solar radiation (INSOLATION, sun light) is stopped by the thin films. In fact, certain thin films are being designed to be used as electrical generating window tinting systems. The transmission of sunlight is discussed in the next section.

NOTE / FACT: More energy (sunlight) hits the surface of the earth EACH day than man uses in an entire year!

Periphyton-based storm water treatment areas:

Periphyton-based STAs, or PASTA, are also called filtering marshes and are designed to mimic nature in that they remove nutrients from the water and store these within accumulating biomass or peat.

Presently, STAs, as the Everglades in general, have high rates of evapotransporation (ET), the combined effects of the physical process evaporation and the biological process of transporation (metabolic 'pumping' of water through an emergent plant into the air). Solar arrays placed over a filter marsh would lead to reflux (evaporation / condensation cycling) and lower water loss to the atmosphere.

A study by Serge Tomas and co-workers at Florida International University [Tomas, S., Gaiser, E. E. and Tobias, F. A. (2006) Effects of shading on calcareous benthic periphyton in a short-hydroperiod oligotrophic wetland (Everglades, FL, USA) *Hydrobiologia* 569: 209 – 221]

has proven that ***Everglades type periphyton grows very well in only 10-20% of the ambient solar flux reaching the surface in southern Florida.***

My own studies (see Neto, R.R., Mead, R.N., Louda, J.W. and Jaffe, R. (2006) Organic biogeochemistry of detrital flocculent material (floc) in a subtropical, coastal, wetland. *Biogeochem.* **77**: 283 – 304. -- and-- Hagerthey, S. E., Louda, J. W. and Mongkronsri, P. (2006) Evaluation of pigment extraction methods and a recommended protocol for periphyton chlorophyll *a* determination and chemotaxonomic assessment. *J. Phycology* **42*:*** 1125 – 1136.) have revealed that ***periphyton growing in the high light environment of southern Florida produce large amounts of ultraviolet and visible light sunscreen pigments to counteract photoinhibition and other deleterious metabolic effects of too much solar flux.***

SUMMARY:

To reiterate, it is proposed that FP&L, in cooperation with the State, the County, US-ACE) and SFWMD investigate, design, build and operate a solar power generation array over several hundreds of acres of constructed wetlands in western Palm Beach County. This system could be self-powered to track the sun for maximal output. In addition, given the potential for Hurricanes, it should be built with a low aerodynamic profile designed to minimize wind resistance.

As most power is used during daylight hours but noting that energy is required at night, existing fossil fuel plants and new biomass conversion plants could be used to complete the power grid. Biomass conversion plants, requiring particulate and other scrubbing technology, would also have an advantage in southern Florida. That is, rather than placing vegetative wastes into landfills, that material could be burned as fuel. While it is true that biomass conversion adds CO_2 to the atmosphere, it does so on a more realistic time scale when compared to fossil fuels. That is, fossil fuels contain carbon that was sequestered millions of years ago while biomass conversion can be considered 'recycling'. Ultimately, solar energy may fulfill 24 hour a day energy needs but electrical storage technologies lag behind production capabilities for now. ***However, recent advances (2007-8) reveal that the storage of energy as molten salt, compressed air and other will allow solar to yield 24 hr/d power.***

The key to power independence and a clean safe world will be *diversification*. Presently, the Department of Ocean Engineering at Florida Atlantic University has joined with the Ocean Renewable Power Co. to design and refine the technology to harness the power of the Gulf Stream (aka Florida Current) using submarine turbine arrays. Add ocean, biomass conversion and solar power to the same grid in southern Florida and solve much if not most of the power needs for at least this part of our state.

The time to move forward with imaginative non-polluting energy sources is here. Actually, we are late, the initiative must be now and the progress swift.

CONCLUSION: **Expansive solar energy production arrays placed over periphyton based filtering marshes would: (1) produce electricity, (2) clean surface waters, and (3) allow the removal of lands from future development while giving those landowners the profits they desire.**

Basic concept in graphic form: **see following figures.**

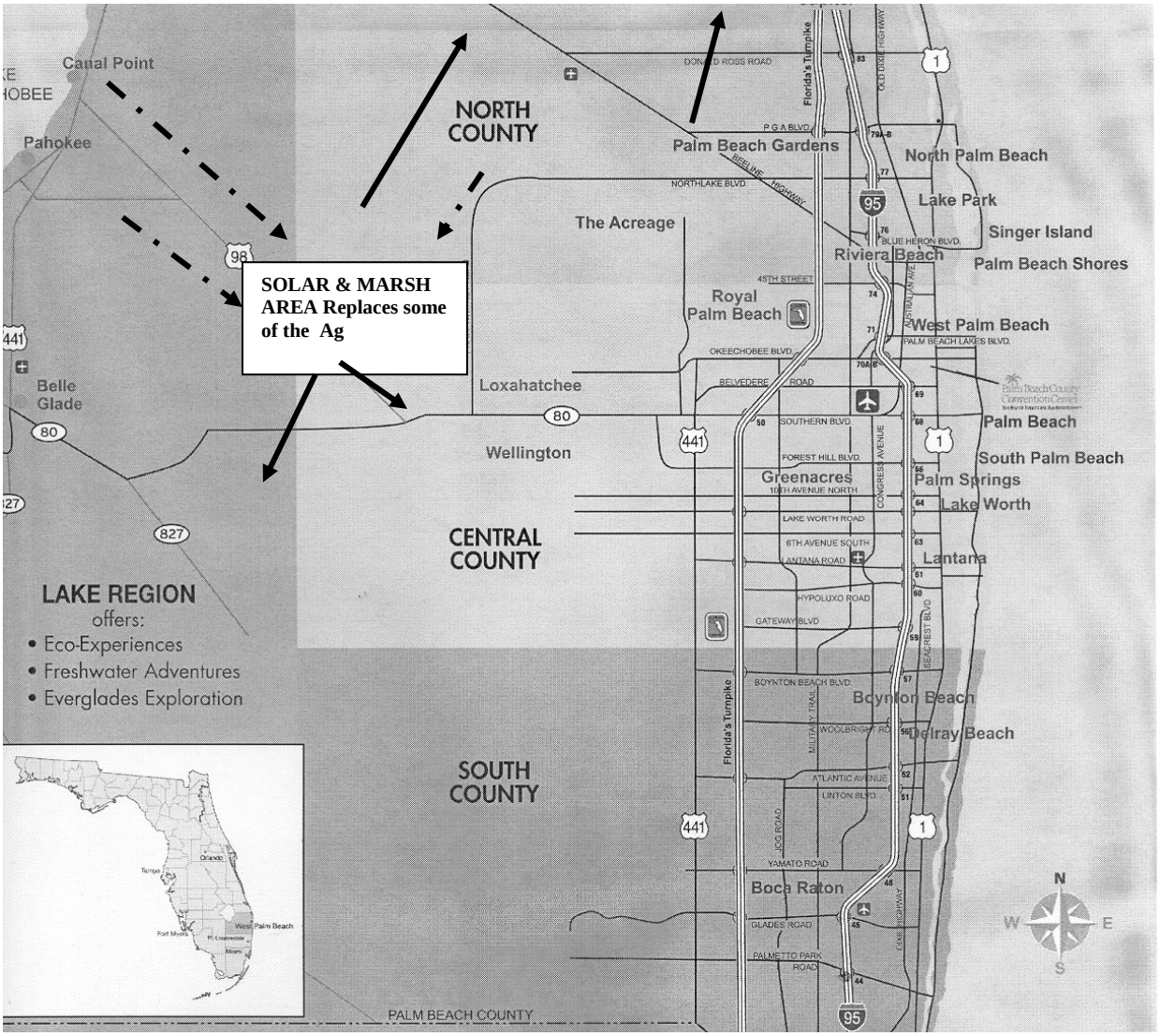

Figure 1: Proposed location of a cooperative (FP&L, US-ACE, SFWMD) Solar Power Generation Area. Broken lines **(- - →)** indicate water inflow, solid lines **(——→)** indicate outflow to the Loxahatchee Slough (NE) and to STAs-1E and 1W (south).

NOTES: This proposal as sent to FL-DEP was passed to SFWMD and the joint comments were that the marsh would not operate at 100% efficiency since photosynthesis is directly related to irradiance. To this I rebut that the periphyton in the Everglades synthesize enormous amounts of "sunscreen pigments" to cut down on the amount of 'felt irradiation'. I therefore dismiss those comments as not being accurate as they derive from schoolbook graphs showing photosynthetic output of temperate higher plants. This is, of course, a new concept and one that needs to overcome the inertia of the commonplace. It will take pilot study, refinement and implementation. DO we not need to crawl before we walk and walk before we run?

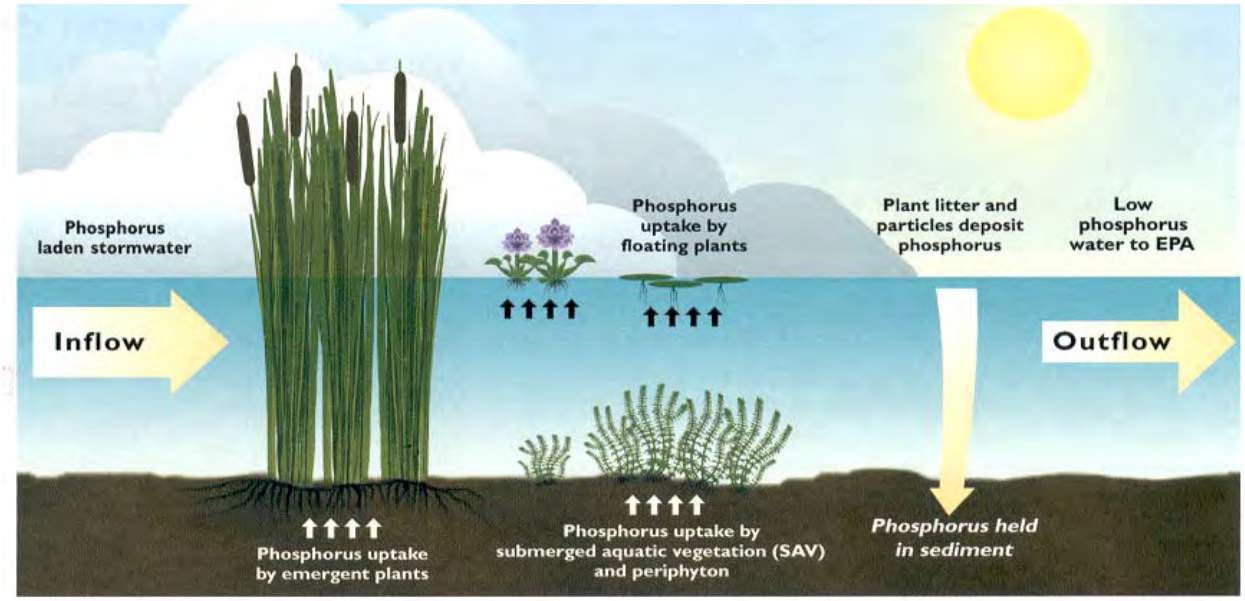

Figure 2: Conventional storm water treatment area (STA) or filtering marsh utilizing many types of aquatic vegetation. PASTA or periphyton-based filtering marshes are typically shallower and consist primarily of benthic algae. Emergent plants would be minimized and removed periodically. (see http://www.sfwmd.gov).

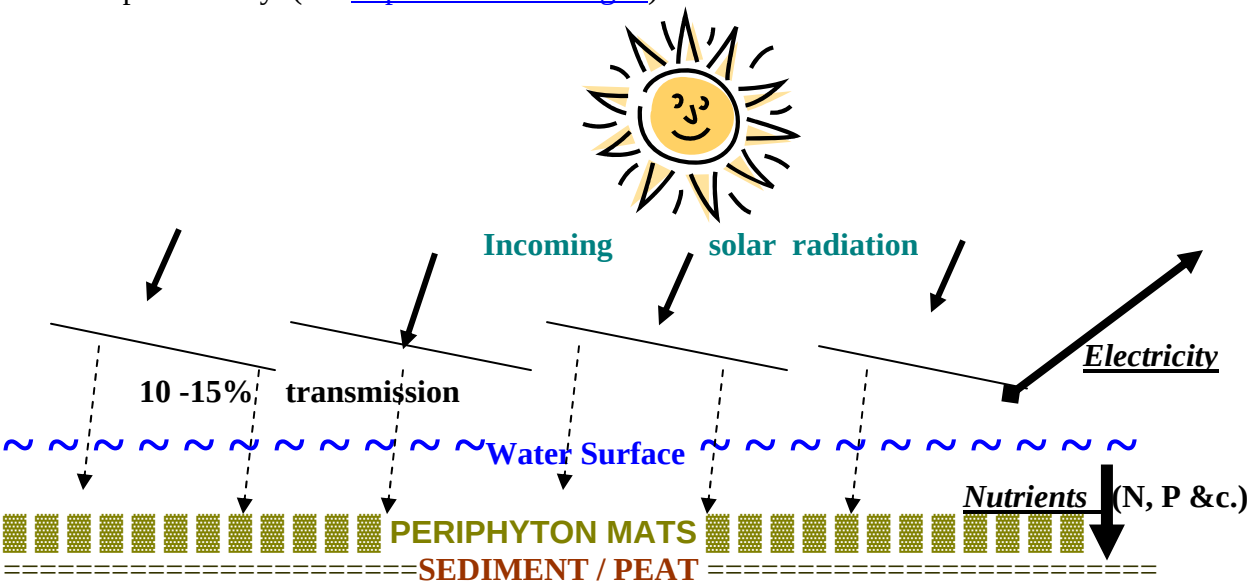

Figure 3: Conventionalized vertical cross section of Solar Arrays over a periphyton-based filtering marsh.

NOTES ADDED FEB.8, 2008: ***Advances in photovotaics and parabolic solar heat concentration technologies make the above suggested 'solar marsh' much more feasible than just 10 months ago when first proposed. It is past time to act. Small (10-30MW) solar "demonstration" plants can be scaled up to the 1,000+ MW stage now.***

NOTE: With the purchase of the US Sugar lands, this concept is even more viable. Have FP&L, or get another power company, to just do it! *(JWmL: 07/26/08)*

December 3, 2013

The Honorable Jo-Ellen Darcy
Assistant Secretary of the Army (Civil Works)
108 Army Pentagon
Washington, DC 20310

Dear Secretary Darcy;

The Everglades Foundation strongly encourages your continued leadership to ensure that the Central Everglades Planning Project (CEPP) Chief's Report is submitted to Congress in early 2014. As you know, the schedule for this pilot-planning project was embraced by President Obama and included in the White House's "It Can't Wait" list, yet despite the support advocates of CEPP have been waiting and completion of the Chief's Report has become a moving target. An original Chief's Report was expected in May 2013, yet continued delays are jeopardizing momentum, funding and ecological benefits.

This past summer, Floridians living along the Caloosahatchee and St. Lucie estuaries were adversely impacted by billions of gallons of polluted water from Lake Okeechobee. Residents and business on both coasts quickly embraced the need to move water south. The CEPP pilot project allows for water to move south thus reducing these devastating discharges.

When does the Obama Administration expect to complete and transmit the Chief's Report to Congress? This is a critical question and one that we wait to hear your response.

In the meantime, we respectfully ask that you empower Colonel Dodd and USACOE staff at Headquarters to eliminate any procedural hurdles that may cause this critical project to miss Congressional authorization in the pending Water Resources Development Act (WRDA). U.S. House and Senate leaders are diligently working to include authorization of CEPP. A completed Chief's Report is tremendously important.

CEPP enjoys unprecedented stakeholder support. Corps staff has worked with the environmental community, local partners, recreational users and agriculture for more than two years to reach this point. Failure to achieve Congressional authorization would render a demoralizing defeat, undermine the public trust and cause Floridians living along estuaries impacted by toxic alga blooms to become exasperated.

Everglades Foundation
18001 Old Cutler Road, Suite 625 • Palmetto Bay, FL 33157
Phone: 305.251.0001 • Fax: 305.251.0039 • evergladesfoundation.org

Madam Secretary, you are an Everglades champion. We are confident that under your leadership the U.S. Army Corps of Engineers will complete the CEPP Chief's Report by April 2014 in order for this project to receive Congressional authorization.

Sincerely,

Eric Eikenberg, CEO

Cc: Steven Stockton, Director of Civil Works
Major General Michael Walsh
The Honorable Bill Nelson (D-FL)
The Honorable Marco Rubio (R-FL)
The Honorable Mario Diaz-Balart, co-chair, House Everglades Caucus
The Honorable Alcee Hastings, co-chair, House Everglades Caucus
The Honorable Patrick Murphy (D-FL)
The Honorable Trey Radel (R-FL)

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DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON DC 20310-0108

OCT 11 2013

Ms. Cara Capp
National Co-Chair
Everglades Coalition
450 N. Park Road, #301
Hollywood, FL 33021

Dear Ms. Capp:

I am responding to your letter dated August 15, 2013, and cosigned by State Co-Chair Jennifer Hecker, asking that the Army Corps of Engineers (Corps) expedite the Central Everglades Planning Project (CEPP) and complete the Report of the Chief of Engineers by December 31, 2013, in order to address the estuary problems caused by the Lake Okeechobee project operations and to enable consideration of the CEPP in the proposed Water Resources Development Act. I apologize for the delay in responding to your letter. I am providing an identical response to Ms. Hecker.

The Corps is making every effort to complete the Chief's Report as expeditiously as possible, including several key activities. On August 30, 2013, the CEPP Draft Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS), dated August 2013, was released for public review in accordance with the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190). The public review is scheduled to end October 15, 2013. As required by NEPA, all comments received during the public review must be reviewed and addressed. Because the extent and type of comments are unknown, it is difficult to anticipate how long it might take to address them.

In addition, the Corps must comply with other requirements in order to complete the final PIR/EIS. The Corps is working with the United States Fish and Wildlife Service to develop a biological opinion for CEPP in accordance with the Endangered Species Act of 1973 (Public Law 93-205). The Corps must also finalize the engineering and environmental analyses for the recommended plan and conduct an independent peer review in accordance with the Water Resources Development Act of 2007.

Once the final PIR/EIS is completed, the Jacksonville District Engineer will present the report and recommendations to the Civil Works Review Board in the Corps Headquarters. Subject to CWRB approval, the final PIR/EIS and a proposed Report of the Chief of Engineers would then be released for the State and Agency Review that is required by Executive Order 12372 – Intergovernmental Review of Federal Programs (July 14, 1982) and the Flood Control Act of 1944 (Public Law 78-534). After the views of the states and agencies are considered and addressed as needed, the Chief of Engineers would consider signing his report and forwarding it to me.

I understand your concerns regarding the study schedule. Please note that we currently cannot predict the effects of the delay in appropriations for Fiscal Year 2014, which could impede or delay the efforts of the Corps and supporting agencies to complete this important work in a timely manner. Thank you for your interest in the Army Civil Works Program.

Very truly yours,

Jo-Ellen Darcy
Assistant Secretary of the Army
(Civil Works)

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON DC 20310-0108

OCT 11 2013

Ms. Jennifer Hecker
State Co-Chair
Everglades Coalition
450 N. Park Road, #301
Hollywood, FL 33021

Dear Ms. Hecker:

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Very truly yours,

Jo-Ellen Darcy
Assistant Secretary of the Army
(Civil Works)

August 20, 2012

Jo-Ellen Darcy
Assistant Secretary for Civil Works
Department of the Army
108 Army Pentagon
Room 3-E446
Washington DC 20310—1-9

Re: C-44 STA Water Reservoir and St. Lucie River Discharges

Dear Assistant Secretary Darcy:

I am writing in support of the Central Everglades Planning Project and urging the Corps to go to the max to meet all regulatory deadlines and reporting requirements so that this project can be authorized and more importantly funded by Congress this year.

The Corps gets the blame for the consequences of many of its decisions or lack thereof. Don't let this be one of those situations. We can't go back to the time Lake O was confined by the dike and redo it – but we must go forward and correct those mistakes. The life two rivers is at stake – no one should have the right to make sewers of our waters – not business, individuals and most especially not the government.

In addition to CEPP the Corps must use all its expertise to mitigate and minimize the current destruction to the waterways. It is essential that the Corps work with the state and local governments and water management authorities but also with other Federal agencies and the citizens and environmental environmental advocates to remedy this disaster.

Sincerely,

Mary-Win O'Brien
2600 SE Ocean Blvd. W1
Stuart FL 34996

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON DC 20310-0108

NOV 14 2013

Ms. Mary-Win O'Brien
2600 SE Ocean Boulevard W1
Stuart, Florida 34996

Dear Ms. O'Brien:

This is in response to your letter dated August 20, 2013, expressing support for the Central Everglades Planning Project (CEPP) and concerns about the C-44 Stormwater Treatment Area (STA) Reservoir and St. Lucie River discharges. I apologize for the delay in responding.

On August 30, 2013, the CEPP draft report began undergoing a public and policy review and the public comment period was extended to November 1, 2013. While every effort is being made to complete the Chief's Report as expeditiously as possible, there are several key activities that must be completed before that can happen. As required by the National Environmental Policy Act of 1969, all comments received during the public review process must be reviewed and addressed. In addition to the public review, the Corps is also working with the United States Fish and Wildlife Service to develop a biological opinion for the project.

While authorization and implementation of CEPP will help address the St. Lucie River discharges, the C-44 project will also help. There are several components to the C-44 project, namely the intake canal and associated features, as well as the actual reservoir and related works. The first contract for the intake canal and associated features, which is currently underway, will lay the ground work for significant improvements to the health of the Indian River Lagoon system. Future funding for additional C-44 contracts will be considered along with many other worthwhile programs, projects, and activities competing for limited resources across the Nation.

Thank you for your interest in the Army Civil Works Program.

Very truly yours,

Jo-Ellen Darcy
Assistant Secretary of the Army
(Civil Works)

APPENDIX C.4

ENVIRONMENTAL COMPLIANCE INFORMATION

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C.4 COMPLIANCE WITH ENVIRONMENTAL LAWS, STATUES AND EXECUTIVE ORDERS

The following documents required compliance with specific Federal acts, Executive Orders (E.O.) and other applicable environmental laws. The following sections provide a summary of environmental compliance with each Act, E.O. or applicable law.

C.4.1 Anadromous Fish Conservation Act

Anadromous fish species would likely not be affected by the proposed project. NMFS provided a Programmatic Biological Opinion for the Comprehensive Everglades Restoration Plan to the Corps on 17 December 2013.

C.4.2 Archaeological Resources Protection Act 1979

This Act works to protect and preserve historical and cultural resources of Federal lands, including Indian lands through a permit system authorizing scholarly study and excavation of cultural properties, as well as provide sanctions for unauthorized use, removal, or damage to any archaeological resource 16 U.S.C. §§432-33; 36 CFR Part 296. The term resource includes human remains, pottery, basketry, bottles, weapon projectiles, rock carvings and paintings, tools, structures or portions thereof, graves, skeletal remains 16 U.S.C. § 470bb(1). Resources of 'recent' origin (less than 100 years) are not protected by ARPA. U.S. v. Shivers, 96 F.3d 120. CEPP is in compliance with this act and will continue to comply throughout construction and operation.

C.4.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act, enacted in 1940 prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. While areas of foraging habitat utilized by bald eagle may be within the project area, impacts to these areas are not likely to adversely affect this protected species. The project would be in compliance with this Act upon review of this document and associated Biological Assessment (BA) by U.S. Fish and Wildlife Service (USFWS).

C.4.4 Clean Air Act

The existing air quality within South Florida is considered good. Section 176 (c) of the Clean Air Act requires that Federal agencies assure that their activities are in conformance with the federally approved Clean Air Act state implementation plans for geographical areas designated as "non-attainment" and "maintenance" areas under the Act. The proposed project is not located within a "non-attainment" area since there are none within the State of Florida. The only new potential source of air pollution as a result of this project would be from construction of pump station(s). Pursuant to rule 62-210.300(3)(a)(21)(b), operations staff would be required to determine if stations would be exempt from air permitting or if an air general permit would be required. Upon this determination, the project would be in compliance with this Act.

C.4.5 Clean Water Act of 1972

Full compliance would be achieved with issuance of a Water Quality Certification (WQC) under Section 401 from the State of Florida. A Section 404 (b)(1) evaluation has been prepared in **Appendix C.4.32**. The project may require dewatering permits and National Pollution Discharge Elimination System permits depending on means and methods of construction. All required permits would be obtained prior to construction activities. All State water quality standards would be met. Water quality is expected to improve with the proposed project. In compliance with this Act and will obtain Water Quality Certification (WQC) from the State of Florida and any required National Pollutant Discharge Elimination System (NPDES) permits and will update 404(b) analysis prior to construction.

C.4.6 Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990

The official Coastal Barrier Resources System (CBRS) maps were reviewed and the CEPP project does not fall into any designated CBRS areas. There are no designated coastal barrier resources in the project area that would be affected by the proposed project. These Acts are not applicable to this project.

C.4.7 Coastal Zone Management Act of 1972

A Federal Consistency determination has been prepared in accordance with the provisions of 15 CFR 930 and is located in **Appendix C.4.33**. The U.S. Army Corps of Engineers (USACE) has considered the enforceable policies of the State of Florida's management program as requirements to be adhered to in addition to existing Federal agency statutory mandates. The proposed project would be consistent to the maximum extent practicable with the enforceable policies of Florida's approved Coastal Zone Management program. This project would be in compliance upon review of this document by the State of Florida and issuance of Water Quality Certification. In a letter dated October, 11 2013, the Florida Department of Environmental Protection the State determined that the USACE's Draft PIR/EIS for CEPP is consistent with the Florida Coastal Management Program (FCMP). To ensure the project's continued consistency with the FCMP, the concerns identified by the reviewing agencies must be addressed prior o project implementation. The state's continued concurrence will be based on the activities' compliance with FCMP authorities, including federal and state monitoring of the activities to ensure their continued conformance, and the adequate resolution of issues identified during this and subsequent regulatory review. In compliance with this Act and obtaining concurrence by the State of Florida. The Corps will be in compliance with the Coastal Zone Management Act at the time of construction.

C.4.8 Endangered Species Act of 1973

The proposed project has been coordinated with the USFWS and National Marine Fisheries Service (NMFS). The Corps requested concurrence from the USFWS on federally listed species and critical habitat that may be present in the project area in a letter dated January 23, 2013. Consultation with the USFWS was initiated on April 1, 2013 with preparation of a Biological Assessment (BA). The USFWS provided concurrence on the species list on May 10, 2013. See **Annex A** for the complete list of federally listed species and critical habitat provided in the BA that was prepared for this project. The Corps provided a BA to USFWS on 5 August 2013 (Annex A – Biological Assessment). The Corps received comments and a Request for Additional Information (RAI) from USFWS on 4 September 2013. The Corps provided a comment response matrix and a Supplemental Technical Analysis in Response to USFWS' RAI on the Central Everglades Planning Project Biological Assessment on 24 October 2013 (Annex A – Supplemental Technical Analysis for the CEPP BA). In a letter dated 13 December 2013, the Corps changed its request from formal to early consultation.

Formal consultation initiated with USFWS on August 5, 2013 with completion of Biological Assessment. The Corps received a Request for Additional Information (RAI) from USFWS on September 4, 2013. The Corps provided a Supplemental Technical Analysis in Response to USFWS' RAI for CEPP on October 24, 2013. On December 13, 2013 the Corps changed its request from formal to early consultation. The Corps entered formal consultation with USFWS on the Everglade snail kite (*Rostrhamus sociablis plumbeus*), and its designated critical habitat, Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*), (CSSS) and its designated critical habitat, wood stork (*Mycteria americana*) and eastern indigo snake (*Drymarchon corais couperi*). A Programmatic Biological Opinion (BO) was received on April 9, 2014, which clearly states that further consultation will be needed when more specific project details

are finalized during PED. While this document does not authorize incidental take of three endangered avian species (CSSS, snail kite, and wood stork), it does describe the anticipated effects based on current information. Upon completing ESA Section 7 consultation for each PPA, USACE will undertake the agreed-to avoidance and minimization measures and implement any required terms and conditions (TCs). When USACE is closer to constructing phases of CEPP that will affect listed species, FWS will provide separate consultation document(s) which may authorize incidental take, and provide applicable reasonable and prudent measures (RPMs) and TCs. The preliminary conclusion is that the proposed project is not likely to jeopardize the continued existence of the species listed above and is not likely to adversely modify critical habitat, where designated. The Programmatic Biological Opinion concurred with the Corps' determination of may affect, but is not likely to adversely affect the Florida panther (*Puma concolor coryi*), West Indian manatee (*Trichechus manatus*), and its critical habitat, American crocodile (*Crocodylus acutus*) and its critical habitat, deltoid spurge (*Chamaesyce deltoidea* ssp. *deltoidea*), Garber's spurge (*Chamaesyce garberii*), Small's milkpea (*Galactia smallii*), and tiny polygala (*Polygala smallii*). Furthermore, the Service concurred with all the "No Effect" determinations made by the Corps in regard to the applicable threatened or endangered species that are found in the action area.

Incidental take was not provided for the Everglade snail kite, the CSSS and the wood stork, however take is anticipated on these three species. Take will be enumerated when a final biological opinion is required for each phase of CEPP implementation. Incidental take of eastern indigo snake is likely during construction and operation, particularly construction of the A-2 FEB and the Miami Canal backfill. The amount of take includes 14,000 acres of the FEB currently in sugar cane and row crops that will become inundated and mostly unusable to indigo snakes. Up to 268 snakes could be harassed through being displaced as a result of the CEPP and up to two indigo snakes may be injured or killed (harmed).

Although the Programmatic Biological Opinion does not specify RPMs and TCs for the three avian species, endangered species monitoring costs include a conservative estimate of potential required monitoring based on information provided by USFWS to ensure the costs were captured. Estimated endangered species monitoring costs are $3,111,200 pre construction, $35,122,200 during the construction period and the O&M cost will be approximately $1,885,200 annually.

A programmatic Endangered Species Act Section 7 consultation for the Comprehensive Everglades Restoration Plan (CERP) was prepared on March 15, 2013 to evaluate potential effects of CERP, including the proposed CEPP, on listed species and designated critical habitat under the NMFS' purview. The Corps provided a Programmatic Biological Assessment for the Comprehensive Everglades Restoration Plan to NMFS on 2 July 2013. NMFS provided a Programmatic Biological Opinion for the Comprehensive Everglades Restoration Plan to the Corps on 17 December 2013 that includes CEPP. In compliance with this Act and ongoing consultation throughout the PED and construction phase as appropriate.

C.4.9 Estuary Protection Act of 1968

The proposed project would provide increased opportunities to redirect water that is currently discharged to the Caloosahatchee and St. Lucie Estuaries for flood control purposes, allowing for the re-establishment of oyster and sea grass populations that are important for providing water quality and habitat functions within the Northern Estuaries. The project would increase flows from Southern Everglades National Park to Florida Bay and result in favorable changes to salinity levels to improve conditions for key species such as seagrasses, seatrout, pink shrimp, and crocodiles. The proposed project is in compliance with the goals of this Act.

C.4.10 Farmland Protection Policy Act of 1981

Coordination with the United States Department of Agriculture (USDA) and National Resources Conservation Service (NRCS)to meet the requirements of the Farmland Protection Policy Act, 7 U.S.C. § 4201, is ongoing. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. The land is also used as cropland, pastureland, rangeland, forest land, or other land, but cannot be used as urban built-up land. According to 7 CFR 657.5, unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. These lands are not used in producing feed, food, fiber, forage, and/or oilseed crops. Almost all land in central and southern Florida used for agricultural production has been designated unique farmland. Coordination with NRCS was done during the planning phase and NRCS concluded that they would defer to PED due to the large footprint of the project action area and the relatively smaller construction footprint in order to more accurately determine level of acres affected. CEPP Alternative 4R2 contains many components, and when detailed design information that locates each of the plan components becomes available, it can then be determined how many acres of unique farmland would be affected. The NRCS will then complete Form AD 1006 to inventory the loss of acres of unique farmland from agricultural production. The Corps is in compliance and will be in full compliance with the Act at the time of construction

C.4.11 Federal Water Project Recreation Act of 1965, As Amended

The effects of the proposed action on outdoor recreation have been considered and are presented in **Appendix F**. The CEPP recreation plan identifies, evaluates, and addresses the impacts of CEPP implementation on existing recreational use within the South Florida ecosystem and identifies and evaluates potential new recreation, public use, and public educational opportunities. Continued recreation planning would be performed during detailed project engineering and design. This project would not adversely affect existing recreational opportunities. This project is in compliance with the goals of this Act.

C.4.12 Fish and Wildlife Coordination Act of 1958, As Amended

The central objective of the Fish and Wildlife Coordination Act is to allow for equal consideration of wildlife resources. Representatives from USFWS have been involved in project planning, development, and evaluation with particular interests in effects to fish and wildlife resources and natural wildlife management areas. Planning Aid Letters (PAL) were provided to the USACE on January 20, 2012, March 27, 2012 and December 12, 2012. USFWS provided a Final Fish and Wildlife Coordination Act Report (CAR) on December 17, 2013 and it has been included within **Annex A**. .The Corps' responses to the FWCAR Recommendations are in **Annex A.3 - Recommendations and Responses under the Fish and Wildlife Coordination Act Report**. The project is in compliance with the goals of this Act.

C.4.13 Magnunson-Stevens Fishery Conservation and Management Act

The Magnunson-Stevens Fishery Conservation and Management Act, 16USC 1801 et seq. Public Law 104-208 reflects the secretary of Commerce and Fishery Management Council authority and responsibilities for the protection of Essential Fish Habitat (EFH). Federal agencies that fund, permit, or carry out activities that may adversely impact EFH are required to consult with the NMFS regarding the potential effects of their actions on EFH. This project has been coordinated with NMFS. A draft EFH assessment was provided on February 20, 2013. After review of the draft PIR/EIS in September of 2013, NMFS determined the EFH provisions of the document were sufficient and that additional comments or EFH conservation recommendations were not needed. The EFH assessment is

included in **Appendix C.4.34.6.8**. NMFS provided a Programmatic Biological Opinion for the Comprehensive Everglades Restoration Plan to the Corps on 17 December 2013.

C.4.14 Marine Mammal Protection Act of 1972

West Indian manatees inhabit the coastal and major inland waters of south Florida including Central and Southern Florida Project canals. Manatees are not expected to be adversely affected by the proposed project. Early consultation with the USFWS has been initiated for the manatee, and a determination by USACE of not likely to adversely affect was made (**Annex A** – Biological Opinion). Incorporation of the safeguards used to protect threatened and endangered species during construction and operation would protect West Indian manatees within the area. The Corps is in compliance and will be in full compliance with the Act at the time of construction.

C.4.15 Marine Protection, Research and Sanctuaries Act

This Act is not applicable. Ocean disposal of dredged material is not proposed as a part of the recommended plan.

C.4.16 National Environmental Policy Act of 1969

This Act encourages public participation and comment on Federal projects, and requires agencies to cooperate with other Federal agencies, State, and local governments, and to involve public stakeholders. Initial public coordination began with the distribution of a scoping letter, dated November 23, 2011, announcing the preparation of an Environmental Impact Statement (EIS) and inviting public and agency comment (**Appendix C.3**). Public scoping meetings were held December 14, 2011 in Plantation, Florida and December 15, 2011 in Clewiston Florida. A Notice of Intent to prepare an EIS was published in the Federal Register (76 FR 75539) December 2, 2011. Five NEPA public workshops were held December 10, 2012 in Estero, Florida; December 11, 2012 in Homestead, Florida; December 12, 2012 in Clewiston, Florida; December 13, 2012 in Stuart, Florida; and December 18, 2012 in Coconut Creek, Florida to present the preliminary final array of alternatives. The Notice of Availability (NOA) of the Central Everglades Planning Project Draft Project Implementation Report and Environmental Impact Statement was published in the Federal Register (FR Volume 78, Number 169) August 30, 2013 and mailed to interested stakeholders to begin the 64 day review period. Five NEPA Draft PIR/EIS Public Meetings were held on September 16, 17, 18, 19 and 25 2013. The Corps is complying with the NEPA process and will be in full compliance with the Act at the time of construction. The Corps will update NEPA documentation as appropriate.

C.4.17 National Historic Preservation Act of 1966 (Inter alia)

The proposed project is in compliance with the National Historic Preservation Act, as amended (PL89-665). As part of the requirements and consultation process contained within the National Historic Preservation Act implementing regulations of 36 CFR 800, this project is also in compliance through ongoing consultation with the Archaeological and Historic Preservation Act, as amended (PL93-29), Archeological Resources Protection Act (PL96-95), American Indian Religious Freedom Act (PL 95-341), Executive Order 11593, 13007, and 13175, the Presidential Memo of 1994 on Government to Government Relations and appropriate Florida Statutes. Consultation with the Florida State Historic Preservation Officer (SHPO), appropriate federally recognized tribes, and other interested parties was initiated December 27, 2011 and is ongoing. See **Appendix C.5** for details of the ongoing consultation. Through consultation with SHPO and STOF THPO, it was agreed that Section 106 consultation would not be completed during the current feasibility phase of the project; however, consultation would be complete prior to construction. Any additional project specific surveys for cultural resources and site

evaluations will be conducted during the Pre-construction Engineering and Design Phase of the project. National Register eligible properties were taken into account while planning this undertaking. The Corps is currently in compliance and will continue to meet the requirements of this act throughout construction and operation.

C.4.18 Native American Graves Protection and Repatriation Act as Amended

Federal agencies must make an inventory of all Indian human remains and funerary objects in its possession and control, attempt to identify the affiliated tribe, and repatriate the items to the appropriate group. This Act also applies to inadvertent discoveries, in that there is a required delay in the disturbance of a site containing human remains until consultation with affiliated tribes is accomplished. The proposed project is in compliance.

C.4.19 Resource Conservation and Recovery Act, As Amended By the Hazardous and Soils Waste Amendments of 1984, CERCLA As Amended by the Superfund Amendments and Reauthorization Act of 1966, Toxic Substances Control Act of 1976

Hazardous, toxic and radioactive waste surveys would be conducted as required. The removal and excavation as described in the proposed action is not expected to result in the discovery or generation of HTRW materials. The proposed action would involve ground disturbances. The Corps is currently in compliance and will continue to meet the requirements of this act throughout construction and operation.

C.4.20.1 USACE – Comprehensive Everglades Restoration Policy – Residual Agricultural Chemicals, USACE-ASA-CW Policy, September 2011.

To address the issues presented by low-level residual agricultural chemicals present on CERP project lands, the Assistant Secretary of Army for Civil Works provided a policy memorandum on September 14, 2011. A copy of the policy is attached and incorporated into the formulation of the proposed project.

C.4.20 Rivers and Harbors Act of 1899

The proposed project would not obstruct navigable waters of the United States. The project has been subject to public notice and other evaluations normally conducted for activities subject to the Act. The proposed project is in compliance with the goals of this Act.

C.4.21 Submerged Lands Act of 1953

The proposed project would reduce freshwater flows to the Caloosahatchee Estuary and the St. Lucie Estuary and provide freshwater overland flow to Florida Bay that will ultimately benefit the ecological habitats that occur on submerged lands of the State of Florida. No construction is expected on submerged lands; therefore the project is in compliance with the goals of this Act.

C.4.22 Wild and Scenic Rivers Act of 1968, As Amended

There are no designated wild and scenic river reaches within the project area that would be affected by project related activities. This Act is not applicable.

C.4.23 E.O. 11514, Protection of the Environment

E.O. 11514 directs Federal agencies to "initiate measures needed to direct their policies, plans, and programs so as to meet national environmental goals." The objectives of the project are focused on environmental protection. The project is in compliance with the goals of this E.O.

C.4.24 E.O. 11593, Protection and Enhancement of the Cultural Environment

E.O. 11593 directs Federal agencies to provide leadership in preserving, restoring and maintaining the historical and cultural environment of the Nation. Agencies of the executive branch of the Government (hereinafter referred to as "Federal agencies") shall (1) administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations, (2) initiate measures necessary to direct their policies, plans and programs in such a way that federally owned sites, structures, and objects of historical, architectural or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people, and (3), in consultation with the Advisory Council on Historic Preservation (16 U.S.C. 470i), institute procedures to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures and objects of historical, architectural or archaeological significance. The project is in compliance with this E.O.

C.4.25 E.O. 11988, Flood Plain Management

E.O. 11988 directs Federal agencies to avoid siting projects in floodplains and to avoid inducing further development of flood-prone areas. The project is not a development but rather a restoration action. Commitment of lands to project restoration would preclude such development. The proposed action would help restore and preserve the natural and beneficial uses of the floodplain. The project would be operated in a manner that would not increase flooding of private property. The project is in compliance with the goals of this E.O.

C.4.26 E.O. 11990, Protection of Wetlands

E.O. 11990 directs Federal agencies to avoid developing and locating projects in wetlands. The proposed project area is located within freshwater wetlands. The nature of this project is that it involves operations in wetlands, and no other practicable alternative to locating this project in avoidance of wetland exists. The objectives of the project are focused on environmental protection. A net functional benefit to wetlands within and adjacent to the project area is expected. The project is in compliance with the goals of this E.O.

C.4.27 E.O. 12962, Recreational Fisheries

E.O. 12962 requires the evaluation of federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries. Effects to recreational fisheries would be negative or positive depending on the activity and location. Recreational fishing by boat would be negatively impacted by back filling the Miami canal and access in L-67C Canal could be lost by placement of the blue shanty levee (could be offset by installing a ramp from the Blue Shanty Levee into the L-67C Canal). Bank Fishing opportunities could be positively increased by addition of access points around proposed structures. The proposed project also has the potential to improve recreational fisheries in Florida Bay and southwestern coastal estuaries and provide slight improvements in recreational fisheries in the Caloosahatchee and St. Lucie Estuaries. Implementation of CEPP is expected to significantly improve conditions for fish species throughout much of the Greater Everglades. The largest percent gains in daily average fish density were predicted within northern Water Conservation Area 3A (WCA 3A) and Northeast Shark River Slough (NESRS). In these areas, fish densities increased in excess of 30%, with extremes over 80%. Other areas within Shark River Slough should also experience appreciable gains in fish density due to increased flows, thus enhancing fishing opportunities. This project is in compliance with the goals of this E.O.

C.4.28 E.O. 12898, Environmental Justice

E.O. 12898 directs Federal agencies to provide full participation of minorities and low-income populations in the Federal decision-making process, and further directs agencies to fully disclose any

adverse effects of plans and proposals on minority and low-income populations. There was sufficient public input to feel confident that scoping was successful and that the breadth of the potential impacts were communicated and understood by the public. During Scoping and subsequent public meetings no subjects or issues were presented as possible environmental impacts that may be disproportionate towards minority and or low income populations. The objectives of the project are focused on environmental protection. Implementation of the project would benefit all population groups by providing restoration of wetlands and other natural resources within the project area. CEPP would provide benefits to quality of life by improving the estuarine environment and contribute to hydrological and water quality improvements in the historic Everglades. The project would improve the quality of human life by providing improved estuarine conditions for fish and wildlife. It would translate into aesthetic and economic benefits for sport fishing and other recreational communities. No home owners would be displaced by the project.

The project would not result in adverse human health or environmental effects. The project would not disproportionately adversely affect any minority or low-income population. The low-income populations and minority populations are not disproportionately located within the region of influence of the proposed action. The proposed activity would not (a) exclude persons from participation in, (b) deny persons the benefits of, or (c) subject persons to discrimination because of their race, color, or national origin, nor would the proposed action adversely impact "subsistence consumption of fish and wildlife." Therefore, the project is in compliance with this Executive Order 12898, Environmental Justice.

C.4.29 E.O. 13045 Protection of Children

E.O. 13045, requires each Federal agency to “identify and assess environmental risks and safety risks [that] may disproportionately affect children and ensure that its “policies, programs, activities, and standards address disproportionate risks to children that results from environmental health risks or safety risks.” The proposed project will not result in environmental health risks or safety risks that may have a disproportionate affect on children. Children will not be in the vicinity of any of the construction operations and activities should not have an impact on children.. The project is in compliance with the goals of this E.O.

C.4.30 E.O. 13089 Coral Reef Protection

There are no hardground or coral reef communities located within the proposed project site or the nearshore waters affected by the project. The project is not expected to adversely impact coral reefs or coral reef resources. This E.O. is not applicable.

C.4.31 E.O. 13122 Invasive Species

The proposed project has the potential to allow expansion of exotic and/or invasive species, due to construction and operational changes to the current water management system. Construction measures to reduce the spread of exotic and/or invasive species would be included in the contract specifications. A nuisance and exotic vegetation control plan has been prepared and is included in **Annex D**. The objectives of the plan are to prevent and/or reduce the establishment of non-native species within the project area. The project is in compliance with the goals of this E.O.

C.4.32 E.O. 13175, Consultation and Coordination with Indian Tribal Governments

E.O. 13175 sets forth fundamental principles to guide agencies in formulating and implementing policies that have tribal implications. The E.O. goes on to set forth policymaking criteria to which agencies must adhere to the extent permitted by law. These principles an policymaking criteria apply to an agency’s “regulations, legislative comments or proposed legislation, and other policy statements or actions” that

have “substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes” (Sec.1(a)). The project is in compliance with this E.O. See **Appendix C.3** and **Appendix C.5** for further details.

C.4.33 E.O. 13186, Responsibilities of Federal Agencies to Protect Migratory Birds

Migratory and resident bird species have been observed within the project area and are likely to use available habitat for foraging, nesting, and breeding. The proposed project is not expected to destroy migratory birds, their active nests, their eggs, or their hatchlings. The proposed project is expected to benefit migratory birds by improving habitat and increasing availability of forage species (amphibians, fish, aquatic and invertebrates) for wading birds. The project is in compliance with the goals of this E.O.

C.4.34 Memorandum on Government-to-Government Relations with Native American Tribal Governments 1994

This Presidential Memorandum directs the Federal government to operate within a government-to-government relationship with federally recognized Native American tribes. The head of each executive department and agency shall be responsible for ensuring that the department or agency operates within a government-to-government relationship with federally recognized tribal governments. Each executive department and agency shall apply the requirements of the E.O. 12875 (“Enhancing the Intergovernmental Partnership”) and E.O. 12866 (“Regulatory Planning and Review”) to design solutions and tailor Federal programs, in appropriate circumstances, to address specific or unique needs of tribal communities. The USACE has consulted with the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida during the NEPA process and during planning efforts for the CEPP. This project is in compliance with the goals of this memorandum. Coordination letters are included in **Appendix C.3** and **Appendix C.5**.

C.4.35 Seminole Indian Lands Claim Settlement Act of 1987

The Florida Indian (Seminole) Land Claims Settlement Act of 1987 directed the SFWMD the State of Florida, and the Seminole Tribe of Florida to execute an agreement for the purposes of resolving tribal land claims and settling the lawsuit filed by the Seminole Tribe of Florida, which involved certain land claims within the State. Agreements to resolve tribal land claims were executed between the three parties, which included conveyance of land and payment of consideration to the tribe, and implementing legislation by the Congress of the United States and Legislature of the State of Florida. An agreement known as the Water Rights Compact (Compact) was executed between the State of Florida, the District, and the Seminole Tribe of Florida. The Compact specifically defined tribal water rights. This Compact was adopted into Federal and state law. It includes a series of provisions establishing the Tribe’s rights and creating several ‘”entitlements” to water for each of the Tribe’s reservations. Water supply deliveries to the Seminole Tribe of Florida’s Big Cypress and Brighton Reservations within the CEPP study area are not significantly affected by CEPP. Any "modeled" decreases in water supply deliveries would not be expected under real-world conditions due to the Compact requirements. Complete performance summaries for water supply to the reservations is included in **Appendix C.2.2**. This project is in compliance with this Act.

C.4.36 Compliance with Florida Statues

The State of Florida has enacted several laws pertaining to implementation of CERP projects. These include amendments to Section 373.026 (8), Florida Stature (F.S.), which establish a requirement for the South Florida Water Management District (SFWMD) to submit a report for review and approval by the Florida Department of Environmental Protection (FDEP) prior to formal submission of a request for

authorization from Congress and prior to receiving an appropriation of state funds for construction and other implementation activities (except the purchase of lands from willing sellers); the enactment of Section 373.1501 F.S., which establishes the intent of the Florida Legislature with respect to CERP and the criteria for FDEP approval and the procedures to be followed by the SFWMD and FDEP for submitting and reviewing requests for approval; the enactment of Section 373.1502 F.S., which establishes permitting requirements and a process for the submittal, review, and issuance of certain regulatory permits for CERP projects; and the enactment of Section 373.470 and Section 373.472 F.S., establishing the "Save Our Everglades Trust Fund," funding and reporting requirements, and procedures for distributions from the trust fund.

The SFWMD's State Compliance Report addressing the criteria for approval listed in Section 373.1501 F.S. is included in **Annex B**. In addition to the above-described statutory requirements, other sections of Chapters 373 (Water Resources) and 403 (Environmental Control) of the Florida Statutes include requirements that may apply to various aspects of CERP project planning and implementation. In particular, Chapter 403 F.S. and the administrative laws adopted in accordance with Chapters 373 and 403 F.S., contain the requirements for facilities that involve the discharge or potential discharge of pollutants to surface and groundwaters, and the discharge of air pollutants, including facilities regulated under the Federal Clean Water and Safe Drinking Water Acts and the Federal Clean Air Act. Based on the information contained in this PIR, the recommended plan complies with the applicable provisions of the Florida Statutes. A detailed explanation of how the project complies with the applicable requirements for CERP projects contained in the Florida Statutes can be found in **Annex B**.

C.4.37 CLEAN WATER ACT SECTION 404(B)(1) EVALUATION

PREFACE This document is a programmatic Section 404(b)(1) Evaluation for the CEPP EIS. As such it addresses, at a general level, the potential environmental effects of the wetland and aquatic ecosystem alterations expected from dredge and fill and the construction of the structural components of the recommended plan. Subsequent site-specific Section 404(b)(1) Evaluations are intended to be done for individual project components, or groups thereof, in sufficient detail for final decision making and for full compliance with the Section 404(b)(1) Guidelines and National Environmental Policy Act requirements. This 404 (b)1 evaluation should be sufficient to qualify for, and in the event that subsequent decisions render the project in compliance with, coverage under Section 404(r) of the Clean Water Act and exempt from State and Tribal Water Quality Certification.

C.4.37.3.1 Location

The study area (**Figure C.4-1**) for the Central Everglades Planning Project (CEPP) encompasses the Northern Estuaries (St. Lucie River and Estuary (including Indian River Lagoon) and the Caloosahatchee River and Estuary), Lake Okeechobee, a portion of the Everglades Agricultural Area, the Water Conservation Areas; Everglades National Park (ENP), the Southern Estuaries (specifically focused on Florida Bay), and portions of the Lower East Coast.

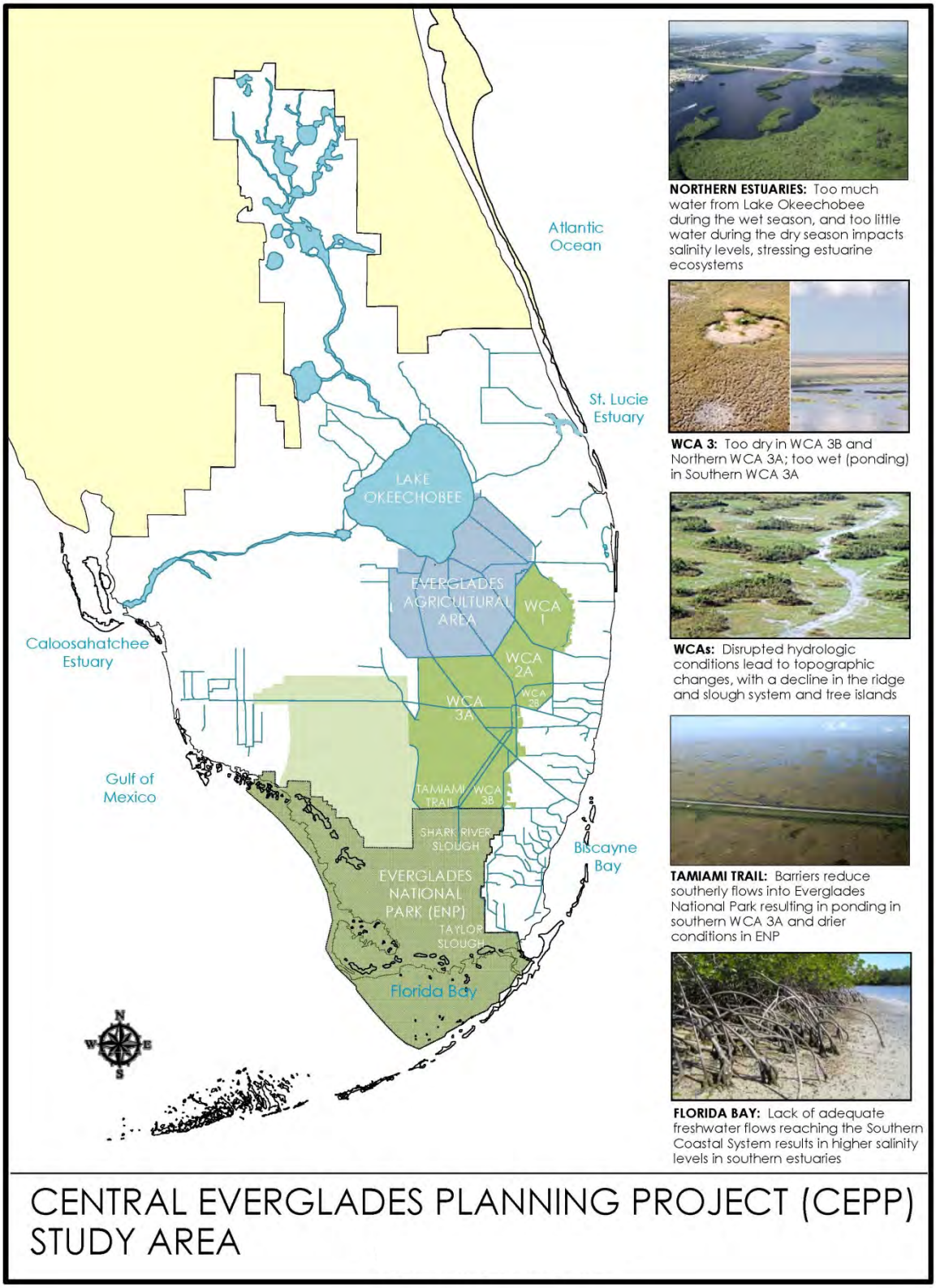


Figure C.4-1. Project Area Map

C.4.37.3.2 Project Description

C.4.37.3.2.1 Plan Features

The components of the recommended plan, Alternative 4R2, are organized into four geographic areas: North of the Redline, South of the Redline, the Green/Blue lines and along the Yellowline.

I. **Everglades Agricultural Area (EAA)** (North of the Redline) includes construction and operations to divert, store and treat Lake Okeechobee regulatory releases.

Storage and treatment of new water will be possible with the construction of a 14,000 acre FEB and associated distribution features on the A-2 footprint that is operationally integrated with the state-funded and state-constructed A-1 FEB and existing STAs. The A-2 FEB will accept EAA runoff and a portion of the Lake Okeechobee water currently discharged to the estuaries. This Lake Okeechobee water is diverted to the FEB when FEB/STAs and canals have capacity. The C-44 reservoir also collects water that would go to the St. Lucie Estuary, and CEPP modifies operations of the reservoir to return a portion of this water back to Lake Okeechobee, from which water can be delivered to the FEB or used to provide water supply deliveries.

It is anticipated that changes to the 2008 LORS will be needed in order to achieve the complete ecological benefits envisioned through implementation of CEPP. Operational changes to the LORS were incorporated into the hydrologic modeling conducted for the CEPP alternatives, including Alternative 4R2, in efforts to optimize CEPP system-wide performance within the current Zones of the 2008 LORS. More specifically, the hydrologic modeling of the CEPP alternatives included proposed revisions to the 2008 LORS decision tree outcome maximum allowable discharges dependant on the following criteria: Lake Okeechobee inflow and climate forecasts (class limits were modified for tributary hydrologic conditions, seasonal climate outlook, and multi-seasonal climate outlook), stage level (regulation zone), and stage trends (receding or ascending). While some refinements were made within the operational flexibility available in the 2008 LORS, assumptions ultimately extended beyond this flexibility due to adjustments made to the tributary/climatological classifications. Additional information and documentation of these assumptions are found in the **Appendix A** (Engineering) of the CEPP PIR. The CEPP PIR will not be the mechanism to propose or conduct the required NEPA evaluation of modifications to the Lake Okeechobee Regulation Schedule.

II. **WCA 2A and Northern WCA 3A** (South of the Redline) includes conveyance features to deliver and distribute existing flows and the redirected Lake Okeechobee water through WCA 3A.

Backfilling 13.5 miles of the Miami Canal between I-75 and 1.5 miles south of the S-8 pump station, and converting the L-4 canal into a spreader canal by removing 2.9 miles of the southern L-4 levee are the key features needed to ensure spatial distribution and flow directionality of the water entering WCA 3A.

Conveyance features to move water into and through the northwest portion of WCA 3A include: a gated culvert to deliver water from the L-6 Canal to the remnant L-5 Canal, a new gated spillway to deliver water from the remnant L-5 canal to the western L-5 canal (during L-6 diversion operations); a new gated spillway to deliver water from STA 3/4 to the S-7 pump station during peak discharge events (eastern flow route is not typically used during normal operations), including L-6 diversion operations; approximately 13.6 miles of conveyance improvements to the L-5 Canal; a new pump station to maintain Seminole Tribe of Florida, STA-5, and STA-6 water supply deliveries west of the L-4 Canal; and new gated culverts and an associated new canal to deliver water from the Miami Canal (downstream of S-8, which

pulls water from the L-5 Canal) to the L-4 Canal, along with potential design modifications to the existing S-8 and G-404 pump stations.

The Miami Canal will be backfilled to approximately 1.5 feet below the peat surface of the adjacent marsh. Spoil mounds on the east and west side of the Miami Canal from S-8 to I-75 will be used as a source for Miami Canal backfill material. Refuge for terrestrial mammals and other upland species will continue to be provided by the retention of 22 of the highest priority Florida Fish and Wildlife Conservation Commission (FWC) enhanced spoil mounds between S-339 to I-75 and the creation of additional upland landscape (constructed tree islands) approximately every mile along the entire reach of the backfilled Miami canal section (S-8 to I-75) where historic ridges or tree islands once existed. The constructed tree islands will block flow down the backfilled canal due to the tree island having a profile across the landscape that varies, or undulates, in elevation. Miami Canal constructed tree island design details will be determined during CEPP preconstruction, engineering and design (PED) phase. Tree island design, construction/planting will be coordinated with appropriate science team members with expertise in these topics to accomplish the restoration vision and intent of CEPP's canal backfilling and tree island construction. A diverse array of species will be planted, including trees, shrubs, and herbaceous species that are appropriate for these tree islands. Additional details are located in **Appendix A**.

III. **Southern WCA 3A, WCA 3B, and ENP** (Green/Blue Lines) includes conveyance features to deliver and distribute water from WCA3A to WCA 3B and ENP.

A new Blue Shanty levee extending from Tamiami Trail northward to the L-67A levee will be constructed. This Blue Shanty levee will divide WCA 3B into two subunits, a large eastern unit (3B-E) and a smaller western unit, the Blue Shanty Flowway (3B-W). A new levee is the most efficient means to restore continuous southerly sheetflow through a practicable section of WCA 3B and alleviates concerns over effects on tree islands by maintaining lower water depths and stages in WCA 3B-E. The width of the 3B-W flow-way is aligned to the width of the downstream 2.6-Mile Tamiami Trail Next Steps bridge, optimizing the effectiveness of both the flow-way and bridge.

In the western unit, construction of two new gated control structures on the L-67A, removal of the L-67C and L-29 Levees within the flowway, and construction of a divide structure in the L-29 Canal will enable continuous sheetflow of water to be delivered from WCA 3A through WCA 3B-W to ENP. A gated control structure will also be added to the L-67A, outside the flowway, to improve the hydroperiod of the eastern unit of WCA 3B. Spoil mounds along the northwestern side of the L-67A Canal, in the proximity to the three new L-67A structures, will also be removed to facilitate sheetflow connectivity with the WCA 3A marsh.

Increased outlet capability at the S-333 structure at the terminus of the L-67A canal, removal of approximately 5.5 miles of the L-67 Extension Levee, and removal of approximately 6 miles of Old Tamiami Trail between the ENP Tram Road and the L-67 Extension Levee will facilitate additional deliveries of water from WCA 3A directly to ENP. Detailed design and construction of these features will consider improving recreation access and minimize project footprints due to the nature of these environmentally sensitive areas.

IV. **Lower East Coast Protective Levee (Yellowline):** Includes features primarily for seepage management, which are required to mitigate for increased seepage resulting from the additional flows into WCA 3B and ENP.

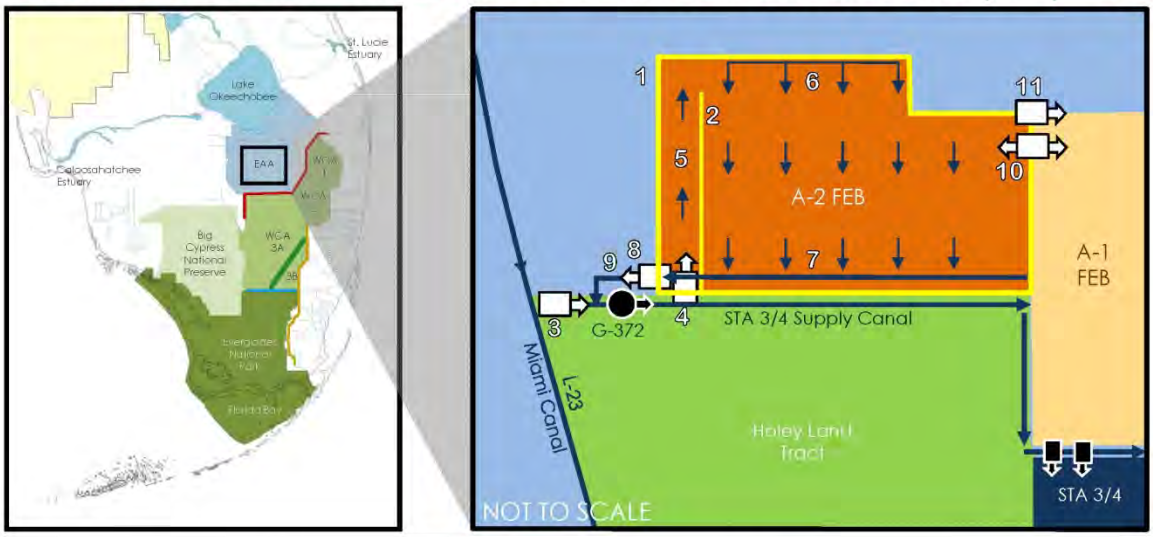
A newly constructed pump station with a combined capacity of 1,000 cfs will replace the existing temporary S-356 pump station, and a 4.2-mile partial depth seepage barrier will be built along the L-31N Levee south of Tamiami Trail.

There is an existing 2-mile seepage cut-off wall in the same vicinity that was constructed by a permittee as mitigation. There is a possibility that the same permittee may construct an additional 5 miles of seepage wall south of the 2-mile seepage wall, if permitted. Since the capability and effectiveness of the existing seepage wall to mitigate seepage losses from ENP remains under investigation, the CEPP recommended plan conservatively includes an approximately 4.2mile long, 35 feet deep tapering seepage barrier in the event construction is necessary.

The specific feature locations are shown in **Figure C.4-2** through **Figure C.4-5** (also see end of **Section 6** foldout figure). Further details of features are available in **Appendix A**.

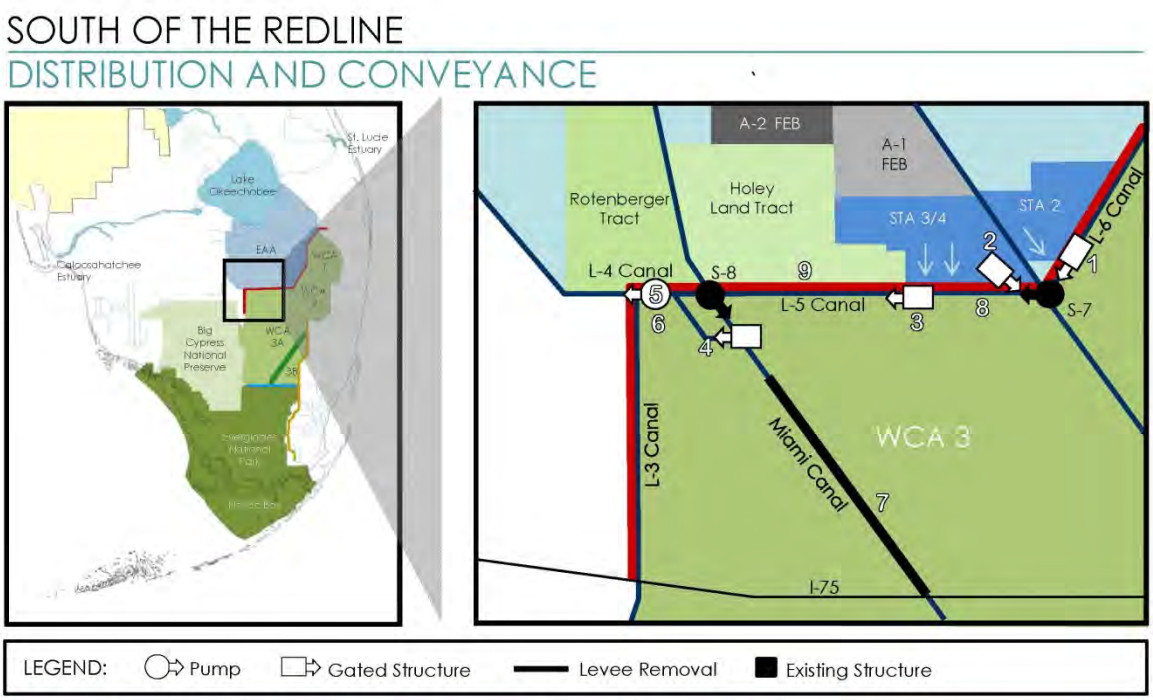
NORTH OF THE REDLINE

STORAGE AND TREATMENT/FLOW EQUALIZATION BASIN (FEB) – A2



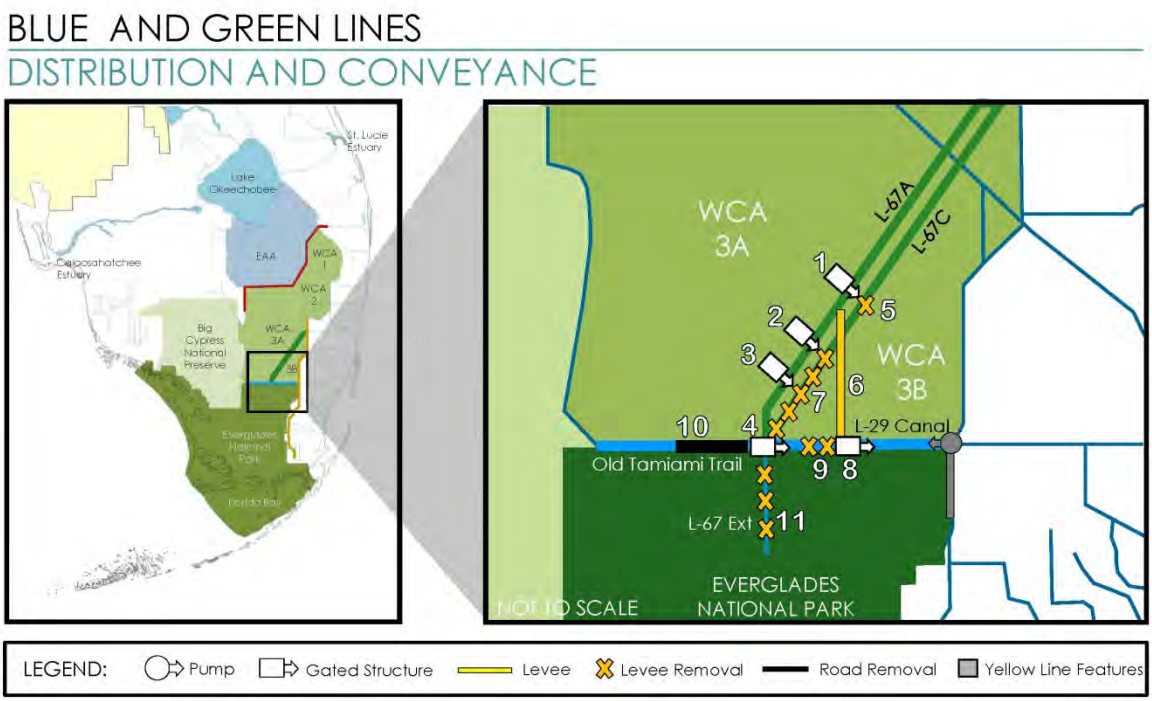
#	STRUCTURE	STRUCTURE/FEATURE TYPE	CFS	TECHNICAL NOTES
1	L-624	Levee		Perimeter Levee (~ 20 miles, 11.3 feet high, 14 feet wide, 3:1 side slope)
2	L-625	Levee		Interior levee (~ 4 miles, 11.3 feet high, 12 feet wide, 3:1 side slope)
3	S-623	Gated Spillway	3700	Delivers water from Miami Canal to existing G-372 pump station
4	S-624	Gated Sag Culvert (FEB inflow structure)	1550	Receives water from existing pump station G-372 via STA 3/4 Supply Canal and delivers it to C-624 FEB inflow canal
5	C-624	FEB Inflow Canal	1550	Conveys water from FEB inflow structure S-624 to FEB C-624 E spreader canal (length: ~ 4 miles)
6	C-624E	FEB Spreader Canal		Distributes FEB inflows across northern FEB; sheetflow within FEB is generally north to south (length: ~ 4 miles)
7	C-625E	FEB Collection Canal	400	Existing seepage canal for STA 3/4 Supply Canal, used to supplement FEB sheetflow during normal operating conditions
8	S-625	Gated Culverts (FEB discharge structure)	1550	Delivers water to FEB outflow canal (C-625W)
9	C-625W	FEB Outflow Canal	1550	FEB Outflow Canal is the extended seepage canal for the STA 3/4 Supply Canal; delivers water via existing G-372 pump station to STA 3/4 for water quality treatment
10	S-628	Gated Culvert (FEB intake/discharge structure)	930	Delivers water in both directions between A-2 FEB and A-1 FEB for operational flexibility
11	S-627	Emergency Overflow weir	445	Location to be determined
A-2 FEB design also includes an exterior seepage collection system (not illustrated):				
	C-626	Seepage Canal	400	~ 11 miles
	S-626	Seepage Pump Station	500	Delivers seepage back into the FEB outflow canal C-625W

Figure C.4-2. Recommended plan Treatment and Storage Features and Location



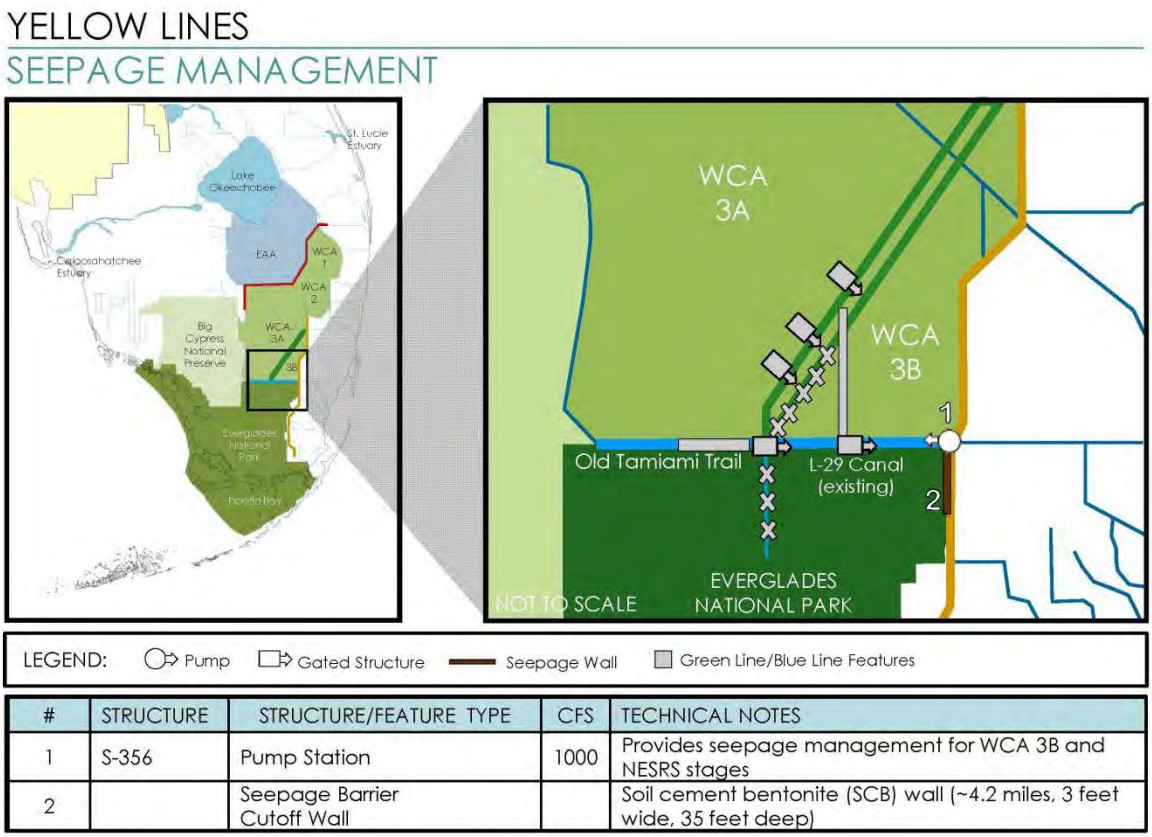
#	STRUCTURE	STRUCTURE/FEATURE TYPE	CFS	TECHNICAL NOTES
1	S-620	Gated Culvert	500	Delivers water from L-6 Canal to L-5 Canal
2	S-621	Gated Spillway	2500	Closed to direct STA 3/4 discharges to western L-5 Canal during normal operations; controls water from STA 3 /4 to the existing S-7 pump station during peak events
3	S-622	Gated Spillway	500	Delivers water from east to west in L-5 Canal (replaces existing L-5 canal plug)
4	S-8A	Gated Culverts with Canal	3080 & 1020	Existing S-8 pump station delivers water from L-5 Canal to Miami Canal; S-8A delivers water from Miami Canal to L-4 Canal (3120 cfs) and remaining Miami Canal segment (1040 cfs); potential design modifications to the existing S-8/G-404 complex will be assessed during PED
5	S-630	Pump Station	360	Delivers water from L-4 Canal west to maintain existing water supply deliveries
6		L-4 Levee Removal		Removes ~2.9 miles of south L-4 Levee
7		Miami Canal Backfill with Tree Islands Mounds		Remove ~ 13.5 miles of Miami Canal , from 1.5 miles south of S-8 to I-75; tree island mounds create habitat and promote sheetflow in WCA-3A within the footprint of the former Miami Canal
8		L-5 Remnant Canal	500	Enlarging canal to expand capacity of L-5 Canal (between S-621 & S-622)
9		L-5 Canal	3000	Enlarging canal to expand capacity of L-5 Canal (between S-622 & S-8)

Figure C.4-3. Recommended plan Northern Conveyance and Distribution Features and Location.



#	STRUCTURE	STRUCTURE/FEATURE TYPE	CFS	TECHNICAL NOTES
1	S-631	Gated Culvert	500	Delivers water from WCA 3A to 3B, east of L-67D Levee
2	S-632	Gated Culvert	500	Delivers water from WCA 3A to 3B, west of L-67D Levee
3	S-633	Gated Culvert	500	Delivers water from WCA 3A to 3B, west of L-67D Levee
4	S-333 (N)	Gated Spillway w/new canal	1150	Delivers water from L-67A Canal to L-29 Canal; supplements existing S-333 gated spillway
5		L-67C Levee Removal Gap		Gap, ~ 6000 feet (corresponding to S-631)
6	L-67D	Blue Shanty Levee		Levee, ~ 8.5 miles, connecting from L-67A to L-29 (6 feet high, 14-foot crest width, 3:1 side slopes)
7		L-67C Levee Removal		Complete removal of ~ 8 miles from New Blue Shanty Levee (L-67D)south to intersection of L-67A/L-67C; L-67C canal is not backfilled
8	S-355W	Gated Spillway	1230	Maintains water deliveries to eastern L-29 Canal
9		Levee Removal (L-29)		Removal of ~ 4.3 miles between L-67A and Blue Shanty Levee intersection with L-29 Levee
10		Removal of remnants of Old Tamiami Trail roadway		Removal of ~ 6 miles of roadway west of L-67 Extension
11		L-67 Extension Levee Removal and Canal Backfill)		Complete removal of ~ 5.5 miles of remaining L-67 Extension, including S-346 culvert

Figure C.4-4. Recommended plan Southern Distribution and Conveyance Features and Location.



#	STRUCTURE	STRUCTURE/FEATURE TYPE	CFS	TECHNICAL NOTES
1	S-356	Pump Station	1000	Provides seepage management for WCA 3B and NESRS stages
2		Seepage Barrier Cutoff Wall		Soil cement bentonite (SCB) wall (~4.2 miles, 3 feet wide, 35 feet deep)

Figure C.4-5. Recommended plan Seepage Management Features and Location.

C.4.37.3 Authority and Purpose

The Comprehensive Everglades Restoration Plan (CERP) was approved in Section 601 of Water Resources Development Act (WRDA) of 2000. The authority for the preparation of the Central Everglades Planning Project (CEPP) Project Implementation Report (PIR), one of a number of site-specific projects, is contained in Section 601(d) WRDA 2000. The U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) have executed a Design Agreement for the design of elements of the CERP and South Florida Ecosystem Restoration project (Design Agreement, May 2000). The direction and guidance for the development of CEPP are contained within the CERP Master Program Management Plan (MPMP), which was developed and approved by USACE and SFWMD for the purposes of describing the framework and processes to be used for managing and monitoring implementation of CERP.

The Central and Southern Florida (C&SF) Flood Control Project, as constructed, had unintended adverse impacts to the Greater Everglades including the Northern Estuaries, WCA 3, ENP, and Florida Bay. Historically, freshwater flowed southward from Lake Okeechobee to Florida Bay from surface (sloughs, transverse glades, and overland from through wetlands) and groundwater sources and resulted in a mosaic of vegetative communities as well as narrower range of salinity fluctuations in Florida Bay than exist today. While historic conditions sustained healthy and extensive ecological communities (ridge and slough, wet prairies, tree islands, sawgrass prairies, mangrove communities and seagrass beds) these communities have been degraded under the managed system. The purpose of CEPP is to improve the quantity, quality, timing, and distribution of water flows to the central Everglades (WCA 3 and ENP).

C.4.37.4 General Description of Dredged or Fill Material

Several project features are expected to involve the discharge of dredged or fill material into wetlands or other aquatic resources such as the Miami Canal or excavation in wetlands for conveyance purposes. However, specific information is unknown at this time. Additional 404(b)1 documents would be done for individual features when actual fill material needs are identified. The specific characteristics (general characteristics discussed below), quantities, and sources of dredged or fill material would be determined during planning and design activities for each component.

C.4.37.4.1 General Characteristics of Material

The soils in the Everglades are primarily composed of peats and mucks. Deep, clean sands characterize the area east of the Everglades and south of Lake Okeechobee with wet, gray or grayish-brown, sandy soils underlain by sandy clay cover the area west of the Everglades. The peat and muck soils, which are dark brown to nearly black, cover approximately 90 percent of the area being considered in the study area. They were formed in marshes or swamps by the partial decay of plant materials, with some admixture of mineral soil in the case of muck. Peat, by definition, consists of 65 percent or more organic material with relatively little mineral matter. Muck on the other hand, consists of 25 to 65 percent plant material mixed with sand, silt, and clay. The peat and muck soils may differ from each other in the kind of plant material that they contain, in the corresponding depths, and/or in the nature of the underlying material. The peat and muck may rest directly on limestone or on an intermediate layer of sand or marl. The highly organic soils have been divided into four types: Okeechobee muck, Okeelanta peaty muck, Everglades peaty muck, and Everglades peat. A fifth type of organic soil, which is not extensive in the area, is Loxahatchee peat. Where peat is encountered in the borrow area, it would be removed and not used as construction material.

The material may be reused or would be disposed of offsite in a Class 1 landfill. Soil testing would be conducted to better define the soil characteristics and as a result of that soil testing, other disposal options may be pursued.

C.4.37.4.2 Quantity of Material (cubic yards)

Material would be produced for disposal with the construction of the A-2 FEB components; the construction of L-6 diversion and hydropattern restoration feature components; and construction of distribution, conveyance and seepage management components in southern WCA 3 and ENP.

C.4.37.4.3 Source of Material

The material consists of peat and muck excavated from within EAA, WCA-3 and ENP. The features of the recommended plan would be installed from the edge of Miami Canal (N), STA 3/4 Supply Canal and Outflow Canal, L-6, L-5, L-4, L-28, L-67A, L-67C, L-67 Extension and L-29 canals, as well as Tamiami Trail. Existing mounds of excavated material would be used to backfill and augmented when necessary with clean fill.

C.4.37.5 Description of the Proposed Discharge Site

C.4.37.5.1 Location

The excess excavated material would be deposited in an approved Class 1 landfill, either being disposed of incurring tipping fees or being used as good landfill cover daily. Placement of material in a landfill is not a discharge per se. The exact Class I landfill has not yet been identified. The excavated material would be assumed to be in the “worse case” condition encountered on other projects within the area.

Soil testing would be performed prior to construction of each component. As a result of soil testing, other disposal options may be pursued for clean dredged or excavated material including placement in the Miami Canal in which case the specific soil characteristics would be evaluated for discharge impacts.

C.4.37.5.2 Size

The exact Class I landfill has not yet been identified; therefore, the size of the Class I landfill is not available at this time. It is anticipated that CEPP would be constructed in stages as described within the Implementation Plan (refer to **Section 5 of the Draft PIR/EIS**) and that due to construction sequencing, several potential interim staging, stockpile, or temporary disposal sites may be required.

C.4.37.5.3 Site

A confined site would be used. The excess excavated material would be hauled by truck from the site and deposited or disposed of in an approved Class I landfill. Disposal of material in a landfill is not a fill per-se evaluated under the Clean Water Act.

C.4.37.5.4 Habitat

The excavated material deposition or disposal site would be an approved Class I landfill. Excavated material of good quality would also be deposited in the Miami Canal and the L-67 Extension that were former conveyance canals and degraded wetlands.

C.4.37.5.5 Timing and Duration of Discharge

Installation timing of the project features has yet to be determined. The time and duration of discharge would be further defined during the detailed design phase.

C.4.37.6 Description of Disposal Method

The excavated material would be hauled by truck to an approved Class I landfill. Similarly, if the excavated material is used as fill, it would be trucked to placement or staging stockpile areas.

C.4.37.7 Factual Determinations (Section 230.11)

C.4.37.7.1 Physical Substrate Determinations

C.4.37.7.1.1 Substrate Elevation and Type

The natural topography of the area is nearly flat with slopes less than two percent, with the exception of the unnatural features (canals and levee, **Table C.4-1**).

C.4.37.7.1.2 Sediment Type

The substrate at the installation site, including EAA, the WCAs, and ENP, is calcium carbonate limestone rock overlain with peat and muck soils.

C.4.37.7.1.3 Dredge/Fill Material Movement

No appreciable movement of material is anticipated during construction. The material is intended to be removed to the limestone rock. Excavation of rock for structures may be necessary. Once the project features are installed and the Miami Canal backfill completed and stabilized, movement of fill and surface soils is not expected. Some minor erosion may occur in specific areas if high rain events induce flooding during, or immediately after, construction. Best management practices would be employed during construction to control movement of sediment into undisturbed areas and areas outside the construction footprint.

C.4.37.7.1.4 Physical Effects on Benthos

No adverse impacts to benthic organisms are anticipated other than displacement of those organisms in the construction footprint of the proposed project. The benthos in the canals being filled would be buried under the fill material; however these highly prolific organisms are expected to quickly re-establish in the natural wetlands restored through improved hydrology.

C.4.37.7.2 Water Circulation, Fluctuation, and Salinity Determination

An ecological monitoring plan (**Annex D**) has been developed to monitor hydrology, water quality, and associated changes within the project area.

C.4.37.7.3 Suspended Particulate/Turbidity Determinations

During project construction, a temporary short-term increase in suspended particulates may occur in the canals and ponded areas associated with levee removal and canal backfilling. Best management practices would be used to minimize the suspension and transport of soils, levee materials, and roadway materials into water adjacent to or downstream of the construction area including use of sediment controls, turbidity screens, or sediment blockages for adjacent wetlands.

In general, any short-term impacts to water quality associated with construction of the project would be ameliorated by construction sequencing, best management practices for erosion and sedimentation control, and monitoring during construction. Longer-term impacts to water quality not associated with fill and associated with the operation of project features would be addressed through operational monitoring and adaptive management actions, if potentially adverse affects are observed or predicted.

C.4.37.7.3.1 Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of the Disposal Site

Although site-specific information is unknown at this time, temporary localized increases in suspended particulates and turbidity levels can be expected during construction of some of project features. Such increases are generally short term and insignificant. All appropriate measures to reduce and contain turbidity would be employed so State Water Quality Standards would not be violated.

C.4.37.7.3.2 Effects on Chemical and Physical Properties of the Water Column

C.4.37.7.3.2.1 Light Penetration

During construction operations there would be a temporary insignificant reduction in light penetration in the canals in the immediate vicinity of the activity. Once construction is complete, light penetration is expected to return to pre-construction levels.

C.4.37.7.3.2.2 Dissolved Oxygen

During construction operations there would be a temporary reduction in the dissolved oxygen content in the water column due to organic sediment oxygen demand from the disturbed soils in the immediate vicinity of the activity. Once construction is complete, dissolved oxygen is expected to return to pre-construction levels.

C.4.37.7.3.2.3 Toxic Metals, Organics, and Pathogens

Generally no toxic metals, anthropogenic organics, or pathogens are anticipated at this time to be released by project construction. Additional discussion on these items would be provided during further planning and design on project components.

C.4.37.7.3.2.4 Aesthetics of the Water Column

During construction, visual aesthetics would be negatively impacted. After completion, aesthetics would improve due to a reduction in exotic species.

C.4.37.7.3.3 Effects on Biota

C.4.37.7.3.3.1 Primary Productivity and Photosynthesis

Disposal of excavated materials would adversely affect wetlands in the immediate vicinity of construction by destroying vegetation and smothering biota. However, project operation would improve the primary productivity and photosynthesis due to an increase in quality of wetland habitat.

C.4.37.7.3.3.2 Suspension/Filter Feeders

During construction operations there would be a temporary increase in turbidity and possibly a decrease in suspension/filter feeders due to construction activities. This temporary increase in turbidity would be short-term and should not have any long-term negative impact on these highly fecund organisms. The implantation of the project should benefit these organisms by creating a better quality wetland habitat.

C.4.37.7.3.3.3 Sight Feeders

During construction operations there would be a temporary increase in turbidity and possibly a decrease in sight feeders due to construction activities. No significant impacts on these organisms are expected as the majority of sight feeders are highly mobile and can move outside the affected area. When the project is operational, sight feeders would benefit from the better quality wetland habitat.

C.4.37.7.4 Contamination Determinations

From the 1920s through the 1960s, most of the land parcels incorporated in the FEB project footprint were cultivated for agricultural use. A few parcels continue to be farmed; however, crops and/or cultivation practices have changed dramatically. Residual pesticide contamination associated with past and present crop production can be detected in the soils on many of the parcels; however, at concentrations that are not likely to present unacceptable risks to human health or environmental receptors. For parcels that are frequently inundated under present hydrologic conditions, the proposed project is not likely to significantly increase the risk of environmental harm associated with the fate and transport of the residual contamination. For parcels that are not frequently inundated under present hydrologic conditions, the proposed project may increase the risk of environmental harm associated with the fate and transport of residual contamination; however, the USFWS has reviewed the testing and analysis performed on these lands and determined that remedial actions do not appear to be warranted. Additional hazardous, toxic and radioactive waste (HTRW) investigations may be conducted to determine what project top-soils might require isolation (by encapsulating in levee berms) to minimize the risk of contaminant bioaccumulation or mobilization.

C.4.37.7.5 Aquatic Ecosystem and Organism Determinations

No long-term adverse impacts on aquatic organisms are anticipated. Wetland and estuarine ecosystems are expected to greatly improve because of implementation of recommended plan, Alternative 4R2. The proposed project is not expected to cause or contribute to violations of State Water Quality Standards, jeopardize the existence of any federally endangered or threatened species, nor impact a marine sanctuary. No significant degradation is expected and all appropriate and practicable steps would taken to minimize impacts. Improvements to upland and wetland habitats are predicted with the construction

of Alternative 4R2. The filling of the canals and removal of the roads is expected to reestablish a more natural sheetflow, which would restore wetland habitat and improve estuarine water quality.

C.4.37.7.5.1.1 Effects on Plankton

No adverse impacts to plankton are anticipated. Concentration of freshwater diatoms should increase, at a minimum, in a narrow zone associated with water deliveries into ENP.

C.4.37.7.5.1.2 Effects on Benthos

No adverse impacts to benthic organisms are anticipated other than displacement of those organisms in the construction footprint of the proposed project. Reduction of freshwater flows to the Caloosahatchee Estuary and the St. Lucie Estuary and an increase of freshwater flows to Florida Bay would provide improved habitat for the benthos.

C.4.37.7.5.1.3 Effects on Nekton

There should be no adverse impacts to freshwater swimming aquatic organisms including fishes during construction. Additionally, no adverse impacts are expected downstream in the waters of Florida Bay and the adjacent coastline. Estuarine fish species most likely to occur in these areas include the small forage species such as killifish (*Cyprinodon* spp. and *Fundulus* spp.), mosquito fish (*Gambusia affinish*), juvenile sciaenids (*Leiostomus* spp.), silversides (*Atherinidae*) and mullets (*Mugil* spp.). Larger secondary consumers include gray snapper (*Lutjanus griesus*), tarpon (*Megalops atlantica*), snook (*Centopomus* spp.), red drum (*Sciaenops ocellatus*) and spotted seatrout (*Cynoscion nebulosus*). Freshwater deliveries through ENP would provide improved habitat and nursery opportunities for fishes in downstream estuaries connecting coastal wetlands to the bay.

C.4.37.7.5.1.4 Effects on Aquatic Food Web

Periphyton forms the base of the food web within the project area. Implementation of the project is expected to increase periphyton mat biomass and productivity throughout the site as well as freshwater diatoms. No adverse impacts to the aquatic food web are anticipated, other than minor temporary impacts within the construction footprint of the proposed spreader channels.

C.4.37.7.5.2 Effects on Special Aquatic Sites

C.4.37.7.5.2.1 Hardground and Coral Reef Communities

There are no hardground or coral reef communities located within the proposed project site or the nearshore waters affected by the project. Corals found within the waters of Biscayne Bay are outside of the area of potential effect.

C.4.37.7.5.2.2 Sanctuaries and Refuges

Biscayne National Park and a portion of Everglades National Park are downstream of the project area and are recognized as tropical marine environments of national significance well known for their productive reef ecosystems that play a critical role in the dynamics of the larger Florida Keys reef ecosystem. The project is intended to improve the quantity, timing, and distribution of water delivered to Florida Bay and should not have a negative effect on the sanctuaries and refuges.

C.4.37.7.5.2.3 Wetlands

The dominant vegetation community in the region is a matrix of sawgrass prairie with tree islands. At the lowest elevations near the coast, mangroves replace the freshwater wetlands. The transition zone between the mangroves and the freshwater prairie is a needle rush-salt grass zone on the freshwater

side, but stunted scrub mangrove on the coastal side. As a result of the project, approximately 127 acres of wetlands would be removed by construction and excavation activities. This loss is considered minimal and is not anticipated to have any adverse effects. The proposed project is anticipated to provide positive ecological benefits, including improving hydroperiods and hydropatterns in ENP, by improving the quantity, timing, and distribution of water delivered to the downstream estuaries, Florida Bay, and other receiving waters.

C.4.37.7.5.2.4 Mud Flats

There are no mud flats within the construction footprint or areas impacted by the proposed project.

C.4.37.7.5.2.5 Vegetated Shallows

Submerged aquatic vegetation (SAV) is present throughout the nearshore waters. The trend shows the following species in order from the shoreline to the deeper waters: widgeon grass (*Ruppia maritime*), turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), shoal grass (*Halodule wrightii*) and Johnsons seagrass (*Halophila johnsonii*). Reduction of freshwater flows to the Caloosahatchee Estuary and the St. Lucie Estuary and an increase of freshwater flows to Florida Bay would provide improvements to SAV. .

C.4.37.7.5.2.6 Riffle and Pool Complexes

There are no riffle or pool complexes within the project footprint and none should be impacted by the proposed project.

C.4.37.7.5.3 Threatened and Endangered Species

There are 41 federally listed threatened and endangered species potentially present in the project area. The USACE and U.S. Fish and Wildlife Service (USFWS) are presently consulting on a determination of 'no effect' or 'not likely to adversely affect' decision for all federally listed species within the project area, with the exception of the Cape Sable seaside sparrow for which a may affect, likely to adversely affect determination has been made. A Biological Assessment is included within **Annex A** to document potential effects to threatened and endangered species. A Biological Opinion from the USFWS on the effect of implementation of the proposed project on any endangered and/or threatened species would be determined and included in **Annex A** of the Final Project Implementation Report and Environmental Impact Statement.

C.4.37.7.6 Proposed Disposal Site Determinations

Excavated material would be used to fill approximately 13.5 miles of the Miami Canal and the L-67 extension and bring the road side ditches to ambient grade along both sides of all roads to be removed. There would be no long-term adverse impacts to the project area resources as a result of the placement of the excavated material.

C.4.37.7.6.1 Mixing Zone Determination

The dredged material would not cause unacceptable changes in the mixing zone water quality requirements as specified by the State of Florida's Water Quality Certification permit procedures. No adverse impacts related to depth, current velocity, direction and variability, degree of turbulence, stratification, or ambient concentrations of constituents are expected from implementation of the project.

C.4.37.7.6.2 Determination of Compliance with Applicable Water Quality Standards

CEPP complies with water quality standards applicable to the project and adjacent waters. Proposed features are located in and adjacent to waters designated as Class III by the State of Florida. In accordance with Florida Administrative Code (F.A.C.) Rule 62-302 ("Surface Water Quality Standards"), the use classification of Class III waters is "Recreation, Propagation, and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife." In addition to the minimum and general criteria for surface waters found in Section 62-302.500(1) F.A.C., there are numerous water quality criteria for specific parameters for Class III waters listed in Section 62-302.530, F.A.C. Although the proposed plan is not expected to affect most of the parameters listed in this rule, certain parameters (e.g., turbidity, dissolved oxygen and nutrients) listed in the criteria may be affected by construction and operations activities. The construction and operation of the proposed project components would comply with Federal and state water quality standards.

C.4.37.7.7 Potential Effects on Human Use Characteristics

C.4.37.7.7.1 Municipal and Private Water Supply

No municipal or private water supplies would be adversely impacted by the implementation of the project. Refer to **Section 4** and **Appendix C.2.1** for additional information pertaining to CEPP water supply analyses.

C.4.37.7.7.2 Recreational and Commercial Fisheries

Recreational fishing by boat would be negatively impacted by backfilling the Miami Canal and access in L-67C Canal could be lost by placement of the Blue Shanty levee (could be offset by installing a ramp from the Blue Shanty Levee into the L-67C Canal). Bank fishing opportunities could be positively increased by addition of access points around proposed structures. The proposed project would benefit recreational and commercial fisheries through salinity improvements within the Northern and Southern Estuaries.

C.4.37.7.7.3 Water Related Recreation

Water related recreation may be reduced by some project features and improved by other project features. Further detail is included in **Appendix F**.

C.4.37.7.7.4 Aesthetics

The proposed project would enhance the overall aesthetics of the project area. The backfilling of canals, degradation of levees and the creation of a flow way in WCA 3B would restore sheetflow to the greater Everglades ecosystem. Exotic plant control may enhance the aesthetics of the area.

C.4.37.7.7.5 Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves

The project would enhance environmental conditions at these types of sites within the project area. For more information refer to Section **C.4.32.8.5.2.2 Sanctuaries and Refuges.**

C.4.37.7.8 Essential Fish Habitat

C.4.37.7.8.1 Essential Fish Habitat in the Area

The project area includes two distinct regional estuarine and nearshore coastal systems: The southern estuaries including Biscayne Bay and Florida Bay; and the northern estuaries including the Caloosahatchee River and the St. Lucie Estuary.

The southern estuaries, a shallow estuarine system (average depth less than three feet), comprise Biscayne National Park and a large portion of Everglades National Park. Florida Bay is the main receiving water of the Greater Everglades, heavily influenced by changes in timing, distribution, and quantity of freshwater flows into the southern estuaries. Lake Okeechobee discharges into the two northern estuaries. The St. Lucie Canal feeds into the St. Lucie Estuary, and the Caloosahatchee Canal/River feeds into the Caloosahatchee Estuary to the west.

Biscayne Bay and Florida Bay

The southern estuaries contain essential fish habitat for corals; coral reef and live bottom habitat; red drum (*Sciaenops ocellatus*); penaeid shrimps (*Penaeus* spp.); spiny lobster (*Panulirus argus*); other coastal migratory pelagic species and the snapper-grouper complex. Species generally present in the southern estuaries region include brown shrimp (*Penaeus aztecus*), pink shrimp (*Penaeus duorarum*), white shrimp (*Penaeus* sp.), spiny lobster, stone crab (*Menippe mercenaria*), gulf stone crab, red drum, Spanish mackerel (*Scomberomorus maculatus*), and gray snapper (*Lutjanus griseus*). Essential fish habitat in the southern estuaries is comprised of seagrasses, estuarine mangroves, intertidal flats, the estuarine water column, live/hard bottoms, and coral reefs.

Caloosahatchee River

The Caloosahatchee River estuary contains essential fish habitat for juvenile brown shrimp, juvenile gray snapper (*Lutjanus griseus*), smalltooth sawfish (*Pristia pectinata*), juvenile pink shrimp, adult and juvenile red drum, adult and juvenile Spanish mackerel, and juvenile stone crab. Downstream habitats include oyster reefs and seagrass beds (submerged aquatic vegetation).

St. Lucie Estuary

The proposed project is within the jurisdiction of the South Atlantic Fishery Management Council (SAFMC) and is located in areas designated as EFH for wormrock, live bottom habitat, for the American oyster (*Crassostrea virginica*); pink shrimp; white shrimp, and brown shrimp ; Florida red drum; grouper (*Epinephelus* spp.); gray snapper (*Lutjanus griseus*); white grunt (*Haemulon plumieri*); red porgy (*Pagrus pagrus*); spiny lobster; and the snapper-grouper complex. In addition, the nearshore hardbottom habitat outside of the St. Lucie Estuary is designated as Essential Fish Habitat-Habitat Areas of Special Concern (EFH-HAPC) for the snapper-grouper complex.

C.4.37.7.8.2 Assessment of Effects on Hardground and Coral Reef Communities

This project is not expected to have an effect on coral reef or hard bottom communities in the project area. There are no coral reefs or hard bottom communities located within the proposed project site or the nearshore waters affected by the project. Corals found within Florida Bay and Biscayne Bay are outside the area of potential effect.

C.4.37.7.8.3 Assessment of Effects on Sanctuaries and Refuges

Biscayne National Park and a portion of Everglades National Park are downstream of the project area and are recognized as tropical marine environments of national significance well known for their productive reef ecosystems that play a critical role in the dynamics of the larger Florida Keys reef ecosystem. The proposed project is intended to improve the quantity, timing, and distribution of water delivered to Florida Bay.

C.4.37.7.8.4 Assessment of Effects on Wetlands

The dominant vegetation community in the region is a matrix of sawgrass prairie with tree islands. At the lowest elevations near the coast mangroves replace the freshwater wetlands. The transition zone between the mangroves and the freshwater prairie is a needle rush-salt grass zone on the freshwater side, but stunted scrub mangrove on the coastal side. As a result of the project approximately 127 acres of wetlands would be removed by construction and excavation activities. This loss is considered minimal and is not anticipated to have any adverse effects. The proposed project is anticipated to provide positive ecological benefits, including improving hydroperiods and hydropatterns in ENP, by improving the quantity, timing, and distribution of water delivered to the downstream estuaries, Florida Bay, and other receiving waters.

C.4.37.7.8.5 Assessment of Effects on Mud Flats

There are no mud flats within the construction footprint or areas impacted by the project.

C.4.37.7.8.6 Assessment of Effects on Vegetated Shallows

SAV is present throughout the nearshore waters. The trend shows the following species in order from the shoreline to the deeper waters: widgeon grass (*Ruppia maritime*), turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), shoal grass (*Halodule wrightii*) and Johnsons seagrass (*Halophila johnsonii*). Reduction of freshwater flows to the Caloosahatchee Estuary and the St. Lucie Estuary and an increase of freshwater flows to Florida Bay would provide improvements to SAV. Without operational changes and/or active pumping the project is not anticipated to have any effect on SAV.

C.4.37.7.8.7 Assessment of Effects on Riffle and Pool Complexes

There are no riffle or pool complexes within the project footprint and none should be impacted by the project.

C.4.37.7.9 Assessment of Effects on Plankton

No adverse impacts to plankton are anticipated. Concentration of freshwater diatoms should increase at a minimum in a narrow zone associated with water deliveries into ENP.

C.4.37.7.10 Assessment of Effects on Benthos

No adverse impacts to benthic organisms are anticipated other than displacement of those organisms in the construction footprint of the project.

C.4.37.7.11 Assessment of Effects on Nekton

There should be no adverse impacts to freshwater swimming aquatic organisms including fishes during construction. Additionally, no adverse impacts are expected downstream in the waters of Florida Bay and the adjacent coastline. Estuarine fish species most likely to occur in these areas include the small forage species such as killifish (*Cyprinodon* spp. and *Fundulus* spp.), mosquito fish (*Gambusia affinish*), juvenile sciaenids (*Leiostomus* spp.), silversides (*Atherinidae*) and mullets (*Mugil* spp.). Larger secondary consumers include gray snapper (*Lutjanus griesus*), tarpon (*Megalops atlantica*), snook (*Centopomus* spp.), red drum (*Sciaenops ocellatus*) and spotted seatrout (*Cynoscion nebulosus*). Freshwater deliveries through ENP would provide improved habitat and nursery opportunities for fishes in downstream estuaries connecting coastal wetlands to the bay.

C.4.37.7.12 Determination of Effects on Essential Fish Habitat

The overall benefit to the regional system is expected to be far greater than the localized adverse effects. The restoration of hydrology of the Greater Everglades ecosystem and the increase in spatial extent of protected wetland acreage in the region would produce extensive cumulative beneficial effects. These beneficial effects are expected to substantially outweigh the cumulative adverse effects produced by the aquatic ecosystem alterations that may be necessary to construct some of the project components.

C.4.37.8 Determination of Cumulative Effects on the Aquatic Ecosystem

The overall benefit to the regional system is expected to be far greater than the localized adverse effects. The hydrologic restoration of the Greater Everglades ecosystem and the increase in spatial extent of protected wetland acreage in the region would produce extensive cumulative beneficial effects. These beneficial effects are expected to substantially outweigh the cumulative adverse effects produced by the aquatic ecosystem alterations that may be necessary to construct some of the project features.

C.4.37.9 Determination of Secondary Effects on the Aquatic Ecosystem

No adverse secondary impacts on the aquatic ecosystem would occur as a result of the construction. During construction the sites would be contained with sedimentation barriers. Erosion would be controlled by appropriate erosion control techniques. Sedimentation would be controlled during construction. An ecological and water quality monitoring plan would be implemented during and after construction and specific environmental commitments, engineering and design commitments, and operational commitments would be incorporated to avoid, minimize, and/or mitigate for adverse effects.

C.4.37.10 Findings of Compliance or Non-Compliance with the Restrictions on Discharge

C.4.37.10.1 No significant adaptations of the guidelines were made relative to this evaluation.

C.4.37.10.2 At the time of the project planning phase no practicable alternatives exist which meet the study objectives involving discharge of some small fill into waters of the United States.

C.4.37.10.3 At this time, no practicable alternatives exist which have less adverse impact on the aquatic ecosystem without presenting other significant adverse environmental consequences. The alternatives all have overwhelming beneficial impacts.

C.4.37.10.4 The discharge of fill materials is not anticipated to cause or contribute to violations of any applicable state water quality standards for Class III waters or Outstanding Florida Waters where applicable. The discharge operation is not anticipated to violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

C.4.37.10.5 The placement of fill materials in the project area is not anticipated to jeopardize the continued existence of any species listed as threatened and endangered or result in the likelihood of destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973, as amended.

C.4.37.10.6 The placement of fill material is not anticipated to result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife and special aquatic sites. The life stages of aquatic species and

other wildlife is not anticipated to be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic and economic values are not anticipated.

C.4.37.10.7 Based on the guidelines, the proposed discharge site for the discharge of fill and/or dredged material is specified as complying with the requirements of these guidelines.

C.4.38 Coastal Zone Management Act Consistency Statement

FLORIDA COASTAL MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES

Central Everglades Planning Project
St. Lucie, Martin, Okeechobee, Glades, Hendry, Palm Beach, Broward, Miami-Dade, Monroe, Collier, Lee and Charlotte Counties

Enforceable Policy. Florida State Statues considered "enforceable policy" under the Coastal Zone Management Act (www.dep.state.fl.us/cmp/federal/24_statutes.htm).

Applicability of the Coastal Zone Management Act.
The following table summarizes the process and procedures under the Coastal Zone Management Act for Federal Actions and for non-Federal Applicants*.

Item	Non-Federal Applicant (15 CFR 930, subpart D)	Federal Action (15 CFR 930, subpart C)
Enforceable Policies	Reviewed and approved by NOAA (in FL www.dep.state.fl.us/cmp/federal/24_statutes.htm)	Same
Effects Test	Direct, Indirect (cumulative, secondary), adverse or beneficial	Same
Review Time	6 months from state receipt of Consistency Certification (30-days for completeness notice) Can be altered by written agreement between State and applicant	60 Days, extendable (or contractible) by mutual agreement
Consistency	Must be Fully Consistent	To Maximum Extent Practicable**
Procedure Initiation	Applicant provides Consistency Certification to State	Federal Agency provides "Consistency Statement" to State
Appealable	Yes, applicant can appeal to Secretary (NOAA)	No (NOAA can "mediate")
Activities	Listed activities with their geographic location (State can request additional listing within 30 days)	Listed or Unlisted Activities in State Program
Activities in Another State	Must have approval for interstate reviews from NOAA	Interstate review approval NOT required
Activities in Federal Waters	Yes, if activity affects state waters	Same

* There are separate requirements for activities on the Outer Continental Shelf (subpart E) and for "assistance to an applicant agency" (subpart F).
** Must be fully consistent except for items prohibited by applicable law (generally does not count lack of funding as prohibited by law, 15 CFR 930.32).

Coastal Zone Consistency Statement by Statute/Enforceable Policy

CHAPTER 161, F.S., BEACH AND SHORE PRESERVATION

Coastal areas are among the state's most valuable natural, aesthetic, and economic resources; and they provide habitat for a variety of plant and animal life. The state is required to protect coastal areas from imprudent activities that could jeopardize the stability of the beach-dune system, accelerate erosion, provide inadequate protection to upland structures, endanger adjacent properties, or interfere with public beach access. Coastal areas used, or likely to be used, by sea turtles are designated for nesting, and the removal of vegetative cover that binds sand is prohibited. This statute provides policy for the regulation of construction, reconstruction, and other physical activities related to the beaches and shores of the state. Additionally, this statute requires the restoration and maintenance of critically eroding beaches.

Response: The proposed plans and information would be submitted to the state in compliance with this chapter. No work is proposed seaward of the mean high water line and would not affect shorelines or shoreline processes.

CHAPTER 163, PART II, F.S., INTERGOVERNMENTAL PROGRAMS: GROWTH POLICY, COUNTY AND MUNICIPAL PLANNING: LAND DEVELOPMENT REGULATION

The purpose of this statute is to provide for the implementation of comprehensive planning programs to guide and control future development in the state. The comprehensive planning process encourages units of local government to preserve, promote, protect, and improve the public health, safety, comfort, good order, appearance, convenience, law enforcement and fire prevention, and general welfare; prevent the overcrowding of land and avoid undue concentration of population; facilitate the adequate and efficient provision of public facilities and services; and conserve, develop, utilize, and protect natural resources within their jurisdictions.

Chapter 163 , Part II Intergovernmental Programs: Growth Policy; County and Municipal Planning; Land Development Regulation
Enforceable policy includes only:

Sections 163.3164 Local Government Comprehensive Planning and Land Development Regulation Act; definitions;

.3177(6)(a) requiring a future land use plan element designating proposed future general distribution, location, and extent of the uses of land for residential uses, commercial uses, industry, agriculture, recreation, conservation, education, public buildings and grounds, other public facilities, and other categories of the public and private uses of land.

(10)(h). public facilities and services needed to support development shall be available concurrent with the impacts of such development in accordance with s. 163.3180. [see .3180(2)(a-c), (5)(a&c), (6), and (8); below].

(10)(l). consider land use compatibility issues in the vicinity of all airports in coordination with the Department of Transportation and adjacent to or in close proximity to all military installations in coordination with the Department of Defense.

(11)(a). innovative approaches to development which may better serve to protect environmentally sensitive areas, maintain the economic viability of agricultural and other predominantly rural land uses, and provide for the cost-efficient delivery of public facilities and services.

(11)(c). maximize the use of existing facilities and services through redevelopment, urban infill development, and other strategies for urban revitalization.

.3178(1) local government comprehensive plans restrict development activities where such activities would damage or destroy coastal resources, and that such plans protect human life and limit public expenditures in areas that are subject to destruction by natural disaster.

(2)(d-j); studies, surveys, and data; be consistent with coastal resource plans prepared and adopted pursuant to general or special law; and contain:

(d) A component which outlines principles for hazard mitigation and protection of human life against the effects of natural disaster, including population evacuation, which take into consideration the capability to safely evacuate the density of coastal population proposed in the future land use plan element in the event of an impending natural disaster. The Division of Emergency Management shall manage the update of the regional hurricane evacuation studies, ensure such studies are done in a consistent manner, and ensure that the methodology used for modeling storm surge is that used by the National Hurricane Center.

(e) A component which outlines principles for protecting existing beach and dune systems from human-induced erosion and for restoring altered beach and dune systems.

(f) A redevelopment component which outlines the principles which shall be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise.

(g) A shoreline use component that identifies public access to beach and shoreline areas and addresses the need for water-dependent and water-related facilities, including marinas, along shoreline areas. Such component must include the strategies that will be used to preserve recreational and commercial working waterfronts as defined in s. 342.07.

(h) Designation of coastal high-hazard areas and the criteria for mitigation for a comprehensive plan amendment in a coastal high-hazard area as defined in subsection (9). The coastal high-hazard area is the area below the elevation of the category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. Application of mitigation and the application of development and redevelopment policies, pursuant to s. 380.27(2), and any rules adopted thereunder, shall be at the discretion of local government.

(i) A component which outlines principles for providing that financial assurances are made that required public facilities will be in place to meet the demand imposed by the completed development or redevelopment. Such public facilities will be scheduled for phased completion to coincide with demands generated by the development or redevelopment.

(j) An identification of regulatory and management techniques that the local government plans to adopt or has adopted in order to mitigate the threat to human life and to control proposed development and

redevelopment in order to protect the coastal environment and give consideration to cumulative impacts.

.3180(2)(a-c), (a) Consistent with public health and safety, sanitary sewer, solid waste, drainage, adequate water supplies, and potable water facilities shall be in place and available to serve new development no later than the issuance by the local government of a certificate of occupancy or its functional equivalent. Prior to approval of a building permit or its functional equivalent, the local government shall consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the local government of a certificate of occupancy or its functional equivalent. A local government may meet the concurrency requirement for sanitary sewer through the use of onsite sewage treatment and disposal systems approved by the Department of Health to serve new development.

(b) Consistent with the public welfare, and except as otherwise provided in this section, parks and recreation facilities to serve new development shall be in place or under actual construction no later than 1 year after issuance by the local government of a certificate of occupancy or its functional equivalent. However, the acreage for such facilities shall be dedicated or be acquired by the local government prior to issuance by the local government of a certificate of occupancy or its functional equivalent, or funds in the amount of the developer's fair share shall be committed no later than the local government's approval to commence construction.

(c) Consistent with the public welfare, and except as otherwise provided in this section, transportation facilities needed to serve new development shall be in place or under actual construction within 3 years after the local government approves a building permit or its functional equivalent that results in traffic generation.

(5)(a&c),

(a) … planning and public policy goals may come into conflict with the requirement that adequate public transportation facilities and services be available concurrent with the impacts of such development. … in urban centers transportation cannot be effectively managed and mobility cannot be improved solely through the expansion of roadway capacity, that the expansion of roadway capacity is not always physically or financially possible, and that a range of transportation alternatives is essential to satisfy mobility needs, reduce congestion, and achieve healthy, vibrant centers.

(c) … developments located within urban infill, urban redevelopment, urban service, or downtown revitalization areas or areas designated as urban infill and redevelopment areas under s. 163.2517, which pose only special part-time demands on the transportation system, are exempt from the concurrency requirement for transportation facilities. A special part-time demand is one that does not have more than 200 scheduled events during any calendar year and does not affect the 100 highest traffic volume hours.

(6) a de minimis impact [on a transportation facility] is consistent with this part.

(8) When assessing the transportation impacts of proposed urban redevelopment within an established existing urban service area, 110 percent of the actual transportation impact caused by the previously existing development must be reserved for the redevelopment…

.3194(1)(a); After a comprehensive plan, or element or portion thereof, has been adopted in conformity with this act, all development undertaken by, and all actions taken in regard to development orders by, governmental agencies in regard to land covered by such plan or element shall be consistent with such plan or element as adopted.

.3202(2)(a-h); Local land development regulations shall contain specific and detailed provisions necessary or desirable to implement the adopted comprehensive plan and shall as a minimum:

(a) Regulate the subdivision of land.

(b) Regulate the use of land and water for those land use categories included in the land use element and ensure the compatibility of adjacent uses and provide for open space.

(c) Provide for protection of potable water wellfields.

(d) Regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management.

(e) Ensure the protection of environmentally sensitive lands designated in the comprehensive plan.

(f) Regulate signage.

(g) Provide that public facilities and services meet or exceed the standards established in the capital improvements element required by s. 163.3177 and are available when needed for the development, or that development orders and permits are conditioned on the availability of these public facilities and services necessary to serve the proposed development. Not later than 1 year after its due date established by the state land planning agency's rule for submission of local comprehensive plans pursuant to s. 163.3167(2), a local government shall not issue a development order or permit which results in a reduction in the level of services for the affected public facilities below the level of services provided in the comprehensive plan of the local government.

(h) Ensure safe and convenient onsite traffic flow, considering needed vehicle parking.

.3220(2)&(3).

(2) (a) The lack of certainty in the approval of development can result in a waste of economic and land resources, discourage sound capital improvement planning and financing, escalate the cost of housing and development, and discourage commitment to comprehensive planning.

(b) Assurance to a developer that upon receipt of his or her development permit or brownfield designation he or she may proceed in accordance with existing laws and policies, subject to the conditions of a development agreement, strengthens the public planning process, encourages sound capital improvement planning and financing, assists in assuring there are adequate capital facilities for the development, encourages private participation in comprehensive planning, and reduces the economic costs of development.

(3) In conformity with, in furtherance of, and to implement the Local Government Comprehensive Planning and Land Development Regulation Act and the Florida State Comprehensive Planning Act of

1972, it is the intent of the Legislature to encourage a stronger commitment to comprehensive and capital facilities planning, ensure the provision of adequate public facilities for development, encourage the efficient use of resources, and reduce the economic cost of development.

Response: The proposed project has been coordinated with various Federal, state and local agencies during the planning process. The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the environment.

CHAPTER 186, F.S., STATE AND REGIONAL PLANNING

The state comprehensive plan provides basic policy direction to all levels of government regarding the orderly social, economic, and physical growth of the state. The goals, objectives, and policies of the state comprehensive plan are statewide in scope and are consistent and compatible with each other. The statute provides direction for the delivery of governmental services, a means for defining and achieving the specific goals of the state, and a method for evaluating the accomplishment of those goals.

Response: The proposed project has been coordinated with various Federal, state and local agencies during the planning process. The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the environment.

CHAPTER 252, F.S., EMERGENCY MANAGEMENT

The state of Florida is vulnerable to a wide range of emergencies, including natural, technological, and manmade disasters and this vulnerability is exacerbated by the tremendous growth in the state's population, especially the growth in the number of persons residing in coastal areas, in the elderly population, in the number of seasonal vacationers, and in the number of persons with special needs. This statute directs the state to reduce the vulnerability of its people and property to natural and manmade disasters; prepare for, respond to and reduce the impacts of disasters; and decrease the time and resources needed to recover from disasters. Disaster mitigation is necessary to ensure the common defense of Floridians' lives and to protect the public peace, health, and safety. The policies provide the means to assist in the prevention or mitigation of emergencies that may be caused or aggravated by the inadequate planning or regulation of facilities and land uses. State agencies are directed to keep land uses and facility construction under continuing study and identify areas that are particularly susceptible to natural or manmade catastrophic occurrences.

Response: This project is a restoration project and provides increased ability to store water in the natural system during hurricanes or floods. All structures will be built to Federal and state standards. This project would be consistent with the efforts of the Division of Emergency Management.

CHAPTER 253, F.S., STATE LANDS

The Board of Trustees of the Internal Improvement Trust Fund (Trustees) is vested and charged with the acquisition, administration, management, control, supervision, conservation, protection, and disposition of all lands owned by the state. Lands acquired for preservation, conservation and recreation serve the public interest by contributing to the public health, welfare and economy. In carrying out the requirements of this statute, the Trustees are directed to take necessary action to fully: conserve and protect state lands; maintain natural conditions; protect and enhance natural areas and ecosystems; prevent damage and depredation; and preserve archaeological and historical resources. All submerged lands are considered single-use lands to be maintained in natural condition for the

propagation of fish and wildlife and public recreation. Where multiple-uses are permitted, ecosystem integrity, recreational benefits and wildlife values are conserved and protected.

Chapter 253 State Lands

No lease of the type covered by this law shall be granted, sold, or executed south of 26° north latitude off Florida's west coast and south of 27° north latitude off Florida's east coast…. After July 31, 1990, no oil or natural gas lease shall be granted, sold, or executed covering lands located north of 26°00'00" north latitude off Florida's west coast to the western boundary of the state bordering Alabama … or located north of 27°00'00" north latitude off Florida's east coast to the northern boundary of the state bordering Georgia ….

Response: The proposed project would conserve, protect, restore and enhance natural conditions within state lands. This project would make a positive contribution to preserving water, fish and wildlife, cultural, and wetland resources within the State of Florida and therefore, complies with the intent of this chapter.

CHAPTER 258, F.S., STATE PARKS AND PRESERVES

The statute addresses the state's administration of state parks, aquatic preserves, and recreation areas, which are acquired to emblemize the state's natural values and to ensure that these values are conserved for all time. Parks and preserves are managed for the non-depleting use, enjoyment, and benefit of Floridians and visitors and to contribute to the state's tourist appeal. Aquatic Preserves are recognized as having exceptional biological, aesthetic, and scientific value and are set aside for the benefit of future generations. Disruptive physical activities and polluting discharges are highly restricted in aquatic preserves. State managed wild and scenic rivers possess exceptionally remarkable and unique ecological, fish and wildlife, and recreational values and are designated for permanent preservation and enhancement for both the present and future.

Response: The proposed project includes constructing a Flow Equalization Basin (FEB) on the state-owned lands in the Everglades Agricultural Area. The FEB would capture approximately 210,000 acre-feet of water that is currently being discharged from Lake Okeechobee to tide in the St. Lucie and Caloosahatchee Estuaries. The water would be stored and treated to improve water quality prior to be discharged south into the Greater Everglades.

The St. Lucie Estuary is a designated Estuary of National Significance and Outstanding Florida Water. The North Fork of the St. Lucie River is a state aquatic preserve and part of Florida's "Save Our Rivers" program. The Indian River Lagoon is part of the National Estuary Program and an aquatic preserve. The proposed FEB would improve delivery of water to the St. Lucie Estuary and Indian River Lagoon by reducing the frequency and volume of high level flows from Lake Okeechobee, thus reducing the potential for impacts to estuarine and nearshore biota.

The Caloosahatchee River and Estuary are at the head of a vast estuarine and marine ecosystem that includes aquatic preserves managed by the State of Florida (e.g., Matlacha Pass, Estero Bay, and Pine Island Sound Aquatic Preserves), the Charlotte Harbor National Estuary Program, and the J. N. Ding Darling National Wildlife Refuge (NWR) Complex which includes the Caloosahatchee, Matlacha Pass, Pine Island, and Island Bay NWRs; along with numerous other state and local parks and recreation areas. The aquatic preserves are also outstanding Florida water bodies. The proposed FEB would reduce the frequency and volume of high flows from Lake Okeechobee, thus reducing the impacts of low salinities on the estuarine and nearshore biota.

The proposed project area includes state-owned lands in Water Conservation Areas (WCA) 3. The proposed project features act to rehydrates northern WCA 3A thereby increasing the spatial extent of wetlands. Additional project features will aid to reconnect WCA 3B and Everglades National Park, providing enhancement of sheetflow and restoration of historic ridge and slough landscape features.

Everglades National Park and the Florida Bay National Marine Sanctuary are within the project area and contain productive estuarine and wetland ecosystems that include aquatic preserves along with local parks and recreation areas. The aquatic preserves are also outstanding Florida water bodies. The proposed project would improve freshwater delivery to coastal wetlands and adjacent estuaries and redistribute flow to salt water wetlands and nearshore bay areas and result in favorable changes to salinity levels. The impacts to the aquatic resources are anticipated to be beneficial for key species such as seatrout, pink shrimp, and crocodiles.

Biscayne National Park is at the headwaters of historic creeks and productive estuarine and marine ecosystems, including aquatic preserves, along with local parks and recreation areas. The Biscayne Bay Aquatic Preserves are Outstanding Florida Waters. The proposed project would not affect the delivery of water to Biscayne Bay.

The proposed project would help enhance environmental conditions at state parks or aquatic preserves in the region. The proposed project would comply with the intent of this chapter.

CHAPTERS 259, F.S., LAND ACQUISITION FOR CONSERVATION OR RECREATION

The statute addresses public ownership of natural areas for purposes of maintaining the state's unique natural resources; protecting air, land, and water quality; promoting water resource development to meet the needs of natural systems and citizens of this state; promoting restoration activities on public lands; and providing lands for natural resource based recreation. Lands are managed to protect or restore their natural resource values, and provide the greatest benefit, including public access, to the citizens of this state.

Response: The potentially affected property is currently in public ownership. These chapters do not apply.

CHAPTERS 260, F.S., FLORIDA GREENWAYS AND TRAILS ACT

A statewide system of greenways and trails is established in order to conserve, develop, and use the natural resources of Florida for healthful and recreational purposes. These greenways and trails provide open space benefiting environmentally sensitive lands and wildlife and provide people with access to healthful outdoor activities. The greenways and trails serve to implement the concepts of ecosystem management while providing, where appropriate, recreational opportunities such as horseback riding, hiking, bicycling, canoeing, jogging, and historical and archaeological interpretation.

Response: The potentially affected property is currently in public ownership. This project is in compliance with the intent of this Chapter.

CHAPTER 267, F.S., HISTORICAL RESOURCES

The management and preservation of the state's archaeological and historical resources are addressed by this statute. This statute recognizes the state's rich and unique heritage of historical resources and directs the state to locate, acquire, protect, preserve, operate and interpret historical and

archeological resources for the benefit of current and future generations of Floridians. Objects or artifacts with intrinsic historical or archeological value located on, or abandoned on, state-owned lands or state-owned submerged lands belong to the citizens of the state. The state historic preservation program operates in conjunction with the National Historic Preservation Act of 1966 to require state and federal agencies to consider the effect of their direct or indirect actions on [significant] historical and archeological resources. These resources cannot be destroyed or altered unless no prudent alternative exists. Unavoidable impacts must be mitigated.

Response: The U.S. Army Corps of Engineers has initiated consultation under Section 106 of the National Historic Preservation Act with the State Historic Preservation Officer, the Miccosukee Tribe of Indians of Florida, and the Seminole Tribe of Florida and would meet all responsibilities under Chapter 267.

CHAPTER 288, F.S., COMMERCIAL DEVELOPMENT AND CAPITAL IMPROVEMENTS

The framework to promote and develop general business, trade, and tourism components of the state economy are established in this statute. The statute includes requirements to protect and promote the natural, coastal, historical, and cultural tourism assets of the state; foster the development of nature-based tourism and recreation; and upgrade the image of Florida as a quality destination. Natural resource-based tourism and recreational activities are critical sectors of Florida's economy. The needs of the environment must be balanced with the need for growth and economic development.

Response: The proposed project would be compatible with tourism for this area and therefore, is consistent with the goals of this Chapter.

CHAPTER 334, F.S., TRANSPORTATION ADMINISTRATION

The statute addresses the state's policy concerning transportation administration. It establishes the responsibilities of the state, the counties, and the municipalities in the planning and development of the transportation systems serving the people of the state and to assure the development of an integrated, balanced statewide transportation system. This is necessary for the protection of public safety and general welfare and for the preservation of all transportation facilities in the state.

Response: No public transportation systems would be impacted by this project.

CHAPTER 339, F.S., TRANSPORTATION FINANCE AND PLANNING

The statute addresses the finance and planning needs of the state's transportation system.

Response: No public transportation systems would be impacted by this project.

CHAPTER 370, F.S., SALTWATER LIVING RESOURCES

This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and to conduct scientific, economic, and other studies and research.

Response: The proposed project would help improve ecological conditions in the estuaries. Implementation of the project would provide direct positive impacts on saltwater resources within the

Caloosahatchee Estuary and St. Lucie Estuary by reducing the frequency and volume of high level flows from Lake Okeechobee and improve the salinity balance. This will benefit seagrass, oysters, fish, and wildlife. Implementation of the proposed project would provide direct positive impacts on saltwater resources within Florida Bay and adjacent southwestern coastal estuaries by redistributing freshwater runoff from the watershed to provide a more natural and historic overland flow through transverse glades and existing coastal wetlands that will reduce hyper-saline conditions and improve the overall salinity balance. This course of action would provide benefits for key species such as seatrout, pink shrimp, and crocodiles as well as seagrass, fisheries and wildlife. Based on the overall impacts , the project is consistent with the goals of this chapter.

CHAPTER 372, F.S., LIVING LAND AND FRESHWATER RESOURCES

This chapter establishes the Game and Freshwater Fish Commission (now called the Florida Fish and Wildlife Conservation Commission) and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions that provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: The proposed project would have a long-term beneficial effect on freshwater aquatic life and wildlife. The proposed project would increase the foraging opportunities for wading birds and other wildlife within the proposed FEB. The project would have a long-term beneficial effect on freshwater aquatic life and wildlife within the Caloosahatchee River and St. Lucie River through attenuation of peak high flows during the wet season thus improving the salinity envelope for these species. The proposed project would rehydrate WCA 3A, 3B and Everglades National Park, add wetland habitat, and is expected to significantly improve conditions for apple snails, fish, amphibians, alligators, and wading bird species throughout much of the Greater Everglades. The proposed project would also distribute freshwater flows through Taylor Slough to provide a more natural and historic overland flow within the freshwater wetlands adjacent to Florida Bay. Implementation of the proposed project would provide direct positive impacts on saltwater resources within Florida Bay and adjacent southwestern coastal estuaries by redistributing freshwater runoff from the watershed to provide a more natural and historic overland flow through transverse glades and existing coastal wetlands that would reduce hyper-saline conditions and improve the overall salinity balance. The proposed project is consistent with the intent of this chapter.

CHAPTER 373, F.S., WATER RESOURCES

The waters in the state of Florida are managed and protected to conserve and preserve water resources, water quality, and environmental quality. This statute addresses sustainable water management; the conservation of surface and ground waters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians. The state manages and conserves water and related natural resources by determining whether activities will unreasonably consume water; degrade water quality; or adversely affect environmental values such as protected species habitat, recreational pursuits, and marine productivity.

Specifically, under Part IV of Chapter 373, the Department of Environmental Protection, water management districts, and delegated local governments review and take agency action on wetland resource, environmental resource, and stormwater permit applications, which address the construction, alteration, operation, maintenance, abandonment, and removal of any stormwater management system, dam, impoundment, reservoir, or appurtenant work or works, including dredging, filling and construction activities in, on, and over wetlands and other surface waters.

Response: The proposed project includes constructing a Flow Equalization Basin (FEB) on the State-owned lands in the Everglades Agricultural Area. The FEB would capture approximately 200,000 acre-feet of water that is currently being discharged from Lake Okeechobee to tide in the St. Lucie and Caloosahatchee Estuaries. The water would be stored and treated to improve water quality prior to being discharged south into the Greater Everglades. The additional 200,000 acre feet of water that was previously lost to the Atlantic Ocean and Gulf of Mexico would flow southward, rehydrating historic marshes, providing enhancement of sheetflow and restoration of historic ridge and slough landscape features, and improving groundwater recharge.

The proposed project incorporates restoration components primarily intended to benefit freshwater wetlands and estuarine resources by distributing freshwater flows through WCA 3A, WCA 3B and Everglades National Park. This includes the installation/construction of a flow equalization basin, pump stations, flow-ways, levees, gated structures and the removal and backfilling of canals. The goals and objectives of this project are to improve habitat conditions for native wildlife species. Impacts of this project have been detailed within an Environmental Impact Statement and in the Section 404(b)(1) Clean Water Act Evaluation (Appendix C.4.3.2). This project is in compliance with the intent of this Chapter.

The non-Federal sponsor for this project is the SFWMD, which is the state agency responsible for implementing this statute. The USACE and the SFWMD have coordinated planning efforts to ensure compatibility with established policies. The project is consistent with the goals of this chapter.

CHAPTER 375, F.S., OUTDOOR RECREATION AND CONSERVATION LANDS

The statute addresses the development of a comprehensive multipurpose outdoor recreation plan. The purpose of the plan is to document recreational supply and demand, describe current recreational opportunities, estimate the need for additional recreational opportunities, and propose the means to meet the identified needs.

Response: The potentially affected property is currently in public ownership. This project is in compliance with the intent of this Chapter.

CHAPTER 376, F.S., POLLUTANT DISCHARGE PREVENTION AND REMOVAL

Regulating the transfer, storage, and transportation of pollutants, and the cleanup of pollutant discharges is essential for maintaining the coastal waters, estuaries, tidal flats, beaches, and public lands adjoining the seacoast in as close to a pristine condition as possible. The preservation of the seacoast as a source of public and private recreation and the preservation of water and certain lands are matters of the highest urgency and priority. This statute provides a framework for the protection of the state's coastline from spills, discharges, and releases of pollutants as a result of the transfer, storage, and transportation of such products. The discharge of pollutants into or upon any coastal waters, estuaries, tidal flats, beaches, and lands adjoining the seacoast of the state is prohibited. The statute provides for hazards and threats of danger and damages resulting from any pollutant discharge to be evaluated; requires the prompt containment and removal of pollution; provides penalties for violations; and ensures the prompt payment of reasonable damages from a discharge. Portions of Chapter 376, F.S., serve as a complement to the national contingency plan portions of the federal Water Pollution Control Act.

Response: The contract specifications would prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and would require that the contractor adopt safe and sanitary measures for the disposal of solid wastes. A spill prevention plan would be required.

CHAPTER 377, F.S., ENERGY RESOURCES

The statute addresses the regulation, planning, and development of the energy resources of the state. The statute provides policy to conserve and control the oil and gas resources in the state, including products made therefrom and to safeguard the health, property and welfare of Floridians. The Department of Environmental Protection (DEP) is authorized to regulate all phases of exploration, drilling, and production of oil, gas, and other petroleum products in the state. The statute describes the permitting requirements and criteria necessary to drill and develop for oil and gas. DEP rules ensure that all precautions are taken to prevent the spillage of oil or any other pollutant in all phases of extraction and transportation. The state explicitly prohibits pollution resulting from drilling and production activities. No person drilling for or producing oil, gas, or other petroleum products may pollute land or water; damage aquatic or marine life, wildlife, birds, or public or private property; or allow any extraneous matter to enter or damage any mineral or freshwater-bearing formation. Penalties for violations of any provisions of this chapter are detailed.

Chapter 377 Energy Resources
Not approved as enforceable policy: Sections 377.06, .24(9), and .242(1)(a)5. All deal with regulation of oil and gas resources.

Response: This project does not involve the exploration; drilling or production of gas, oil or petroleum product and therefore, this chapter does not apply.

CHAPTER 379, F.S., FISH AND WILDLIFE CONSERVATION

The framework for the management and protection of the state of Florida's wide diversity of fish and wildlife resources are established in this statute. It is the policy of the state to conserve and wisely manage these resources. Particular attention is given to those species defined as being endangered or threatened. This includes the acquisition or management of lands important to the conservation of fish and wildlife. This statute contains specific provisions for the conservation and management of marine fisheries resources. These conservation and management measures permit reasonable means and quantities of annual harvest, consistent with maximum practicable sustainable stock abundance, as well as ensure the proper quality control of marine resources that enter commerce.

Additionally, this statute supports and promotes hunting, fishing and the taking of game opportunities in the State. Hunting, fishing, and the taking of game are considered an important part in the state's economy and in the conservation, preservation, and management of the state's natural areas and resources.

Chapter 379 Fish and Wildlife Conservation.
Not approved as enforceable policy: Sections 379.2551 and .362.

379.2511? [no 379.2551 shown] Lease of state-owned water bottoms for growing oysters and clams.

379.362 Wholesale and retail saltwater products dealers; regulation.

Response: The goals and objectives of this project are to improve habitat conditions for native wildlife species. This project is in compliance with the intent of this Chapter.

CHAPTER 380, F.S., LAND AND WATER MANAGEMENT

Land and water management policies are established to protect natural resources and the environment; and to guide and coordinate local decisions relating to growth and development. The statute provides that state land and water management policies, to the maximum possible extent, be implemented by local governments through existing processes for the guidance of growth and development and that all the existing rights of private property be preserved in accord with constitutions of this state and of the United States. The chapter establishes the Areas of Critical State Concern designation, the Florida Communities Trust as well as the Florida Coastal Management Act. The Florida Coastal Management Act provides the basis for the Florida Coastal Management Program which seeks to protect the natural, commercial, recreational, ecological, industrial, and aesthetic resources of Florida's coast.

Chapter 380 Land and Water Management

Not approved as enforceable policy: Section 380.23(3)(d). [consistency review of] Federal activities within the territorial limits of neighboring states when the Governor and the department determine that significant individual or cumulative impact to the land or water resources of the state would result from the activities.

Response: The proposed project incorporates restoration components primarily intended to benefit freshwater wetlands and estuarine resources by distributing freshwater flows through WCA 3A, WCA 3B and Everglades National Park. This includes the installation/construction of a flow equalization basin, pump stations, flow-ways, levees, gated structures and the removal and backfilling of canals. The goals and objectives of this project are to improve habitat conditions for native wildlife species. Impacts of this project have been detailed within an Environmental Impact Statement. This project is in compliance with the intent of this Chapter.

CHAPTER 381, F.S., PUBLIC HEALTH: GENERAL PROVISIONS

The statute establishes public policy concerning the state's public health system, which is designated to promote, protect, and improve the health of all people in the state.

Chapter 381 Public Health: General Provisions
Enforceable policy includes only Sections 381.001, .0011, .0012, .006, ,0061, .0065, .0066, and .0067.
381.001 Legislative intent; public health system.
381.0011 Duties and powers of the Department of Health.
381.0012 Enforcement authority.
381.006 Environmental health.
381.0061 Administrative fines.
381.0065 Onsite sewage treatment and disposal systems; regulation.
381.0066 Onsite sewage treatment and disposal systems; fees.
381.0067 Corrective orders; private and certain public water systems and onsite sewage treatment and disposal systems.

Response: This project would not affect the state's public health system and therefore, this Chapter is not applicable.

CHAPTER 388, F.S., MOSQUITO CONTROL

Mosquito control efforts of the state are to achieve and maintain such levels of arthropod control as will protect human health and safety and foster the quality of life of the people, promote the economic development of the state, and facilitate the enjoyment of its natural attractions by reducing the number of pestiferous and disease-carrying arthropods. It is the policy of the state to conduct arthropod control in a manner consistent with protection of the environmental and ecological integrity of all lands and waters throughout the state.

Response: The proposed project would not further the propagation of mosquitoes or other pest arthropods and with the restoration of sheetflow, standing water would be reduced, thus potentially reducing the propagation of mosquitoes. This project is in compliance with the intent of this Chapter.

CHAPTER 403, F.S., ENVIRONMENTAL CONTROL

Environmental control policies conserve state waters; protect and improve water quality for consumption and for the propagation of fish and wildlife; and maintain air quality to protect human health and plant and animal life. This statute provides wide-ranging authority to address various environmental control concerns, including air and water pollution; electrical power plant and transmission line siting; the Interstate Environmental Control Compact; resource recovery and management; solid and hazardous waste management; drinking water protection; pollution prevention; ecosystem management; and natural gas transmission pipeline siting.

Chapter 403 Environmental Control
Not approved as enforceable policy: Section 403.7125(2) and (3).

(2) The owner or operator of a landfill …shall establish a fee, or a surcharge on existing fees or other appropriate revenue-producing mechanism, to ensure the availability of financial resources for the proper closure of the landfill.

(3) An owner or operator of a landfill … may provide financial assurance to the department in lieu of the requirements of subsection (2).

Response: A draft Environmental Impact Statement addressing project impacts has been prepared and would be reviewed by the appropriate resource agencies including the Florida Department of Environmental Protection. Environmental protection measures would be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources would occur. The project complies with the intent of this chapter.

CHAPTER 553, F.S., BUILDING AND CONSTRUCTION STANDARDS

The statute addresses building construction standards and provides for a unified Florida Building Code.

Chapter 553 Building and Construction Standards.
Enforceable policy includes only Sections 553.73 and .79.

553.73 Florida Building Code.

553.79 Permits; applications; issuance; inspections.

Response: A draft Environmental Impact Statement addressing project impacts has been prepared and would be reviewed by the appropriate resource agencies including the Florida Department of Environmental Protection. Environmental protection measures would be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources would occur. Water Quality Certification would be sought from the State prior to construction. The project complies with the intent of this chapter.

CHAPTER 582, F.S., SOIL AND WATER CONSERVATION

It is the state's policy to preserve natural resources; control and prevent soil erosion, prevent floodwater and sediment damages and to further the conservation, development and use of soil and water resources, and the disposal of water. Farm, forest, and grazing lands are among the basic assets of the state; and the preservation of these lands is necessary to protect and promote the health, safety, and general welfare of its people. These measures help to preserve state and private lands, control floods, maintain water quality, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife and protect wildlife habitat, protect the tax base, protect public lands, and protect and promote the health, safety, and general welfare of the people of this state.

Response: Project construction and implementation would include appropriate erosion control plans and measures to ensure compliance with the intent of the chapter.

CHAPTER 597, F.S., AQUACULTURE

The statute establishes public policy concerning the cultivation of aquatic organisms in the state. The intent is to enhance the growth of aquaculture, while protecting Florida's environment. This includes a requirement for a state aquaculture plan which provides for the coordination and prioritization of state aquaculture efforts, the conservation and enhancement of aquatic resources and which provides mechanisms for increasing aquaculture production for the creation of new industries, job opportunities, income for aquaculturists, and other benefits to the state.

Response: The proposed project does not include aquaculture activities, and therefore, this Chapter does not apply.

APPENDIX C.5

CULTURAL RESOURCES

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C.5 CULTURAL RESOURCES

This appendix provides details pertaining to consultation concerning cultural resources and other pertinent information. This PIR/EIS meets cultural resources requirements as specified under NEPA. While the Corps is currently in compliance with the procedural requirements of the NHPA, the Corps recognizes that additional consultation and other requirements are not yet complete, but the project will be in full compliance prior to construction.

C.5.1 Abbreviations

AAF – Airboat Association of Florida

ACHP – Advisory Council on Historic Preservation

BIA – Bureau of Indian Affairs

CEPP – Central Everglades Planning Project

CR – Cultural Resources

EAA – Everglades Agricultural Area

ENP – Everglades National Park

ERTP – Everglades Restoration Transition Plan

FBAR – Florida Bureau of Archaeological Research

HR – Human Remains

NEPA – National Environmental Policy Act

MTIF – Miccosukee Tribe of Indians of Florida

SFWMD – South Florida Water Management District

SHPO – State Historic Preservation Office

STOF – Seminole Tribe of Florida (to mean THPO unless otherwise specified)

THPO – Tribal Historic Preservation Office

Corps – U.S. Army Corps of Engineers

WCA – Water Conservation Area

C.5.2 Specific Consultation

Table C.5.2.1 is a representative sample of project consultation efforts that have occurred up to January 2014 and does not present every occurrence. The Corps acted as lead.

Table C.5.2.1. Synopsis of Consultation

Date	*Group*	*Form*	*Consultation Synopsis*
11/23/2011	All	Letter	NEPA scoping letter
12/07/2011	MTIF, STOF	Letter	Corps letter inviting tribes to public workshops and regular meetings
12/14/2011	MTIF	Phone	Introductions, Discussed possible date to meet and discuss CEPP
12/27/2011	STOF, MTIF, SHPO, ENP	Letter	Corps letter dated 12-27-2011 asking for bi-weekly Section 106 consultation
12/28/2011	STOF	Email/Letter	Corps emailed electronic version of letter dated 12-27-2011 asking for formal Section 106 consultation regarding CR.
12/28/2011	MTIF	Fax	Corps faxed letter dated 12-27-2011 asking for bi-weekly formal consultation regarding CR
01/6/2012	STOF	Email	Corps asking for face-to-face meeting with THPO.

Date	*Group*	*Form*	*Consultation Synopsis*
01/13/2012	MTIF	Meeting	Corps to discuss CEPP Sampling Strategy for WCA3, Predictive modeling for EAA A-1, A-2; Phased approach to CR investigations, and consulting every two weeks.
01/20/2012	MTIF	Letter	MTIF response letter to Corps 12/07/2011 NEPA Scoping Letter
01/30/2012	SHPO	Phone	Corps spoke with Deputy SHPO regarding necessity for programmatic agreement. SHPO declined need at this time.
02/5/2012	ENP	Email	Corps emailed ENP Chief of Cultural Resources to set up meeting to discuss project
02/6/2012	STOF, SHPO, MTIF	Phone	Corps contacted each group individually to inquire about the need for testing in WCA3.
02/8/2012	STOF, SFWMD	Meeting	Corps, THPO, and SFMWD meeting regarding CEPP Sampling Strategy for WCA3, Predictive modeling for EAA A-1, A-2; Phased approach to CR investigations, and consulting every two weeks.
02/9/2012	STOF	Email	Corps sending requested documentation for EAA
02/10/2012	STOF	Email	Corps and THPO discussed best methodology for soil sample collection
02/16/2012	SFWMD	Phone/Web	Participants discussed slides for March 21st meeting, discussed need for testing in EAA A-1 and A-2 and need to speak with SHPO, and consultation process between partners.
02/21/2012	SFMWD	Phone	Participants discussed CEPP Field Testing Plan for WCA3, EAA A-1 and A-2
02/23/2012	MTIF	Fax	Corps faxed CEPP Field Testing Plan for WCA3, EAA A-1 and A-2 to cultural resource rep.
02/24/2012	STOF, SFWMD	Phone	Corps, SFWMD and THPO conference call - CEPP Field Testing Plan for WCA3 EAA A-1 and EAA A-2.
03/1/2012	STOF, SFWMD	Meeting	Corps met with THPO at PDT meeting. CR was discussed. THPO requested CR to be covered during PDT meetings.
03/5/2012	STOF, SFWMD	Email	Corps emailed 3-1-2012 PDT NEPA Slides
03/5/2012	STOF, SFWMD	Email	Corps emailed revised CEPP Field Testing Plan for WCA3 EAA A-1 and EAA A-2
03/6/2012	STOF, SFWMD	Email	Corps and THPO discuss changes of CEPP Field Testing Plan for WCA3 EAA A-1 and EAA A-2
03/6/2012	STOF, ENP, SHPO, MTIF	Letter	Corps letter dated 03-06-2012 asking for concurrence on CEPP Field Testing Plan for WCA3 EAA A-1 and A-2
03/16/2012	SHPO	Letter	Letter received from SHPO concurring with CORPS recommendations to conduct necessary CR surveys within areas of potential effect.
03/19/2012	STOF, SFWMD	Email	Corps emailed electronic version of letter dated 03-06-2012 discussed above
03/20/2012	STOF, SFWMD	Phone	Corps, THPO and SFWMD discuss additional changes to CEPP Field Testing Plan and ERTP vs. CEPP
03/21/2012	SFWMD	Meeting	Corps presented difference between ERTP and CEPP, discussed necessity for testing EAA A-1 and A-2, and programmatic agreement based on consultation
03/22/2012	STOF, SFWMD	Email	Corps provided requested information to THPO in regards to tree islands
03/23/2012	STOF, SFWMD	Email	Corps provided requested information to THPO

03/26/2012	STOF, SFWMD	Email	Corps emailed revised draft CEPP Field Testing Plan for WCA3, EAA A-1 and A-2. CORPS asked specific questions for THPO opinions/concerns.
03/29/2012	SFMWD	Meeting	Corps to provide basis for CR investigations for CEPP. Where are they needed and why.
03/30/2012	STOF, SFWMD	Email	Corps provided update to participants regarding FBAR discussions concerning curation/collection strategy for CEPP
03/30/2012	MTIF	Phone	Participants discussed collection strategy for CEPP
04/4/2012	STOF, SFWMD	Phone/Web	Gave CEPP update. Discussed project timeline and that SFMWD would do EAA A-1 separate from CEPP as part of their court ordered water quality requirement.
04/15/2012	MTIF	Phone	Update on CEPP
04/27/2012	SHPO, FBAR, SFWMD	Meeting	Corps, SFWMD, SHPO, FBAR meeting regarding CEPP, particularly EAA A-1 required testing
04/29/2012	MTIF	Mail	Sent requested material to cultural resources representative
05/1/2012	FBAR	Phone	Discussed methodology for CEPP WCA3, EAA A-1 and A-2
05/3/2012	MTIF	Phone	Discussed test areas within WCA3 and cultural issues
05/10/2012	STOF, SFWMD	Phone/Web	Provided THPO and SFWMD CEPP update
05/14/2012	STOF, FBAR, SFWMD,	Phone/Web	Discussed EAA A-1 and methodology
05/15/2012	FBAR	Phone	Discussed EAA A-1 and A-2 methodology
05/29/2012	STOF	Phone	Discussed EAA A-1 and A-2 methodology
05/30/2012	SFMWD	Phone	Corps and SFMWD discuss EAA A-1
05/30/2012	STOF, FBAR, SHPO, SFWMD,	Phone/Web	THPO, SHPO, FBAR and SFWMD discussed CEPP, SFWMD water quality remedy and EAA A-1 methodology
06/6/2012	BIA	Letter	Corps letter dated 7/06/2012 to BIA asking for consultation (no response)
06/6/2012	ACHP	Letter	Corps letter to ACHP invitation to enter into consultation pursuant to Appendix A of CRF 800
06/14/2012	MTIF	Phone	Discussed airboat access for WCA3
06/18/2012	MTIF	Phone	CR Representative discussed EAA A-1
06/20/2012	STOF, FBAR, SHPO, SFWMD	Meeting	THPO, FBAR, SFWMD, and SHPO Face to Face meeting regarding CEPP CR update, EAA A-1 as State project.
06/21/2012	MTIF	Fax	Corps sent requested information
07/5/2012	MTIF, STOF	Phone	Discussed potential of there being HR or culturally significant plants on spoil mounds throughout WCA3. None was known.
07/12/2012	MTIF	Letter	Corps letter dated 7/12/2012 asking for concurrence of the field testing plan for CEPP Phase I Survey - WCA 3
07/13/2012	MTIF	Signature	Corps received signed concurrence of 7/12/2012 letter
07/25/2012	SHPO	Email	SHPO email response to Corps' request for documentation of consultation regarding the need for a programmatic agreement. SHPO agreed with Corps – not needed at this time
08/17/2012	ACHP	Letter	Letter received from ACHP accepting participation in consultation pursuant to the Criteria for Council Involvement in Reviewing Individual Section 106 Cases to help ensure that historic properties are fully considered in the management and control of water resources in the Everglades
09/25/2012	STOF, SFWMD	Meeting	STOF Representatives, SFWMD Face to Face meeting regarding CEPP - Biologist and THPO
10/4/2012	SFWMD, FWS	Meeting	SFMWD discuss plantings on WCA3 islands with CR and HR

10/15/2012	STOF	Letter	Corps letter response to STOF letter dated 9/26/2012 requesting formal consultation in development of a HR policy.
10/24/2012	STOF, SFWMD	Phone/Web	THPO, SFWMD discussed island plantings in WCA3, and CR investigation update
11/07/2012	STOF	Letter	STOF letter to Corps regarding Western Basins and Tribal Partnership Program
11/16/2012	STOF, FBAR, SFMWD, ENP, SHPO, ACHP	Phone/Web	STOF THPO, SHPO, FBAR, ENP, ACHP discuss CEPP Alternatives and CR
12/7/2012	MTIF	Meeting	Met with representative to discuss project alternatives, concerns were noted and relayed to rest of team management
12/20/2012	STOF, FBAR, SFMWD, ENP, SHPO	Phone/Web	Participants discussed draft Alternatives and potential effects to cultural resources and results of WCA3 Phase I Survey.
01/17/2013	STOF, FBAR, SFMWD, ENP, SHPO, ACHP	Phone/Web	Participants discussed changes to Alternatives and potential effects to cultural resources.
02/21/2013	STOF, FBAR, SFMWD, ENP, SHPO, ACHP	Phone/Web	Participants discussed TSP and the potential effects to cultural resources previously not discussed, draft operations manual for project was introduced, and discussed EAA A-2 collection strategy.
03/8/2013	STOF, SFWMD	Meeting	Met with STOF THPO to discuss concerns related to CEPP project schedule for cultural resources, CEPP vs. ERTP, level of effort needed for Section 106 compliance for a feasibility study, inundation of HR.
03/19/2013	STOF	Letter	STOF letter to Corps dated 3/19/2013 response 3/8/2013 meeting with Corps.
04/1/2013	SHPO, STOF, MTIF	Letter	Corps letter dated 4/01/2013 requesting consultation/comment on CEPP WCA 3 Phase I Survey Draft Report.
05/23/2013	STOF	Phone	STOF requested meeting to discuss concerns regarding CEPP Phase I WCA 3 Draft Report.
05/23/2013	STOF	Letter	STOF Phase I WCA 3 Draft Report comment letter dated 5/23/2013 received by Corps via email.
06/10/2013	SFWMD, FBAR	Phone/Web	Discussed cultural sensitive sites discovered during the EAA A-2 Phase I Survey.
06/16/2013	STOF	Letter	STOF Legal Department provided comments to the draft PIR
06/18/2013	SHPO	Letter	SHPO Phase I WCA 3 Draft Report Comment Letter received by Corps via email.
06/20/2013	STOF	Letter	Corps letter dated 6/19/2013 response to STOF concerns regarding inundation of human resources, CEPP, and adaptive management.
06/20/2013	SFWMD	Email	Corps sent via email for review, the EAA A-2 Phase I Survey Draft Report.
06/20/2013	STOF, FBAR, ACHP SFMWD, SHPO	Phone/Web	Discussed changes to alternatives (4R2) and modeling results. Updated CEP Project and ongoing surveys.

07/26/2013	SHPO, STOF, MTIF	Letter	Corps letter dated 7/26/2013 requesting comments on CEPP Phase I Survey for EAA A-2 Revised Draft Report.
07/26/2013	SHPO, STOF, MTIF	Letter	Corps letter dated 7/26/2013 requesting comments on CEPP Phase I Survey for the L-67 Ext. Corridor Draft Report.
07/26/2013	SFWMD	Email	Corps sent electronically the CEPP Phase I Survey for the L-67 Ext. Draft Report to SFWMD for review.
08/5/2013	STOF, SFMWD	Meeting	Corps and STOF Representatives for Environmental Compliance and THPO meeting to discuss CEPP Alt. 4R2 - latest model runs.
08/6/2013	STOF	Meeting	STOF requested meeting with Corps Regulatory and Civil Works (CEPP Team Specifically) to discuss the A-1 FEB EIS.
08/13/2013	SHPO, STOF	Letter	WCA 3 Phase II Cultural Resources Assessment draft report sent out for review via FPT site.
08/19/2013	MTIF	Letter	WCA 3 Phase II Cultural Resources Assessment draft report sent out for review via mail.
08/19/2013	SHPO, STOF, ACHP, FBAR, SFWMD	Email	Regularly scheduled monthly meeting was canceled (Jan. 15) per request. Sent participants a brief project update.
08/21/2013	STOF	Letter	Corps sent electronically the CEPP WCA 3 Phase I Survey Final Report via FTP site.
08/21/2013	STOF	Meeting	Meeting in response to STOF 8/06/2013 request, regarding A-1 FEB EIS.
09/11/2013	SHPO	Letter	Transmittal of final cultural resources investigation reports specific to CEPP: EAA A-2, L-67 Extension, WCA 3 Phase I.
09/11/2013	ENP	Letter	Transmitted final CEPP L-67 Extension cultural resources report.
09/19/2013	STOF, ACHP, SHPO, FBAR, SFMWD	Phone/Web	Monthly meeting. Corps updated May 23, 2012 slide show to reflect the status of CEPP concerning Section 106 and NEPA compliance. THPO and SHPO asked for additional time to review Phase II WCA 3 draft report. Agreed to move date to 9/25/2013.
09/20/2013	STOF	Letter	Fed-ex final reports for EAA A-2, and L-67 Extension Phase I Survey. Resent via fed-ex final report for WCA 3 Phase I Survey.
09/20/2013	SHPO, ENP	Letter	Fed-ex L-67 Extension Phase I Survey Final Report to SHPO. Same report sent electronically to ENP via FTP site.
10/01/2013	SHPO	Letter	Received formal letter from SHPO documenting CEPP draft PIR/EIS comments
10/07/2013	SHPO	Letter	Received second draft report comment letter from SHPO for WCA 3 Phase I Draft Report. This letter was in response to original 4-01-2013 letter sent by the Corps. (First response letter dated June 18, 2013.)

10/15/2013	STOF	Letter	Received formal CEPP draft PIR/EIS comments from STOF.
10/17/2013	SHPO, STOF, ACHP, FBAR, SFWMD	Phone/Web	Monthly meeting canceled due to Federal shutdown.
11/20/2013	STOF	Letter	Corps response letter addressed to STOF THPO and Interim Director, Environmental Resource Management Department. In response to STOF letter dated 10/15/2013 providing comments for the CEPP draft PIR/EIS.
11/21/2013	SHPO, STOF, ACHP, FBAR, SFWMD	Phone/Web	Monthly meeting canceled per request.
12/17/2013	MTIF	Meeting	Corps met with representatives (NAGPRA and Fish and Wildlife Director) to discuss CEPP.
12/19/2013	SHPO, STOF, ACHP, FBAR, SFWMD	Phone/Web	Overview of comments received from Federal, state, and public on CEPP draft PIR/EIS. Very brief summary of MTIF meeting. Discussed work being conducted to correct Mod Waters Miami Canal Survey report. Update on schedule slip for overall consultation letter for CEPP.
01/13/2014	SHPO	Letter	Transmitted Modified Waters Deliveries WCA 3, L-4, and L-5 Spreader and Pump Station Final Report corrections
01/16/2014	SHPO, STOF, ACHP, FBAR, SFWMD	Phone/Web	Discussed routed Mod Waters Report corrections (01-16-2014). Corps stated that overall consultation letter might not be included in final PIR/EIS due to time constraints. Discussed upcoming consultation with Airboat Association of Florida scheduled 01/18/2014.
01/18/2014	AAF	Meeting	Corps meets with AAF to provide an overview of CEPP and to initiate Section 106 consultation. This information was provided during the Mod Waters Real Estate meeting. Follow-up letter will be routed soon.
01/26/2014	STOF	Letter	Per request of STOF, Corps sent Mod-Waters Miami Canal Final Report Corrections and updated/new FMSF forms to THPO.
01/31/2014	AAF	Letter	Follow-up letter to the AAF regarding face-to-face meeting held on 01/18/2014.

C.5.3 Written Correspondence: Federal and State Agencies

November 23, 2011 NEPA Scoping Letter
December 27, 2011 USACE to ENP CEPP Invitation Section 106 Consultation Bi-Weekly
December 27, 2011 USACE to SHPO CEPP Invitation Section 106 Consultation Bi-Weekly
March 06, 2012 USACE to ENP CEPP WCA 3 and EAA Field Testing Plan
March 06, 2012 USACE to SHPO CEPP WCA 3 and EAA Field Testing Plan
March 16, 2012 SHPO to USACE Response Letter to USACE CEPP WCA 3 and EAA 03-06-2012 Letter
June 06, 2012 USACE to ACHP CEPP Invitation to Consult Pursuant to Appendix A of 36 CFR 800
June 06, 2012 USACE to BIA CEPP Invitation Section 106 Consultation
July 25, 2012 SHPO to USACE Modified Waters Deliveries WCA3 L4 and L5 Spreader and Pump Station Report Comments
July 25, 2012 USACE to SHPO Email – The Need for CEPP to Enter Into a Programmatic Agreement
August 17, 2012 ACHP to USACE Response Letter to USACE CEPP ACHP Letter Dated 06-06-2012
April 01, 2013 USACE to SHPO CEPP WCA3 Phase I Draft Report Request for Section 106 Review
May 05, 2013 USACE Memorandum for the Record – Requesting CEPP Cultural Resources Specific Agency Technical Review (ATR)
June 18, 2013 SHPO to USACE CEPP WCA 3 Phase I Draft Report Comments –First Response to 04-01-2013 Letter
July 26, 2013 USACE to SHPO CEPP EAA A-2 Phase I Draft Report Request for Section 106 Review
July 26, 2013 USACE to SHPO CEPP L-67 Extension Phase I Draft Report Request for Section 106 Review
August 13, 2013 USACE to SHPO CEPP WCA3 Addendum Phase II Draft Report Request for Section 106 Review
September 11, 2013 USACE to SHPO Transmittal Letter for CEPP EAA A-2 Phase I Final Report
September 11, 2013 USACE to SHPO Transmittal Letter for CEPP L-67 Extension Phase I Final Report
September 11, 2013 USACE to SHPO Transmittal Letter for CEPP WCA 3 Phase I Final Report
September 21, 2013 USACE to ENP Transmittal Letter for CEPP L-67 Extension Phase I Final Report
September 24, 2013 USACE Memorandum for the Record – CEPP ACHP Consultation
October 01, 2013 SHPO to USACE CEPP Draft PIR/EIS Comments
October 07, 2013 SHPO to USACE CEPP WCA 3 Phase I Draft Report Comments –Second Response Letter to 04-01-2013 Letter
October 15, 2013 SHPO to USACE CEPP L-67 Extension Phase I Report Comments (late receiving)
January 15, 2014 USACE to SHPO Modified Waters Deliveries WCA3 L4 and L5 Spreader and Pump Station Final Report and USACE Corrections

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

NOV 23 2011

TO WHOM IT MAY CONCERN:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Central Everglades Planning Project. The goal of the Central Everglades Planning Project is to develop an integrated, comprehensive technical plan, including the first increment of project features to be recommended for authorization, for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem.

The Everglades ecosystem encompasses a system of diverse wetland landscapes that are hydrologically and ecologically connected across more than 200 miles from north to south and across 18,000 square miles of southern Florida. In 2000, the U.S. Congress authorized the Federal government, in partnership with the State of Florida, to embark upon a multi-decade, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) to further protect and restore the remaining Everglades ecosystem while providing for other water-related needs of the region. CERP involves modification of the existing network of drainage canals and levees that make up the Central and Southern Florida Flood Control Project to restore the south Florida ecosystem.

Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Picayune Strand Restoration, the Indian River Lagoon South and Site 1 Impoundment projects. Project Implementation Reports have been completed, or are nearing completion, for the second generation of CERP projects for Congressional authorization, including Biscayne Bay Coastal Wetlands-Phase 1, the Broward County Water Preserve Areas, the Caloosahatchee River (C-43) West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. All of these CERP projects utilize lands that were acquired by the State and Federal government to meet CERP goals of increasing the extent of wetlands, reducing damaging freshwater discharges to the coastal estuaries, and reducing seepage losses from the natural system. These projects contribute significant ecological benefits to the system and the specific regional habitats in which they are located. These initial CERP projects were intended to provide initial and immediate ecological benefits and set the conditions along the margins of the system that help ensure increased water flows to the interior of the system will not cause adverse effects.

The next step for implementation of CERP is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park and Florida Bay. The Central Everglades Planning Project (Figure 1) will develop the initial increment of the project features that provide for storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3 and seepage management features to retain water within the natural system. The CERP Projects identified to accomplish this include the Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park Seepage Management, and Everglades Rain-Driven Operations. These projects make up the heart of CERP aimed at restoring more natural quantity, quality, timing and distribution of water flows to the remaining portions of the river of grass. An integrated study effort on these projects is needed to set the direction for the next decade of CERP implementation.

The Corps will hold a Public Workshop December 14 from 6:30 to 9:00 p.m. at the Sheraton Suites Plantation, Plantation I/II Room, 311 North University Drive, Plantation, Florida and December 15, 2011 from 6:30 to 9:00 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, Florida. The formal portion of the workshop will begin at 7:30 p.m. The Central Everglades Planning Project team will be available prior to and after the formal presentation to provide information and answer questions about the projects and development of a proposed plan. Interested attendees can call 904-232-1613 for Spanish translation or other special services.

We invite the participation of Federal and State agencies, Native American Tribes, local agencies, interested parties and individuals in providing comments and identifying any issues or concerns. Please share this notice with any interested party. Please send any comments you may have to the attention of Gina Paduano Ralph, Ph.D. (904-232-2336) at the letter head address or email gina.p.ralph@usace.army.mil no later than 30 days from the date of this letter. All individuals providing comments will be included in future mailings. Others may be added to the mailing list by making a written request (postcard) to the same address or by email.

Sincerely,

Stuart J. Appelbaum
Chief, Planning and Policy Division

Enclosure

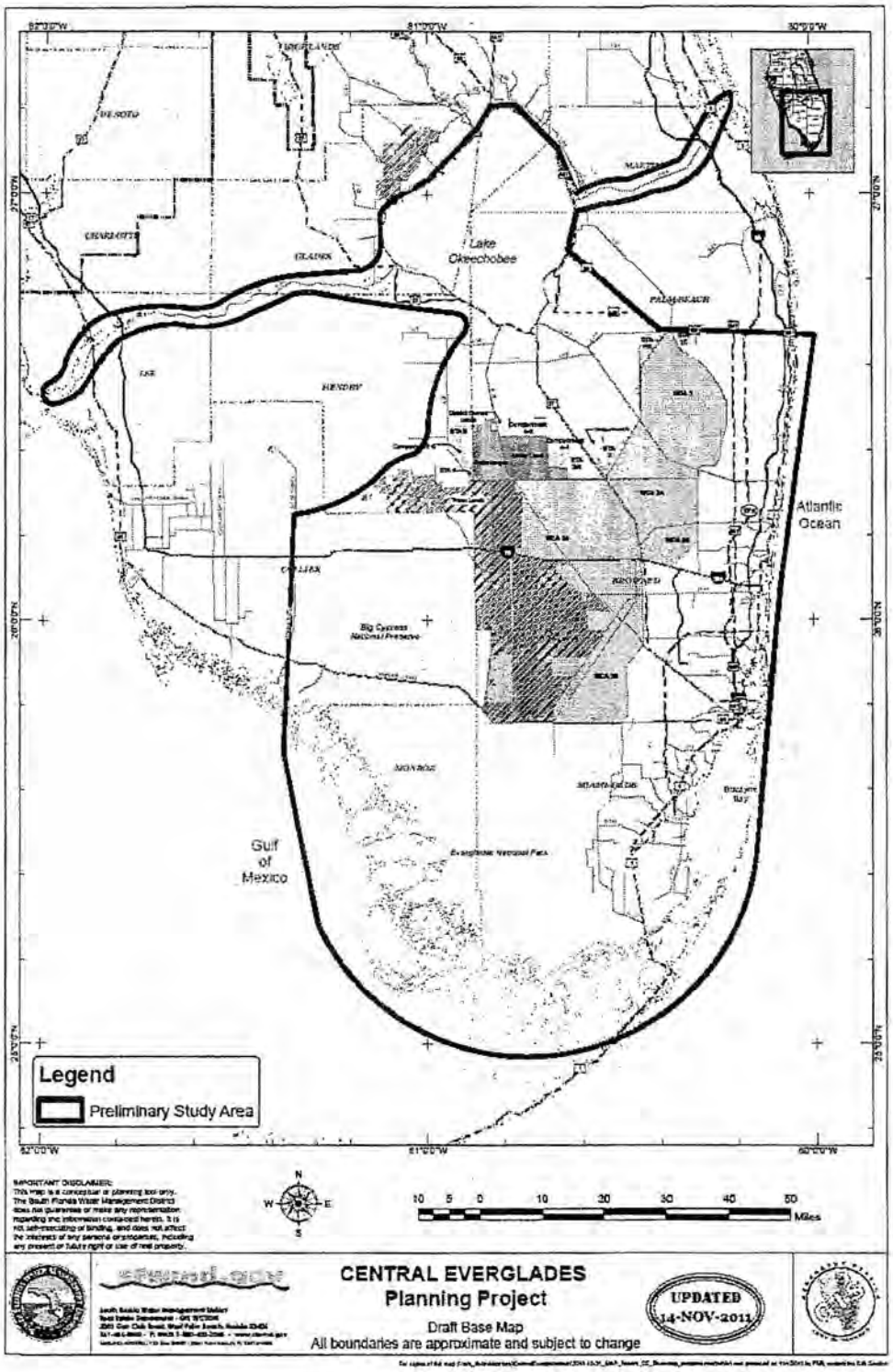

Figure 1. Central Everglades Planning Project Preliminary Study Area.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

Ms. Melissa Memory
Everglades and Dry Tortugas National Parks
Chief of Cultural Resources
40001 State Road 9336
Homestead, Florida 33034

Dear Ms. Memory:

As stated in the National Environmental Policy Act scoping letter dated December 07, 2011, the U.S. Army Corps of Engineers (Corps), Jacksonville District, in partnership with the South Florida Water Management District (SFWMD), have initiated an 18-month expedited pilot project known as the Central Everglades Planning Project (CEPP). The goal of the CEPP is to develop an integrated, comprehensive technical plan for the first increment of project features to be recommended for authorization for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem. The scope of this project includes increments of the following Comprehensive Everglades Restoration Plan (CERP) components: Everglades Agricultural Area Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park Seepage Management, and Everglades Rain-Driven Operations.

Under Section 106 of the National Historic Preservation Act of 1966, as amended and implementing regulations 36 CFR Part 800, as amended, we are assessing our needs for information regarding historic or undocumented traditional cultural properties that might be affected by the undertaking. Although the exact project footprint has yet to be determined, due to the expeditious nature of CEPP, the Corps is currently conducting an extensive review of the Florida Master Site Files (FMSF) to identify previously recorded cultural resource sites and to ascertain the adequacy of past cultural resources surveys conducted within the larger CEPP study area. To insure internal deadlines are met for this project, FMSF review, identification of areas in need of Phase I Survey, and development of a survey methodology are projected to be completed by the end of January 2012. Tentatively, initiation of Phase I Surveys will start mid-March 2012. This will ensure that any necessary cultural resource investigations are completed in a timely manner.

Therefore, we would like to extend an invitation for you or a designated member of your staff to consult with us throughout this process to ensure that all concerns are addressed during these efforts. It is expected that one-on-one discussions regarding the project could take place as monthly or bi-monthly meetings, and either in person or via conference call. Ms. Cindy Thomas has been designated as Corps Staff Archaeologist for CEPP, and will be initiating contact with you (or designee) immediately upon response to this letter. Any questions or concerns that you may have at this time can also be addressed by Ms. Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander

12/27/11

Enclosure

Thomas/CESAJ-PD-EP/1180
Kinard/CESAJ-DD
Applebaum/CESAJ-ED
Taplin/CESAJ-DR-W
Summa/CESAJ-ED-E
Acosta/CESAJ-PD-EP
FOR Garrett/CESAJ-PM-E ET 12/27/11
Vitek/CESAJ-PM
Goral/CESAJ-OC
FOR Hobbie/SESAJ-PPMD
Gapinski/CESAJ-DX
LTC Barker/CESSAJ-DD
COL Pantano/CESAJ-DE
12/27/11

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

Mr. Robert F. Bendus
Division of Historical Resources
State Historic Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Mr. Bendus:

As stated in the National Environmental Policy Act scoping letter dated December 07, 2011, the U.S. Army Corps of Engineers (Corps), Jacksonville District, in partnership with the South Florida Water Management District (SFWMD), have initiated an 18-month expedited pilot project known as the Central Everglades Planning Project (CEPP). The goal of the CEPP is to develop an integrated, comprehensive technical plan for the first increment of project features to be recommended for authorization for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem. The scope of this project includes increments of the following Comprehensive Everglades Restoration Plan (CERP) components: Everglades Agricultural Area Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park Seepage Management, and Everglades Rain-Driven Operations.

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Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
12/27/11

Enclosure

Copy Furnished:
Ms. Laura Kammerer, Deputy State Historic Preservation Officer for Review and Compliance, 500 South Bronough Street, Tallahassee, Florida 32399

Thomas/CESAJ-PD-EP/1180
Kinard/CESAJ-DD
Applebaum/CESAJ-ED
Taplin/CESAJ-DR-W
Summa/CESAJ-ED-E
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LTC Barker/CESSAJ-DD
COL Pantano/CESAJ-DE AAP 12/27/11

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

MAR 0 6 2012

Mr. Dan B. Kimball
Superintendent
Everglades National Park
40001 State Road 9336
Homestead, Florida 33034-6733

Dear Mr. Kimball:

The U.S. Army Corps of Engineers (Corps), Jacksonville District, along with the South Florida Water Management District (SFWMD), is studying the environmental effects of the proposed Central Everglades Planning Project (CEPP). The goal of the Central Everglades Planning Project is to deliver within two years a finalized plan, known as a Project Implementation Report (PIR), for a suite of restoration projects in the central Everglades. This PIR is in preparation to seek Congressional authorization for the CEPP as part of the Comprehensive Everglades Restoration Plan (CERP). The project will incorporate updated science and technical information gained over the last decade to identify projects on lands already in public ownership to be selected as the next generation of CERP components.

The CEPP is incorporating some previously defined projects that have already addressed cultural resource concerns. Once the final array of alternatives are identified consultation with your office, site file reviews, cultural resource surveys, and determinations of significance and eligibility for listing of historic properties to the National Register of Historic Places, will continue until the Section 106 process of the NHPA, 36 CFR Part 800, Protection of Historic Properties, and the National Environmental Policy Act of 1969, as amended, are complete.

Based on goals specified by CEPP, the following areas will be consulted on at this time: Water Conservation Areas 3A and 3B, and Everglades Agricultural Area A-1 and A-2 (previously known as Component A).

Water Conservation Areas 3A and 3B – Florida Master Site File research indicates the presence of previously recorded sites, most of which were identified via remote sensing. These sites have not been verified with either surface or subsurface investigations.

Similarly, the Everglades Agricultural Area A-1 and A-2 – Florida Master Site File research indicates that this area has not undergone systematic cultural resource investigations. Therefore, the Corps proposes to conduct an archaeological survey and assessment of specific areas within both WCA3 and EAA A-1 and A-2 in accordance with the enclosed field testing plan enclosed.

The Corps seeks your comments on this proposed plan of action and looks forward to working with you. Any questions or concerns that you may have at this time can be addressed by Ms. Cindy Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa.
Chief, Environmental Branch

Enclosure

Copy Furnished:
Ms. Melissa Memory, Everglades and Dry Tortugas National Parks, Chief of Cultural Resources, 40001 State Road 9336, Homestead, Florida 33034

Thomas/CESAJ-PD-EP/1180
Summa/CESAJ-ED-E
Acosta/CESAJ-PD-EP
Garrett/CESAJ-PM-E
Hughes/CESAJ-PD-EP

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

MAR 0 6 2012

Mr. Robert F. Bendus
Division of Historical Resources
State Historic Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Mr. Bendus:

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Similarly, the Everglades Agricultural Area A-1 and A-2 – Florida Master Site File research indicates that this area has not undergone systematic cultural resource investigations. Therefore, the Corps proposes to conduct an archaeological survey and assessment of specific areas within both WCA3 and EAA A-1 and A-2 in accordance with the enclosed field testing plan enclosed.

The Corps seeks your comments on this proposed plan of action and looks forward to working with you. Any questions or concerns that you may have at this time can be addressed by Ms. Cindy Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

Enclosure

Copy Furnished:
Ms. Laura Kammerer, Deputy State Historic Preservation Officer for Review and Compliance, 500 South Bronough Street, Tallahassee, Florida 32399

CF Thomas/CESAJ-PD-EP/1180
Summa/CESAJ-ED-E
Acosta/CESAJ-PD-EP
Garrett/CESAJ-PM-E
Hughes/CESAJ-PD-EP

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Mr. Eric Summa
Planning Division
Jacksonville USACE
P.O. Box 4970
Jacksonville, Florida 32232-0019

March 16, 2012

Re: DHR Project File No. 2012-01115/ Received by DHR: March 8, 2012
Project: Central Everglades Planning Project
Counties: Broward, Palm Beach

Dear Mr. Summa:

Our office received and reviewed the above referenced project application in accordance with Section 106 of the National Historic Preservation and the National Environmental Policy Acts as amended, to assess possible adverse impacts to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the National Register of Historic Places.

Our office concurs with the recommendations of your agency for the necessity for a cultural resource survey of the area of potential effect for the proposed project. We look forward to reviewing the resultant survey report. As you know, the resultant survey report must conform to the specification set forth in Chapter 1A-46, *Florida Administrative Code,* and be forwarded to this agency in order to complete the review and consultation processes for this undertaking and its impacts to historic properties. The results of the analysis should determine if significant cultural resources would be disturbed by this development. In addition, if significant remains are located, the data described in the report and the consultant's conclusions will assist this office as well in determining measures to be taken to avoid or minimize adverse impacts to any historic properties identified.

If you have any questions concerning our comments, please contact Michael Hart, Historic Sites Specialist, by phone at 850.245.6333, or by electronic mail at Michael.Hart@dos.myflorida.com. Your continued interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

JUN 0 6 2012

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

Mr. Reid Nelson
Advisory Council on Historic Preservation
Old Post Office Building
1100 Pennsylvania Avenue, NW, Suite 803
Washington, DC 20004

Dear Mr. Nelson:

The U.S. Army Corps of Engineers (Corps) and the Assistant Secretary of the Army senior leadership have collaboratively worked to identify and discuss opportunities to modernize the Civil Works Planning Program to better address water resources challenges that face the nation. One priority for addressing these challenges is shortening the time between initiation of a planning study and initiation of construction by incorporating both the current Reconnaissance and Feasibility phases into a single cohesive preauthorization process in a targeted goal of 18 months.

The Central Everglades Planning Project (CEPP) is one of seven projects chosen to be a part of the Corps initiated National Planning Pilot Program. The CEPP is identified as a multiagency study with the Corps as the lead agency in partnership with the South Florida Water Management District (SFWMD). The target of the CEPP is to deliver within two years, a finalized plan known as a Project Implementation Report (PIR) for a suite of restoration projects in the central Everglades. This PIR is in preparation to seek Congressional authorization for the CEPP as part of the Comprehensive Everglades Restoration Plan (CERP) implemented in 1999. Enclosure 1 provides information regarding the approach for the new study plan. Also, visit http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx for further information regarding CEPP including but not limited to public comments, Working Group Meetings and Planning and Development Team Meetings.

Under Section 106 of the National Historic Preservation Act of 1966, as amended and implementing regulations 36CFR 800, as amended, we are assessing our needs for information regarding historic properties that may be affected by the undertaking. Although the exact suite of previously implemented projects have yet to be determined, due to the expeditious nature of CEPP, the Corps has completed an extensive review of LiDar data, historic and modern aerial photographs, and historic land records (e.g. General Land Office, plat maps, surveyors notes, etc.) to ascertain high probability of historic sites location. In addition, USACE has conducted

an extensive search of the Florida Bureau of Archaeological Research, Florida Master Site Files (FMSF) to identify previously recorded cultural resource sites within the study area, and to ascertain the adequacy of past cultural resource surveys conducted within the larger CERP study area (Enclosure 2). Simultaneously, as previously implemented projects are identified to be a part of CEPP we will continue to do consultation, background reviews, cultural resource surveys, and determinations of significance and eligibility for listing of historic properties to the National Register of Historic Places until compliance with the National Historic Preservation Act is complete.

Enclosure 3 provides a summary of previous cultural resources investigations within the CEPP Feasibility Study area of potential effect (APE), in addition to a summary of project specific alternatives for many of the previously implemented projects under consideration for the CEPP. Currently, only two previously implemented projects have been identified as part of the CEPP: Decomp and Component A-1 and A-2. Through consultation with the State Historic Preservation Office (SHPO), the Seminole Tribe of Florida Tribal Historic Preservation Office (STOF-THPO), and the Miccosukee Tribe of Indians of Florida Cultural Resource Representative, it was determined that identification and assessment of historic properties within the areas is warranted, therefore a sampling strategy and field testing plan was developed. Fieldwork for WCA3 will be completed prior to the PIR, however , due to litigation between the SFWMD and the leasee that is currently preventing access to the property, fieldwork for Component A-1 and A-2 may be delayed until after the PIR, but prior to construction. As stated previously, once other previously implemented projects are identified, we will continue with the Section 106 process until complete. Finally, once the final array of alternatives are selected we will then determine effects, if any, and provide documentation in accordance with 36 CFR 800.11.

In addition to contacting your office, Corps has identified other potential consulting parties, and pursuant to 36 CFR 800.4, is consulting with Florida federally recognized tribal governments (Miccosukee Tribe of Indians of Florida, and Seminole Tribe of Florida) on at least a bi-weekly basis, Florida's SHPO, and Everglades National Park (Enclosure 4).

At this time, the Corps would like to extend an invitation for you or a designated member of your staff to review the information provided to determine whether to enter into consultation pursuant to Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of 36 CFR Part 800. Ms. Cindy Thomas has been designated as Corps Staff Archaeologist for CEPP. Any questions or concerns that you may have can be addressed by Ms. Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Kenneth R Summa

for Eric Summa
Chief, Environmental Branch

JUL 06 2012

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

Mr. David Saunders
Bureau of Indian Affairs
Eastern Regional Office
545 Marriott Drive
Suite 700
Nashville, Tennessee 37214

Dear Mr. Saunders:

The U.S. Army Corps of Engineers (Corps) and the South Florida Water Management District (District) are conducting an integrated reconnaissance and feasibility study for the Central Everglades Planning Project (CEPP) and are studying associated environmental effects. The CEPP is looking at combining a suite of projects, many of which have been previously implemented throughout south Florida. The target of the CEPP is to deliver within two years, a finalized plan known as a Project Implementation Report (PIR) for restoration projects in the central Everglades. The CEPP PIR will be prepared and ultimately submitted to Congress for authorization for the CEPP as part of the Comprehensive Everglades Restoration Plan (CERP) implemented in 1999, visit http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx for further information.

The CEPP was announced to the public on November 01, 2011. On December 20, 2011, the Corps began consulting on a bi-weekly basis (at least) with the Miccosukee Tribe of Indians of Florida's NAGPRA Representative and the Seminole Tribe of Florida's, Tribal Historic Preservation Office concerning cultural resources. It is the intention of the Corps to continue this level of consultation with all parties until such time that Section 106 of the National Historic Preservation Act, as amended is complete.

Ms. Cynthia Thomas has been designated as Corps staff Archaeologist for the CEPP. If you would like to provide comments on historic properties located on lands within Bureau of Indian Affairs jurisdiction, please submit comments in writing to Cynthia Thomas. Also, any questions

or concerns regarding the project may also be addressed to Ms. Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric L. Bush
Chief, Planning and Policy Division

Copies Furnished:

Dr. Christina Stringer, Bureau of Indian Affairs, Natural Resources Officer, 545 Marriott Drive, Suite 700, Nashville, Tennessee 37214

Thomas/CESAJ-PD-EP/1180
Summa/CESAJ-ED-E
Acosta/CESAJ-PD-EP
Vitek/CESAJ-PM

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Mr. Eric P. Summa
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

July 25, 2012

Re: DHR Project File No.: 2012-2895 / 1A-32 Permit No.: 1112.001
Received by DHR: June 25, 2012
Phase I Historical and Archaeological Survey of the Miami Canal within WCA-3A, Levee 4-5 Spreader Channel, and Levee 5 Spreader Channel Pump Station, Broward and Dade Counties

Dear Mr. Summa:

Our office received and reviewed the above referenced survey report in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*, and Chapter 267, *Florida Statutes,* for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the National Register of Historic Places (NRHP).

Between July and August 2011, Panamerican Consultants, Inc. (PCI) conducted an archaeological and historical Phase I survey of the Miami Canal within WCA-3A to determine the potential effects of closing and backfilling a 27 mile long portion of the Miami Canal and constructing a water flow "spreader channel" and pump station within the northern boundary of WCA-3A. The survey was completed on behalf of the US Army Corps of Engineers, Jacksonville District.

PCI identified six previously unrecorded sites. Three are prehistoric black earth middens (8BD4836, 8BD4837, and 8BD4838), one is a historical barge used as a decking support at Jesse Howard's Fish Camp/Crossroads (8BD4839), another is a ruinous water control structure (8BD4841) on the National Register eligible Miami Canal, and the last is the National Register eligible Miami Canal (8BD4840). In addition, four archaeological occurrences likely associated with early canal construction and use, and 51 buildings and structures were recorded, 11 of which were determined by PCI to be integral to the canal and National Register eligible as part of the already existing fabric of the Miami Canal.

PCI suggested Phase II testing for sites 8BD4836 and 8BD4837 due to insufficient information to determine National Register eligibility, and for 8BD4838 due to the presence of faunal and ceramic artifacts. In addition, PCI recommended that more research be conducted on the Jesse Howard Fish Camp/Crossroads, the Al Bryant Fish Camp, and Picnic Island to determine if these are historic sites associated with the Gladesmen culture, and to determine if any of these sites meet the criteria for National Register eligibility.

It is the opinion of PCI that no further investigation of 8BD4839, 8BD4841, or AO 2, 3, and 4 is needed. AO 1 was not evaluated since it was outside of the APE, but PCI did propose a magnetometer and side-scan sonar survey of this location.

Based on the information provided, our office concurs with these determinations and finds the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code.*

However, the following inclusions and corrections should be made when submitting the final report:

Pg iii, 3rd paragraph – 8BD3838 should be 8BD4838.

Pg 6-7, Figure 6.5 – "Picnic Island" is misspelled on figure.

Pg 9-11, Saunders and Russo (2011) – has been published and is no longer "in press."

Appendices B and C – should also be submitted on loose-leaf paper and in electronic form (with digital copies of associated photographs) on a CD.

For any questions concerning our comments, please contact Deena Woodward, Historic Sites Specialist at 850.245.6333, or by electronic mail at deena.woodward@dos.myflorida.com. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,

Laura A. Kammerer

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance

From: Thomas, Cynthia SAJ
To: Thomas, Cynthia SAJ
Subject: FW: CEPP - Question Regarding PA
Date: Monday, December 02, 2013 2:24:15 PM

-----Original Message-----
From: Kammerer, Laura [mailto:Laura.Kammerer@DOS.MyFlorida.com]
Sent: Monday, June 25, 2012 4:17 PM
To: Thomas, Cynthia SAJ
Subject: RE: CEPP - Question Regarding PA

Cynthia,
I am very sorry for taking so long to respond to your emails! I do not think a Programmatic Agreement is necessary at this point in the CEPP project. Perhaps later down the road when resources are identified and evaluated; and there is documentable reason to suspect there will or may be adverse impacts to historic properties. Any Human Remains (HR) issues should be handled separately at that point, not in the PA; in a HR Policy for CEPP perhaps.
Laura

Laura A. Kammerer
Deputy State Historic Preservation Officer for Review and Compliance | Bureau of Historic Preservation | Division of Historical Resources | Florida Department of State | 500 South Bronough Street | Tallahassee, Florida 32399 | 850.245.6333 | 1.800.847.7278 | Fax: 850.245.6437 | Laura.Kammerer@DOS.MyFlorida.Com | www.flheritage.com

-----Original Message-----
From: Thomas, Cynthia SAJ [mailto:Cynthia.G.Thomas@usace.army.mil]
Sent: Tuesday, June 05, 2012 11:37 AM
To: Kammerer, Laura
Cc: Vitek, Kimberly A SAJ
Subject: CEPP - Question Regarding PA

Hello Laura,

I have been requested by my boss (Kim Taplin), in response to a request by our headquarters, to obtain written documentation from your office concerning our discussion on 1/30/2012 - if you felt that a PA was necessary for this project. Based on my notes, I show that you "see no reason for it at this time".

Do I need to send a formal letter to you summarizing this discussion and asking your concurrence, or can your office send me a letter?

Just to give you a little background, USACE had an In Progress Review (IPR) on cultural resources for CEPP with headquarters April 23, 2012. Discussions at this meeting involved: ERTP's PA, the relationship between ERTP and CEPP, cultural resource needs for CEPP, and the field testing plan for WCA3 and Component A. Headquarters also asked why CEPP did not require a PA when ERTP did... which was discussed at length. Today we received the memorandum for the record (MFR) comments from the IPR,

and the lawyers have asked that I get something in writing reflecting your opinion concerning a PA for this project.

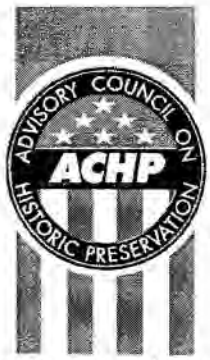
Please Advise.

Respectfully,
Cindy

Cynthia Thomas
PD-C Archaeologist

U.S. Army Corps of Engineers
Jacksonville District
701 San Marco Blvd.
Jacksonville, Florida 32207

Office: (904) 232-1180
Fax: (904) 232-3442



Preserving America's Heritage

August 17, 2012

Lieutenant General Thomas P. Bostick
Commanding General
U.S. Army Corps of Engineers
441 G. Street, NW
Washington, DC 20314-1000

REF: Project Implementation Report for the Central Everglades Planning Project

Dear Lieutenant General Bostick:

The Advisory Council on Historic Preservation (ACHP) has been invited to participate in the referenced undertaking by the Jacksonville District of the Corps of Engineers to help ensure that historic properties are fully considered in the management and control of water resources in the Everglades. Pursuant to the Criteria for Council Involvement in Reviewing Individual Section 106 Cases (Appendix A to our regulations, 36 CFR Part 800) we believe the criteria are met for our participation in this undertaking. Development and implementation of plans to better manage water resources will involve important questions of policy and interpretation and could have substantial impacts to important historic properties. Accordingly, the Advisory Council on Historic Preservation will participate in consultation with the Jacksonville District on this undertaking.

By copy of this letter we are also notifying Mr. Eric Summa, Chief of the Jacksonville District's Environmental Branch, of our decision to participate in consultation.

Our participation will be handled by Dr. Tom McCulloch, who can be reached at 202-606-8554 or at tmcculloch@achp.gov. We look forward to working with the Corps on this important project.

Sincerely,

John M. Fowler
Executive Director

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

APR 01 2013

Mr. Robert F. Bendus
Division of Historical Resources
State Historic Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Mr. Bendus:

The U.S. Army Corps of Engineers (Corps), Jacksonville District in partnership with the South Florida Water Management District is conducting a feasibility study for the Central Everglades Planning Project (DHR Project File No. 2012-01115). As part of that study, a cultural resource survey was conducted within Water Conservation Area 3 resulting in the draft report titled, *Central Everglades Planning Project Cultural Resources Survey of Water Conservation Areas 3A and 3B, Broward and Miami-Dade Counties, Florida.* The draft report contains recommendations on determinations of effects, however the Corps has yet to make a final determination and reserves the right to do so upon submission of the final report. As per request of the Compliance Review Supervisor, Dr. Timothy Parsons, the draft report has been provided electronically for review.

Please provide your comments within 30 calendar days of receipt of this letter. If there are any questions, contact Ms. Cynthia Thomas at 904-232-1180 or e-mail Cynthia.G.Thomas@usace.army.mil. An electronic copy of this letter has been provided to Dr. Timothy Parsons, Compliance Review Supervisor.

Sincerely,

Kenneth R Ousley

for Eric P. Summa
Chief, Environmental Branch

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

05 MAY 2009

REPLY TO
ATTENTION OF

CESAJ-PD

MEMORANDUM FOR: CEMVP-PD-F (Michelle Kniep)

SUBJECT: ATR Review of Cultural Resources Analyses for Central Everglades Planning Project

1. The Central Everglades Planning Project (CEPP) is an increment of the larger Comprehensive Everglades Restoration Plan. Jacksonville District has been developing an integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS) for CEPP. The Review Plan for CEPP describes a set of five intermediate Agency Technical Reviews. ATR-1 (objectives, management measures, screening methods), ATR-2 (formulation and screening alternatives), and ATR-3 (evaluation of final alternatives to identify TSP) are complete. Unfortunately, neither the Review Plan nor the ATR team included a specialist in cultural resources analysis. The Jacksonville District would like to have this review completed now rather than wait for ATR-4. Therefore, we request the following reviews be completed.

2. Please provide a review of the draft cost estimate for cultural resources to verify that the costs are valid, reasonable and comprehensive. These costs are for the life of the project (estimated 40 years). The cost estimate is enclosed and can be furnished electronically if requested.

3. Please provide a review of the PIR main document Sections 2, 4, and 5 for both cultural resources compliance under Section 106 of the National Historic Preservation Act and Native Americans sections that address consultation in fulfillment of our Trust responsibilities pursuant to Executive Orders 13007- Indian Sacred Sites, Executive Order 13175- Consultation and Coordination with Indian Tribal Governments, and Executive Order 12898- Executive Order on Environmental Justice. The reviewer can access the PIR and provide comment in Dr. Checks.

4. Please provide a review the PIR Appendices C.1, C.2.1, and C.2.2 for both cultural resources compliance and Native American consultation.

5. If you have questions or require additional information, please contact Cindy Thomas at Cynthia.G.Thomas@usace.army.mil or by phone at 904-232-1180.

Encl

ERIC L. BUSH
Chief, Planning and Policy Division

CF: CESAD-PD (w/encl) (D. Bauman)

24 September 2013

CESAJ-PPD
MEMORANDUM FOR RECORD

SUBJECT: Pilot Program, Central Everglades Planning Project (CEPP), Florida, Advisory Council on Historic Preservation (ACHP) Conversation Regarding Cultural Resources and Section 106 Compliance on 20 September 2013.

1. Background: During the CEPP IPR 3.1, the USACE HQ advised the SAJ to consult with the ACHP under 36 CFR 800 Appendix A to ask for participation in consultation for the CEPP (Enclosure 1). On 2012 June 06 the SAJ invited ACHP to participate (Enclosure 2) they accepted on 2012 August 17 (Enclosure 3). Since then, the ACHP has participated in bimonthly and monthly cultural resource consultation meetings lead by the SAJ since that time.

2. Purpose: The purpose of this memorandum is to document discussions between staff Archeologist and staff with the Advisory Council on Historic Preservation, and to summarize suggested actions necessary to end Section 106 consultation for the feasibility phase of the CEPP with the understanding that consultation will continue once the project is authorized. The meeting was conducted via teleconference with the Tom McCullouch of the ACHP office and the SAJ CEPP staff Archeologist Cynthia G. Thomas.

3. Overview: This meeting focused on discussions on the CEPP Section 106 compliance efforts.

4. Questions and Recommendations: The following questions were directed to the ACHP and responses were documented.

a. How does the ACHP feel about the expedited process used for the CEPP with regards to Section 106 and 36CFR 800?

1. The ACHP identified the project as being very complex with different consulting parties, conflicting interests of those consulting parties, and different land management practices. The study area's area of potential effect covers state owned lands, Tribal lands, and National Park Service lands, different levels of complexity than most projects. The ACHP referred to CEPP as appearing like the perfect storm.
2. The ACHP stated that currently all parties are cooperating and consultation has been very successful.
3. The ACHP asked if consulting parties understood the Federal process. The SAJ explained that multiple attempts had been made to educate the group being that many of the key consultation representatives are new to the process due to recent turnovers (State Historic Preservation Officer, Deputy State Archaeologist, Seminole Tribe of Florida Tribal Historic Preservation Office staff). The SAJ discussed the PCC1 and PCC2 class recently attended by staff from both the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida. Tuition was funded by the SAJ to assist these key partners in understanding our Federal planning process. Also discussed multiple efforts made by the CEPP Archeologist to further educate those involved.

b. Will ACHP formalize their observations of the project process in a letter?

1. The ACHP stated that there would be no need for a letter, however the suggested that a memo be written by SAJ providing an overview of the effort as of 19 Dec 2013. The ACHP also suggested that SAJ send a letter to all participants summarizing what had taken place during the CEPP study with regards to cultural resources, specifying decisions made and actions taken. The ACHP offered assistance in reviewing the letter for required language prior to mailing. The SAJ concurred with all suggestions and established a December deadline for completion of formal consultation for the feasibility phase of the CEPP with the understanding

that consultation will continue once the project is authorized and the CEPP enters into the Pre-construction, Engineering and Design phase.

c. Does the ACHP have any suggestions for how the process could have potentially worked better.
   1. The ACHP had no suggestions.

5 . Actions/Conclusion: The draft consultation summary letter will be sent to Tom McCullouch with the ACHP for review NLT 15 November 2013 and will include Section 106 consultation required attachments for the CEPP in its entirety.

THOMAS.CYNTHIA.G.1400734069 Digitally signed by THOMAS.CYNTHIA.G.1400734069 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=THOMAS.CYNTHIA.G.1400734069 Date: 2013.09.23 10:55:54 -04'00'

Cynthia G. Thomas
Archeologist, Central Everglades Branch

9/24/13

Kimberley A. Taplin
Chief, Central Everglades Branch

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Cynthia Thomas
Jacksonville District Corps of Engineers
701 San Marco Blvd.
PD-C Floor 4W
Jacksonville, FL 32207

June 18, 2013

Re: DHR Project File No.: 2013-2375
Corps of Engineers Performance Work Statement No.: W912EP-10-D-0018
Revised Draft Report: Cultural Resource Investigations of Water Conservation Areas 3A and 3B, Everglades, Broward and Miami-Dade Counties, Florida

Dear Ms. Thomas:

Our office received and reviewed the above referenced survey report in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*, and Chapter 267 of the *Florida Statutes*, for possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the National Register of Historic Places (NRHP).

The revised draft report submitted for SHPO review details fieldwork conducted by New South Associates as part of the Central Everglades Planning Project (CEPP). The report includes the results of archaeological survey of 30 tree islands, and survey and recording of 10 historic canal segments. We note that a forthcoming report from New South will document an assessment of Al Bryan's Camp and Phase II testing of three prehistoric sites.

Archaeological Survey

Fifteen archaeological sites were investigated as the result of the tree island survey. These included five previously known sites and ten newly identified sites. The historic structures survey documented six historic canals in ten segments, and 20 associated structures including levees, pump stations, etc.

The five previously recorded sites (8DA2144, 8BD2145, 8DA2207, and 8DA2212) were not ground-truthed following their initial identification through remote sensing. None of these sites were identified during subsurface testing efforts. New South noted that despite these results,

cultural material may be present within other portions of these five islands that went untested. Although no NRHP eligibility or management recommendations were provided by New South for the sites that went unidentified, this office recommends avoidance of the sites. If avoidance is not feasible, we recommend more testing to definitely determine the presence or absence of subsurface archaeological resources.

Of the ten sites newly identified by New South during the course of this project, four (8BD4975, 8BD4978, 8BD4979, and 8BD4980) were recommended as eligible for the NRHP, four (8BD4974, 8BD4976, 8BD4799, and 8BD4982) were recommended as potentially eligible for the NRHP, one (8BD4981) was recommended as not eligible for the NRHP, and one (8DA12830) remains unevaluated. New South recommended that these sites be avoided during any project activities. If avoidance is not feasible, New South recommended mitigation.

The four sites recommended as potentially eligible (8BD4974, 8BD4976, 8BD4977, and 8BD4982) are associated with human remains. This office recommends no further testing and avoidance of the sites during project activities. If avoidance is not feasible, further consultation and mitigation may be necessary.

Due to lack of integrity, 8BD4981 was recommended as not eligible for listing in the NRHP. No further work is recommended for this site.

Historic Canals and Structure Survey

The Miami Canal (8BD4840/8DA6525) and South New River Canal (8BD4153) were determined eligible for the NRHP prior to this survey project. New South recommended that sections of the canal evaluated specifically as part of this survey be listed as eligible, as well. The other historic canals and levees (8BD4987/8DA12829, 8BD4988, and 8DA12826) lack integrity and are recommended not eligible.

Two structures associated with the canals (8BD4984 and 8BD4985) are recommended as eligible for the NRHP. Two historic bridges identified during survey (8BD4986 and 8DA12828) are recommended not eligible by New South.

Based on the information provided, upon receiving the final report the SHPO plans to concur with New South's determinations of eligibility. We note, however, that the sites recommended as "potentially eligible" require more investigation prior to a SHPO eligibility determination.

As part of the final report, please submit the following documents:

- **Florida Master Site File Archaeological Site Forms** for newly recorded and updated archaeological sites.
- **Historic Structure Forms** for 8BD4984 and 8BD4985.
- **Historical Bridge Forms** for 8BD4986 and 8DA12828.

For any questions concerning these comments, please contact me by electronic mail at Timothy.Parsons@DOS.MyFlorida.com, or by phone at 850.245.6333. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,

Timothy A. Parsons, Ph.D., RPA
Compliance Review Supervisor
and Deputy State Historic Preservation Officer

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

26 JUL 2013

Planning and Policy Division
Environmental Branch

Mr. Robert F. Bendus
Division of Historical Resources
State Historic Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Mr. Bendus:

The U.S. Army Corps of Engineers (Corps) in partnership with the South Florida Water Management District (District) are conducting a feasibility study for the Central Everglades Planning (CEP) Project (DHR Project File No. 2012-01115). A component of the feasibility study will be the construction and operation of a 14,000 acre Flow Equalization Basin (FEB) within the Everglades Agricultural Area Cell A-2 (EAA A-2). For your records, in 2002 this parcel was consulted under the description Everglades Agricultural Area Storage Reservoirs Project Component A (DHR Project File No. 2002-09656).

Following consultation with your office on 2012 April 27 and subsequent review of previous research conducted in the area (Survey # 5610 and 4869), the Corps concluded that additional investigations would be required for the EAA A-2 FEB footprint. With the use of historic and modern aerials, the Corps identified vegetation anomalies within the project area, and contracted Southeastern Archaeological Research Inc. to conduct field investigations of those specific areas. As a result, three prehistoric midden sites (8PB16037, 8PB16039, and 8PB16040) and one historic agricultural work camp (8PB16038) were identified The Corps has determined that only prehistoric site 8PB16039 meets the criteria for eligibility for listing on the National Register of Historic Places.

For the CEPP feasibility study, only preliminary FEB design plans have been developed, which makes it impracticable for the Corps to make a final determination of effect on significant cultural resources at this time. Once Congress has authorized the CEP Project and the FEB enters into the detailed design phase, the Corps will make a final determination of effect for site 8PB16039. In addition, consultation will be needed to identify methods to address potential impacts to site 8PB106040, which contains human remains. Currently the EAA A-2 property is under lease to Florida Crystals by the District and actively cultivated with sugar cane.

As per request of the Deputy Historic Preservation Officer, Dr. Timothy Parsons, the draft report titled, *Central Everglades planning Project, Cultural Resources Investigation of the Everglades Agricultural Area Cell A-2, Palm Beach County, Florida* has been provided electronically for review.

In accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, we ask for your comments on the above referenced draft report and concurrence on the Corps eligibility determinations within 30 calendar days of receipt of this letter. If you have any questions, please contact Ms. Cindy Thomas at (904) 232-1180 or via email Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

Copy Furnished:
Dr. Timothy Parsons, Compliance Review Supervisor, Deputy State Historic Preservation Officer.

Thomas/CESAJ-PD-C/1180
McCullough/CESAJ-PD-EP
Taplin/CESAJ-PD-C
Summa/CESAJ-ED-E
Acosta/CESAJ-PD-EP

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

26 JUL 2013

Planning and Policy Division
Environmental Branch

Mr. Robert F. Bendus
Division of Historical Resources
State Historic Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Mr. Bendus:

The U.S. Army Corps of Engineers (Corps) and Everglades National Park (ENP) conducted a Phase I Survey of a 5.38-mile corridor along the L-67 Extension (L-67 Ext.) as part of the Central Everglades Planning Project (CEPP) feasibility study from January 16 through January 18, 2013. The CEPP proposes to use material from the L-67 Ext. levee to backfill the associated borrow canal. The area of potential effect (APE) for this proposed feature of CEPP consists of a 46-meter wide corridor starting at Tamiami Tail (U.S. 41) running south 5.38-miles along the L-67 Ext.

With the use of historic and modern aerial photographs, and in consultation with ENP, the Corps concluded that areas with high probability for site locations did not exist within the APE. To verify these findings, the project archaeologist along with ENP staff visited specific locations and conducted surface inspections and subsurface testing. No cultural material over 50 years of age was observed. As a result, the Corps has determined that there will be no effect to historic properties within the APE of the proposed backfilling and levee degrading of the L-67 Ext.

As per request of the Deputy Historic Preservation Officer, Dr. Timothy Parsons, the draft report titled, *Phase I Archeological Survey of a 5.38-Mile Corridor Along the L-67 Extension* has been provided electronically for review.

In accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, we ask for your comments on the above referenced draft report and concurrence on the Corps determination of no effect within 30 calendar days of receipt of this letter. If you have any questions, please contact Ms. Cindy Thomas at (904) 232-1180 or via email Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

Copy Furnished:
Dr. Timothy Parsons, Compliance Review Supervisor, Deputy State Historic Preservation Officer.

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Package ID:	1606550
Sender's Name:	Cynthia Thomas
Sender's Email:	cynthia.g.thomas2@us.army.mil
Date Uploaded:	7/26/2013 12:35:34 PM
Description	Please find attached CEPP L-67 Ext. Transmittal Letter and Draft Report for your review. A hard copy of the transmittal letter will be sent via the U.S. Postal Service. Any questions, please contact Cindy Thomas at 904-232-1180 or Cynthia.G.Thomas@usace.army.mil
Delete Date:	8/9/2013

Package Contents

File(s)	Privacy Act Data
L-67 Ext. Report Final Draft.pdf (18 MB)	No
(2013-7-26)USACE to SHPO CEPP L-67 Ext. Report Transmittal Ltr.pdf (120 KB)	No

Recipients List

Recipients	Downloaded
Robert.Bendus@DOS.MyFlorida.com	False
Timothy.Parsons@DOS.MyFlorida.com	False

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

13 AUG 2013

Planning and Policy Division
Environmental Branch

Mr. Robert F. Bendus
Division of Historical Resources
State Historic Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Mr. Bendus:

The U.S. Army Corps of Engineers (Corps) in partnership with the South Florida Water Management District (District) are conducting a feasibility study for the Central Everglades Planning Project (CEPP) (DHR Project File No. 2012-01115). For the feasibility study, Alternatives 1-4 included the construction of a spreader approximately 600 feet south and running parallel to the L-5 Levee in northern Water Conservation Area 3A (WCA-3A). In 2011 as part of the Modified Waters Delivery Project (MWD), Panamerican Consultants, Inc., conducted an Phase I survey within the spreader feature area resulting in report, *Phase I Historical and Archaeological Survey of the Miami Canal within WCA-3A, Levee 4-5 Spreader Channel, and Levee 5 Spreader Channel Pump Station, Broward and Dade Counties* (DHR Project File No.: 2012-2895/1A-32 Permit No.:1112.001). During the survey, sites 8BD4836, 8BD4837, and 8BD4838 were identified and recommended for further work to assess site significance. Therefore, in compliance with 36 CFR 800, the Corps conducted Phase II excavations of these three sites resulting in the enclosed draft report, *Archaeological Testing of 8BD4836, 8BD4837, and 8BD4838, Addendum to Technical Report: Central Everglades Planning Project Water Conservation Areas 3A and 3B, Broward and Miami-Dade Counties, Florida* (1A-32 Permit No.: 1213.002).

Based on research results, the Corps has determined that prehistoric sites 8BD4836, 8BD4837, 8BD4838 meet the criteria of eligibility for listing on the National Register of Historic Places under Criterion D. It should also be noted that each of these sites contains human remains and are therefore considered culturally sensitive to the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida.

During the analysis of each Alternative for the CEPP feasibility study, the proposed spreader feature along the L-5 Levee was removed from the project. Therefore, the Corps has determined that there will be no effect to sites 8BD4836 – 8BD4838.

As per request of the Deputy Historic Preservation Officer, Dr. Timothy Parsons, the draft report titled, *Archaeological Testing of 8BD4836, 8BD4837, and 8BD4838, Addendum to Technical Report: Central Everglades Planning Project Water Conservation Areas 3A and 3B, Broward and Miami-Dade Counties, Florida* has been provided electronically for review.

In accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, we ask for your comments on the above referenced draft report and concurrence on the Corps eligibility and effects determinations within 30 calendar days of receipt of this letter. If you have any questions, please contact Ms. Cindy Thomas at (904) 232-1180 or via email Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

Copy Furnished:
Dr. Timothy Parsons, Compliance Review Supervisor, Deputy State Historic Preservation Officer.

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Package ID:	1659923
Sender's Name:	Cynthia Thomas
Sender's Email:	cynthia.g.thomas2@us.army.mil
Date Uploaded:	8/13/2013 4:25:42 PM
Description	FILES SHARED: 1. Consultation Letter 2. WCA 3 Draft Addendum Report - Phase II Excavation of sites 8BD4836, 8BD4837, 8BD4839. Please review the electronically shared CEPP WCA 3 Draft Addendum Report and transmittal letter. A hard copy of the transmittal letter will be sent via U.S. Postal Service. Please contact Cindy Thomas at Cynthia.G.Thomas@usace.army.mil should you have any questions.
Delete Date:	8/27/2013

Package Contents

File(s)	Privacy Act Data
WCA 3 Phase II Addendum Revised Draft Report.pdf (15 MB)	No
(2013-8-13) USACE to SHPO CEPP WCA3 Addendum Phase II Draft Rpt Ltr.pdf (184 KB)	No

Upload more files to Package...

Recipients List

Recipients	Downloaded
Robert.Bendus@DOS.MyFlorida.com	False
Timothy.Parsons@DOS.MyFlorida.com	False
cynthia.g.thomas@usace.army.mil	False

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

Document Transmittal Form

Date:	September 11, 2013
To:	Timothy Parsons, Deputy State Historic Preservation Officer
Organization:	Division of Historical Resources
Address:	500 South Bronough Street Tallahassee, Florida 32399-0250
Contact No.:	(850) 245-6339
Items Sent:	Final report titled, "Central Everglades Planning Project, Cultural Resources Inv estigations of Everglades Agricultural Area Cell A-2, Palm Beach County, Florida" **DHR Project File No. 2012-01115**
Sent By: **Contact No.:**	Cindy Thomas (904) 232-1180
Transmitted Via:	FED-EX
Message:	Enclosed are two bound copies of the final report and one unbound copy of FMSF forms. Please forward a bound copy to Dan Seinfeld, FBAR. Thanks, Cindy

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

Document Transmittal Form

Date:	September 11, 2013
To:	Timothy Parsons, Deputy State Historic Preservation Officer
Organization:	Division of Historical Resources
Address:	500 South Bronough Street Tallahassee, Florida 32399-0250
Contact No.:	(850) 245-6339
Items Sent:	Final report titled, "Phase I Archeological Survey of a 5.38-Mile Corridor Along the L-67 Extension, Miami-Dade Counties, Florida" **DHR Project File No. 2012-01115**
Sent By: **Contact No.:**	Cindy Thomas (904) 232-1180
Transmitted Via:	FED-EX
Message:	Enclosed is one bound copy of the final report. Thanks, Cindy

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

Document Transmittal Form

Date:	September 11, 2013
To:	Timothy Parsons, Deputy State Historic Preservation Officer
Organization:	Division of Historical Resources
Address:	500 South Bronough Street Tallahassee, Florida 32399-0250
Contact No.:	(850) 245-6339
Items Sent:	Final report titled, "Technical Report: Performance Work Statement #W912EP-10-D-0018, Central Everglades Planning Project Cultural Resources Survey of Water Conservation Areas 3A and B, Broward and Miami-Dade Counties, Florida" **DHR Project File No. 2012-01115**
Sent By: **Contact No.:**	Cindy Thomas (904) 232-1180
Transmitted Via:	FED-EX
Message:	Enclosed is two bound copies of the final report and one unbound copy of FMSF forms. Please forward a copy to Dan Seinfeld, FBAR. Thanks, Cindy

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

Document Transmittal Form

Date:	2013 Sept 21
To:	Margo Schwadron, Acting Chief, Cultural Resources, Everglades and Dry Tortugas National Park
cc:	Paul O'Dell
Organization:	Everglades National Park
Address:	40001 State Road 9336 Homestead, Florida 33034
Contact No.:	(863) 983-6549 Ext. 12244
Item(s) Sent:	Final report titled, "Phase I Archeological Survey of a 5.38-Mile Corridor Along the L-67 Extension, Miami-Dade County, Florida"
Sent By:	Cindy Thomas
Contact No.:	(904) 232-1180
Transmitted Via:	Electronic Fileshare
Message:	Hello Margo and Paul, Hope you guys are faring well down there. I have made all but one of the suggested changes from STOF THPO on the above mentioned report. I felt the last comment was a matter of preference and did not change the content. We are marking this one final! Thanks again for all your help Paul. Wish you both the best, Cindy

24 September 2013

CESAJ-PPD
MEMORANDUM FOR RECORD

SUBJECT: Pilot Program, Central Everglades Planning Project (CEPP), Florida, Advisory Council on Historic Preservation (ACHP) Conversation Regarding Cultural Resources and Section 106 Compliance on 20 September 2013.

1. Background: During the CEPP IPR 3.1, the USACE HQ advised the SAJ to consult with the ACHP under 36 CFR 800 Appendix A to ask for participation in consultation for the CEPP (Enclosure 1). On 2012 June 06 the SAJ invited ACHP to participate (Enclosure 2) they accepted on 2012 August 17 (Enclosure 3). Since then, the ACHP has participated in bimonthly and monthly cultural resource consultation meetings lead by the SAJ since that time.

2. Purpose: The purpose of this memorandum is to document discussions between staff Archeologist and staff with the Advisory Council on Historic Preservation, and to summarize suggested actions necessary to end Section 106 consultation for the feasibility phase of the CEPP with the understanding that consultation will continue once the project is authorized. The meeting was conducted via teleconference with the Tom McCullouch of the ACHP office and the SAJ CEPP staff Archeologist Cynthia G. Thomas.

3. Overview: This meeting focused on discussions on the CEPP Section 106 compliance efforts.

4. Questions and Recommendations: The following questions were directed to the ACHP and responses were documented.

a. How does the ACHP feel about the expedited process used for the CEPP with regards to Section 106 and 36CFR 800?

1. The ACHP identified the project as being very complex with different consulting parties, conflicting interests of those consulting parties, and different land management practices. The study area's area of potential effect covers state owned lands, Tribal lands, and National Park Service lands, different levels of complexity than most projects. The ACHP referred to CEPP as appearing like the perfect storm.
2. The ACHP stated that currently all parties are cooperating and consultation has been very successful.
3. The ACHP asked if consulting parties understood the Federal process. The SAJ explained that multiple attempts had been made to educate the group being that many of the key consultation representatives are new to the process due to recent turnovers (State Historic Preservation Officer, Deputy State Archaeologist, Seminole Tribe of Florida Tribal Historic Preservation Office staff). The SAJ discussed the PCC1 and PCC2 class recently attended by staff from both the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida. Tuition was funded by the SAJ to assist these key partners in understanding our Federal planning process. Also discussed multiple efforts made by the CEPP Archeologist to further educate those involved.

b. Will ACHP formalize their observations of the project process in a letter?

1. The ACHP stated that there would be no need for a letter, however the suggested that a memo be written by SAJ providing an overview of the effort as of 19 Dec 2013. The ACHP also suggested that SAJ send a letter to all participants summarizing what had taken place during the CEPP study with regards to cultural resources, specifying decisions made and actions taken. The ACHP offered assistance in reviewing the letter for required language prior to mailing. The SAJ concurred with all suggestions and established a December deadline for completion of formal consultation for the feasibility phase of the CEPP with the understanding

that consultation will continue once the project is authorized and the CEPP enters into the Pre-construction, Engineering and Design phase.

c. Does the ACHP have any suggestions for how the process could have potentially worked better.
   1. The ACHP had no suggestions.

5 . Actions/Conclusion: The draft consultation summary letter will be sent to Tom McCullouch with the ACHP for review NLT 15 November 2013 and will include Section 106 consultation required attachments for the CEPP in its entirety.

THOMAS.CYNTHIA.G.1400734069 Digitally signed by THOMAS.CYNTHIA.G.1400734069 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=THOMAS.CYNTHIA.G.1400734069 Date: 2013.09.23 10:55:54 -04'00'

Cynthia G. Thomas
Archeologist, Central Everglades Branch

9/24/13

Kimberley A. Taplin
Chief, Central Everglades Branch

31 January 2013

CESAJ-PPD
MEMORANDUM FOR RECORD

SUBJECT: Pilot Program, Central Everglades Planning Project (CEPP), Florida, In Progress Review #3.1, Cultural Resources on 10 April 2012

1. Purpose: The purpose of this memorandum is to document the vertical team discussion, concurrence, and to summarize required actions that are necessary to reach Decision Point (DP) # 2. In Progress Review (IPR) #3.1 was conducted via teleconference and webinar with the South Florida Water Management District, OASA(CW), HQUSACE and SAD. A list of attendees is provided as Attachment 1.

2. Overview: This IPR was topic specific and focused on discussion of the cultural resources efforts being conducted for CEPP. The SAJ presentation for discussion included: 1) a general overview of the study, 2) a description of the areas of potential effect;3) a description of the existing information in the potential areas of effects; 4) an explanation of the proposed sampling strategy for WCA-3, and 5) the proposed schedule and cost for undertaking cultural resource surveys inWCA-3.

3. Issues, Discussion and Decisions: The following issues were discussed and recommended steps were established with the vertical team. These recommended steps are identified as "Actions."

a. Identification of historic/cultural sites and determination of eligibility: The SAJ team described the consultation that has taken place to date with the Tribes THPO and SHPO on the approach being undertaken in accordance with our Section 106 requirements. It was explained that the consultation and coordination to date has been through formal letters, meetings, email and meeting summaries. HQ advised that formal documentation from the Tribes was a better path forward and all agreed to make an effort to obtain formal documentation. Such documentation will likely be received from the Seminole Tribe but is unlikely to be received from the Miccosukee Tribe. In the absence of formal documentation, the email correspondence and meeting summaries will serve to document the required coordination and consultation. The team was asked whether coordination with the Advisory Council had been undertaken. The team indicated that no coordination with the Advisory Council had occurred to date.

ACTIONS: The District will coordinate with the Advisory Council and will follow-up with HQ about the reaction. Paul Rubenstein suggested that SAJ keep a formal record of the request and follow Appendix A.

Determination of Effects: The team explained that the PIR will document the assessment of effects based upon existing information and the cultural resources survey information being collected in WCA-3 and A-2 sites in the EAA for CEPP. The team identified that there may be a need for additional survey data to be collected depending upon the final A-2 construction footprint associated with the yet to be defined recommended plan. The team

further explained that a study to assess effects from changing water levels is being undertaken as part of ERTP. For ERTP, the assessment will be based on those sites identified in the ERTP study. A ROD and PA is expected to be completed for ERTP within the next month. The CEPP PIR will describe how the ERTP study and documentation relate to the CEPP. It was noted that the Section 106 consultation may not be completed by the time the PIR and ROD are completed. It was agreed and understood that the PIR will document the consultation conducted throughout the CEPP study and describe the consultation that will need to be continued subsequent to completion of the PIR and ROD for CEPP. The PIR will include a cost analysis that takes into account any NHPA issues and will include appropriate contingencies.

4. Conclusion: There was a brief summary of the outcome of the discussions at the end of the meeting and all participants agreed upon the stated outcomes.

Eric L Bush
Chief, Planning and Policy Division

SAJ	Discipline
Stuart Appelbaum	Chief, Planning Division. SAJ
Eric Summa	Chief, Environmental Branch, SAJ
Kim Taplin	Chief, Central Everglades Study Branch, SAJ
Ray Wimbrough	Plan Formulation, PTL, SAJ
Natalie Garrett	Tribal Liaison, SAJ
Brad Foster	Plan Formulation, PTL SAJ
Melissa Nasuti	Ecosystem Evaluation , SAJ
Gina Ralph	Environmental, NEPA , SAJ
Kevin Wittmann	Economics SAJ
Kim Vitek	Project Manager , SAJ
Murika Davis	Engineering Lead , SAJ
Cynthia Thomas	Cultural Resources , SAJ
Brooks Moore	Office of Council, SAJ
Dan Hughes	Environmental Branch, SAJ
SFWMD participants	
Matt Morrison	Project Manager, SFWMD
Tom Teets	SFWMD
Beth Lewis	SFWMD
Paul Warner	SFWMD
Meghan Jacoby	SFWMD
Armando Ramirez	SFWMD
SAD	
Mike Magley	Plan Formulation
Wilbert Paynes	Chief, Planning
HQ	
Steve Kopecky	SAD-RIT Planner
Stacey Brown	SAD-RIT
Lee Ware	Office of Water Project Review
Jeanette Gallihugh	Office of Water Project Review
Paul Rubenstein	Policy Analyst
Katherine Chekouras	Counsel

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

JUN 0 6 2012

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

Mr. Reid Nelson
Advisory Council on Historic Preservation
Old Post Office Building
1100 Pennsylvania Avenue, NW, Suite 803
Washington, DC 20004

Dear Mr. Nelson:

The U.S. Army Corps of Engineers (Corps) and the Assistant Secretary of the Army senior leadership have collaboratively worked to identify and discuss opportunities to modernize the Civil Works Planning Program to better address water resources challenges that face the nation. One priority for addressing these challenges is shortening the time between initiation of a planning study and initiation of construction by incorporating both the current Reconnaissance and Feasibility phases into a single cohesive preauthorization process in a targeted goal of 18 months.

The Central Everglades Planning Project (CEPP) is one of seven projects chosen to be a part of the Corps initiated National Planning Pilot Program. The CEPP is identified as a multiagency study with the Corps as the lead agency in partnership with the South Florida Water Management District (SFWMD). The target of the CEPP is to deliver within two years, a finalized plan known as a Project Implementation Report (PIR) for a suite of restoration projects in the central Everglades. This PIR is in preparation to seek Congressional authorization for the CEPP as part of the Comprehensive Everglades Restoration Plan (CERP) implemented in 1999. Enclosure 1 provides information regarding the approach for the new study plan. Also, visit http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx for further information regarding CEPP including but not limited to public comments, Working Group Meetings and Planning and Development Team Meetings.

Under Section 106 of the National Historic Preservation Act of 1966, as amended and implementing regulations 36CFR 800, as amended, we are assessing our needs for information regarding historic properties that may be affected by the undertaking. Although the exact suite of previously implemented projects have yet to be determined, due to the expeditious nature of CEPP, the Corps has completed an extensive review of LiDar data, historic and modern aerial photographs, and historic land records (e.g. General Land Office, plat maps, surveyors notes, etc.) to ascertain high probability of historic sites location. In addition, USACE has conducted

an extensive search of the Florida Bureau of Archaeological Research, Florida Master Site Files (FMSF) to identify previously recorded cultural resource sites within the study area, and to ascertain the adequacy of past cultural resource surveys conducted within the larger CERP study area (Enclosure 2). Simultaneously, as previously implemented projects are identified to be a part of CEPP we will continue to do consultation, background reviews, cultural resource surveys, and determinations of significance and eligibility for listing of historic properties to the National Register of Historic Places until compliance with the National Historic Preservation Act is complete.

Enclosure 3 provides a summary of previous cultural resources investigations within the CEPP Feasibility Study area of potential effect (APE), in addition to a summary of project specific alternatives for many of the previously implemented projects under consideration for the CEPP. Currently, only two previously implemented projects have been identified as part of the CEPP: Decomp and Component A-1 and A-2. Through consultation with the State Historic Preservation Office (SHPO), the Seminole Tribe of Florida Tribal Historic Preservation Office (STOF-THPO), and the Miccosukee Tribe of Indians of Florida Cultural Resource Representative, it was determined that identification and assessment of historic properties within the areas is warranted, therefore a sampling strategy and field testing plan was developed. Fieldwork for WCA3 will be completed prior to the PIR, however , due to litigation between the SFWMD and the leasee that is currently preventing access to the property, fieldwork for Component A-1 and A-2 may be delayed until after the PIR, but prior to construction. As stated previously, once other previously implemented projects are identified, we will continue with the Section 106 process until complete. Finally, once the final array of alternatives are selected we will then determine effects, if any, and provide documentation in accordance with 36 CFR 800.11.

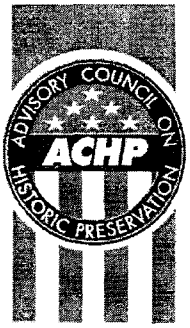
In addition to contacting your office, Corps has identified other potential consulting parties, and pursuant to 36 CFR 800.4, is consulting with Florida federally recognized tribal governments (Miccosukee Tribe of Indians of Florida, and Seminole Tribe of Florida) on at least a bi-weekly basis, Florida's SHPO, and Everglades National Park (Enclosure 4).

At this time, the Corps would like to extend an invitation for you or a designated member of your staff to review the information provided to determine whether to enter into consultation pursuant to Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases,* of 36 CFR Part 800. Ms. Cindy Thomas has been designated as Corps Staff Archaeologist for CEPP. Any questions or concerns that you may have can be addressed by Ms. Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Kenneth R Dupo

for Eric Summa
Chief, Environmental Branch



Preserving America's Heritage

August 17, 2012

Lieutenant General Thomas P. Bostick
Commanding General
U.S. Army Corps of Engineers
441 G. Street, NW
Washington, DC 20314-1000

REF: Project Implementation Report for the Central Everglades Planning Project

Dear Lieutenant General Bostick:

The Advisory Council on Historic Preservation (ACHP) has been invited to participate in the referenced undertaking by the Jacksonville District of the Corps of Engineers to help ensure that historic properties are fully considered in the management and control of water resources in the Everglades. Pursuant to the Criteria for Council Involvement in Reviewing Individual Section 106 Cases (Appendix A to our regulations, 36 CFR Part 800) we believe the criteria are met for our participation in this undertaking. Development and implementation of plans to better manage water resources will involve important questions of policy and interpretation and could have substantial impacts to important historic properties. Accordingly, the Advisory Council on Historic Preservation will participate in consultation with the Jacksonville District on this undertaking.

By copy of this letter we are also notifying Mr. Eric Summa, Chief of the Jacksonville District's Environmental Branch, of our decision to participate in consultation.

Our participation will be handled by Dr. Tom McCulloch, who can be reached at 202-606-8554 or at tmcculloch@achp.gov. We look forward to working with the Corps on this important project.

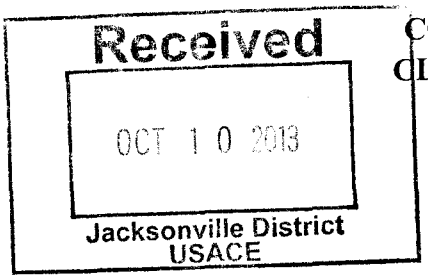
Sincerely,

John M. Fowler
Executive Director

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov

SA 1-106 - CORPS

COUNTY: ALL



DATE: 8/28/2013
COMMENTS DUE DATE: 10/1/2013
CLEARANCE DUE DATE: 10/13/2013
SAI#: FL201308286704C
REFER TO: FL201112066056

MESSAGE:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
AGRICULTURE	SOUTH FLORIDA WMD		
ENVIRONMENTAL PROTECTION			
FISH and WILDLIFE COMMISSION			
X STATE			
TRANSPORTATION			

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

_ **Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.**

X **Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.**

_ **Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.**

_ **Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.**

Project Description:

DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - DRAFT INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT, CENTRAL EVERGLADES PLANNING PROJECT (CEPP) - SOUTH FLORIDA.

To: Florida State Clearinghouse

AGENCY CONTACT AND COORDINATOR (SCH)
3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

EO. 12372/NEPA Federal Consistency

- ☐ No Comment
- ☐ Comment Attached
- ☐ Not Applicable
- ☐ No Comment/Consistent
- ☑ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

From:

Division/Bureau: Historic Preservation

Reviewer: T. Parsons

Date: 10/1/13

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Lauren P. Milligan
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399-300

October 1, 2013

Re: DHR Project File No.: 2013-4293
Corps of Engineers – Draft Integrated Project Implementation Report and Environmental Impact Statement, Central Everglades Planning Project (CEPP)

Dear Ms. Milligan:

Our office reviewed the draft PIR/EIS for the Central Everglades Planning Project in accordance with the National Environmental Policy Act of 1969 and implementing regulations. We find the document to be consistent with federal regulation regarding the treatment of historic properties/cultural resources under NEPA.

As noted in Appendix C.2.1.7 of the document, Section 106 consultation regarding the potential effects of CEPP operations on historic properties is ongoing. We will continue to work with our federal, state, and tribal partners as the project progresses to ensure compliance with Section 106, and to minimize impacts to historic properties.

If I can be of any further help, or if you have any questions about this letter, please feel free to contact me at *timothy.parsons@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,

Timothy A. Parsons, Ph.D., RPA
Compliance Review Supervisor
and Deputy State Historic Preservation Officer

Pc. Eric P. Summa
Chief, Environmental Branch
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Cindy Thomas
Jacksonville District Corps of Engineers
P.O Box 4970
Jacksonville, Florida 32232-0019

October 7, 2013

Re: DHR Project File No.: 2013-3571 / 1A-32 Permit No.: 1213.002
Technical Report: Performance Work Statement #W912EP-10-D-0018, Central Everglades Planning Project Cultural Resources Survey of Water Conservation Areas 3A and 3B, Broward and Miami-Dade Counties, Florida

Dear Ms. Thomas:

Our office received and reviewed the above referenced report in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*, and Chapters 267, *Florida Statutes,* for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the National Register of Historic Places (NRHP).

Between June 2012 and July 2013, New South Associates, Inc. (New South) conducted a Phase I cultural resource assessment survey of Water Conservation Areas 3A and 3B on behalf of the Jacksonville District of the U.S. Army Corps of Engineers. During the archaeological survey, 15 sites were investigated. Five were previously known sites that did not produce any cultural material. New South recommends that these sites be revisited during the dry season. The remaining 10 sites were all previously unrecorded. Of these 10 sites, nine (8BD4974, 8BD4975, 8BD4976, 8BD4977, 8BD4978, 8BD4979, 8BD4980, 8BD4981, and 8BD4982) were determined to be eligible for listing in the NRHP under Criterion D, and one (8DA12830) was not evaluated. New South recommends further testing for sites 8BD4975, 8BD4976, 8BD4978, 8BD4979, 8BD4980, 8BD4981, and 8DA12830, and avoidance for sites 8BD4974, 8BD4977, and 8BD4982 due to the presence of human remains.

During the historic structures portion of the survey, six historic canals and 20 structures/properties associated with the canals were examined. Of the 20 structures/properties, only five were 50 or more years old. The sections of Miami Canal (8BD4840/8DA6525) and South New River Canal (8BD4153) were determined to be eligible for listing in the NRHP. In addition, structures 8BD4984 and 8DA12827 were also determined to be eligible for listing in the NRHP. Three historic canals/levees (8BD4987/8DA12829, 8BD4988, AND 8DA12826), and two historic bridges (8BD4986 and 8DA12828) were recommended not eligible for listing in the NRHP. New South recommends further testing for 8BD4985.

Based on the information provided, our office concurs with these determinations and finds the submitted survey report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code.*

For any questions concerning our comments, please contact Deena Woodward, Community Assistance Consultant by electronic mail at deena.woodward@dos.myflorida.com, or by phone at 850.245.6333. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely

Robert F. Bendus, Director
Division of Historical Resources
and State Historic Preservation Officer

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Cindy Thomas
Jacksonville District Corps of Engineers
P.O Box 4970
Jacksonville, Florida 32232-0019

October 15, 2013

Re: DHR Project File No.: 2013-4407 / Received by DHR: September 17, 2013
Phase I Archaeological Survey of a 5.38-Mile Corridor Along the L-67 Extension, Miami-Dade County, Florida

Dear Ms. Thomas:

Our office received and reviewed the above referenced report in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*, and Chapters 267, *Florida Statutes*, for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the National Register of Historic Places (NRHP).

In January 2013, the Corps with the assistance of the Everglades National Park (ENP) staff conducted a Phase I archaeological survey within the proposed L-67 Extension APE corridor. The Corps identified no cultural resources within the project area during the investigation. The Corps determined that the proposed project will have no effect on cultural resources listed, or eligible for listing in the NRHP, or otherwise of archaeological, historical, or architectural significance. If alterations to the L-67 extension take place after the levee, canal, and associated features have reached 50 years, this office concurs with the recommendation from the Corps that these resources are revisited and recorded for the Florida Master Site File.

Based on the information provided, our office concurs with these determinations and finds the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code.*

For any questions concerning our comments, please contact Sarah Liko, Historic Sites Specialist, by electronic mail at Sarah.Liko@DOS.MyFlorida.com, or by phone at 850.245.6333. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely

Robert F. Bendus, Director
Division of Historical Resources
and State Historic Preservation Officer

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

Document Transmittal Form

Date:	January 15, 2014
To:	Timothy Parsons, Deputy State Historic Preservation Officer
Organization:	Division of Historical Resources
Address:	500 South Bronough Street Tallahassee, Florida 32399-0250
Contact No.:	(850) 245-6339
Items Sent:	Final report titled, "Phase I Historical and Archaeological Survey of the Miami Canal within WCA-3A, Levee 4-5 Spreader Channel, and Levee 5 Spreader Channel Pump Station, Broward and Dade Counties, Florida" **DHR Project File No. 2012-2895 / 1A-32 Permit No.: 1112.001**
Sent By: **Contact No.:**	Daniel Hughes (904) 232-3028
Transmitted Via:	FED-EX
Message:	Enclosed are one bound copy of the final report and one unbound copy of FMSF forms. Also enclosed is correction/clarification, and updated and/or new FMSF forms, that should accompany the above referenced report. These documents have been provided as hard copies. Please contact me should you have any questions.

C.5.4 Written Correspondence: Native Americans

December 07, 2011 USACE to MTIF CEPP Invitation to Public Workshops
December 07, 2011 USACE to STOF CEPP Invitation to Public Workshops
December 27, 2011 USACE to MTIF CEPP Invitation Section 106 Consultation Bi-Weekly
December 27, 2011 USACE to STOF CEPP Invitation Section 106 Consultation Bi-Weekly
January 20, 2012 MTIF to USACE CEPP NEPA Scoping Response Letter
March 06, 2012 USACE to STOF CEPP WCA 3 and EAA Field Testing Plan
March 06, 2012 USACE to MTIF CEPP WCA 3 and EAA Field Testing Plan
July 10, 2012 STOF to USACE Modified Waters Deliveries WCA3 L4 and L5 Spreader and Pump Station Report Comments
J**uly 12, 2012** USACE to MTIF CEPP WCA 3 Signed Survey Plan
September 26, 2012 STOF to USACE Requesting CEPP Human Remains Policy
October 15, 2012 USACE to STOF Response Letter to STOF Letter Dated 9-26-2012 Regarding CEPP Human Remains Policy
November 07, 2012 STOF to USACE Response Letter to USACE Letter Dated 10-05-2012 Regarding Big Cypress Reservation Hydration (S-190 and Western Basins)
March 19, 2013 STOF to USACE Follow-up Letter to 03-08-2013 Meeting - CEPP Development of Adaptive Management Plan and MOA
April 01, 2013 USACE to STOF CEPP WCA3 Phase I Draft Report Request for Section 106 Review
April 01, 2013 USACE to MTIF CEPP WCA3 Phase I Draft Report Request for Section 106 Review
May 23, 2013 STOF to USACE WCA3 Phase I Draft Report Comments – Response to 05-01-2013 Letter
June 19, 2013 USACE to STOF Response Letter to STOF Letter Dated 03-19-2013 and Follow-up Letter to STOF Face To Face Meeting 05-15-2013 – CEPP Adaptive Management and MOA.
July 16, 2013 STOF to USACE Email and Attachment – STOF Comments on Working Rough Draft PIR/EIS
July 26, 2013 USACE to MTIF CEPP EAA A-2 Phase I Draft Report Request for Section 106 Review
July 26, 2013 USACE to STOF CEPP EAA A-2 Phase I Draft Report Request for Section 106 Review
July 26, 2013 USACE to MTIF CEPP L-67 Extension Phase I Draft Report Request for Section 106 Review
July 26, 2013 USACE to STOF CEPP L-67 Extension Phase I Draft Report Request for Section 106 Review
August 13, 2013 USACE to MTIF CEPP WCA3 Addendum Phase II Draft Report Request for Section 106 Review
August 13, 2013 USACE to STOF CEPP WCA3 Addendum Phase II Draft Report Request for Section 106 Review
August 21, 2013 USACE to STOF Transmittal Letter for CEPP WCA3 Phase I Final Report (FTP Fileshare)
August 26, 2013 STOF to USACE CEPP EAA A-2 Draft Report Comments – Response to 7-26-2013 Letter
September 21, 2013 USACE to STOF Transmittal Letter for CEPP EAA A-2 Phase I Final Report
September 21, 2013 USACE to STOF Transmittal Letter for CEPP L-67 Extension Phase I Final Report
September 21, 2013 USACE to STOF Transmittal Letter for CEPP WCA3 Phase I Final Report (Fed-ex)
October 15, 2013 STOF to USACE CEPP Draft PIR-EIS Comments
November 20, 2013 USACE to STOF Response Letter to STOF CEPP Draft PIR/EIS Comment Letter Dated 10-15-2013 *****See Appendix C.3, Table C.3.3-2 Draft PIR/EIS Comment Response Matrices, under "Seminole" for more detailed responses to each comment.**
January 26, 2014 USACE to STOF Modified Waters Deliveries WCA3 L4 and L5 Spreader and Pump Station Final Report and USACE Corrections

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

DEC 07 2011

Planning and Policy Division
Environmental Branch

Honorable Colley Billie
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021, Tamiami Station
Miami, Florida 33144

Dear Chairman Billie:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Central Everglades Planning Project. The goal of the Central Everglades Planning Project would be to develop an integrated, comprehensive technical plan for the first increment of project features to be recommended for authorization for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem. The Corps respectfully requests to meet with you and your staff routinely throughout this planning process to ensure any issues or concerns the Tribe may have are identified and we receive your input regarding the development of this plan. Additionally, the Corps would also like to invite you or your designated staff to participate on the Project Delivery Team that will be conducting the technical analyses and evaluations in support of plan development and selection. I, along with select staff, would be pleased to meet with you to discuss Central Everglades Planning Project.

The Everglades ecosystem encompasses a system of diverse wetland landscapes that are hydrologically and ecologically connected across more than 200 miles from north to south and across 18,000 square miles of southern Florida. In 2000, the U.S. Congress authorized the Federal government, in partnership with the State of Florida, to embark upon a multi-decade, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) to further protect and restore the remaining Everglades ecosystem while providing for other water-related needs of the region. CERP involves modification of the existing network of drainage canals and levees that make up the Central and Southern Florida Flood Control Project.

Since 2000, much progress has been made. Construction has begun on the first generation of CERP project modifications already authorized by Congress. These include the Picayune Strand Restoration, the Indian River Lagoon South and Site 1 Impoundment projects. Project Implementation Reports have been completed, or are nearing completion, for the second generation of CERP projects for Congressional authorization, including Biscayne Bay Coastal Wetlands – Phase 1, the Broward County Water Preserve Areas, the Caloosahatchee River (C-43) West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. All of these CERP projects utilize lands that were acquired by the State and Federal government to meet CERP goals of increasing the extent of wetlands, reducing damaging freshwater discharges to the coastal estuaries, and reducing seepage losses from the natural system. These projects contribute significant ecological benefits to the system and the specific regional habitats in which they are located. These initial CERP projects were intended to provide initial and immediate ecological benefits and set the conditions along the margins of the system that help ensure increased water flows to the interior of the system will not cause adverse effects.

The next step for implementation of CERP is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park and Florida Bay. The Central Everglades Planning Project (Figure 1) will develop the initial increment of project features that provide for storage, treatment and conveyance south of Lake Okeechobee, removal of canals and levees within Water Conservation Area 3, and seepage management features to retain water within the natural system. The CERP projects identified to accomplish this include the Everglades Agricultural Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park (ENP) Seepage Management, and Everglades Rain-Driven Operations. These projects make up the heart of CERP aimed at restoring more natural quantity, quality, timing and distribution of water flows to the remaining portions of the river of grass. An integrated study effort on these projects is needed to set the direction for continued CERP implementation.

The Corps will also hold a Public Workshop December 14 from 6:30 to 9:00 p.m. at the Sheraton Suites Plantation, Plantation I/II Room, 311 North University Drive, Plantation, Florida and December 15, 2011 from 6:30 to 9:00 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, Florida. The formal portion of the workshop will begin at 7:00 p.m. The CES team will be available prior to and after the formal presentation to provide information and answer questions about the projects and development of a proposed plan. Interested attendees can call 904-232-1613 for any special services.

We look forward to the opportunity to meet with you. Please contact Kim Taplin 561-801-0285 at your earliest convenience to schedule.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
12/07/11

Enclosure

Copy Furnished:

Bernie Roman, Miccosukee Tribal Attorney; PO Box 440021 Tamiami Station; Miami, Florida 33144
Fred Dayhoff, Section 106 and NAGPRA Consultant; PO Box 440021 Tamiami Station; Miami, Florida 33144
James Erskine, Water Resources Director; PO Box 440021 Tamiami Station; Miami, Florida 33144
Rory Feeney, Miccosukee Wildlife Director; PO Box 440021 Tamiami Station; Miami, Florida 33144
Terry Rice, Colonel (Ret'd), PhD, PE; Miccosukee Everglades Consultant; 6526 S Kanner Highway, PMB 316; Stuart, Florida 34997

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

DEC 07 2011

Planning and Policy Division
Environmental Branch

Honorable James Billie
Chairman, Seminole Tribe of Florida
6300 Stirling Boulevard
Hollywood, Florida 33024

Dear Chairman Billie:

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The Everglades ecosystem encompasses a system of diverse wetland landscapes that are hydrologically and ecologically connected across more than 200 miles from north to south and across 18,000 square miles of southern Florida. In 2000, the U.S. Congress authorized the Federal government, in partnership with the State of Florida, to embark upon a multi-decade, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) to further protect and restore the remaining Everglades ecosystem while providing for other water-related needs of the region. CERP involves modification of the existing network of drainage canals and levees that make up the Central and Southern Florida Flood Control Project.

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The Corps will also hold a Public Workshop December 14 from 6:30 to 9:00 p.m. at the Sheraton Suites Plantation, Plantation I/II Room, 311 North University Drive, Plantation, Florida and December 15, 2011 from 6:30 to 9:00 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, Florida. The formal portion of each workshop will begin at 7:00 p.m. The Central Everglades Planning Project team will be available prior to and after the formal presentation to provide information and answer questions about the projects and development of a proposed plan. Interested attendees can call 904-232-1613 for any special services.

We look forward to the opportunity to meet with you. Please contact Kim Taplin 561-801-0285 at your earliest convenience to schedule.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
12/27/11

Enclosure

Copy Furnished:

Craig Tepper, Director of Water Resource Management, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Jim Shore, General Counsel, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Willard Steele, Seminole Tribe of Florida, Tribal Historic Preservation Officer, 30290 Josie Billie Highway, PMP 1004, Clewiston, Florida 33440

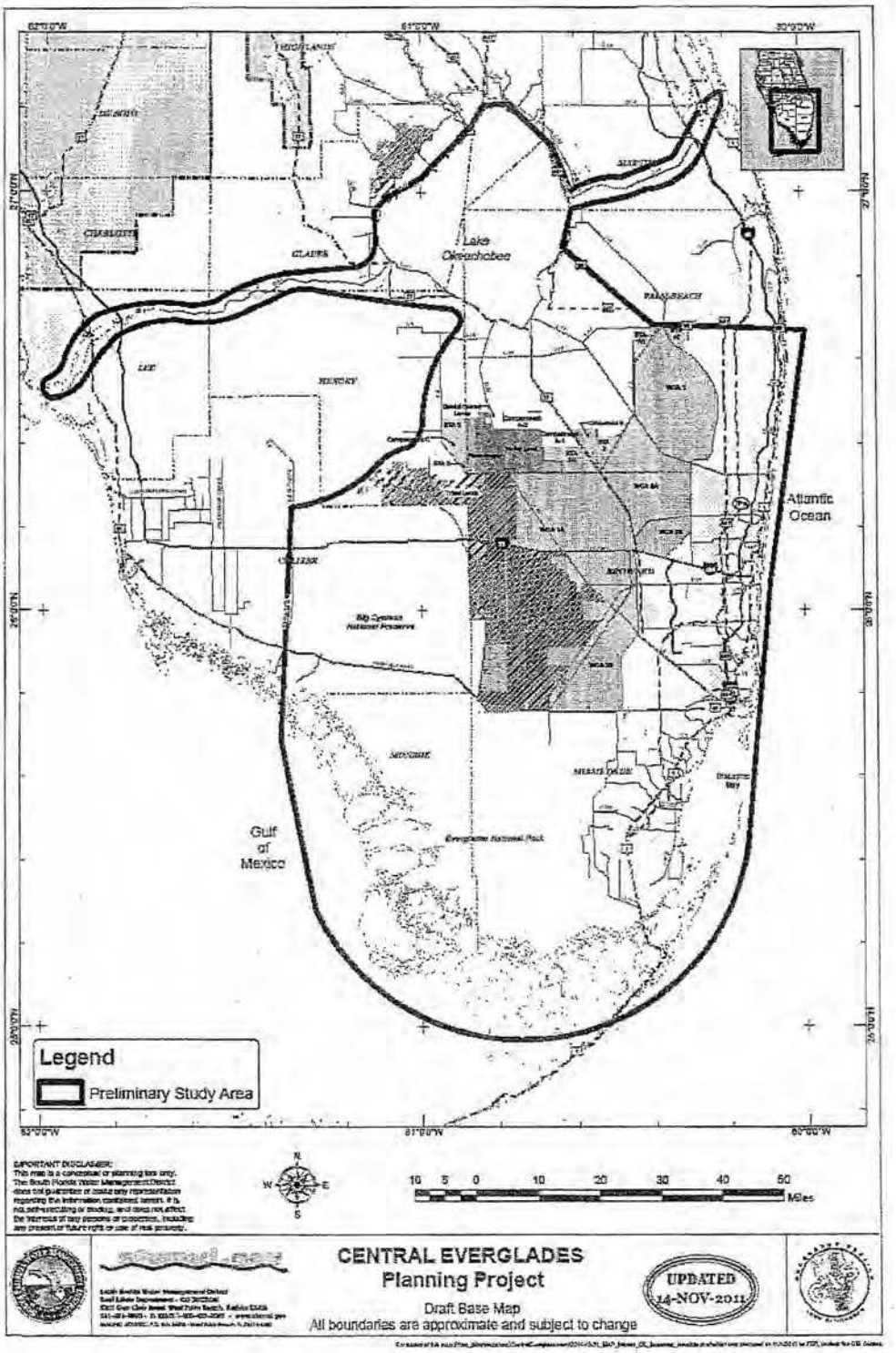

Figure 1. Central Everglades Planning Project Preliminary Study Area.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

DEC 27 2011

Planning Division
Environmental Branch

Honorable Colley Billie
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021, Tamiami Station
Miami, Florida 33144

Dear Chairman Billie:

As stated in the National Environmental Policy Act scoping letter dated December 07, 2011, the U.S. Army Corps of Engineers (Corps), Jacksonville District, in partnership with the South Florida Water Management District (SFWMD), have initiated an 18-month expedited pilot project known as the Central Everglades Planning Project (CEPP). The goal of the CEPP is to develop an integrated, comprehensive technical plan for the first increment of project features to be recommended for authorization for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem. The scope of this project includes increments of the following Comprehensive Everglades Restoration Plan (CERP) components: Everglades Agricultural Area Storage Reservoirs, Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement, Everglades National Park Seepage Management, and Everglades Rain-Driven Operations.

Under Section 106 of the National Historic Preservation Act of 1966, as amended and implementing regulations 36 CFR Part 800, as amended, we are assessing our needs for information regarding historic or undocumented traditional cultural properties that might be affected by the undertaking. Although the exact project footprint has yet to be determined, due to the expeditious nature of CEPP, the Corps is currently conducting an extensive review of the Florida Master Site Files (FMSF) to identify previously recorded cultural resource sites and to ascertain the adequacy of past cultural resources surveys conducted within the larger CEPP study area. To insure internal deadlines are met for this project, FMSF review, identification of areas in need of Phase I Survey, and development of a survey methodology are projected to be completed by the end of January 2012. Tentatively, initiation of Phase I Surveys will start mid-March 2012. This will ensure that any necessary cultural resource investigations are completed in a timely manner.

Therefore, we would like to extend an invitation for you or a designated member of your staff to consult with us throughout this process to ensure that all concerns are addressed during these efforts. It is expected that one-on-one discussions regarding the project could take place as monthly or bi-monthly meetings, and either in person or via conference call. Ms. Cindy Thomas has been designated as Corps Staff Archaeologist for CEPP, and will be initiating contact with you (or designee) immediately upon response to this letter. Any questions or concerns that you may have at this time can also be addressed by Ms. Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
12/27/11

Enclosure

Copies Furnished:
Mr. Bernie Roman, Miccosukee Tribal Attorney, PO Box 440021 Tamiami Station, Miami, Florida 33144
Mr. Fred Dayhoff, Section 106 and NAGPRA Consultant, PO Box 440021 Tamiami Station, Miami, Florida 33144
Mr. Rory Feeney, Fish and Wildlife Director, PO Box 440021 Tamiami Station, Miami, Florida 33144

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

Honorable James Billie
Chairman, Seminole Tribe of Indians of Florida
6300 Stirling Boulevard
Hollywood, Florida 33024

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Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
12/27/14

Enclosure

Copies Furnished:
Mr. Willard Steele, Seminole Tribe of Florida, Tribal Historic Preservation Officer, 32090 Josie Billie Highway, PMP 1004, Clewiston, Florida 33440
Jim Shore, General Counsel, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024

Thomas/CESAJ-PD-EP/1180
Kinard/CESAJ-DD
Applebaum/CESAJ-ED
Taplin/CESAJ-DR-W
Summa/CESAJ-ED-E
Acosta/CESAJ-PD-EP
for Garrett/CESAJ-PM-E CT 12/27
Vitek/CESAJ-PM
Goral/CESAJ-OC
Hobbie/SESAJ-PPMD
Gapinski/CESAJ-DX
LTC Barker/CESSAJ-DD
COL Pantano/CESAJ-DE AP
12/27/14

Miccosukee Tribe of Indians
of Florida

Business Council Members
Colley Billie, Chairman
Jasper Nelson, Ass't. Chairman
Jerry L. Cypress, Treasurer
Andrew Bert Sr., Secretary
William M. Osceola, Lawmaker

January 20, 2012

Colonel Alfred Pantano (Alfred.A.Pantano@usace.army.mil)
United States Army Corps of Engineers
701 San Marco Blvd.
The Prudential Building
Jacksonville, Florida 32207-8175

Via E-Mail and Express Mail

Re: Comments by the Miccosukee Tribe of Indians of Florida on the NEPA Scoping for the Central Everglades Planning Project (CEPP)

Attention: Dr. Gina Paduano Ralph at CEPPComments@usace.army.mil

Dear Colonel Pantano:

Enclosed, please find the official comments of the Miccosukee Tribe of Indians of Florida in response to your request regarding scoping for the Central Everglades Planning Project (CEPP) under the National Environmental Policy Act (NEPA).

For over 13 years, allegedly to protect the Cape Sable seaside sparrow, discriminatory water management actions have flooded and degraded hundreds of thousands of acres of Tribal Everglades in Water Conservation Area 3A that are vital to the culture and way of life of the Tribe. The high water levels caused by these actions also posed a threat to the health and safety of the Miccosukee community and brought the Snail Kite to the verge of extinction. Sadly, a vast area of the Everglades, which the government promised to preserve in a natural state *in perpetuity* for the Tribe, has been severely degraded.

Based upon our experts' review of the Corps' selected plan for the Everglades Restoration Transition Plan (ERTP) as presented in your recently released Final Environmental Impact Statement dated March 4, 2011, the Tribe is cautiously optimistic that the ERTP should begin to alleviate some of the harm in Water Conservation Area 3A caused by more than a decade of discriminatory water management actions. In addition, the Corps has an opportunity under the Combined Operational Plan for the Modified Water Deliveries and C-111 projects to move Everglades Restoration even further ahead. While this plan has yet to be developed, a water management plan that moves us farther toward

P.O. Box 440021, Tamiami Station, Miami, Florida 33144, (305) 223-8380, fax (305) 223-1011
Constitution Approved by the Secretary of the Interior, January 11, 1962

restoration would make significant strides in protecting the Miccosukee culture and cultural resources once implemented.

Now, the Corps is proposing the Central Everglades Planning Project to develop a plan for a suite of projects in the Central Everglades to prepare for Congressional authorization as Comprehensive Everglades Restoration Plan (CERP). As you know, the Tribe has long raised concerns that vital restoration projects were being delayed and that the Central Everglades was being left out of the CERP process. Therefore, the Tribe is pleased to see an emphasis on projects for the central Everglades, which is the Tribe's traditional homeland. The Tribe, which has participated in more than twenty years of restoration planning, is concerned that to date no CERP projects that would benefit the Central Everglades, including Tribal lands, have been built. The Tribe is hopeful that the CEPP process will not turn into yet another planning process that produces no restoration results. In addition, care must be taken to ensure that projects are designed and implemented in such a way that they follow all applicable law. Finally, any so-called "new science" must not be used to attempt to justify sacrificing the Tribal Everglades in WCA-3A for the Park downstream. Thus, we believe it is very important that you sincerely consider, and adequately address, during your NEPA process, all the issues and concerns that have been identified by our experts if you are to actually achieve success.

As always, the Tribe expects that all agencies not only comply with all federal environmental statutes, but also with their Trust Responsibility to the Miccosukee people.

Finally, the Tribe hopes that the plan that is devised will treat all parts of the Everglades, and all species, equally and will only deliver water that is clean. Only by protecting all parts of the Everglades equally, and delivering clean water, will the goal of Everglades Restoration be achieved.

Sincerely,

Colley Billie
Chairman

MEMORANDUM

TO: Chairman Colley Billie
Miccosukee Tribe of Indians of Florida

FROM: Mr. James Erskine, Acting Miccosukee Water Resources Director; Mr. Rory Feeney, Miccosukee Wildlife Director; Col. (Ret'd) Terry L. Rice, PhD, PE; Ms. Joette Lorion, Environmental Consultant

DATE: January 13, 2012

SUBJECT: Identification of Issues and Concerns to Be Addressed in the Central Everglades Planning Project ("CEPP") National Environmental Policy Act ("NEPA") Document Proposed by the US Army Corps of Engineers.

The following memorandum includes our expert analyses of the issues and concerns that the Army Corps of Engineers ("Corps") should address in the National Environmental Policy Act ("NEPA") document that the Corps plans to prepare related to the Central Everglades Planning Project ("CEPP"). The Notice of Intent to prepare an Environmental Impact Statement ("EIS") for CEPP was issued in the Federal Register on December 2, 2011. A Public Notice sent by the Corps stated that: "Public comments on the Central Everglades Planning Project are being accepted through January 20, 2012. Thus, we recommend that this memorandum be submitted to the U.S. Army Corps of Engineers on or before January 20, 2012, as the Miccosukee Tribe's issues and concerns.

Background: Beginning as early as the 1880s, humans began modifying the natural hydrology of South Florida and the Everglades. Over the years, anthropogenic changes have, among other things, removed areas from the natural system, caused some areas to flood while others are dried out, and, in general, stopped the natural flow of water through the Greater Everglades Ecosystem.

Finally in 1989, the U.S. Congress directed the U.S. Army Corps of Engineers to begin the restoration of flows through the Everglades "to the extent practicable" in Public Law 101-229, the Everglades National Park Protection and Expansion Act, which authorized the Modified Water Deliveries ("MWD") project. The February 1991 Environmental Impact Statement ("EIS") on the MWD project stated that the Everglades National Park Protection and Expansion Act authorized construction of the project based on "the environmental benefits to be derived by the Everglades ecosystem in general and by the park in the particular." EIS at 3. The 1992 Final EIS promised that the project would benefit approximately 100,000 acres of wetlands in NESR, 600,000 acres of wetlands in WCA-3, and 200,000 acres within the Shark River Slough Basin of the Park. FEIS at EIS-32. The expectation of Congress was that this project would be completed

by approximately 1997. Despite a Government Accountability Office ("GAO") Report and Congressional hearings on the delay of the MWD project, it is now 2013 and the Corps is still years away from total completion given the original scope of the project.

On a parallel track with the MWD project, the Corps agreed to modify C-111 South Dade components of the Central and South Florida project ("C&SF") in order to restore flows through Taylor Slough, which eventually enter Florida Bay. As with the MWD project, the C-111 modifications have been in the works for over two decades without being completed. The completion of both the MWD and C-111 projects, and an operational plan to implement them, are extremely important to the Miccosukee Tribe. This is primarily because they will permit increased water to move south through the historic flow path of the Everglades, thus relieving Tribal land in WCA 3A north of Tamiami Trail from unnatural inundation and ongoing, irreversible destruction.

While these two projects were being planned and implemented at a snail's pace, the Fish and Wildlife Service ("FWS") declared jeopardy on the Cape Sable seaside sparrow ("the Sparrow") in 1997 under the provisions of the Endangered Species Act ("ESA"). The draconian and discriminatory water management changes, which the Corps made at the behest of the FWS, further exacerbated the flooding of Tribal land. The Corps began with emergency deviations in December 1997, and followed these with the Interim Structural and Operational Plan ("ISOP") in 1999, and the Interim Operational Plan ("IOP") in 2002; each made the flooding of Tribal land progressively worse. As preposterous as it sounds, all of these operational plans moved the Everglades further away from the restoration and have not helped the "Sparrow."

In 2003, the Corps began planning operational rules for the day that the MWD and C-111 projects would be completed. This effort was dubbed the Combined Structural and Operational Plan ("CSOP"). Tribal representatives participated in more than 22 meetings of a CSOP advisory team formed by the Task Force under the mistaken assumption that all the interests actually supported the goal of finally operating these projects in a manner that would begin the restoration process. After four years of intensive work on the part of many, to include the Tribe's representatives, and a consensus agreement on the part of a large majority of participants, the Corps abandoned the CSOP effort. ENP, with the support of their environmental allies, refused to support the plan for clearly unjustifiable reasons, including that the proposed Alternative 5R would allegedly harm the western "Sparrow" subpopulation A. As discussed herein, this issue is both a red herring and contrary to Everglades restoration.

In reality, the CSOP hydrologic modeling had revealed the obvious: The implementation of the MWD project and more natural flows would make the "Sparrow" habitat south of the Miccosukee Reserved Area ("MRA"), which has been unnaturally dried out since 1997, much wetter. This revelation was in diametric opposition to the FWS demands to artificially dry this area out over the past 13 years. The dilemma that the Tribe had realized and expounded for years, was now front and center; water managers could either continue to 1) unnaturally dry out the western side of the Park or 2) restore the area ... not both.

During this same period, the FWS was responding to a lawsuit which required the Service to consider this area for designation as "critical habitat" under the provisions of the ESA. If this area was in fact designated "critical habitat," then it would have to be unnaturally dried out forever, and Everglades restoration would be permanently blocked. Based primarily on the Tribe's technical and scientific arguments, along with the Corps' modeling, the FWS rejected the establishment of this area as "critical habitat." The FWS was challenged in Federal Court, but, again, due to the Tribe's support in that case, the Judge upheld the FWS decision to not establish "critical habitat" and to permit Everglades restoration to move forward. The only question that remains now is when does the Corps start allowing more flows into this area, including through the S-12 gates under the contemplated Combined Operational Plan ("COP"), and eventually CERP, so that restoration can in fact commence both north and south of Tamiami Trail?

In 2010, after 13 years of discriminatory water management actions, purportedly for the "Sparrow," the Corps finally listened to two major points the Miccosukee Tribe had been making for years regarding these operations: 1) WCA 3A was being severely impacted by IOP and the previous "Sparrow" operations, as evidenced by the destruction that had been experienced, which is highlighted by the continuing loss of tree islands, the plummeting of the snail kite population from over 3,500 birds in 2000 to less than 700 in 2008, and the conversion of Everglades marsh habitat into a shallow lake, and 2) by far the most important, the "health and safety" of the Miccosukee Tribe was being threatened by operating WCA 3A at water levels well above its design specifications. This recognition by the Corps stemmed from the Tribe's Equal Protection lawsuit in which Tribal members and representatives, to include Chairman Colley Billie, gave testimony and resulted in the Corps' development of the Everglades Restoration Transition Plan ("ERTP"). As a result, the Corps issued a Final Environmental Impact Statement ("FEIS") in December of 2011, which proposed major changes to address the "health and safety" of the Tribe and the high water in WCA 3A. If the ERTP is finally implemented as proposed in the FEIS, the Tribe may finally be provided some relief from the damaging, discriminatory water management actions that have been going on for over 13 years.

In June 22, 2011, while the ERTP was in process, the Tribe provided NEPA scoping comments on the Combined Operational Plan ("COP"), which is the new acronym that replaced CSOP for the (CSOP operational plan that will be implemented once the construction of the MWD and C-111 projects is completed, which was once called CSOP. The COP will replace the ERTP when completed. If the Issues/Concerns that were provided to the Corps by the Tribe are adequately addressed, the COP has the potential of providing even more benefits for the Everglades and Tribe than the proposed ERTP promises to accomplish. However, since the COP has yet to be developed, and structures still need to be constructed, that remains to be seen.

In October 2011, with some CERP projects having been abandoned and others seriously delayed, the Corps and other announced yet another new planning effort to push forward certain central Everglades components of CERP. Yet another acronym was created and the Central Everglades Planning Project (CEPP) was announced with great fanfare. To date, the details of CEPP are

limited to power points, "fact" sheets, letters and a Federal Register Notice. The Federal Register Notice states that the goal of the CEPP effort is "to develop an integrated, comprehensive technical plan, including the first increment of projects, for delivering the right quantity, quality, timing and distribution of water needed to restore and reconnect the central Everglades ecosystem." It identifies the CERP components that are included as the following projects: Everglades Agricultural Area Storage Reservoirs; Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement; Everglades National Park Seepage Management; and Everglades Rain Driven Operations. According to a Corps fact sheet, "The goal of the Central Everglades Planning Project is to deliver within two years a finalized plan, known as a Project Implementation Report, for a suite of restoration projects in the central Everglades to prepare for Congressional authorization as part of the Comprehensive Everglades Restoration Plan (CERP)." It is difficult to discern from the scanty information whether CEPP will be just another endless planning effort or projects will actually be built.

The statement in the Federal Register Notice that, "Since 2000 much progress has been made," is highly misleading. Nothing could be farther from the reality of missed deadlines and abandoned projects. The Tribe has been contending for almost a decade that projects were being seriously delayed, and that the "heart of the Everglades," including Tribal Everglades, was being left out of CERP. Even the Committee on Independent Scientific Review of everglades Progress (CISRERP) echoed the Tribe's concerns. In its 2006 Biennial Review, CISRERP found that important projects necessary to re-establish sheet flow in the Everglades are, ***"far behind the original schedule."*** It further recognized that, ***"anticipated restoration progress in the Water Conservation Areas and Everglades National Park appears to be lagging behind the production of natural system benefits in other parts of the Everglades."*** The 2008 Biennial Review warned that, ***"Ongoing delay to South Florida ecosystem restoration not only has postponed improvements to the hydrological condition but also has allowed ecological decline to continue."*** The Review concluded that, ***"It's too early to evaluate the response of the ecosystem to CERP Projects because none have been implemented."*** It is disingenuous based on reality for the Corps to attempt to fool the public into thinking that "much progress has been made" or that it is expediting projects that have been seriously delayed.

While the Tribe is pleased to see after all these years that there is finally a focus on creating a plan to move projects for the Central Everglades forward, it remains to be seen whether CEPP will be yet another new acronym for yet another endless planning effort or whether projects to restore the Central Everglades will actually be built. The Tribe, whose entire culture and way of life depends on a healthy Everglades ecosystem has long sought for its traditional homeland to be restored. Yet, the Tribe cannot help but have any optimism that it might have tempered by the many plans that it has worked on for so many years, only to see them cast aside when politics intervened. In the Tribe's experience, it remains to be seen whether projects necessary to restore the "heart of the Everglades" will ever be authorized and implemented. Moreover, depending on how the plan is designed, and implemented, the CEPP could either benefit or harm Tribal lands and interests in the Everglades, especially since the State failed to meet the December 31, 2006

deadline to meet water quality standards in the Everglades Protection Area. Thus, the following comments are provided in response to a Public Notice by the Corps requesting scoping comments and must be addressed in the CEPP NEPA process.

Miccosukee Tribe Issues/Concerns
That Must Be Addressed in the NEPA Process Include:

- **An EIS Is Required:** The CEPP formulation and implementation will have "*a significant impact on the human environment.*" Therefore, **the document that is required to be prepared by the Corps under the National Environmental Policy Act ("NEPA") must be an Environmental Impact Statement ("EIS").**

- **All Applicable Law Must be Followed:** While the Tribe is not opposed to the significantly delayed CERP process becoming more efficient, it is opposed to any streamlining that comes at the expense of compliance with all applicable laws. As always, the Tribe expects the Corps to comply with the National Environmental Policy Act ("NEPA"), the Endangered Species Act ("ESA"), the Federal Advisory Committee Act ("FACA"), the Clean Water Act, the U.S. Constitution, the Corps' Trust responsibility to the Tribe, and all other applicable laws.

- **ERTP, Not IOP, Should Be the Base Condition:** The Corps concluded in the Final Environmental Impact Statement (FEIS) on the Everglades Restoration Transition Plan ("ERTP") that, due to safety and endangered species concerns, that "IOP is no longer a viable option" for water management within WCA-3A and the South Dade Conveyance System." ERTP FEIS at xiii. The Corps argued when it stopped using the Test 7 operational plan as a base condition in the EIS process that it could no longer be used because it was contrary to the ESA. Similarly here, the Corps cannot rely on IOP as the base condition for CEPP in the NEPA process, because it is not viable. In addition, the ERTP should be replacing IOP in the very near future and prior to any NEPA document being produced.

- **Ensure No Adverse Impacts to Miccosukee Tribe Culture & Cultural Resources:** Corps' analysis and planning often do not adequately take into consideration the impacts of Corps project operations on the Miccosukee Tribe's Culture and Cultural Resources, before most projects/actions are authorized for implementation. **The Corps must perform a comprehensive review of all potential adverse impacts of all proposed actions under the CEPP on the Miccosukee Tribe's Culture and Cultural Resources in the action area, which includes WCA-3 and the Park, and ensure that any adverse impacts are eliminated prior to implementation of the selected alternative. Certainly, the assurance of the "health and safety" of the Tribe must be paramount.**

- **Must Produce Benefits for Tribal Lands in WCA 3A:** The CEPP process should incorporate a revised WCA-3A regulation schedule targeted at the restoration of the entire central Everglades that incorporates a multispecies management approach building upon what was achieved with the ERTP and hopefully will be achieved under COP. Any regulation scheduled developed in the CEPP process must provide restoration of the Tribal Everglades in

WCA-3A, as well as the Park. The Corps must be careful during the NEPA process not to succumb to unreasonable demands by the Park, or any other interests, to provide more water than the CEPP can reasonably deliver without sacrificing other areas of the Everglades, such as the Tribal Everglades in WCA-3A. **The pursuit of the unnecessary, unreasonable, and impossible often prevents the achievable.** The Tribal Everglades must benefit from CEPP.

- **CEPP Must Decrease WCA 3A Flooding:** WCA-3A water levels must become more natural as defined by the Natural Systems Model ("NSM") and the CERP documented -1 foot below to +2.5 feet above ground envelope to protect the few remaining tree islands. According to the December 2011 FEIS on the ERTP, for WCA-3, the result of lowering Zone A and extensions of Zones E1 and D can be seen in the modeling for the southern areas of WCA 3, such as Indicator Region 124, Figure A-H-7 and Figure A-H-8. FEIS at 4-36. The FEIS explains that the stages show a significant reduction (by as much as 0.2 or 0.3 feet) from about the highest 5 percent to about the 50% of the time range. *Id.* The results of lowering the zones under the ERTP Alternative 9E1 can be seen in Figure A-H-10 for the southern areas of WCA 3A. The number of high weeks (392) under the current condition (IOP) was reduced to 252 weeks under Run 9E1. *Id.* According to the FEIS, this equated to a 36 per cent reduction in exceedance of the high water stage criterion with no increase of low water events. *Id.* The modeling also shows that the numbers of weeks of sustained high water above 2.5 ft. in Indicator Region 14 has been reduced from 412 weeks under IOP to 260 weeks under ERTP 9E1. *See* FEIS at B-1-99. The Corps concluded: "The alternative that best met the ERTP objectives of improving conditions within WCA 3A for the snail kite, wood stork and other wildlife species, while maintaining protection for the CSSS and meeting Congressionally-authorized C&SF Project purposes, became the ERTP." FEIS at 2-31. Alternative 9E1 is the recommended plan. FEIS at *xiii.* ***CEPP* must reduce damaging high water levels in WCA 3A even more than the proposed ERTP and the anticipated COP. So-called "new science," which in many cases is old science that has been discarded, must not be misused as an excuse to drown the Tribal Everglades to provide more water to the Park downstream.**

Health And Safety Must Be a Priority: The Corps' recent FEIS for the ERTP quotes a letter of Miccosukee Tribal Chairman Colley Billie which states: ***"For far too many years, as a direct result of discriminatory water management actions, hundreds of thousands of acres of Tribal everglades in Water Conservation Area 3A have been flooded and degraded ... It has threatened the health and safety of the Miccosukee community."*** FEIS at 4-89. In 2008, the Tribe filed an Equal Protection lawsuit, pending in the Eleventh Circuit Court of Appeals, that detailed the threats that these discriminatory water management actions posed to the Tribal Everglades in WCA-3A, and to the health and safety of the Miccosukee people. In July 2010, the USACE Water Resources Engineering Branch (EN-W) conducted a review of the original General Design Memorandum for WCA-3A. *See* ERTP FEIS at 1-19; *see* Memo of Sean Smith as Exhibit A. Based upon the results of this review, the Corps concluded that a rigorous evaluation of the Standard Project Flood conditions within WCA-3A should be conducted. *Id.* As a result of the Corps' Phase I analysis of high water events, the Corps discovered that "based on

current system conditions as simulated in the water budget spreadsheet, the current configuration of WCA-3A would result in an increase in the SPF stage for WCA-3A of between 1.3 and 1.4 feet compared to the WCA-3A design assumptions." *Id.* Through this analysis, the Corps also discovered the blindingly obvious: "that peak SPF stage is increased over the original design due to the reduction in outlet capacity from WCA-3A through the S-12s." *Id.* The Corps recognized that the "Discharge through the S-12 structures is essential for managing the WCA-3A SPF peak stage." FEIS at A-5-33. The FEIS concluded that: "Leaving IOP in place is not an acceptable option due to the snail kite habitat issues and L-29 levee high stage concerns." FEIS at G-1-10. In light of this safety analysis, the FEIS concluded that it is "prudent for the USACE to recommend the lowering of Zone A of the WCA-3A Regulation Schedule as a risk reduction measure." FEIS at 1-20. The FEIS further concluded that the 1960 WCA-3A 9.5 to 10.5 feet, NGVD Regulation Schedule is a "required component for the interim water management criteria for WCA-3A Zone A under ERTP, necessary to mitigate for the observed effects of the discharge limitations of the S-12 spillways." *Id.* In light of these findings, **any CEPP water management actions that may impact water levels in WCA-3 must account for the specific flood stage of the L-29 levee system as detailed in the US Army Corps of Engineers 2011 General Design Memorandum for WCA-3A.** (see Exhibit A attached). This is vital to protecting the Miccosukee community located downstream of the L-29 levee. Finally, any safety studies that have been, or are being, conducted on the L-31 levee and the Lake Okeechobee dike must also be taken into account. **Health and safety of the Miccosukee Tribe, and the public, must be the top priority in the CEPP process.**

- **CEPP Must Incorporate Storage As a Priority:** As with water quality treatment, storage must also be incorporated. The nutrient enriched flows that are discharged from Lake Okeechobee could easily overload the current stormwater treatment system, and impact the Everglades wetlands. Incorporating storage facilities must be a central component of the CEPP and should be scheduled for construction and implementation early in the sequencing process. It is a tragedy that the Everglades Agricultural Area ("EAA") Reservoir Phase 1, one of the first CERP projects, was abandoned after many months of construction and an expenditure of more than $250 million dollars. If the EAA Reservoir Phase 1 had not been abandoned, both it and the Bolles and Cross Canal Projects, could have been completed by December 2009. Additionally, although the EPA Amended Determination stated that a Flow Equalization Basin ("FEB") built on this site could meet the Water Quality Based Effluent Limit in WCA-3 by 2013, no action has been taken to build an FEB on this site that was paid for by federal tax dollars. **Constructing storage at the soonest must be a priority if CEPP is too succeed.**

- **Rehydrate Only With Clean Water to Protect Northern WCA-3A and WCA-3B:** Flows into the dry areas of northern WCA-3A and through WCA-3B should be restored to the greatest extent practicable toward achieving historical flows and levels and only if the water is clean. Dirty water, *i.e.* water containing concentrations of phosphorus greater than 10 ppb should never be utilized for rehydration of unnaturally dried out areas. **In general, CEPP should never**

permit rehydration with dirty water and should always strive for natural flows and levels to the greatest extent practicable.

- **CEPP Must Incorporate Solutions to Stop Western Basins Pollution:** Any project truly geared at delivering more water clean water to the *"Central Everglades"* must incorporate solutions for the western basins. Discharges through the S-140 and the S-190 water control structures continually deliver phosphorus laden waters onto Tribal lands and into WCA-3A. Recent data from the 2011 South Florida Environmental Report shows that the combined discharge from the S-140 and S-190 water control structures comprised nearly 30% of the total phosphorus load discharged to WCA-3A. The S140 water control structure discharged 9.2 metric tons of phosphorus with a FWMC of 55 ppb directly onto Tribal lands and into WCA-3A. This was the single largest structure discharge into WCA-3A in 2010. The S-190 water control structure discharged 7.6 metric tons of phosphorus with a FWMC of 73 ppb directly into the L-28 Interceptor canal, which terminates on Tribal lands in WCA 3A (2011 SFER Appendix 3A-5). The SFWMD inflow station at the terminal end of the L-28 Interceptor canal had a discharge geometric mean phosphorus concentration of 65.2 ppb in WY 2010 (SFER 2011; Appendix 3-4).

The combined impacts and phosphorus load from these discharges has had a devastating effect on Tribal lands and WCA-3A. The Central Everglades Planning Process provides an invaluable opportunity to develop and implement solutions that will cooperatively benefit Tribal lands and the water conservation area. These solutions were outlined in the Comprehensive Everglades Restoration Plan (CERP) and in the Big Cypress - L-28 Interceptor Modifications Project description which calls for canal modifications and water quality treatment for these basins:

> *Big Cypress - L-28 Interceptor Modifications Project (www.evergladesplan.org)*
>
> *Modification of levees and canals, water control structures, pumps, and stormwater treatment areas (with a total storage capacity of 7,600 acre-feet) will re-establish sheetflow from the West Feeder Canal across the Big Cypress Reservation and into the Big Cypress National Preserve, maintain flood protection on Seminole Tribal lands, and ensure that inflows to the North and West Feeder Canals meet applicable water quality standards. Upstream flows entering the West and North Feeder Canals will be routed through two stormwater treatment areas to be located at the upstream ends of the canals. Sheetflow will be re-established south of the West Feeder Canal consistent with the Seminole Tribe's Conceptual Water Conservation System master plan.*

The Central Everglades Planning Process is the time to initiate the long overdue planning process for the CERP Big Cypress - L-28 Interceptor Modifications and provide a solution for the devastating discharges from the L-28 Interceptor Canal and the S-140 water control structure..

- **No More Dirty Water, No Rehydration with Dirty Water, & No Use of WCAs As *De Facto* STAs:** Unlike a lake or a stream in which pollutant discharges undergo relatively quick

and complete mixing, the Everglades is being eaten away by P pollution like a cancer. Cancer starts at a point and eventually spreads throughout the body unless stopped. Like a cancer, phosphorus pollution eats away from the points it enters the Glades, and continuously spreads further and further into unimpacted areas. It will eventually destroy the vast majority of what's left, if not the entire Everglades, unless it is stopped.

If damage occurred until the cause of the damage was stopped, and was then reversed in approximately the same time it took to cause that damage, this damage would be considered reparable, or reversible. This is not what occurs in the Everglades. Recreating tree islands and extracting high concentration of phosphorus from the soil may never be achieved by nature except in geological timeframes; and extirpated species will never be replaced. Even if humans could reverse the damage in a shorter time, which at present they cannot, it would certainly be cost prohibitive, and require many, many years to complete. Whether these restorations can be achieved is unknown, and, if they could, the time to achieve them is centuries, millennia, or longer. Even in the best case scenario, this damage is, for all intents and purposes, irreparable. It only makes sense that stopping this irreparable damage is the prudent first step to restoration, and, in the minds of many, including the Miccosukee Tribe, the mandatory first step.

It should be clear to all that restoration of the Everglades has not begun, as the Everglades continues today to be irreversibly destroyed. Restoration can only begin once the irreversible damage is stopped, and that day is, at best, far in the future.

The water quality issue was supposed to have been resolved by December 31, 2006 when the State, now under an Order of the Court, was supposed to have achieved inflows into the Everglades that ensured the Water Quality Standard was being met. The State's meeting this deadline in a timely fashion was a base assumption of the CERP Restudy, and the success of CERP, in accordance with the projected schedule, depended on it. However, this has yet to be achieved, and under the current best case scenario, may not be achieved until 2020. There is a possibility under the EPA Amended Determination that the Water Quality Based Effluent Limitation ("WQBEL") for WCA could be met by 2013 if a Flow Equalization Basin ("FEB") on the Talisman land was constructed, but no such reservoir is even being planned let alone being constructed. Moreover, as all who work on Everglades restoration know, the best case scenario is rarely, if ever, realized.

In addition, CISRERP has invited an analysis of "trade-offs between water quality and quantity," which opens the door wide for those who would destroy one part of the Everglades for the benefit of another. At the heart of this is the utilization of vast areas of the Everglades (both WCAs and Tribal Land) as *de facto* STAs. To permit the State to utilize Tribal Land as STAs in order to achieve 10 ppb P in the Park is diametrically opposed to actually restoring the Everglades, contrary to the Consent Decree and the Clean Water Act, and anathema to the Miccosukee Tribe. The Tribe will not permit Tribal land to be utilized as an STA.

Therefore, the Tribe does and will not support a CEPP that 1) increases the amount of dirty water brought into the Everglades Protection Area, or 2) restores flows to the

Everglades Protection Area with dirty water, until the restoration water meets the 10 ppb P criterion mandated by the Clean Water Act. Even more, Tribal land will not be utilized as an STA. The 10 ppb P criterion must be a major performance measure in CEPP and water quality must be thoroughly analyzed and evaluated in the CEPP process.

- **No More Dirty Water - Water Quality Must Be Met:** The Federal Register defines the primary objective of the CEPP as follows: "*The next step for the implementation of CERP is to redirect water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore flow to the South...*" The CEPP process cannot attempt to restore more water into the central Everglades from the north, *i.e.* from the Everglades Agricultural Area ("EAA") and Lake Okeechobee until the State meets water quality standards in the water being delivered to the Everglades Protection Area. The State of Florida failed to meet the December 31, 2006 deadline, as recognized by Judge Gold, to ensure that waters discharged to the Everglades Protection Area meets water quality standards, including a numeric criterion of 10 ppb Phosphorus ("P"). Thus, waters discharged from Lake Okeechobee are laden with pollution. The most recent data for the 2011 South Florida Environmental Report shows that the open water Lake total phosphorus concentrations were 118 ppb for WY2010 and had a five year average of 172 ppb (2011 SFER; Table 10-12). To accomplish the stated goal of redirecting Lake Okeechobee flows south, while maintaining the water quality standards as a constraint, as presented and discussed at the Water Resources Advisory Commission (WRAC) on Thursday, January 6, 2012, treatment must incorporated. Without the appropriate treatment, redirected flows from Lake Okeechobee will greatly increase the nutrient loads to the water conservation areas, causing further degradation of Tribal lands within the Everglades ecosystem." **Once flow at natural rates, levels, and quality is "practicable," then, and only then, should more water be brought into the Everglades; given the current rate of progress, this is many years into the future, if ever.**

- **No Trade-Offs Permitted:** One hears discussions at times about trade-offs" in Everglades restoration. Although not clearly nor precisely framed, CISRERP has invited an analysis of "trade-offs between water quality and quantity," which opens the door wide for those who would destroy one part of the Everglades for the benefit of another. At the heart of this is the utilization of vast areas of the Everglades (both WCAs and Tribal Land) as *de facto* STAs in the restoration process. The Tribe is concerned that under the guise of "new science" some will attempt to use the CEPP process to seek a plan that forces large volumes of water through some areas, like WCA-3A, for the possible benefit of other areas, like the Park to the south. These are not new arguments, but old ones previously rejected and now being recirculated. There was much discussion during the Restudy process about how too much water could devastate the last vast expanse of sawgrass left in existence in WCA-3A. It was decided that all areas of the Everglades were to be restored. The Tribe is deeply concerned by the so-called "new science" that some are using to support sending greater volumes of water through the Everglades than was envisioned by CERP. It should be noted that much of the modeling on this new science that was done did not take into account any constraints for water supply, flood control, or the fact that half of the

Everglades is gone. The Tribe will resist any effort to drown the Tribal Everglades for the alleged benefit of the Park downstream. As discussed in the section on endangered species, Tribal lands and the endangered snail kite have suffered from the high water effects of discriminatory water management. The Miccosukee Tribe never endorsed "trade-offs", which is essentially *"Animal Farm"* equality for the Everglades, or the use of Tribal land as a *de facto* STA. Using the Tribe's Everglades in WCA-3A as a *de facto* STA to clean the water before it gets to the Park is also specifically prohibited by the Consent Decree (Judge Moreno's Court). **CEPP must endorse as a guiding principle that no area of the Everglades will be destroyed/sacrificed for the benefit of another are of the Everglades by planned CERP projects, or for that matter, any proposed project.**

• **CEPP Must Not Delay Already Delayed MWD Project Components:** According to the Congressional Research Service ("CRS") Report to Congress dated March 17, 2005, ***"Mod Waters was originally estimated to be completed by 1997, yet some now argue it is unclear when or even whether the project will be completed."*** Another study on the delay of the Modified Water Deliveries Project ("MWD Project") conducted by the Inspector General of the Department of the Interior dated March 2006, discusses the cost of delay: ***"The Corps estimates that damage to tree islands resulting from the current high water levels could be as much as 246 acres per year and the cost to restore the islands ranges from $12.3 million to $123 million per year."*** The CRS Report further stated that: "***Section 601(b)(2)(D)(iv) of WRDA 2000 provides that Mod Water must be completed before appropriations can be made to construct other restoration projects in the east Everglades."*** Moreover, the 2006 Biennial Review by CISRERP warned that: "***Since the Mod Waters Project is an assumed precursor for the WCA-3A Decomprtmentalization and Sheetflow Enhancement part 1 (Decomp) project, further delays in the project's completion may ultimately delay funding appropriations for Decomp.***" The committee recommended that: ***"Mod Waters should be completed without further delay."*** In its 2008 Biennial Review CISRERP warned, "***If this relatively modest restoration project cannot proceed and provide some restoration benefits, the outlook for CERP is dismal.***" The CEPP must not be used as an excuse to bypass Congressional intent or to delay the construction of vital MWD Project components, which have already been seriously delayed. The Tribe is concerned that some will attempt to delay important aspects of this project by incorporating them into the CEPP, which may never be authorized. The Tribe will be opposed to any attempt to do so. **Completion and implementation of the MWD Project must be a pre-condition to the CEPP and a "without project condition" under NEPA.**

• **Decompartmentalization of WCA-3:** The Tribe agrees with the CISRERP that, if MWD does not get completed, the outlook for CERP is dismal and, unfortunately, the MWD Project is still far from completion. The CERP Decompartmentalization Project is also well behind the scheduled January 2010 completion date for construction of certain components contained in Section 10 of the Yellow Book. The Tribe cannot help but wonder if this new planning effort, with a new acronym, was devised to obfuscate this important fact. However, in the event that the

CEPP planning effort actually moves forward, plans for the Decompartmentalization of WCA-3 should incorporate more than the hydrologic modification features proposed for north of I-75 by the DECOMP PDT Team. When incorporating the Decompartmentalization of WCA-3 into the CEPP all of the canals in the L-28 system should be considered for removal in addition to the entire Maimi canal and L-67 canal system to truly provide restoration of the "Central Everglades." As the Decompartmentalization of WCA 3 progresses, careful and consistent consultation with the Tribe should take place to ensure that the cultural meeting places of the Miccosukee people and Tribal camps are not adversely impacted.

- **Analyze Expanding the Capacity of S-333:** All water that the Park desires for rehydration of Northeast Shark River Slough cannot flow through WCA-3B without causing significant irreversible destruction. As much water as is naturally possible should be funneled through WCA-3B, and, if more is available to satisfy the desires of the Park, then it should be provided via S-333, at least until the CERP eastern rehydration projects are completed. In order to provide this additional water, the CEPP should look at increasing the capacity of S-333. During the development of "Sparrow" deviations in the late 1990s, it was decided to increase the S-333 capacity from 1,350 cfs to 2,000 cfs, as documented in the 2002 IOP Final EIS, but this was never accomplished. The tentatively selected plan for COP also included the same increase in capacity for the S-333 structure, but COP was abandoned. **It is only prudent to finally analyze increasing the size of S-333 in order to ensure the Park can receive the higher volumes of water at a faster rate that it claims it needs.**

- **8.5 Square Mile Area Must Be Protected:** After years of debate, a project to protect the people of the 8.5 Square Mile Area ("8.5 SMA") from project induced flooding was authorized by Congress and constructed by the Corps of Engineers. There still are many associated with the Park that would like to see the remaining homes removed; under the mandate of Congress, this is not going to happen. **The Corps must ensure the people of the 8.5 SMA are afforded the protection they are authorized, and must not let another 8.5 SMA debate paralyze the restoration process and stop the CEPP from being implemented.**

- **CEPP Transitional Plan Is Essential:** There remain several components of both the MWD and C-111 projects that must be formulated, designed, and constructed. These components will not be all completed at the same time; it will take years for all to be completed. Similarly, the components of the different projects that will constitute the CEPP to deliver what the Corps refers to as "incremental" restoration will also come on line at different times. Thus, the **CEPP should contain a transitional plan that implements beneficial operational changes once each new component of the Pre-CERP and CERP projects is completed.**

- **No Operation of the S-356 Pump Station:** The Miccosukee Tribe will not support the operation of the S-356 pump station as a component of CEPP. There are three primary reasons: 1) water quality issues exist which have not been adequately addressed (Note: Among the potential/existing water quality issues, testing and analysis to date of S-356 pumped water have

found zero dissolved oxygen, along with a very strong odor of sulfur; changes in the concentration, load, and distribution of P flows into the Park resulting from the use of S-356 have not been analyzed rigorously *vis-à-vis* the Consent Decree, and there is clear potential for an increase in the number of Consent Decree violations), 2) the net result of the use of S-356 is pumping water in a circle, *i.e.* S-356 pumps into L-29 Canal, L-29 water flows into NE Shark River Slough in the Park, then seepage of this water enters the L-31N, and, then again, S-356 into L-29 Canal, which is clearly not restoration, and 3) most important to the Tribe, the pumping into the L-29 Canal from S-356 reduces the flow through S-333 into the L-29, and, thus, results in higher water in WCA 3A and Tribal land. This latter consequence of S-356 utilization results in adverse impacts to Tribal lands in WCA 3A and the endangered snail kite and its critical habitat. **The S-356 pump station has no redeeming value at this point, and probably never will, and it certainly should be eliminated from consideration in the formulation of CEPP.**

- **Address Seepage Control As A Critical Requirement:** Seepage out of Northeast Shark River Slough in ENP remains a huge impediment to restoration. Simply and directly stated, the restoration of ENP and the entire Everglades cannot be achieved until the seepage between S-335 and G-211 is adequately managed. **CEPP must recognize this debilitating seepage limitation and be formulated to appropriately account for it.**

- **1-Mile Eastern Bridge Should Be Plugged:** The Tribe continues to strenuously object to the construction of the 1-Mile Eastern "Bridge to Nowhere" and contends that it is a waste of taxpayer money that will continue to delay the MWD project. Moreover, given the facts that additional flows into Northeast Shark River Slough are severely limited by seepage into the L-31N Canal, and that the 1-Mile Eastern Bridge that is now being constructed will concentrate current and additional flows on the eastern side of the Park, it is clear that the bridge should not be utilized until the seepage challenge is met. The Corps even predicts that the flow across Tamiami Trail will increase by over 15% once this bridge is complete without even changing operations, *i.e.* the seepage challenge will be exacerbated just by merely constructing the bridge. The proposed COP and CEPP NEPA processes must analyze this potential flooding threat, which could adversely impact the Miccosukee Resort, and other Miami-Dade County properties. **The openings under the bridge should either 1) remain blocked by leaving the existing Tamiami Trail in place, or 2) be blocked by fill, sheet pile, or some other technique, until the seepage challenge is appropriately met, thus forcing more of the flow to the west in Shark River Slough where seepage is much less of an issue.**

- **Reduce/Eliminate the "Big Red Arrow":** The "Big Red Arrow," *i.e.* the arrow depicted on water budget schematics depicting the huge amounts of water forced south out of the L-31N Canal into the area of Homestead and vicinity since the enlargement of the L-31N in the early 1980s, must be reduced to the maximum extent practicable. If not, the people of South Miami-Dade will be continue to be flooded beyond the level of protection authorized by Congress, and

the CEPP clearly has the potential to exacerbate this already bad situation. **Therefore, CEPP should have as a primary goal the elimination of the "Big Red Arrow."**

- **Maintain the G-3273 Trigger Gage:** Uncontrolled, high volumes of seepage into the L-31N Canal can cause and has exacerbated flooding in the built portion of Miami-Dade County, which includes Miccosukee property. Seepage also causes the "Big Red Arrow," which specifically leads to increased flooding in southern Miami-Dade. Historically, this seepage has been somewhat managed by discontinuing the controllable inflow of water into Northeast Shark River Slough when the G-3273 gage rises 6.8 feet NGVD. **Until seepage, and, thus, unacceptable flooding, are adequately addressed, there is little reason to believe that G-3272 trigger well is not going to remain a critical part of the water management system under CEPP.**

- **Clear Downstream of the Culverts to Increase Flows:** In 2009, the Park commissioned a professor from the University of Miami to evaluate the effectiveness of culvert swales in increasing flows from the WCAs to ENP. The culvert-swale approach is one method for effectively clearing the accumulation of sediment, vegetation (to include invasive exotics), detritus, and, literally, garbage downstream of the Tamiami Trail culverts that is significantly reducing the flows from north to south, *i.e.* rather than actually remove the blockage, swales enable the water to move around it. In January 2010, Dr. David A. Chin, PE, published his report. Dr. Chin's analysis indicates that the Miccosukee long-held position is correct, *i.e.* clearing downstream of the culverts will significantly increase flows (Note: It also reconfirms at least 2 prior studies done by the Corps). Key points from the report follow:

  - Even the most modest swale considered, *i.e.*, 500' by 30', at a constant L-29 stage of only 6.0 feet NAVD, will likely increase flows by 60% at one culvert set and 250% at the other ... the most robust swale considered, *i.e.*, 1500' by 30', will provide for a 200% and 560% increase at the same culvert sets, respectively.
  - Even a worst case scenario for both culvert sets during sensitivity analysis provided for a 48% and 200% increase in flows with the 1500' by 30' swale option, while an equally plausible, but more favorable, marsh resistance increased flows by 520% and 830% for the same swale option.
  - Adding another culvert set at the swale locations provided only a little improvement in increased flows.
  - Replacing the culverts by bridges at the swale provided improvements, but not nearly as great as the increased flows predicted for simply building the swale.
  - When a bridge is simulated to replace the existing culvert set: "... it should be noted that, for a given spreader-canal configuration, water deliveries are independent of the bridge span as long as stage differences across the bridge opening are relatively small [which is the normal condition]."

These new and independent scientific/engineering findings provide great hope for major, quick improvements in the condition of the Everglades at a very reasonable cost. Dr. Chin's work convinced the Superintendant of ENP to conduct an actual Pilot Swale Project to evaluate Dr. Chin's findings in the field; although this pilot project was supposed to be implemented by October of 2010, it appears that the work now been cancelled. **Given that the evidence and possibilities are so compelling, and the deteriorating state of the Everglades so dire, the Corps should move forward with full scale swale projects immediately, and analyze the increased flow capabilities of such swales as a component of the CEPP EIS.**

- **Clear Downstream of the S-12s & Implement Other Measures Needed to Increase Flows:** The same hydraulic principles employed by Dr. Chin to the culvert swales also apply to the S-12s. Clearing downstream of these structures provides more opportunities for further increasing flows through the Everglades. Especially increasing flows from WCA 3A, which is flooded much of the time, to an area in the Park that has been unnaturally dried out over many years. In preparation for the development of the ERTP, the Corps performed an analysis of current water levels in WCA 3A *vis-à-vis* the 1960 and 1972 design specifications and expectations, and reported the results in MEMORANDUM FOR SAJ LEVEE SAFETY OFFICER (DUBA), Subject: EN-W Position Statement on WCA-3A Regulation Schedule Modifications, 9 September 2010. Major findings are [emphasis added]:

  - **Actual water levels are much higher than those for which WCA 3A was designed –** *"The analysis illustrated that under the current system conditions, as represented in the spreadsheet, the peak SPF S-12 headwater stage was computes 13.76 ft, NGVD and the peak SPV WCA-3A three gage average stage was computed as 15.20 ft, NGVD. The comparison of peak stages between the 1960 GDM WCA-3A design and the 2010 WCA-3A volumetric spreadsheet predictions indicate that the predicted SPF stage is higher than the WCA-3A design stages established in the original GDM and used to set the as-built crest elevation of L-29: 1.36 feet higher at the headwater of the S12 structures; 1.3 feet higher at the three station average for WCA-3A."*
  - **S-12 flows are crucial achieving lower water levels** – *"Sensitivity analysis performed utilizing the 2010 WCA-3A volumetric spreadsheet tool illustrated that the peak SPF stage is most sensitive to the amount of outflows being discharged from WCA-3A, with the primary outlet being the S-12s ..."*
  - **Must lower top of regulation schedule to the design envelope of 9.5 – 10.5 feet to mitigate for the S-12 discharge limitations** – *"... EN-W has concluded that the lowering of Zone A of the current WCA-3A Regulation Schedule to the 9.5-10.5 feet NGVD regulation schedule line from the 1960 GDM will provide an interim step to mitigate for the observed effects of the S-12s discharge limitations."*
  - **Much more than reducing the top of the regulation schedule is needed to lower water in WCA 3A** – *"The inclusion of the lowering of Zone A of the current WCA-3A Regulation Schedule within the proposed alternatives of the ongoing ERTP NEPA effort*

is a minimum requirement to demonstrate compatibility with the required interim water management criteria for WCA-3A. Additional water management operating criteria to further reduce the frequency and duration of high stages within WCA-3A should also be considered within the context of other ERTP Project considerations."

- **Decisive and prescribed measures are needed now to decrease the risk to "human health and safety"** – *"The ERTP Project's water management operating criteria should include the establishment of operational constraints at the S-12 structures based upon safety considerations for WCA-3A features and pertinent downstream areas, including the identification of infrastructure modifications to be implemented on a temporary basis to allow the reduction of risk to human health and safety. The stability analysis of the S-12s is predicated on a maximum design headwater stage of elevation 12.4 feet NGVD with the differential head across the structure limited to 5.5 feet; also, the as-built crest elevation of L-29 and crown elevation of Tamiami Trail (US-41) in the S-12A to S-12D reach has been established to protect against the risk of overtopping from an adjacent flood stage of elevation 12.4 feet NGVD. The exceedances of these design conditions should be considered an immediate increase in risk to the human, health and safety afforded by the project feature and would require decisive and prescribed measures to reduce the WCA-3A stage."*

- **ERTP alone will not sufficiently reduce the risk to human health and safety ... more is needed!** – *"Outside of the ERTP project, additional NEPA assessment would be required to implement infrastructure modifications on a temporary basis to allow the reduction of risk to human health and safety, or to implement other permanent structural alternative which may result from the future phase 2 analyses. Considering the limitations on discharge through the S-12 structures, downstream conveyance improvements at the S-12 structures (potentially including removal of portions of the old Tamiami Trail) or additional outlets are required to mitigate for increased SPF stages within WCA-3A."*

In the Corps Draft ERTP EIS published on March 4, 2011, the Corps reiterated the importance of clearing the downstream blockages of the S-12 structures, as well as other measures to increase the flow out of WCA 3A.

5.0 Conclusions *(DEIS at A-5-41)* [emphasis added]:

- *The predicted SPF stage is higher than the WCA-3A design stages established in the original GDM and used to set the as-built crest elevation for L-29.*

- *Outlet capacity of the S-12s has either reduced over time OR[1] was never as large as assumed for the original design routings.*

[1] The Tribe's takes exception to the word "OR" which should be "AND" as it is clear from the evidence, including e-mails from Corps Staff, that: 1) the S-12 design flows were never achieved and 2) the capacity of the S-12s has decreased over time based on analysis of the rating curves over time.

- *The peak SPF stage is not sensitive to modifying the top (i.e. Zone A) of the WCA-3A Regulation Schedule. The peak SPF stage is most sensitive to the amount of outflows being discharged from WCA-3A, with the primary outlet being the S-12s.*
- *Considering the limitations on discharge through the S-12 structures, additional outlets are required to mitigate for increased SPF stages.*
- *The most effective additional measure investigated to alleviate the problem involves further degradation of the L-28 to increase outflows; however, the downstream effects of this action cannot be adequately addressed with the spreadsheet model routing and would require a more robust hydraulic analysis.*
- *Implementation of the Modified Water Deliveries Conveyance and Seepage Control Features would also provide additional outlet capacity.*

7.0 Recommendations for Future High Water Control

- *Remove key sections of the Old Tamiami Trail to reduce current impediments to flow out of WCA-3A.*
- *Investigate the possibility of changing the operating criteria at S-343A, S-343B, and S-344.*
- *Perform S-12 downstream conveyance improvements, such as vegetation cleanout.*

ERTP has proposed major steps to decrease water levels in WCA 3A. If the Recommended Plan for the ERTP is implemented it should lessen the now recognized and documented risk to human "health and safety," to include a major threat to the members of the Miccosukee Tribe. But clearly, the Corps' own analyses specifies that more must be done to increase flows out of WCA-3A. **Additional measures that need to be addressed in the CEPP EIS include 1) clearing downstream of the S-12 structures, 2) removing as much as possible of Old Tamiami Trail, and 3) further degrading of the L-28 levee. These, and other measures that might help, need to be planned and analyzed in the CEPP EIS and implemented at the soonest.**

• **Impact on Endangered Species Must be Assessed – Multi-Species Approach Is Essential:** The CEPP EIS must analyze the impacts of operation of these CERP projects on all endangered and threatened species in the action area, which includes Lake Okeechobee, the northern estuaries, all of the WCAs and the Park. Such an analysis would include the impact of operations on the Tribal lands in WCA-3A, and on the endangered snail kite and its critical habitat there. Both the snail kite, and its critical habitat in WCA-3A, have suffered an alarming decline under the past thirteen years of discriminatory water management. These draconian actions, purportedly for the Cape Sable seaside sparrow ("Sparrow)., moved the Everglades, including Tribal lands, further away from restoration. As a result of these water management actions, which include IOP, the Everglade snail kite that lives on Tribal lands has suffered an

alarming decline reported at more than 50%, which is actually even greater.[2] *See* ERTP FEIS at 3-26. This decline is a direct result of more than thirteen years of S-12 gate closures, which degraded thousands of acres of snail kite critical habitat on Tribal lands in WCA-3A.

The Miccosukee Tribe, whose members have called the Everglades home since time immemorial, objected to these single-species water management actions on grounds that they would cause the damage the Tribe has witnessed. The ERTP FEIS confirms that damage to both WCA-3A and the snail kite has taken place. The FEIS states, ***"the snail kite population has progressively and dramatically decreased since 1999 ... the snail kite population essentially halved between 2000 and 2002 from approximately 3,400 birds to 1,700 birds; and halved again from approximately 1,500 to 1,600 birds in 2006, to approximately 685 birds in 2008."*** FEIS at 3-26. The estimated 2009 population size of 662 birds indicates that there is no sign of recovery (Cattau et al. 2009)." *Id.* A review of Table 3-1 in the FEIS shows that number of successful nests, and young fledged, have declined dramatically since the Corps began implementing the S-12 gate closings in 1998. *Id.* and *Table 3-3.* ***"WCA- 3A has been previously identified as the most critical component of snail kite habitat in Florida"*** and the lack of reproduction in this area in recent years is of principal concern. *Id.* ***"A population viability analysis conducted in 2006 predicts very high extinction probabilities within the next 50 years (Martin 2007).*** Given the 2009 population estimate (i.e. 662 birds) the extinction risk may be even greater than the previous estimate (Cattau et al. 2009)." 3-26 to 3-27. It is clear that the Tribe's concerns about the snail kite have been proven correct. The FEIS also recognizes that the alarming decline of the vegetation on snail kite critical habitat in WCA-3A. **"However, high water levels and extended hydroperiods have resulted in vegetation shifts within WCA-3A, degrading snail kite critical habitat."** FEIS at 3-28. A multi-species approach that builds on the ERTP process and scientific information is essential. The ERTP was the first process to actually take a real multi-species approach to water management. Before this, as described above, it has typically been single-species management. **The ERTP model for multi-species management must be a guiding principle of the CEPP.**

• **Restoration West of Shark River Slough Must Begin:** As discussed earlier, "critical habitat" for the "Sparrow" was not designated by FWS for western Shark River Slough, because this area is currently being unnaturally dried out for subpopulation A of the "Sparrow" when under restoration it will be made much wetter. Declaring critical habitat would have effectively blocked the future restoration of the Everglades. Based largely on the written defense of the FWS's Final Rule by the Tribe, and concerns that the proposed designation would not only stop Everglades Restoration, but cause the continued destruction of Tribal Land, a Federal Judge ruled in 2011 that the FWS was correct not to designate this area as "critical habitat." In addition

[2] While some government documents have reported a 50% decline, the drop from approximately 3,400 snail kites in 2000 to 662 in 2009 actually represents a startling population decline of 81%. This is considerably more than the 50% stated.

to stopping Everglades restoration, the Judge unequivocally recognized the damage being done to Tribal land by "Sparrow" deviations:

> *"Under the grip of the law of unintended consequences, however, these corrective plans* [*i.e.* deviations for the "Sparrow"] *produced untoward results. Some argue that the greater retention of water for longer periods of time in WCA 3A, intended for Sparrow conservation, precipitated abnormally high water levels in WCA 3A. The higher water levels in WCA 3A are thought to have imposed adverse effects on other endangered species and on members of the Miccosukee Tribe of Indians of Florida ("Tribe")—who reside on more than 100,000 acres of WCA 3A land—by flooding culturally significant sites."* Collyer Order at p. 13.

Settled: CERP is formulated to restore the Everglades and the CEPP process purports to begin the incremental restoration of the Central Everglades. The best science in the form of modeling and field studies show that restoration of the Everglades will result in the western portion of Shark River Slough being wetter. In contrast, the last 13 years of draconian water management actions allegedly for the "Sparrow" have made this area dryer and moved it away from restoration, while not helping the "Sparrow." The designation of "critical habitat" for this area would have required it to be dried out in perpetuity. The FWS has officially decided, and a Federal Judge upheld the FWS decision, that at some point the CSSS-A area will be restored and be wetter.

Unsettled: The only question that remains at this time is when does the Corps start allowing more flows into the area of western Shark River Slough so that restoration can in fact commence both for the areas north and south of Tamiami Trail? **Thus, the Tribe, for the sake of its land and culture in particular, and Everglades restoration in general, implores the Corps to begin the restoration of western Shark River Slough via both the COP and CEPP.**

- **Decisive Action Required:** From 2003 to 2007, the Miccosukee Tribe participated in the 4-year CSOP effort to attempt to achieve essentially the same outcomes that a new acronym, COP, is now supposed to achieve. At the end of the day, because of the unjustified non-support of a few, the consensus of many was rejected, and, to the detriment of the Tribe, nothing was implemented. This endless restoration planning without concrete results must not be repeated under either the COP or CEPP. **The Colonel must make a final decision for the CEPP based on the best information available in spite of the misguided demands that some may have. No more "kicking the can down the road." Another dead end excursion is not an option for the dying Everglades. Bold, decisive action that results in actual restoration is essential for success.**

CESAJ-EN-W 09 September 2010

MEMORANDUM FOR SAJ LEVEE SAFETY OFFICER (DUBA)

SUBJECT: EN-W Position Statement on WCA-3A Regulation Schedule Modifications

The USACE Jacksonville District Water Resources Engineering Branch (EN-W) has conducted a thorough review of the Central and South Florida Project (C&SF) Part 1 Supplement 33: General Design Memoranda (GDM) for Water Conservation Area 3 (June 1960) and the C&SF Part 1 Supplement 49: Agricultural and Conservation Areas General and Detail Design Memorandum (August 1972). The 1960 GDM documents the WCA-3A design criteria and design assumptions, including the 9.5-10.5 feet NGVD regulation schedule for WCA-3A that managed water levels in WCA-3A prior to the start of the Experimental Program of Water Deliveries to Everglades National Park in 1983. Under the Experimental Program, the WCA-3A Regulation Schedule zones and operational rules were initially modified as part of the two-year test of the Rainfall Plan starting in 1985. The modified WCA-3A Regulation Schedule and Rainfall Plan remained in effect through the end of the Experimental Program in 2000. As an outcome of the deliberations during development of the Interim Structural and Operational Plan (ISOP 2000-2002) and the Interim Operational Plan (IOP 2002-present), the WCA-3A regulation schedule was further changed with the modification of Zone D and the establishment of Zone E1.

Based on the review of WCA-3A design documents and in conjunction with the hypothesis that the S-12s are not capable of achieving the original design discharge of 32,000 cfs, EN-W has concluded that a detailed engineering assessment of the effects of the potential S-12s discharge limitations and the WCA-3A Regulation Schedule modifications on the frequency and duration of high water events was warranted. The engineering assessment should include a rigorous evaluation of Standard Project Flood (SPF) conditions within WCA-3A as these conditions have not been evaluated by the USACE Jacksonville District since the original 1960 and 1972 design documents.

EN-W has proposed a two-phase analysis approach for WCA-3A high water events including: phase 1(ongoing) - identification and assessment of interim water management criteria for WCA-3A, including operational changes proposed as part of the ongoing

Everglades Restoration Transition Plan (ERTP) NEPA efforts; and phase 2(future) - a WCA-3A flood routing hydraulic analysis, incorporating current USACE risk analysis requirements focusing on potential human health and safety concerns resulting from WCA-3A stages, with identification of proposed water management operating criteria and potential infrastructure modifications to address identified concerns. The phase 1 effort was limited to hydrology and hydraulics assessment, while the phase 2 analysis will include additional engineering analysis conducted by hydrology and hydraulics, geotechnical, and structural design disciplines.

Findings of Phase 1 - To determine the ERTP interim water management criteria for WCA-3A, EN-W has completed a preliminary assessment based on the methodology identified in the 1960 GDM design document. The original design headwater of the S-12 structures is 12.4 feet and the peak three station average for WCA-3A under the SPF event was 13.90 ft, NGVD (C&SF Part I, Supplement 33). Since the current configuration of WCA-3A inflow and outflow structures differs from the 1960 GDM design document, a simple volumetric spreadsheet was developed of WCA-3A to determine the peak Standard Project Flood (SPF) stage within WCA-3A and at the S-12 structures based on current system conditions. Multiple inflow and outflow variables were identified and quantified to refine the calculations of the peak flows and stages for the SPF evaluation. The latest USGS rating curve for each of the S-12 structures was utilized in the analysis to incorporate the most current stage discharge measurements to more accurately incorporate present flow conditions. The analysis illustrated that under the current system conditions, as represented in the spreadsheet, the peak SPF S-12 headwater stage was computed as 13.76 ft, NGVD and the peak SPF WCA-3A three gage average stage was computed as 15.20 ft, NGVD. The comparison of peak stages between the 1960 GDM WCA-3A design and the 2010 WCA-3A volumetric spreadsheet predictions indicate that the predicted SPF stage is higher than the WCA-3A design stages established in the original GDM and used to set the as-built crest elevation of L-29: 1.36 feet higher at the headwater of the S12 structures; 1.3 feet higher at the three station average for WCA-3A. Sensitivity analysis

performed utilizing the 2010 WCA3A volumetric spreadsheet tool illustrated that the peak SPF stage is most sensitive to the amount of outflows being discharged from WCA-3A, with the primary outlet being the S-12's, and that the peak SPF stage is less sensitive to the configuration of the WCA-3A Regulation Schedule Zone A.

The schedule and scope for completion of the ongoing ERTP NEPA analysis precludes consideration of potential structural alternatives which would be proposed and evaluated in Phase 2. For immediate implementation through ERTP, prior to completion of the Phase 2, EN-W has concluded that the lowering of Zone A of the current WCA-3A Regulation Schedule to the 9.5-10.5 feet NGVD regulation schedule line from the 1960 GDM will provide an interim step to mitigate for the observed effects of the S-12s discharge limitations. Preliminary SFWMM modeling indicated that the following reductions in WCA-3A three station average high water frequency (as a percentage of the SFWMM 36-year period-of record, 1965-2000) may be reasonably expected from the lowering of Zone A: no significant change for stages above 11.75 feet NGVD (corresponds to S-12 headwater stage of 10.92 feet NGVD, based on historical regression); 1% reduction in stages exceeding 11.5 feet NGVD; 2-3% reduction in stages exceeding 11.0 feet NGVD; and 6-7% reduction in stages exceeding 10.5 feet NGVD.

The inclusion of the lowering of Zone A of the current WCA-3A Regulation Schedule within the proposed alternatives of the ongoing ERTP NEPA effort is a minimum requirement to demonstrate compatibility with the required interim water management criteria for WCA-3A. Additional water management operating criteria to further reduce the frequency and duration of high stages within WCA-3A should also be considered within the context of other ERTP Project considerations.

The ERTP Project's water management operating criteria should include the establishment of operational constraints at the S-12 structures based upon safety considerations for WCA-3A features and pertinent downstream areas, including the identification of infrastructure modifications to be implemented on a temporary

basis to allow the reduction of risk to human health and safety. The stability analysis of the S-12's is predicated on a maximum design headwater stage of elevation 12.4 feet NGVD with the differential head across the structure limited to 5.5 feet; also, the as-built crest elevation of L-29 and crown elevation of Tamiami Trail (US-41) in the S-12A to S-12D reach has been established to protect against the risk of overtopping from an adjacent flood stage of elevation 12.4 feet NGVD. The exceedance of these design conditions should be considered an immediate increase in risk to the human, health and safety afforded by the project features and would require decisive and prescribed measures to reduce the WCA-3A stage. In addition, application of the FDOT road base impact criteria to this reach of Tamiami Trail (estimated crown elevation of 14.95 feet) would result in a not to exceed regulated water stage of approximately elevation 11.5 feet NGVD adjacent to the roadbed (corresponds to S-12 headwater stage of 12.45 feet NGVD, based on historical regression). While this water stage could be temporarily exceeded and does not present the immediate risk of the SPF stage violation, nevertheless, it should be considered adverse with operational measures applied to reduce its duration.

Outside of the ERTP project, additional NEPA assessment would be required to implement infrastructure modifications on a temporary basis to allow the reduction of risk to human health and safety, or to implement other permanent structural alternatives which may result from the future phase 2 analyses. Considering the limitations on discharge through the S-12 structures, downstream conveyance improvements at the S-12 structures (potentially including removal of portions of the old Tamiami Trail) or additional outlets are required to mitigate for increased SPF stages within WCA-3A. The most effective additional measure investigated under phase 1 to alleviate the problem involves further degradation of the L-28 to increase outflows, although the potential for downstream effects, including impacts to the Tamiami Trail roadway and hydro-period/nesting condition effects on Cape Sable Seaside Sparrow Sub-population A, would require further investigations. Implementation of the Modified Water Deliveries Conveyance and

CESAJ-EN-W
SUBJECT: EN-W Position Statement on WCA-3A Regulation Schedule Modifications

Seepage Control Features and Tamiami Trail Improvements would also provide additional outlet capacity.

If you have any questions or require additional information, please contact me directly at extension 2105.

SEAN L. SMITH, P.E.
Chief, Water Resources Engineering Branch

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

MAR 0 6 2012

COPY

Mr. Willard Steele
Seminole Tribe of Florida
Tribal Historic Preservation Officer
32090 Josie Billie Highway, PMP 1004
Clewiston, Florida 33440

Dear Mr. Steele:

The U.S. Army Corps of Engineers (Corps), Jacksonville District, along with the South Florida Water Management District (SFWMD), is studying the environmental effects of the proposed Central Everglades Planning Project (CEPP). The goal of the Central Everglades Planning Project is to deliver within two years a finalized plan, known as a Project Implementation Report (PIR), for a suite of restoration projects in the central Everglades. This PIR is in preparation to seek Congressional authorization for the CEPP as part of the Comprehensive Everglades Restoration Plan (CERP). The project will incorporate updated science and technical information gained over the last decade to identify projects on lands already in public ownership to be selected as the next generation of CERP components.

The CEPP is incorporating some previously defined projects that have already addressed cultural resource concerns. Once the final array of alternatives are identified consultation with your office, site file reviews, cultural resource surveys, and determinations of significance and eligibility for listing of historic properties to the National Register of Historic Places, will continue until the Section 106 process of the NHPA, 36 CFR Part 800, Protection of Historic Properties, and the National Environmental Policy Act of 1969, as amended, are complete.

Based on goals specified by CEPP, the following areas will be consulted on at this time: Water Conservation Areas 3A and 3B, and Everglades Agricultural Area A-1 and A-2 (previously known as Component A).

Water Conservation Areas 3A and 3B – Florida Master Site File research indicates the presence of previously recorded sites, most of which were identified via remote sensing. These sites have not been verified with either surface or subsurface investigations.

COPY

Similarly, the Everglades Agricultural Area A-1 and A-2 – Florida Master Site File research indicates that this area has not undergone systematic cultural resource investigations. Therefore, the Corps proposes to conduct an archaeological survey and assessment of specific areas within both WCA3 and EAA A-1 and A-2 in accordance with the enclosed field testing plan enclosed.

The Corps seeks your comments on this proposed plan of action and looks forward to working with you. Any questions or concerns that you may have at this time can be addressed by Ms. Cindy Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa.
Chief, Environmental Branch

Enclosure

Copy Furnished:
Mr. Paul Backhouse, Seminole Tribe of Florida, Deputy Tribal Historic Preservation Officer, 32090 Josie Billie Highway, PMP 1004, Clewiston, Florida 33440
Ms. Anne Mullins, Seminole Tribe of Florida, Compliance Review Supervisor, 32090 Josie Billie Highway, PMP 1004, Clewiston, Florida 33440
Mr. Elliot York, Archaeological Data Analyst, 32090 Josie Billie Highway, PMP 1004, Clewiston, Florida 33440

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

MAR 0 6 2012

Mr. Fred Dayhoff
Section 106 and NAGPRA Consultant
Miccosukee Tribe of Indians of Florida
PO Box 440021 Tamiami Station
Miami, Florida 33144

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers (Corps), Jacksonville District, along with the South Florida Water Management District (SFWMD), is studying the environmental effects of the proposed Central Everglades Planning Project (CEPP). The goal of the Central Everglades Planning Project is to deliver within two years a finalized plan, known as a Project Implementation Report (PIR), for a suite of restoration projects in the central Everglades. This PIR is in preparation to seek Congressional authorization for the CEPP as part of the Comprehensive Everglades Restoration Plan (CERP). The project will incorporate updated science and technical information gained over the last decade to identify projects on lands already in public ownership to be selected as the next generation of CERP components.

The CEPP is incorporating some previously defined projects that have already addressed cultural resource concerns. Once the final array of alternatives are identified consultation with your office, site file reviews, cultural resource surveys, and determinations of significance and eligibility for listing of historic properties to the National Register of Historic Places, will continue until the Section 106 process of the NHPA, 36 CFR Part 800, Protection of Historic Properties, and the National Environmental Policy Act of 1969, as amended, are complete.

Based on goals specified by CEPP, the following areas will be consulted on at this time: Water Conservation Areas 3A and 3B, and Everglades Agricultural Area A-1 and A-2 (previously known as Component A).

Water Conservation Areas 3A and 3B – Florida Master Site File research indicates the presence of previously recorded sites, most of which were identified via remote sensing. These sites have not been verified with either surface or subsurface investigations.

Similarly, the Everglades Agricultural Area A-1 and A-2 – Florida Master Site File research indicates that this area has not undergone systematic cultural resource investigations. Therefore, the Corps proposes to conduct an archaeological survey and assessment of specific areas within both WCA3 and EAA A-1 and A-2 in accordance with the enclosed field testing plan enclosed.

The Corps seeks your comments on this proposed plan of action and looks forward to working with you. Any questions or concerns that you may have at this time can be addressed by Ms. Cindy Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa.
Chief, Environmental Branch

Enclosure

Copy Furnished:
Mr. Rory Feeney, Fish and Wildlife Director; PO Box 440021 Tamiami Station, Miami, Florida 33144

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
AH-TAH-THI-KI MUSEUM

30290 JOSIE BILLIE HWY
PMB 1004
CLEWISTON, FL 33440

PHONE: (863) 983-6549
FAX: (863) 902-1117

July 10, 2012

Dan Hughes
U.S. Army Corps of Engineers
Jacksonville District Office
Attn.: CESAJ-PD-EP
701 San Marco Boulevard
Jacksonville, Florida 32207

RE: Phase I Historical & Archaeological Survey of the Miami Canal within WCA-3A, Levee 5 Spreader Channel, Levee 4-5 Spreader Channel Pump Station, Broward & Dade Counties, FL, Panamerican Consultants, Inc. (June 2012)

Mr. Hughes:

Thank you for the opportunity to review the above reference report provided to our office on June 25, 2012. I noted during my review of the report that the results of the survey indicate that there are several potentially NR eligible archaeological sites identified (including 8BD4836, 8BD4837, and 8BD4839) that will be potentially adversely impacted by the proposed action. We respectfully would like to be consulted with regard to any further action that might affect these sites, including any further archaeological research or inundation of the known resources. Based on the conclusions of the report The Seminole Tribe of Florida respectfully recommends monitoring by an archaeologist that meets the Secretary of the Interiors Standards during any ground disturbance in high probability areas for archaeological materials in the event that construction inadvertently impacts a previously unknown archaeological site.

Please contact our office regarding further consultation on this project.

Sincerely,

Paul Backhouse, Ph.D., RPA
Acting Tribal Historic Preservation Office, Seminole Tribe of Florida

CC: Natalie Garret, Tribal Liaison
Eric P. Summa, Chief Environmental Branch

JUL 12 2012

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

Mr. Fred Dayhoff
NAGPRA Representative, Tribal Consultant
Miccosukee Tribe of Indians of Florida
P.O. Box 440021
Miami, Florida 33144

Dear Mr. Dayhoff:

As part of the Central Everglades Planning Project (CEPP), the U.S. Army Corps of Engineers (Corps) in partnership with the South Florida Water Management District (District), are planning to conduct archaeological investigations of tree islands and levees and/or canals within Water Conservation Area (WCA) 3A and 3B. The purpose of this testing is to determine what archaeological resources are in the area that may be effected by the project and to determine National Register of Historic Places (NRHP) eligibility of those archaeological resources. Results of this testing will guide and inform the CEPP team and consultation concerning cultural resources will continue as the project develops.

Because of the unique nature of the environment a research design was developed, through consultation, specifically for WCA 3A and 3B, which includes both tree islands and historic canals/levees. Provided below is an overview of how archaeological investigations within WCA 3A and 3B will be carried out. We seek your concurrence on this methodology, which was originally presented in full in our letter on 06 March 2012.

1. Through consultation with the Miccosukee Tribe of Indians of Florida and Seminole Tribe of Florida, 45.89 miles of historic levees/canals and 33 tree islands were selected for investigations.
2. Levee/Canals and any associated features will be recorded and assessed for NRHP eligibility.
3. Tree islands will undergo a surface inspection before shovel testing.

4. Shovel tests will start on the outside edge of the tree island and work inward toward the center. If artifacts are discovered, progress towards the center will stop. To better understand the history of the site, two 50-centimeter shovel tests will be dug in the highest portion of the site. This method will enable the Corps and the District to answer specific questions about the historic use of the area, while leaving most of the site undisturbed.
5. An archaeologist who specializes in identifying human remains will be in the field at all times. All material recovered from shovel tests will be scanned for the presence of human remains.
6. In the event that human remains are located during fieldwork, all work on the tree island will cease and any material collected from that tree island will be reburied. Human remains or funerary items will not be photographed.
7. All artifacts collected for analysis will be returned to the tree island they were recovered from by January 31, 2013. If human remains are inadvertently discovered during lab analysis, such material and any associated funerary items will be returned to the location in which they were recovered as soon as possible.

At this time, we seek your concurrence on the methodology for testing tree islands and historic canals/levees within WCA 3A and 3B. If you concur, please sign and date on the line provided below and return this letter to Ms. Cynthia Thomas. It is understood that all agreed upon methodologies are subject to review by the Tribal Chairman and that approval may be withdrawn with cause at any time during the project, at which point a new agreement, if any, will be written. Any questions or concerns that you may have can also be addressed by Ms. Thomas by contacting her at (904) 232-1180 or via email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

CONCURRENCE: Fred E. Dayhoff

Miccosukee Tribe of Indians of Florida, NAGPRA Representative and Consultant

DATE: July 13 2012

SEMINOLE TRIBE OF FLORIDA

TELEPHONE
(954) 967-3900

FAX
(954) -967-3463

WEBSITE:
www.seminoletribe.com

6300 STIRLING ROAD
HOLLYWOOD,
FLORIDA 33024

Tribal Officers:

JAMES E. BILLIE
Chairman

TONY SANCHEZ, JR.
Vice Chairman

PRISCILLA D. SAYEN
Secretary

MICHAEL D. TIGER
Treasurer

VIA ELECTRONIC & REGULAR U.S. MAIL

September 26, 2012

Colonel Alan M. Dodd
U.S. Army Corps of Engineers
Jacksonville District
Post Office Box 4970
Jacksonville, Florida 32331-0019

Re: Everglades Restoration Transition Plan

Dear Colonel Dodd:

I am pleased to inform you that on September 14, 2012, the Seminole Tribe of Florida's Tribal Council formally ratified both the Programmatic Agreement and Human Remains Policy for the Environmental Restoration Transition Plan ("ERTP"). Further, the Tribal Council has elected to participate in the Programmatic Agreement as a Signatory Party. Please find attached a copy of the Programmatic Agreement signed by Chairman James E. Billie. We appreciate the United States Army Corps of Engineers' ("Corps") efforts in cooperatively developing both documents with the Seminole Tribe. Burial resources hold significant cultural and religious importance to the Seminole Tribe. Therefore, we are especially pleased with the development of the Human Remains Policy for ERTP and the Corps' commitment to protect burial resources as trust resources.

This commitment was acknowledged by Colonel Pantano during our May 15, 2012, formal consultation. During that meeting, Colonel Pantano suggested and committed to the development of a Human Remains Policy for ERTP. Colonel Pantano also suggested and committed to developing, in consultation with the Seminole Tribe, a global human remains

policy that would govern all Corps activities throughout Florida. This commitment by Colonel Pantano is reflected in the ERTP Programmatic Agreement. As Colonel Pantano suggested, the global policy would build off the ERTP Human Remains Policy and the 2008 Comprehensive Everglades Restoration Plan Human Remains Policy.

We look forward to the opportunity to collaborate with the Corps in fulfilling the Corps' commitment to the Seminole Tribe to develop a global human remains policy. Both the Corps and the Seminole Tribe will benefit from an agreed upon, streamlined process for the treatment of burial resources. Such a policy will ensure outcomes that timely further project goals in a culturally sensitive manner. The Corps staff has committed to developing a global policy by June 2013, which we believe is a reasonable timeframe.

We are currently conducting formal consultation with the Corps in connection with the Central Everglades Planning Project ("CEPP"). We appreciate the Corps involving the Seminole Tribe and considering cultural resource issues early on in the process. Considering the early stages of CEPP, we believe that CEPP presents an excellent opportunity for the timely development of the global human remains policy. It is important that both the Seminole Tribe and the Corps continue to act on the commitments made to ensure a cooperative approach to the treatment of burial resources and the progress made thus far continues. Therefore, we respectfully request, in connection with CEPP, the Corps initiate formal consultation with the Seminole Tribe to develop the global human remains policy. Thank you again for your time and consideration.

Sincerely,

Jim Shore, General Counsel
Seminole Tribe of Florida

cc:

Cynthia Thomas – U.S. Army Corps of Engineers
Matt Morrison – U.S. Army Corps of Engineers
Kim Taplin – U.S. Army Corps of Engineers
Daniel Hughes – U.S. Army Corps of Engineers
John Pax – U.S. Army Corps of Engineers
Matt Donaldson – U.S. Army Corps of Engineers
Natalie S. Garrett – U.S. Army Corps of Engineers
Danny Tommie – Seminole Tribe of Florida
Paul N. Backhouse – Seminole Tribe of Florida
Anne Mullins – Seminole Tribe of Florida
Craig Tepper – Seminole Tribe of Florida
Patricia Power – Bose Public Affairs Group
Stephen Walker – Lewis, Longman & Walker, P.A.
James Charles – Lewis, Longman & Walker, P.A.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

OCT 15 2012

Planning and Policy Division
Environmental Branch

Mr. Jim Shore
Seminole Tribe of Florida
General Council
6300 Stirling Road
Hollywood, Florida 33024

Dear Mr. Shore:

On behalf of the U.S. Army Corps of Engineers (Corps), Jacksonville District, I would like to thank the Seminole Tribe of Florida for collaborating with the Corps on the development and ratification of the Everglades Restoration Transition Plan (ERTP) Programmatic Agreement and Human Remains Policy, and for the continued participation in ongoing formal consultation for the Central Everglades Planning Project (CEPP).

In your letter dated September 26, 2012, your office requested formal consultation concerning the development of a broader human remains protocol in connection with the ongoing consultation for CEPP. As you know, CEPP is an accelerated planning project, which requires a great deal of consultation and coordination to insure that all interested parties' concerns are considered. Currently, CEPP is covered under the Comprehensive Everglades Restoration Plan (CERP) Human Remains Policy that was signed in 2008. Due to the importance placed on human remains and burial resources and our Trust responsibilities, the Corps does not view it as appropriate for the human remains protocol covering all Jacksonville District civil works projects within Florida to be developed in connection with CEPP (which focuses on water and related resources in the south Florida region). A broader human remains policy covering all of the Corps of Engineers' civil works missions within the Jacksonville District's area of responsibility in Florida should be developed separately and independently of any project.

We would like to extend an invitation for you or a designated member(s) of your staff to discuss the path forward toward achieving our mutual goal of developing the human remains protocol. Mr. Daniel Hughes has been designated as the Jacksonville District staff archaeologist for the development of this document and will be initiating contact with you (or your designee) by November 16, 2012.

Please contact Mr. Hughes at (904) 232-3028 or via email: Daniel.B.Hughes@usace.army.mil, or the Jacksonville District's Tribal Liaison, Ms. Natalie Garrett at (561) 472-8878 or via email: Natalie.S.Garrett@usace.army.mil with any concerns or questions you may have.

Sincerely,

Alan M. Dodd
Colonel, U.S. Army
District Commander

Copy Furnished:

Mr. James Charles, Lewis, Longman & Walker, P.A., 515 North Flagler Drive, Suite 1500 West Palm Beach, Florida 33401
Mr. Stephen Walker, Lewis, Longman & Walker, P.A., 515 North Flagler Drive, Suite 1500, West Palm Beach, Florida 33401
Ms. Patricia Power, Bose Public Affairs Group, 1120 20th Street, N.W., Washington, DC 20036
Mr. Danny Tommie, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Mr. Craig Tepper, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Mr. Paul N. Backhouse, Seminole Tribe of Florida, 30290 Josie Billie Hwy, PMB 1004, Clewiston, Florida 33440
Ms. Anne Mullins, Seminole Tribe of Florida, 30290 Josie Billie Hwy, PMB 1004, Clewiston, Florida 3340
Mr. Matthew Morrison, South Florida Water Management District, 3301 Gun Club Road, West Palm Beach, Florida 33406
Ms. Cynthia Thomas, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Ms. Kimberley Taplin, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Mr. Daniel Hughes, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Mr. John Pax, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Mr. Matt Donaldson, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Ms. Natalie S. Garrett, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207

SEMINOLE TRIBE OF FLORIDA

6300 STIRLING ROAD
HOLLYWOOD, FLORIDA 33024
PHONE (954) 966-6300

WEBSITE:
http://www.semtribe.com

November 7, 2012

Colonel Alan M. Dodd
Jacksonville District Commander
United States Army Corps of Engineers
701 San Marco Blvd.
Jacksonville, Florida 32207-8175

Dear Colonel Dodd:

Thank you for your response letter of October 5, 2012, regarding hydration on the Big Cypress Reservation and other federal lands adjacent to the southern border of our Reservation. While we appreciate the acknowledgement of the Seminole Tribe of Florida's commitment to restoring the South Florida Ecosystem, we are not convinced that the Corps of Engineers understands vital importance of a healthy ecosystem to our identity as the Seminole Tribe of Florida. While we focus on the lands within the reservation boundaries, we also watch the land and water that surrounds this boundary because our history is not limited to the lines on current day maps. Our future will be controlled by a large extent by the decisions made regarding land use and water control all around our reservation. So we look to our region, including lands in the western basins, to see how the federal, state, and local governments are providing resources and planning for a healthy future and what we now see causes great distress.

As you note in your letter, the Seminole Tribe has been actively engaged in the South Florida Ecosystem Restoration effort for nearly 20 years. We have supported this effort technically and politically through all of these years. More specifically, we are constructing in full partnership with the Corps, an extensive water control system on the Big Cypress Reservation. This project is important to us and to our region and we appreciate the Corps' work and federal funding. But focusing solely on the land and water within our Reservation's legal boundaries is short-sighted. And this has been our position for nearly two decades. We have urged over and over again through all the planning efforts, including the Restudy which is the basis for CERP, to include the western basins in the Central Everglades system in the monitoring, modeling, data gathering, design, planning, and project implementation. So please appreciate our deep disappointment to be told that waters in the western basins that impact the Central Everglades Planning Project (CEPP) are not included in the scope of CEPP because the monitoring, data gathering, and modeling have still not been done in this region, despite our repeated requests to do so for over 14 years. We applaud the Corps' drive to complete the CEPP planning process in 18 months, but we remain very concerned by the long-standing inattention to this region.

Apart from the fact that we, a valued partner in Everglades Restoration by all accounts, have been effectively ignored in our repeated requests for monitoring, modeling, and planning in this region, we note that

the federal government has an obligation through its trust responsibilities to restore the northwest corner of WCA 3A, where the Seminole Tribe of Florida retains hunting and fishing rights, at a minimum. Beyond CEPP, we would like to discuss further how the Corps and its State partner intend to address the Central Everglades north and west of the redline in the current CEPP models.

As to your specific suggestions for addressing our water supply concerns, we welcome your offers. Regarding your suggestion to exercise adaptive management of Basin 1 of the critical project, we look forward to working with your engineering and wetlands regulatory staff on crafting operational changes to the outlets and siphons in order to deliver more water to the native areas south of the West Feeder Canal in the Big Cypress Seminole Indian Reservation. We assume that such work will be eligible for funding under the Operations & Maintenance provisions of the project's Project Cooperation Agreement.

Regarding the S-190 water control structure temporary deviation, we are encouraged by the option to work effectively within the existing regulation schedule to increase water storage in the West and North Feeder Canals, which will allow more water to replenish groundwater of the reservation. We would like to schedule meetings as soon as possible with the Corps and the South Florida Water Management District (District) to discuss the details and timing of the temporary deviation. I note here that we are also concerned about the structural integrity of the S-190 water control structure and urge the Corps and the District to carefully review the soundness of the structure and take all actions necessary to make it secure.

And thank you for the information on the Tribal Partnership Program as authorized by Section 203. We will take a careful review of this program and make a decision about whether or not to apply at a later date.

Managing water resources in South Florida is a steep challenge. The only way to meet this challenge is to work together to plan a future that balances competing needs fairly, which requires a more comprehensive view of the system. For as long as the monitoring and modeling in the western basins is not addressed, the South Florida Ecosystem restoration plan is incomplete.

We look forward to continue to work with you to remedy this situation and to address the pressing needs of the Tribe to correct the hydrology surrounding our Big Cypress Reservation. I have directed my staff to arrange another meeting with the Corps through Ms. Garrett.

Thank you for your attention to this critical resource issues for the Seminole Tribe.

Sho-na-bish,

James E. Billie
Chairman of the Tribal Council

Jeb/Pd
Cc: Jim Shore, General Counsel, Seminole Tribe of Florida
Craig D. Tepper, Director, Environmental Resource Management Department, Seminole Tribe of Florida
FILE

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC
PRESERVATION OFFICE

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PHONE: (863) 983-6549
FAX: (863) 902-1117

March 19, 2013

Erica Summa
Chief, Environmental Branch
U.S. Army Corps of Engineers
Jacksonville District Office
Attn.: CESAJ-PD-EP
701 San Marco Boulevard
Jacksonville, Florida 32207

RE: Comprehensive Everglades Project Plan (CEPP)-Development of Adaptive Management Plan (AMP) and Memorandum of Agreement (MOA)

Mr. Summa:

I wish to thank you and the Jacksonville District, USACE for meeting with our staff on March 8, 2013 to discuss the next steps for the Central Everglades Project Plan (CEPP). We are encouraged that the Jacksonville District, USACE is committed to developing an Adaptive Management Plan (AMP) that would address STOF concerns by incorporating key provisions of the Everglades Restoration Transition Plan (ERTP) to address cultural resources and human remains including the avoidance of unnatural inundation. Further, this AMP would be formalized by a legally binding Section 106 Compliance Document in the form of a Memorandum of Agreement (MOA).

Based on our meeting and the commitments made, we believe development of an AMP is an appropriate measure to address unexpected and unwanted impacts to burial resources including unnatural inundation. Similar to the Human Remains Policy developed for ERTP, the AMP would be drafted to address the limited knowledge of the resources within the Area of Potential Effect ensuring culturally sensitive treatment of burial resources; a "Plan B" as it was characterized during our meeting. In order to move forward on this initiative, we respectfully request another meeting with Cindy Thomas, Susan Kaynor, and you to formalize the parameters and timeframes for the AMP. Please provide us some potential dates that you, Cindy and Susan would be available.

I would note that Tribal Historic Preservation Office (THPO) staff were somewhat alarmed by statements by USACE technical staff as to the potential effect of CEPP and ERTP operations. As we understand it ERTP appears to have the potential to cause effects that are contrary to those previously communicated

during previous meetings by key USACE staff. During previous ERTP consultations we were lead to believe that ERTP operations would lower watertables throughout the area of potential effect. During our March 8th meeting we were informed that the watertable within Shark River Slough would actually be elevated. This area is well known to contain high frequencies of cultural resources and the lack of explanation for the inconsistency in operation delivery is alarming. The potential for different kinds of impacts from project to project to the same resources highlights the need for a uniform treatment plan for burial resources. Regardless of the project design, purpose or funding, the one constant that remains unwavering is the fact that unnatural inundations is an unacceptable impact that must be avoided. This was acknowledged by Colonel Grosskruger in the 2008 CERP Human Remains Policy and was further strengthen by Colonel Pantano in the ERTP Human Remains Policy. The differences between ERTP and CEPP also highlight the need to consult with the Seminole Tribe on all the projects as a whole versus project by project. In order to ensure project goals and culturally sensitive treatment of burials is achieved, a more global view of the projects (how they work together) and associated cultural resources is needed so as to avoid misunderstandings such as what has occurred. We therefore respectfully request that great care is taken in the future to accurately explain the potential effects of a particular project on places that might have cultural significance for the Seminole Tribe of Florida. We look forward to working with you to develop the above documents.

Regards,

Paul N, Backhouse, Ph.D., Tribal Historic Preservation Officer

CC: Cynthia Thomas, Archaeologist, USACE
Susan Kaynor, Ecosystem Branch, USACE
Anne Mullins, Deputy THPO, Seminole Tribe of Florida
Bradley Mueller, Compliance Supervisor, Seminole Tribe of Florida
James E. Charles, Attorney/Shareholder, Lewis, Longman & Walker, P.A.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

APR 01 2013

Planning Division
Environmental Branch

Mr. Paul Backhouse
Tribal Historic Preservation Officer
Seminole Tribe of Florida
Ah Tah Thi Ki Museum
34725 West Boundary Road
Clewiston, Florida 33440

Dear Mr. Backhouse:

The U.S. Army Corps of Engineers (Corps), Jacksonville District in partnership with the South Florida Water Management District is conducting a feasibility study for the Central Everglades Planning Project (DHR Project File No. 2012-01115). As part of that study, a cultural resource survey was conducted within Water Conservation Area 3 resulting in the draft report titled, *Central Everglades Planning Project Cultural Resources Survey of Water Conservation Areas 3A and 3B, Broward and Miami-Dade Counties, Florida.* The draft report contains recommendations on determinations of effects, however the Corps has yet to make a final determination and reserves the right to do so upon submission of the final report. As per your request the draft report has been provided electronically for review.

Please provide your comments within 30 calendar days of receipt of this letter. If there are any questions, contact Ms. Cynthia Thomas at 904-232-1180 or e-mail Cynthia.G.Thomas@usace.army.mil. An electronic copy of this letter has been provided to the following members of your staff: Anne Mullins, Alison Swing, Brad Mueller and Elliott York.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

APR 0 1 2013

Mr. Fred Dayhoff
NAGPRA Representative, Consultant to Miccosukee Tribe
Box 68 Old Loop Road
Ochopee, Florida 34141

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers (Corps), Jacksonville District in partnership with the South Florida Water Management District is conducting a feasibility study for the Central Everglades Planning Project (DHR Project File No. 2012-01115). As part of that study, a cultural resource survey was conducted within Water Conservation Area 3 resulting in the draft report titled, *Central Everglades Planning Project Cultural Resources Survey of Water Conservation Areas 3A and 3B, Broward and Miami-Dade Counties, Florida.* The draft report contains recommendations on determinations of effects, however the Corps has yet to make a final determination and reserves the right to do so upon submission of the final report.

Please provide your comments within 30 calendar days of receipt of this letter. If there are any questions, contact Ms. Cynthia Thomas at 904-232-1180 or e-mail Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
AH-TAH-THI-KI MUSEUM

30290 JOSIE BILLIE HWY
PMB 1004
CLEWISTON, FL 33440

PHONE: (863) 983-6549
FAX: (863) 902-1117

May 23, 2013

Cynthia Thomas, Archaeologist
Central Everglades Planning Project
U.S. Army Corps of Engineers - Jacksonville District
701 San Marco Blvd.
PD-C Floor 4W
Jacksonville, Florida 32207
Office: (904) 232-1180
Blackberry: (904) 445-7693

RE: Review Comments for the *Central Everglades Planning Project Cultural Resources Survey of Water Conservation Areas 3A and 3B* Report.

Ms. Thomas:

Thank you for consulting with the Seminole Tribe of Florida (STOF) and for the opportunity to comment on the above referenced report. After carefully reviewing the report the STOF THPO has several initial concerns which we would like to bring to your attention.

The previous research section of the report does not appear to sufficiently present or synthesize the existing investigative literature for the project area. The overall sample universe and investigated sample size is not stated and our estimation based on the presented data suggests that less than a 3% sample of the high probability tree island locations was investigated during this project.

There appears to have been no attempt to utilize Seminole Tribal members as informants. The lack of Seminole input overlooks a potentially valuable source for information concerning the history of the

Everglades region. Likewise, the role of the Seminole people in the recent history of the Everglades seems to be missing from the Historic Context section of the report. The potential for historic Seminole sites is also almost entirely missing from the methodological development and therefore largely missing from the reported results (with the exception of one site with a Seminole component).

The Metal Detector Survey section of the Methods chapter of the report states that a limited, judgmental metal detector survey was performed but that "hits" or "targets" were not excavated in order to ensure that any potential Seminole/Miccosukee human burials would remain undisturbed. While we understand and applaud the motive to not disturb human burials, the failure to explore the nature of metal detector hits seriously compromises the value of the information that can be collected from a site. With respect to Shovel Testing and all other field methods employed it goes without saying that the preferred time of the year to conduct field investigations is the dry season when a greater number of tree islands would be accessible. The limitations placed on the fieldwork by either the water levels or the density of the vegetation serve to further reduce the overall tree island sampling rate within the APE.

Finally, with regard to one of the research questions addressed in the report and referred to as the "predictive measure for site presence", the THPO notes that the report expresses concern over the small sampling size with only ten sites examined in the field and only eight of those examined in detail (found in the Interpretations and Research Results section). The limited sample size is problematic and we agree with the conclusion that too little information is available to make an accurate determination as to the distribution or eligibility of tree island sites outside of those directly tested as part of this investigation.

There is much to be applauded in the report and the work and effort put into the fieldwork is apparent. We hope that you view these comments in the constructive manner in which they are intended. Should you have any further questions or concerns do not hesitate to contact our office.

Respectfully,

Bradley M. Mueller

Bradley M. Mueller
Compliance Review Section Supervisor

CC: Paul N, Backhouse, Ph.D., Tribal Historic Preservation Officer & Director of Museum
Anne Mullins, Deputy Tribal Historic Preservation Officer
James E. Charles, Attorney/Shareholder, Lewis, Longman & Walker, P.A.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

19 JUN 2013

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

Paul Backhouse, Ph.D, RPA
Museum Director and Tribal Historic Preservation Officer
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Dear Dr. Backhouse,

Thank you for the invitation to meet with you and your staff members on May 15. I found the discussion to be helpful, enlightening (as it was my first time on the Seminole reservation) as well as very productive. I hope to continue the dialogue well into the future.

You may recall that at the close of our meeting, I offered to write a summary of what was discussed in addition to directly responding to your letter dated March 15, 2013. In your March letter you requested a face to face meeting to discuss Adaptive Management and its potential application to Central Everglades Planning Project (CEPP) as well as requesting clarifying information on the Everglades Restoration Transition Plan (ERTP).

During our meeting, we covered the status of CEPP, with specific focus of where the project fits in the civil works process and how this study phase is different from implementation. We also discussed ERTP as an example of a project in the Operations and Maintenance stage of the civil works implementation process. Finally, we discussed Adaptive Management as an implementation strategy, how it relates to an effects determination, and where we believe we can jointly focus our energies in the future toward addressing your concerns over inundation of human remains.

In summary, Jacksonville District recognizes the Seminole Tribe's interest in incorporating adaptive management principles into CEPP. The Sec 106 consultation process will allow for continued coordination and development of appropriate adaptive management principles, also known as contingency measures, if warranted as the plan design, construction and operations are refined. Such determinations will be made when we have more detailed and refined information, which will enable the most accurate predictions in water deliveries south into the Everglades.

In the interim, we intend to continue the cultural resource identification work underway in CEPP, will make preliminary effects determinations based upon best available information, and will continue to consult with you as additional surveys are planned and conducted throughout the project. We would also like your continued collaboration on the development of the updated Jacksonville District Human Remains Policy, a commitment from our current and former District Commander. We expect this new policy to replace the existing CERP 2008 Human Remains Policy, and be applied to all civil works and regulatory projects within the Jacksonville District, including CEPP in the implementation phase. This is a large endeavor which has the potential to serve us for many years, but will only occur if we are equally committed to its development.

Finally, at the meeting we discussed how adaptive management principles/contingency plans have already been incorporated into the ERTP project, including your concerns regarding the expected water levels in Shark River Slough through the implementation of ERTP. For more detailed and specific information, we will ensure that the all necessary members of the ERTP team will be available to discuss water levels at the next ERTP quarterly meeting currently scheduled for July 18, 2013.

Again, I appreciate the opportunity to meet with you and your staff and would like to continue such discussions, preferably face-to-face, with some frequency in the future. In the interim, I intend to pursue quickening the pace of our Human Remains policy and will ensure that we have appropriate stakeholders present for the discussions. If you have any additional questions with regards to the Human Remains policy, feel free to contact Natalie Garrett, Tribal Liaison; questions concerning CEPP, please contact Cynthia Thomas, CEPP Cultural Resources Lead or questions concerning ERTP, contact Grady Caulk, ERTP Cultural Resources Lead. As always, I am available to assist you in any way that I can, so do not hesitate in contacting me when necessary.

Sincerely,

19 JUN 2013

Eric P. Summa
Chief, Environmental Branch

Copy Furnished:
Susan Kaynor, Section Chief, Ecosystem Branch, USACE
Anne Mullins, Deputy THPO, Seminole Tribe of Florida
Bradley Mueller, Compliance Supervisor, Seminole Tribe of Florida
James E. Charles, Attorney/Shareholder, Lewis, Longman & Walker, P.A.

THOMAS.CYNTHIA.G.1400734069	Thomas/CESAJ-PD-C/1180
	Taplin/CESAJ-PD-C
	Summa/CESAJ-PD-E
	Acosta/CESAJ-PD-EP
HUGHES.DANIEL.BRYANT.1188810876	Hughes/CESAJ-PD-EP
GARRETT.NATALIE.S.1292413854	Garrett/CESAJ-PM-E
for DONALDSON.MATTHEW.BRANDON.1401868582	Moore/CESAJ-OC

***See CEPP PIR/EIS Appendix C.3 for detailed responses to comments listed below.

From: Stephen Walker
Sent: Tuesday, July 16, 2013 5:32 PM
To: 'Ramirez, Armando'; 'donna.s.george@usace.army.mil'
Cc: 'Cherise Maples'; Michelle Diffenderfer; 'Patty Power'; 'Jim Shore'
Subject: Seminole Tribe Comments to the PIR

Dear Donna and Armando,

Please see attached to this email the Seminole Tribe's handwritten comments to the Draft PIR. The Seminole Tribe of Florida ("Tribe") appreciates the opportunity to comment on the Draft PIR for the Central Everglades Planning Project ("CEPP") that is being prepared by the South Florida Water Management ("District") and the U.S. Army Corps of Engineers ("Corps"). We appreciate the opportunity to provide our comments on the PIR as a PDT member and look forward to providing more formal comments in the tribal consultation process. The Seminole Tribe remains supportive of the restoration of the Everglades, including the Central and Western Everglades, of which it is a part. The Tribe's remaining concerns regarding CEPP center largely on the Corps' inability to anticipate impacts, positive or negative to the Big Cypress Reservation, Preserve and Addition lands. The Tribe remains concerned that the project does not contemplate or consider the impact on the Western Basins including the Tribal Big Cypress Reservation, Preserve and Addition Lands. The failure to fully assess the impacts to the Western Basins and incorporate benefits for this area into the CEPP planning process continues to be an issue. This inability to model or analyze the Western Basins in connection with CEPP is a fundamental flaw.

We are disappointed to see that the PIR does not include any substantive analysis regarding supplemental water for restoration of tribal natural resources and protection of the Tribe's customary usage rights. We believe that the PIR should have discussed in detail, the Tribe's environmental water request. We recommend that the PIR consider development of alternatives which would direct supplemental water to the Big Cypress Seminole Indian Reservation and the Big Cypress National Preserve and Addition Lands. This is particularly relevant as the Tribe is the local sponsor for a Critical Project in the Western Basins which has the capacity to bring water for the restoration of wetlands on Big Cypress Reservation, Big Cypress National Preserve and Addition Lands. There are greater restoration benefits that could be realized by looking at a larger restoration landscape that are being lost by the segmentation of CEPP. At a

minimum, the Corps should consider how CEPP and the Tribe's Critical Project could be analyzed in a more holistic manner to better accomplish the environmental goals of CEPP.

Sincerely,

Stephen A. Walker

2.6 NATIVE AMERICANS

Lands leased to the Miccosukee Tribe of Indians of Florida are currently experiencing long term high water staging in the southern part of WCA 3A, which effects subsistence practices and increases inundation risks to islands utilized by the Tribe.

Predicted sea level rise for the south Florida area for historic, intermediate and high rates of future sea level rise are +5 inches, +9 inches and +20 inches, respectively http://publications.usace.army.mil/publications/eng-circulars/EC_1165-2-212.pdf. Sea level rise would potentially effect habitation, ceremonial and sacred areas south of Tamiami Trail and west of the Miccosukee Reserved Area under FWO project conditions.

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The Seminole Tribe has customary usage Rights in WCA 3A, the Big Cypress Preserve and addition Lands. We recommend adding language to address these rights and analyze how this project will impact these rights under the existing and without analysis.

Additional opportunities should be listed. This will help PDT members understand how stakeholders can help work toward mutual goals.

4.5.2 Operational Refinements of the NER Plan

The results of the NER analysis identified Alternative 4M infrastructure as providing the greatest overall benefits with the least cost per habitat unit; however, the evaluation identified the need to revise the operations of Alternative 4M to ensure the project savings clause constraints are met, minimize localized adverse ecological effects, and identify additional opportunities to provide for other water related needs.

The modeling does not demonstrate how the 4M infrastructure or the 3 modeling scenarios will impact the Tribe's water needs for natural resources and customary usage.

Three modeling scenarios were conducted to identify project effects resulting from operational changes.

Alt 4R

The first refinement, Alt 4R, focused on operation changes to avoid potential impacts to water supply levels of service in the Lake Okeechobee Service Area (LOSA) and Lower East Coast (LEC). Refinements included alleviating potential ecological impacts from lowered water depths in WCA 2B by retaining a small portion of the water in WCA 2B that Alternative 4M had diverted to WCA 3A. Increases in low flow events to the St. Lucie Estuary, minimized reductions in freshwater flows to Biscayne Bay, and improved water depths in eastern WCA 3B for purposes of improving environmental conditions were also considered.

Alternative 4R changed assumptions from Alt 4M by including:

- St Lucie Reservoir (C-44) backflow to Lake Okeechobee.
- Revised Lake O. schedule releases to re-balance Lake / Water Supply / Estuary objectives.
- Reduced frequency & magnitude of CEPP L-6 Diversion operations in ALT4R relative to Final Array ALTs.
- Increased utilization of S144, S145 and S146 relative to S11s.
- Increased seepage out of eastern ENP

This refinement resulted in an alternative that lessened concerns over violating constraints yet there remained room for improvement in LOSA water supply and the spatial distribution of groundwater and canal discharges in the LEC to provide greater confidence in meeting legal requirements of the savings clause. This alternative did not fully address the low flow events to the St. Lucie Estuary nor did it identify additional opportunities for other water related needs. ALT4R maintains the majority of the system benefit identified for Alt 4M in the final array evaluation and demonstrates a substantial hydrologic improvement over the baselines; however, represented a 6% decrease in overall project benefits due to competing demands for the allocation of water in the regional system.

The modeling should consider the impact on the Tribe's BCR and western basins and better examine how flood impacts will be dealt with in connection with Lake Okeechobee releases.

Alt 4R.1

The second refinement, Alt 4R.1, was performed to determine if water supply cutbacks on LOSA could be further reduced and if increases in the LEC public water supply (PWS) could be met while maintaining the natural system performance realized from the adjustments that were made for Alt 4R. The PWS demands utilized in the alternative are based on per capita demand increases proportional to Florida's Bureau of Economic and Business Research (BEBR) medium population projections.

Alternative 4R.1 changed assumptions from Alt 4M by including:

- Revised PWS demand for LEC Service Areas 2 from 277 MGD to 295 MGD
- Revised PWS demand for LEC Service Area 3 from 412 MGD to 465 MGD

affect Tribal compacts, and with adjustments maintaining water supply for existing users in the LEC (xx confirm/edit the highlighted items after Assurances modeling is completed in late June 2013).

- Alternative 4~~R~~ ranks highly for the four P&G criteria. It is the most efficient of the four final alternatives and is near the most effective in achieving the objectives for the entire planning area. The acceptability of Alternative 4~~R~~ is similar to the other three alternatives. None of the alternatives were completely free of stakeholder concerns. ~~All four alternatives meet all legal criteria for implementation. Alternative 4R is complete, as are the other three alternatives~~
- Alternative 4R.2 would provide the greatest habitat unit benefits, defined as the average annual difference between With Project and Without Project conditions, for the Greater Everglades and Florida Bay while providing for other water related needs. Within the Greater Everglades region, Alternative 4R.2 would provide the greatest number of habitat units relative to the FWO in ~~,~~ northeastern WCA 3A~~southern ENP (Zone ENP-S), and southeastern ENP (Zone ENP-SE)~~. Alternative 4R.2 would provide the second and third greatest number of habitat units relative to the FWO in northern and southern ENP (Zones ENP-N and ENP-S) and the fourth greatest number of habitat units relative to the FWO in areas adjacent to the Miami Canal in WCA 3A~~WCA 3B~~ (Zone 3A-MCB). ~~Alternative 4R would provide the same benefits as Alternatives 1, 2, and 3 to northern WCA 3A, central WCA 3A, and the St Lucie and Caloosahatchee estuaries~~
- ~~The ecological performance of Alternative 4R in WCA 3B is expected to be improved as the operations of the WCA 3B infrastructure is refined.~~
- The flow-way generated by the Blue Shanty levee in Alternative 4R.2 would increase flows through western WCA 3B (Figure G-3~~620~~) while maintaining protective water depths in eastern WCA 3B. For the action alternatives considered with CEPP, Alternative 4R.2 would also best achieve the goal of re-establishing hydrologic and ecologic connectivity of WCA 3A, WCA 3B, and ENP by degrading the L-67 C and L-29 levees west of the Blue Shanty levee. Long, continuous and uninterrupted patterns of sheetflow from north to south are a defining characteristic of the Everglades. ~~(Refer to Section G.2.2.3 of Appendix G [Benefit Model]) for further information on changes in overland sheet flow (Figure G-17) and proposed water depths (Figure G-20) with Alternative 4 and potential benefits within the Blue Shanty flow way.~~
- Alternative 4R.2 is a cost effective and best buy plan. It has the lowest annualized cost per output for habitat units in the Greater Everglades area (WCAs and ENP) and habitat units in Florida Bay.

Alt 4R, for Northern Estuaries, Greater Everglades and Florida Bay combined:

- 3,190,660 acres (~4,985 square miles),
- $1,019,000,000 first cost; $72,500,000 average annual cost; 259,110 average annual HU benefit.
- 319 first cost $ / acre;
- 280 average annual $ / average annual HU;
- CEPP unit costs are lower than Picayune Strand & Kissimmee River, which are justified and successful restoration projects.

Comment [MAN5]: Is this appropriate statement? I thought Alts 1-4 had potential issues in meeting savings clause requirements.

Do you need to do an additional P&G ranking of Alternatives 4R, 4R.1 and 4R.2? Or do you say that Alternatives 4 ranked highly for the four P&G criteria so Alt 4R.2 ranks high by default?

Comment [MAN6]: Edited this section to reflect new scores. Did not draft original text not sure if it is needed. Summary paragraph on benefits appears in Section 6.

Comment [MAN7]: Reference write-up Myrika D. and Kim T. did on Blue Shanty – not sure where it is in the report.

Comment [tra8]: Need to recheck all these numbers.

Comment [dec9]: Clarify this descriptor.

Comment [dec10]: Is this needed? I assume the reverse is also true, in that other successful projects have lower unit costs.

6.1.2.2 Flow Equalization Basin Discharge Canal

The A-2 FEB Discharge Canal runs from the STA 3/4 supply canal to the southwest corner of the A-2 FEB. There are approximately 91.25 acres required for this canal. The canal runs along the southern portions of Sections 35 and 36, Township 46 South, Range 35 East. Approximately 57.02 acres are owned by the State of Florida and will be acquired by SFWMD. The remaining 34.23 acres are owned by SFWMD and were acquired as part of the Talisman Exchange, with both Federal and State funds. The Federal funds contributed by DOI pursuant to the Farm Bill will be credited to the Federal share of the project cost. The state funds contributed by SFWMD for the acquisition of the Talisman property will be credited to SFWMD. Fee title will be the required estate for these lands. These lands are currently leased by either the State of Florida or the SFWMD to agricultural interests. More details are provided in Appendix D, Real Estate.

Comment [SFWMD12]: The acquisition requirements in this section need to be clarified.

6.1.2.3 Water Conservation Areas 3A and 3B

SFWMD owns a variety of interests in WCA 3A and WCA3B. These lands were acquired and provided for the Central and Southern Florida Project (C&SF). The SFWMD owns fee title to approximately 134,280.95 acres, a perpetual flowage easement over approximately 300,343.52 (with the fee owned by the State of Florida), a perpetual flowage easement over approximately 70,612 (with the fee owned by private parties), canal or levee easement over approximately 11,598.84 acres and a perpetual easement for surface flowage rights over approximately 73,360 acres (with fee title owned by the State). All of these lands were provided as an item of local cooperation for the C&SF Project. The rights owned by SFWMD in WCA 3A and WCA 3B have been determined to be sufficient for CEPP project purposes. The SFWMD will recertify these lands to the Federal government when required for construction or operations at no cost to CEPP. More details are provided in Appendix D, Real Estate.

The Tribe has Customary usage Rights that we should acknowledge in this section.

6.1.2.4 Uniform Relocation Assistance Act, PL91-646 as amended

There are no residential relocations entitled to Uniform Relocation Assistance Benefits associated with project implementation. There are no businesses requiring relocation as a result of this Project; therefore, there are no additional persons or businesses entitled to Uniform Relocation Assistance Benefits, Public Law (PL) 91-646, as amended. All relocation benefits were included as part of the Talisman exchange/acquisition agreement.

6.1.2.5 Facility/Utility Relocations

Florida Power and Light lines will have to be relocated or abandoned from the center of the detention area within the A-2 FEB. Florida Power and Light, and Quest Communications lines will have to be relocated where the L-29 is being removed. The removal of Old Tamiami Trail will require relocation of the Florida Power and Light line.

Comment [SFWMD13]: This location needs to be updated

6.1.3 Draft Project Operating Manual

A Draft Project Operating Manual (DPOM) was developed to control day-to-day water management functions of the project. ~~The DPOM encompasses all foreseeable conditions that may be encountered during project operation.~~ The project will be operated in accordance with the DPOM to achieve the goals, purposes, and benefits outlined in the Project Implementation Report, including the improvement of the quantity, timing, and distribution of water in the natural system. All costs associated with the physical operation of the project will be funded through OMRR&R. The DPOM is in Annex C.

Comment [SFWMD14]: Combine with Section 6.6.5

Comment [SFWMD15]: Move to OMRR&R Section

Comment [SFWMD16]: Need to include a summary here of how the project features will be operated.

It is important to note that refinements to the operating criteria and the DPOM will be made as more design details, data, operational experience and information are gained during preconstruction engineering and design, construction, and operations.

6.1.4 Adaptive Management and Monitoring Plan

The CEPP Adaptive Management (AM) and Monitoring Plan (**AM and Monitoring Plan, Annex D**) identifies the monitoring information needed to inform CEPP implementation and to document restoration progress to agencies, the public, and Congress. The overall objective of the AM and Monitoring Plan is to focus resources on continued refinement of CEPP to fine-tune performance due to inevitable uncertainties, based on existing knowledge and knowledge that will be gained through monitoring and assessment.

Items in the AM and Monitoring Plan that are not required for regulatory monitoring are subject to further prioritization and screening and are not guaranteed to be executed. As test project and pilot project results become available, as continued ecosystem monitoring data become available, and as the level of knowledge changes through time, it is likely that the number of items that need to be included in the final AM and Monitoring Plan will be reduced.

A fundamental principle of AM is that a project can be adjusted to continually achieve high performance toward the project's goals and objectives and to remain within its constraints. In particular, in AM the adjustments are not "trial and error", which can be costly and erratic, but rather they are based on a scientifically efficient and sound process of learning from data. These adjustments should be viewed as intelligently fine-tuning the project, the need for which is almost inevitable in a large-scale, long-term restoration project like CERP. Given this fundamental principle of AM, the CEPP AM and Monitoring Plan provides suggestions for adjusting certain aspects of CEPP if necessary. The suggestions are based on current experience and knowledge and are provided for discussion. The suggestions are not required actions, nor are they meant to limit agencies from considering other options. They have been analyzed under the existing NEPA analysis of CEPP in **Sections 4** and **5** and in **Appendices C.2.1** and **C.2.2**. See **Annex D** for the full AM and Monitoring Plan.

6.1.5 Exotic and Invasive Species Management Plan

An exotic and invasive vegetation management plan has been developed in conjunction with USACE policy. This policy complements the National Invasive Species Act and strives to either prevent or reduce establishment of invasive and non-native species at project sites. The primary objectives of this effort for CEPP is to establish favorable conditions suitable for the long-term maintenance control of non-native species, and the re-establishment of native flora. To achieve these goals, this plan proposes to complete both initial and long-term invasive plant control efforts necessary to achieve maintenance control levels of invasive vegetation within the project area. Specifics of the nuisance and exotic vegetation control plan are contained in **Annex D.**

6.1.6 Recreation Features

The proposed recreation facilities will increase access into the Greater Everglades and enhance users' opportunities and access within the marsh. Facilities include sufficient gravel parking with boat ramps and trail heads, dry vault toilets, shelters, and Americans with Disabilities Act compliant fishing platforms. Within the Everglades, facilities will enhance user opportunities through establishing ~~northern Canal~~the Canalairboat crossings over levees and boat accessible marsh tent camping sites. Pedestrian accessibility will be maintained along levee routes through existing and proposed water control structures. Typical activities supported are multi use trails and blue ways, hunting, fishing and wildlife viewing. Recreational features will be constructed on SFWMD fee lands, eliminating real estate expense for recreation.

Comment [SFWMD17]: Combine with Section 6.6.6

Comment [SFWMD18]: There needs to be more detail added here on the obligations to implement. Also add more information for prioritization and screening factors.

Comment [SFWMD19]: Need to add recreation associated with A-2 FEB.

Comment [dec20]: Has this been agreed to as a CEPP recreation feature? Potential water quality implications and hydrological effects would need to be assessed within the CEPP NEPA. I recognize it has been long recommended by recreational interests, including during the DPM, but was not aware of a final determination.

→ The Tribe has customary usage rights which include activities such as hunting, fishing, frogging, etc. for areas such as WCA 3A, Big Cypress Preserve, ~~and~~ and addition lands.

Cultural Resources		
Geographic Regions	Future Without Project (No Action Alternative)	Alt 4R
Old Tamiami Trail	No effect	Major long term adverse effect. Potential mitigation down to no effect.
L 67 Ext. Levee	No effect	No effect
L 31N	No effect	Potential Major long term adverse effect. Potential mitigation down to no effect.
S 356	No effect	No effect
L 28	No effect	Unknown, survey needed
G 211 Operational Refinements	No effect	No effect
S 334 to S335 Seepage Barrier	No effect	Not ApplicableNo effect
Draft Preliminary Operations Plan	Unknown	Unknown

6.5.2.16 Native Americans * Section Incomplete for DQC***

The Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida rely upon upon the Everglades in its natural state to support their religious, subsistence, and commercial activities. The Tribes' Federal Reservation lands are either partially situated or immediately adjacent to WCA 3A (Figure C.1-14). In addition, the Miccosukee Tribe holds a perpetual lease from the State of Florida over a large portion of the WCA 3A. Subsistence activities for both Tribes include gathering of materials, hunting and fishing; while the Miccosukee Tribe's commercial activities include frogging, airboat and other guided tours, and providing recreational and tourism facilities within the Everglades. The Miccosukee Tribe's perspective on southern WCA 3A water stages is that flooding and degrading of tree islands was an issue prior to ERTP, which has threatened the health and safety of the Tribe (Miccosukee Tribe of Indians of Florida CEPP NEPA Response Letter 20 January 2012).

Comment [baf39]: Native Americans *** Section Incomplete

why removed?

Table 5-5-135-13. Environmental Effects of Alt 4R: Native Americans

Comment [CT40]: No need for table. These effects are addressed in the text.

Native Americans		
Geographic Regions	Future Without Project (No Action Alternative)	Alt 4R
Lake Okeechobee		
Northern Estuaries		
EAA		
Greater Everglades		
Southern Estuaries		

a table that fully analyzes the impacts on the Tribe would be helpful.

6.5.2.17 Invasive Species

Alt 4R has the potential and likelihood for establishment and spread of non native invasive and native nuisance species (**Table 5-13**). Proposed restoration activities may affect ecosystem drivers that directly or indirectly influence the invasiveness of non native species. These factors may affect invasive species positively or negatively, depending on the unique characteristics of individual species and the environmental conditions for a given biological invasion (Doren et al. 2009). For example, shortened surface water drawdowns may reduce the recolonization rates of melaleuca in sawgrass marsh while increasing habitat suitability for Old World climbing fern in tree islands. Many of the areas where features are proposed are currently inhabited by non native invasive and native nuisance species. Construction of the proposed features has the potential to spread the existing non native invasive and native nuisance species on site as well as introduce new invasive species via contaminated equipment.

	would aid in improving suitable habitat for pink shrimp, juvenile spotted seatrout, sea turtles, manatee and crocodiles among other species.
Future Actions	Some level of improvement to fish and wildlife resources is expected to occur as a result of implementation of projects with the capability of improving the timing, quantity, quality and distribution of freshwater flow to the study area. Hydrologic restoration planned as part of CERP would further improve fish and wildlife habitat.
Cumulative Effect	Habitat improvement efforts are anticipated to benefit fish and wildlife resources.
	Vegetation and Wetlands
Past Actions	Drainage of Florida's interior wetlands, conversion of wetlands to agriculture, and urban development has reduced the spatial extent and quality of wetland resources.
Present Actions	Efforts are being taken by state and Federal regulatory agencies to reduce wetland losses.
Proposed Action	Negligible effects to vegetation within Lake Okeechobee and the EAA are anticipated. Reductions in the number of high discharge events to the Northern Estuaries are anticipated to improve conditions for seagrass beds. Significant beneficial effects are anticipated within the Greater Everglades. Improved hydroperiods and sheetflow within WCA 3A, 3B and ENP would result in reduced soil oxidation, promoting peat accretion necessary to rebuild the complex mosaic of habitats across the landscape. Increased freshwater flows to Florida Bay would aid to lower salinity levels, benefiting mangrove communities and seagrass beds.
Future Actions	Some level of improvement to vegetative communities is expected to occur as a result of implementation of projects with the capability of improving the timing, quantity, quality and distribution of freshwater flow to the study area. More natural hydrology as part of the CERP would assist in restoring natural plant communities.
Cumulative Effect	While the spatial extent of natural plant communities would not be restored to historic proportions, the quality of vegetative communities would be improved.
	Cultural Resources
Past Actions	Flood and water control projects, conversion of wetlands into agriculture and urban development have had adverse unmitigated effects to cultural resources either directly or indirectly.
Present Actions	Ongoing efforts have been made by Federal and state agencies to implement projects to improve hydrology within the project area, thereby stabilizing the tree islands which are known to have a high potential for cultural resources.
Proposed Action	While effects of the proposed action have been evaluated, a final determination of effects on cultural resources is not complete. Consultation with stakeholders, including the State Historic Preservation Office, Advisory Council on Historic Preservation, Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida is currently ongoing.
Future Actions	Continued improvement to hydroperiods and sheetflow within WCA 3A, 3B and ENP could reduce soil oxidation, which could stabilize the environment, and this in turn could stabilize tree islands containing cultural resources. Investigations mandated in the Programmatic Agreement for ERTP are in the process of being completed and will determine the effects of fluctuating water on subsurface historic properties.
Cumulative Effect	Cumulative effects to historic properties and culturally significant sites will be potentially major long-term adverse effects. Mitigation measures for effects to historic properties could reduce the cumulative effect to be minor long-term adverse effects.
	Water Quality
Past Actions	Water quality has been degraded from development and agriculture.

– could get more [illegible] better benefit with incorporation of add'l [illegible] water to STOF BCR Crit. Proj.

Comment [MAN49]: Mark Shafer to review and edit.

Present Actions	Efforts to improve water quality from agricultural areas are ongoing. Federal and state projects would temporarily elevate localized levels of suspended solids and turbidity.
Proposed Action	Implementation of the proposed action would likely result in no additional exceedances of the Everglades Settlement Agreement as compared with the current operational plan. Water quality changes potentially affects fish and wildlife resources by altering vegetation composition or structure.
Future Actions	Aggressive actions by the State of Florida would decrease pollutant concentration and loadings to the project area. If authorized in the next Water Resources Development Act (WRDA), the Broward County WPA Project, (report approved in 2007) would reduce storm runoff deliveries to WCA 3 and improve water quality coming across Tamiami Trail.
Cumulative Effect	While anthropogenic effects on water quality are unlikely to be eliminated, water quality is expected to slowly improve over existing and recent past conditions.
Water Supply/Flood Control	
Past Actions	Water supply and flood control for agricultural and urban users has benefited from construction and operation of the C&SF project.
Present Actions	Availability of water from Lake Okeechobee for agricultural users were recently diminished through implementation of LORS 2008. Availability of water for urban users were recently diminished through implementation of ERTP.
Proposed Action	Implementation of ALT 4R2 would likely have no effect on water supplies to agricultural users dependent on Lake Okeechobee. A portion of the urban users, namely LECSA 2 and 3, future supplies would increase slightly.
Future Actions	Future supplies would not change in the future unless additional storage or hydrologic improvements to the Everglades are implemented and increase water availability.
Cumulative Effect	While effects on water supplies are unlikely to improve, water supplies available for agricultural and urban users is expected to remain stable.

The Tribe has the capacity to accomadate & store excess waters on its lands particularly in times of flooding. If the Corps would consider analyzing this CEPP together with the broader restoration landscape these efficiencies could be recognized and the Tribe could be a partner in helping the ~~Corps~~ prevent fresh water being released to tide we believe modeling on these efficiencies is essential.

6.6 PLAN IMPLEMENTATION

Implementation of CEPP will occur over many years and include many actions by USACE and SFWMD. This subsection discusses the major implementation steps that occur after Congressional authorization and apprioriateion of funding for Project construction. The Tentatively Selected Plan is composed of features which can be grouped into separable elements. These separable elements are physically ~~separate from other portions of the Project and which either 1) achieves independent hydrologic~~ benefits or 2) produces independent environmental or economic benefits that are separately identifiable from those produced by other separable Project elements. CEPP will be designed and constructed in phases, which each construction phase containing one or more separable elements as set forth in Section . This approach gives the USACE and the SFWMD maximum flexibility to develop and implement separable elements as agreed to by the parties. The approach incorporates the adaptive management process, maximizing the opportunity to realize incremental restoration benefits by initially building features that utilized existing water in the system which meets State water quality standards. The USACE and the Corps wil select particular separable elements and the sequence of such separable elements to maximize benefits to the extent practicable and consistent with the Adaptive Management and Monitoring Plan (See Annex D) Table 6-5 identifies one example of key project feature dependencies to be as part of each separable element. Figure 6-1 provides a Gantt Chart illustrates one possible example pf a sequencing plan for implementation of separable elements. Individual Project Partnership Agreements, or amendments to existing PPAs, will be executed prior to construction for each implementation phase for one or more separable elements. ~~The first task is for USACE and SFWMD to prepare the Final PIR/EIS. After all approvals are attained, the project would be submitted to Congress for authorization. After authorization, USACE would begin preconstruction engineering and design (PED). Once sufficient details of design are available, the SFWMD and USACE would execute a legally binding Project Partnership Agreement (PPA). It is possible that multiple PPAs will be executed to match phasing of construction (see below). SFWMD would obtain the lands, easements, rights of way and relocations (LERR). Before the end completion of PED and before prior to the issuing issuance of any project construction contracts, SFWMD would and certify the LERR to USACE, , and the SFWMD and USACE would execute a legally binding Project Partnership Agreement (PPA).~~

~~The PPA is a binding agreement between the agencies and the required contents of a PPA are detailed in the CERP Master Agreement. It is possible the project will be split into multiple PPAs.~~

~~After execution of a PPA and certification of LERR, the USACE would advertise and issue contracts for construction of project features. An operational testing and monitoring period (OTMP) would occur prior to the end of construction of each feature or set of features. Upon completion of the OTMP, the feature(s) would be transferred to SFWMD for operation and maintenance. [Add a sentence here on invasive species / vegetation management.] Regional ecosystem monitoring would be performed as part of the CERP Adaptive Assessment and Management Program implemented by RECOVER. Project specific monitoring would be funded through O&MOMRR&R.~~

~~Most of the major steps are discussed further in the following subsections.~~

6.6.1 Preconstruction Engineering and Design

Preconstruction Engineering and Design (PED) of CEPP would begin after Congressional authorization ~~of CEPP~~ and upon SFWMD's concurrence and will be implemented in a phased approach with each phase consisting of one or more separable elements. PED would include site-specific surveys and geotechnical investigations. During the design phase, detailed analyses, subsurface and site investigations will be

a more holistic approach to the greater restoration landscape would allow for greater efficiencies in the system and better ensure that the projects functional value is fully realized. We also believe that the Corps should analyze & provide modeling on the projects impact to the western Basins.

conducted to prepare construction documents. See **Section 5.1** for a list of plan features to be constructed. See **Appendix A** and **Annex C-2 of Appendix A** for conceptual design plates.

~~PED activities will be in accordance with USACE construction standards, including cultural resources compliance.~~ Preliminary design activities~~, which include survey and geotechnical investigations as well as cultural resources compliance,~~ will commence upon authorization and with SFWMD approval. The Engineering Appendix (**Appendix A**) represents ~~less than 30 percent~~a limited level of design, but includes documentation of all engineering assumptions and conceptual designs and OMRR&R cost share for State owned/ State operated facilities identified to date in support of cost estimate development for ~~costing~~ the TSP. Upon project authorization and SFWMD approval, USACE will prepare an Engineering Design Report updating the conceptual design and~~,~~ prepare initial, Intermediate and final plans and specifications for ~~multiple construction contract awards~~each phase of construction. All work would be coordinated ~~and reviewed~~ with SFWMD and reviewed and approved to ensure that the work meets USACE standards and regulations and incorporates SFWMD design guidance, as applicable.

Comment [dec50]: Text was previously stated in the prior paragraph.

Comment [dec51]: Approval of what? Please specify.

Comment [baf52]: Spell out EDR

6.6.2 Construction

It is envisioned that the project will be constructed using conventional means and methods. Multiple contracts will be awarded in a sequenced and phased approach. The project features ~~were~~will be conceptually sequenced and conceptually placed in contracts that maximize opportunities to realize benefits with ~~clean water already in the existing system~~exisitn water that meets State water quality standards, capitalize on use of onsite material, reduce multiple handling scenarios, and maintain flood control operations of existing features. Adaptive Management will help with future development of the implementation and sequencing.

6.6.3 Construction Sequencing and Implementation Plan

~~Certain a~~Assumptions are made to conduct any planning effort as to what the future condition of the study area may look like if no action is taken, referred to as the FWO project condition. It is a best guess prediction of what is likely to occur in the study area in the future. The CEPP FWO project condition assumed that certain CERP projects that are currently under construction, as well as those CERP projects which have completed the planning process and are awaiting Congressional authorization, would be undertaken. This is a projection of what the configuration of the system would be without a CEPP project. With the identification of a tentatively selected plan for CEPP, the next step is to consider how CEPP features would be implemented in the future (with-plan condition).

In development of construction sequencing, a number of non- CEPP projects must be in place before implementing any CEPP features. Additionally, certain non- CEPP project features must be integrated into the sequencing of CEPP to avoid unintended adverse consequences as set forth in Table 6-5 below. Several basic principles were considered in development of an implementation plan for CEPP features which include the following:

1. All features of the State's Restoration Strategies must be completed and meet state water quality standards prior to initiating construction of most CEPP project features;
2. Construction of CEPP Project features cannot proceed until it is determined that construction and operation of the feature:
   a. Will not cause or contribute to a violation of State water quality standards; and
   b. Will not cause or contribute to a violation of any applicable water quality permit discharge limits or specific permit conditions ; and

plans?

features

It is clear that CEPP is dependent on non CEPP projects. Accordingly, a more holistic analysis should be utilized to better understand these dependant non CEPP projects that could result in unintended adverse consequences & inefficiencies in the project

c. Reasonable assurances exist that demonstrate adverse impacts on flora and fauna in the area influenced by the Project features will not occur.

3. Appendix A water quality compliance must be addressed for new Project water entering Everglades National Park
4. Additional CEPP water quality treatment features, including operational and structural modifications, may need to be constructed if State water quality standards are not met upon operation of CEPP project features
5. Sequencing for the earliest opportunity to realize benefits, including the features that can provide benefits that utilize existing water meeting State water quality standards.
6. Additional outlet capacity from WCA 3A must be provided before new Project water from Lake Okeechobee is released into the system
~~1.~~7. Location of the sources needed for Miami canal backfilling and the blue Shanty Levee to minimize costs associated with double handling and stockpiling of materials

Comment [SFWMD53]: Add additional Water Quality Language once negotiations between the State and Federal Governments are complete on this issue

~~Four basic principlesals were considered in development of an implementation plan for CEPP features: 1) Cconsideration of the sequencing for construction of features that provide the earliest opportunity to realize benefits, includingi.e. features that could provide benefits with the existing volumes of water inflows prior to bringing additional water from Lake Okeechobee; 2) cConsideration of any aspects of the FWO condition that must be in place before implementing any CEPP features to avoid any detrimental or un intended adverse consequences. A (a summary of the relationship of CEPP features to other projects is provided in Table 5-17); 3) Rrecognition that additional outlet capacity from WCA 3A must be provided before bringing in additional water from Lake Okeechobee; 4) Cconsideration of the sources of fill needed for the Miami Canal backfilling and the Blue Shanty levee and sequencing the construction of these features to minimize additional costs associated with stockpiling material and double handling.~~

Table 6-~~556175-175-~~16. Project Dependencies

Project	Dependency of CEPP Features
~~A-1 FEB State Restoration Strategies~~	Required prior to implementation of northern WCA-3A distribution features (L-4 degrade, new divide structure, S-8 Modifications, L-5 and L-6 improvements, Miami Canal Backfilling) to ensure adequate water quality treatment of inflows
C-111 South Dade	Extension of the detention area levees to connect with 8.5 Square Mile Area (SMA) required prior to significantly increasing flows to NESRS to enable operation of S-357 pump station to provide seepage management to 8.5 SMA
MWD 1-Mile Bridge & Road Raising	Required prior to implementation of WCA-3B inflow structures along the L-67A&C levees or increasing flows through existing S-333 to NESRS to ensure adequate road protection to allow for increased stages in L-29 canal
BCWPA C-11 Impoundment	Required prior to increasing flow through S-333 or implementation of WCA-3B inflow structures along the L-67A&C levees to ensure adequate water quality of inflows to NESRS
Tamiami Trail Next Steps Bridging and Road Raising	Required prior to increasing capacities ~~of~~ ~~at~~ S-333 and S-356 and implementation of WCA-3B inflow structures along the L-67A&~~C~~ levees, gaps in L-67C levee and Blue Shanty flowway (L-67C removal, L-29 levee removal)
IRL-S C-44 reservoir	Required prior to re-directing the full 200,000 ac-ft/yr from Lake Okeechobee south to the FEB to avoid reduction in low flows to the St. Lucie Estuary

The Tribe has capacity to receive ~~[illegible]~~ water released from Lake Okeechobee and believes modeling on this issue is critical. Please see overall notes regarding a more holistic NEPA analysis for the dependency of CEPP features.

Also we would recommend that Corps consider efficiencies that could be created when the Tribe's critical project is completed & how this could help from an availability of storage perspective.

A fundamental principle of AM is that a project can be adjusted to continually achieve high performance toward the project's goals and objectives and reduce or eliminate unintended consequences. ~~to remain within its constraints~~. In particular, in AM the adjustments are not "trial and error", which can be costly and erratic, but rather they are based on a scientifically efficient and sound process of learning from data. These adjustments should be viewed as intelligently fine-tuning the project elements, design and the implementation sequencing plan., the need for which is almost inevitable in a large-scale, long-term ~~restoration projects in CERP; this~~ is one reason why adaptive management plans are a required PIR element for CERP projects. Given this fundamental principle of AM, the CEPP AM and Monitoring Plan provides suggestions for adjusting CEPP if feasible and necessary. The suggestions are based on current experience and knowledge and are provided for discussion: they are not required actions, nor are they meant to limit agencies from considering other options.

The CEPP selected plan will be designed and constructed in phases with each construction phase containing one or more separable elements. This adaptively managed implementation approach will maximize opportunities to realize incremental ecosystem restoration benefits and minimize or eliminate unintended consequences. The CEPP Selected Plan provides the USACE and the SFWMD with macimum flexibility to develop and implement separable elements as agreed to by the parties. The USACE and SFWMD will select particular separable elements and the sequencting of such separable elements to maximize benefits to the extent practicable and consistent with the Adaptive Management and Monitoring Plan.

During formulation of the CEPP Adaptive Management Plan (**Annex D**), several potential management actions designed to address CEPP uncertainties were developed. Potential environmental effects of implementation of the majority of the AM management options were analyzed within **Sections 4.1 and 5.1** and in **Appendices C.2.1 and C.2.2** of this document. However, the seven adaptive management actions described below, if they are to be implemented to address CEPP uncertainties, require additional NEPA analysis. Potential environmental considerations of these management actions are described in detail below.

AM Action: Design hydropattern restoration feature to allow testing of restoration potential and degree of success with and without vegetation management downstream of structure.

Design of the hydropatterns restoration feature in northwest WCA 3A provides an opportunity to utilize adaptive management to address the uncertainties regarding restoration of water flows and levels throughout WCA - #A. Environmental Considerations: Experimental design to include vegetation management downstream of 1-mile section of Hydropattern Restoration Feature (HRF) to improve sheetflow and getaway capacity;; vegetation management will not be employed downstream of the remaining 1-mile section. Vegetation management downstream of the hydropatterns restoration feature in northwest WCA 3A may include burning, herbicide treatment or scarring of existing vegetation. Burning could have potential effects on water quality due to potential increase or mobilization of nutrients. –Mobilization of nutrients may result in short-term increases in primary productivity directly benefitting foraging fish and invertebrates, followed by increased foraging opportunities for higher trophic levels. The loss of woody vegetation within the managed area would result in loss of perch sites for foraging birds; however, perch sites would likely be available in the unmanaged area. Removal of woody vegetation in northwest WCA 3A coud promote water flow southwest, providing sheetflow south and west of the Miami Canal and minimize water depths and durations that are potentially too deep for the Sawgrass plains in northeastern WCA 3A ~~would facilitate sheetflow, thereby increasing water depths and durations within downstream areas and~~ providing benefits as described within **Sections 4.1.3 and 4.1.5**. Nuisance vegetation management would also aid

Comment [dec60]: Additional analysis. Please add clarity whether this section is intended to provide NEPA assessment or whether this would be conducted as a separate effort.

Comment [dec61]: Text is duplicative from section 5.1.4. Recommend condensing here and referencing the prior section as appropriate.

we believe that these management actions would require additional NEPA analysis and that more holistic NEPA analysis as upstream & downstream flows is required

Section 601(h) (4) (A) of WRDA 2000, entitled "Project-Specific Assurances", requires project implementation reports among other items to:

- identify the appropriate quantity, timing, and distribution of water dedicated and managed for the natural system
- identify the amount of water to be reserved or allocated for the natural system necessary to implement under State law

Following analysis of the model results, the results and conclusions will be reported in this section.

Contribution to interim goals and targets may be in this section (or moved to Plan Accomplishments)

6.8 VIEWS OF NON-FEDERAL SPONSOR

6.9 PROJECT CONCERNS AND CONTROVERSERIES

ADAPTIVE MGT AS A WAY TO ALLEVIATE CONCERNS NEEDS TO BE LEAD IN HERE

- **Incremental Restoration and Future Water Resources Opportunities.**

The National Academy of Sciences has recommended the implementation of CERP through an incremental adaptive restoration (IAR) process. CEPP has adopted that recommendation and has formulated a solution for an increment of overall restoration of the South Florida ecosystem. Incidentally, there are problems and opportunities remaining. CEPP is not meeting all targets of the pre-drainage Everglades, however does provide for significant and substantial restoration of ecosystem and achieves approximately 2/3 of the additional water flow that CERP envisioned.

~~**6.8.1.1 Northern Estuaries**~~
~~**6.8.1.2 Florida Bay**~~
~~**6.8.1.3 Water Supply**~~

- **Water Levels in ~~Water Conservation Area 3A~~WCA 3A**

Raising water levels in and distributing water across Northern WCA 3A is paramount to reestablishing a 500,000-acre flowing system through the northern most extent of the remnant Everglades, however; adverse impacts to mammals dependent upon upland habitat could occur due to increased water stages and changes in water distribution in northern WCA 3A.

~~White-tailed deer occur widely in Florida; they are found in every county where suitable habitat occurs. They are Florida's most important game species, from a perspective of both economics and a cultural tradition. Compared to other areas of Florida, the Everglades WMAs are not considered to be prime deer habitat and support relatively low deer population numbers and recreational opportunities. However, there is a large contingent of sportsmen that hunt deer in the area and have publicly voiced concern over impacts to the deer herd in Northern WCA 3A from raised water levels due to CEPP. In addition to concerns over deer impacts, questions have been raised over potential impacts from higher water levels on accessibility in WCA 3A resulting from vehicle and airboat closures and to existing leased hunt camps.~~

Comment [SFWMD63]: Need to reword this section to more fully address the restoration benefits of this area.

The Tribe will need an opportunity to analyze this modeling and provide additional comments.

Law, Policy and Regulations	Status	Comments
Protection of Wetlands		objectives of the proposed action are focused on environmental protection.
E.O. 12962, Recreational Fisheries	In compliance with ~~goals of~~ this E.O.	Proposed action would have an adverse affect on recreational fisheries in Water Conservation Area 3 with the backfilling of the Miami Canal, but is expected to have a beneficial affect with improved recreational fisheries in Florida Bay and slight improvements in the Caloosahatchee and St. Lucie Estuaries, the Blue Shanty flow way and the rehydration of northern WCA 3A.
E.O. 12898 Environmental Justice	In compliance with ~~goals of~~ this E.O.	Proposed action would benefit all population groups in Okeechobee, Glades, Martin, Palm Beach, Broward, Miami-Dade and Monroe Counties by providing restoration of wetlands and other natural resources within the project area.
E.O. 13045 Protection of Children	In compliance with ~~goals of~~ this E.O.	Proposed action is not expected to have environmental or safety risks that may disproportionately affect children.
E.O. 13089 Coral Reef Protection	This E.O. is not applicable	Coral reefs are not affected~~No coral reefs are located within project area.~~
E.O. 13122 Invasive Species	In compliance with goals of this E.O.	A nuisance and exotic vegetation control plan has been prepared to prevent or reduce establishment of invasive and non-native species within the project area. Control plan is located in Annex D.
E.O. 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	In compliance with goals of this E.O.	Proposed action would not adversely affect migratory bird species. Proposed action is expected to benefit species by improving habitat and increasing availability of foraging opportunities.
Memorandum on Government to Government Regulations with Native American Tribal Governments	In compliance with this Memorandum.	The USACE has consulted with the Miccosukee Tribe of Indians of Florida and Seminole Tribe of Florida throughout CEPP planning process.

Comment [GSE4]: Cindy Comment: For Cultural Resources - See appendix C.5. References to the appendix will be added throughout the text.

Comment [GSE5]: Brooks comment: What have we done? I haven't seen details anywhere in this report concerning consultation.

lease add Seminole Indian Lands Claim Settlement act of 1987 (25 U.S.C. 1772e)

Chapter 285, Florida Statutes

interest shall implement such plan not later than one year after completion of construction of the Project. The Non-Federal Sponsor shall provide an information copy of the plan to the Government upon its preparation;

4. The Non-Federal Sponsor shall prescribe and enforce regulations to prevent obstruction of or encroachment on the Project or on the lands, easements, and rights-of-way determined by the Government to be required for the construction, operation, maintenance, repair, replacement, and rehabilitation of the Project, that could reduce the level of protection the Project affords, hinder operation or maintenance of the Project, or interfere with the Project's proper function.

u. The non-Federal sponsor shall execute under State law the reservation or allocation of water for the natural system as identified in the PIR for this authorized CERP Project as required by Section 601(h)(4)(B)(ii) of WRDA 2000 and the non-Federal sponsor shall provide information to the Government regarding such execution. In compliance with 33 CFR 385, the District Engineer will verify such reservation or allocation in writing. Any change to such reservation or allocation of water shall require an amendment to the PPA after the District Engineer verifies in writing in compliance with 33 CFR 385 that the revised reservation or allocation continues to provide for an appropriate quantity, timing, and distribution of water dedicated and managed for the natural system after considering any changed circumstances or new information since completion of the PIR for the authorized CERP Project.

Therefore, I recommend that .....(May need to add additional recommendations to reflect the resolution of currently unresolved policy items, as of 15 March 2013 such as water quality, cost sharing of O&M of A-1 FEB and STA 3/4, cost of L-67A culverts, and/or apply CERP-specific HTRW AgChem policies.)

The recommendations contained herein reflect the information available at this time and current Departmental policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are transmitted to the Congress as proposals for authorization and implementation funding. However, prior to transmittal to the Congress, the Sponsor, the State, interested Federal agencies, and other parties will be advised of any modifications and will be afforded an opportunity to comment further.

Alan M. Dodd
Colonel, Corps of Engineers
District Engineer

we recomend a more holistic anaysis of A-1 Feb, CEPP and non CEPP projects that CEPP features are dependant on to ensure that CEPP reaches its full functional potential

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

26 JUL 2013

Planning and Policy Division
Environmental Branch

Mr. Fred Dayhoff
NAGPRA Representative, Tribal Consultant
Miccosukee Tribe of Indians of Florida
P.O. Box 440021
Miami, Florida 33144

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers (Corps) in partnership with the South Florida Water Management District (District) are conducting a feasibility study for the Central Everglades Planning (CEP) Project (DHR Project File No. 2012-01115). A component of the feasibility study will be the construction and operation of a 14,000 acre Flow Equalization Basin (FEB) within the Everglades Agricultural Area Cell A-2 (EAA A-2). For your records, in 2002 this parcel was consulted under the description Everglades Agricultural Area Storage Reservoirs Project Component A (DHR Project File No. 2002-09656).

Following consultation with your office on 2012 April 27 and subsequent review of previous research conducted in the area (Survey # 5610 and 4869), the Corps concluded that additional investigations would be required for the EAA A-2 FEB footprint. With the use of historic and modern aerials, the Corps identified vegetation anomalies within the project area, and contracted Southeastern Archaeological Research Inc. to conduct field investigations of those specific areas. As a result, three prehistoric midden sites (8PB16037, 8PB16039, and 8PB16040) and one historic agricultural work camp (8PB16038) were identified The Corps has determined that only prehistoric site 8PB16039 meets the criteria for eligibility for listing on the National Register of Historic Places.

For the CEPP feasibility study, only preliminary FEB design plans have been developed, which makes it impracticable for the Corps to make a final determination of effect on significant cultural resources at this time. Once Congress has authorized the CEP Project and the FEB enters into the detailed design phase, the Corps will make a final determination of effect for site 8PB16039. In addition, consultation will be needed to identify methods to address potential impacts to site 8PB106040, which contains human remains. Currently the EAA A-2 property is under lease to Florida Crystals by the District and actively cultivated with sugar cane.

In accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, we seek your comments on the draft report titled, *Central Everglades Planning Project, Cultural Resources Investigation of Everglades Agricultural Area Cell A-2, Palm Beach County, Florida* within 30 calendar days of receipt of this letter. If you have any questions, please contact Ms. Cindy Thomas at (904) 232-1180 or via email Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

Thomas/CESAJ-PD-C/1180
McCullough/CESAJ-PD-EP
Taplin/CESAJ-PD-C
Summa/CESAJ-ED-E
Acosta/CESAJ-PD-EP

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

26 JUL 2013

Planning and Policy Division
Environmental Branch

Paul Backhouse, Ph.D, RPA
Museum Director and Tribal Historic Preservation Officer
30290 Josie Billie Hwy, PMB 1004
Clewiston, Florida 33440

Dear Dr. Packhouse:

The U.S. Army Corps of Engineers (Corps) in partnership with the South Florida Water Management District (District) are conducting a feasibility study for the Central Everglades Planning (CEP) Project (DHR Project File No. 2012-01115). A component of the feasibility study will be the construction and operation of a 14,000 acre Flow Equalization Basin (FEB) within the Everglades Agricultural Area Cell A-2 (EAA A-2). For your records, in 2002 this parcel was consulted under the description Everglades Agricultural Area Storage Reservoirs Project Component A (DHR Project File No. 2002-09656).

Following consultation with your office on 2012 April 27 and subsequent review of previous research conducted in the area (Survey # 5610 and 4869), the Corps concluded that additional investigations would be required for the EAA A-2 FEB footprint. With the use of historic and modern aerials, the Corps identified vegetation anomalies within the project area, and contracted Southeastern Archaeological Research Inc. to conduct field investigations of those specific areas. As a result, three prehistoric midden sites (8PB16037, 8PB16039, and 8PB16040) and one historic agricultural work camp (8PB16038) were identified The Corps has determined that only prehistoric site 8PB16039 meets the criteria for eligibility for listing on the National Register of Historic Places.

For the CEPP feasibility study, only preliminary FEB design plans have been developed, which makes it impracticable for the Corps to make a final determination of effect on significant cultural resources at this time. Once Congress has authorized the CEP Project and the FEB enters into the detailed design phase, the Corps will make a final determination of effect for site 8PB16039. In addition, consultation will be needed to identify methods to address potential impacts to site 8PB106040, which contains human remains. Currently the EAA A-2 property is under lease to Florida Crystals by the District and actively cultivated with sugar cane.

As per request of your office, the draft report titled, *Central Everglades planning Project, Cultural Resources Investigation of the Everglades Agricultural Area Cell A-2, Palm Beach County, Florida* has been provided electronically for review.

In accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, we seek your comments on the above referenced draft report within 30 calendar days of receipt of this letter. If you have any questions, please contact Ms. Cindy Thomas at (904) 232-1180 or via email Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

Copy Furnished:
Ann Mullins, Deputy THPO, Seminole Tribe of Florida
Bradley Mueller, Compliance Supervisor, Seminole Tribe of Florida
Alison Swing, Compliance Analyst, Seminole Tribe of Florida

Thomas/CESAJ-PD-C/1180
McCullough/CESAJ-PD-EP
Taplin/CESAJ-PD-C
Summa/CESAJ-ED-E
Acosta/CESAJ-PD-EP

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

26 JUL 2013

Mr. Fred Dayhoff
NAGPRA Representative, Tribal Consultant
Miccosukee Tribe of Indians of Florida
P.O. Box 440021
Miami, Florida 33144

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers (Corps) and Everglades National Park (ENP) conducted a Phase I Survey of a 5.38-mile corridor along the L-67 Extension (L-67 Ext.) as part of the Central Everglades Planning Project (CEPP) feasibility study from January 16 through January 18, 2013. The CEPP proposes to use material from the L-67 Ext. levee to backfill the associated borrow canal. The area of potential effect (APE) for this proposed feature of CEPP consists of a 46-meter wide corridor starting at Tamiami Tail (U.S. 41) running south 5.38-miles along the L-67 Ext.

With the use of historic and modern aerial photographs, and in consultation with ENP, the Corps concluded that areas with high probability for site locations did not exist within the APE. To verify these findings, the project archaeologist along with ENP staff visited specific locations and conducted surface inspections and subsurface testing. No cultural material over 50 years of age was observed. As a result, the Corps has determined that there will be no effect to historic properties within the APE of the proposed backfilling and levee degrading of the L-67 Ext.

In accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, we ask for your comments on the enclosed draft report titled, *Phase I Archeological Survey of a 5.38-Mile Corridor Along the L-67 Extension* within 30 calendar days of receipt of this letter. If you have any questions, please contact Ms. Cindy Thomas at (904) 232-1180 or via email Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

26 JUL 2013

Planning and Policy Division
Environmental Branch

Paul Backhouse, Ph.D, RPA
Museum Director and Tribal Historic Preservation Officer
30290 Josie Billie Hwy, PMB 1004
Clewiston, Florida 33440

Dear Dr. Packhouse:

The U.S. Army Corps of Engineers (Corps) and Everglades National Park (ENP) conducted a Phase I Survey of a 5.38-mile corridor along the L-67 Extension (L-67 Ext.) as part of the Central Everglades Planning Project (CEPP) feasibility study from January 16 through January 18, 2013. The CEPP proposes to use material from the L-67 Ext. levee to backfill the associated borrow canal. The area of potential effect (APE) for this proposed feature of CEPP consists of a 46-meter wide corridor starting at Tamiami Tail (U.S. 41) running south 5.38-miles along the L-67 Ext.

With the use of historic and modern aerial photographs, and in consultation with ENP, the Corps concluded that areas with high probability for site locations did not exist within the APE. To verify these findings, the project archaeologist along with ENP staff visited specific locations and conducted surface inspections and subsurface testing. No cultural material over 50 years of age was observed. As a result, the Corps has determined that there will be no effect to historic properties within the APE of the proposed backfilling and levee degrading of the L-67 Ext.

As per request of your office, the draft report titled, *Phase I Archeological Survey of a 5.38-Mile Corridor Along the L-67 Extension* has been provided electronically for review.

In accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, we ask for your comments on the above referenced draft report within 30 calendar days of receipt of this letter. If you have any questions, please contact Ms. Cindy Thomas at (904) 232-1180 or via email Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

Copy Furnished:
Anne Mullins, Deputy THPO, Seminole Tribe of Florida
Bradley Mueller, Compliance Supervisor, Seminole Tribe of Florida
Alison Swing, Compliance Analyst, Seminole Tribe of Florida

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

13 AUG 2013

Planning and Policy Division
Environmental Branch

Mr. Fred Dayhoff
NAGPRA Representative, Tribal Consultant
Miccosukee Tribe of Indians of Florida
P.O. Box 440021
Miami, Florida 33144

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers (Corps) in partnership with the South Florida Water Management District (District) are conducting a feasibility study for the Central Everglades Planning Project (CEPP) (DHR Project File No. 2012-01115). For the feasibility study, Alternatives 1-4 included the construction of a spreader approximately 600 feet south and running parallel to the L-5 Levee in northern Water Conservation Area 3A (WCA-3A). In 2011 as part of the Modified Waters Delivery Project (MWD), Panamerican Consultants, Inc., conducted an Phase I survey within the spreader feature area resulting in report, *Phase I Historical and Archaeological Survey of the Miami Canal within WCA-3A, Levee 4-5 Spreader Channel, and Levee 5 Spreader Channel Pump Station, Broward and Dade Counties* (DHR Project File No.: 2012-2895/1A-32 Permit No.:1112.001). During the survey, sites 8BD4836, 8BD4837, and 8BD4838 were identified and recommended for further work to assess site significance. Therefore, in compliance with 36 CFR 800, the Corps conducted Phase II excavations of these three sites resulting in the enclosed draft report, *Archaeological Testing of 8BD4836, 8BD4837, and 8BD4838, Addendum to Technical Report: Central Everglades Planning Project Water Conservation Areas 3A and 3B, Broward and Miami-Dade Counties, Florida* (1A-32 Permit No.: 1213.002).

Based on research results, the Corps has determined that prehistoric sites 8BD4836, 8BD4837, 8BD4838 meet the criteria of eligibility for listing on the National Register of Historic Places under Criterion D. It should also be noted that each of these sites contains human remains and are therefore considered culturally sensitive to the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida.

During the analysis of each Alternative for the CEPP feasibility study, the proposed spreader feature along the L-5 Levee was removed from the project. Therefore, the Corps has determined that there will be no effect to sites 8BD4836 – 8BD4838.

DEPARTMENT OF THE ARMY
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REPLY TO
ATTENTION OF

13 AUG 2013

Planning and Policy Division
Environmental Branch

Paul Backhouse, Ph.D, RPA
Museum Director and Tribal Historic Preservation Officer
30290 Josie Billie Hwy, PMB 1004
Clewiston, Florida 33440

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During the analysis of each Alternative for the CEPP feasibility study, the proposed spreader feature along the L-5 Levee was removed from the project. Therefore, the Corps has determined that there will be no effect to sites 8BD4836 – 8BD4838.

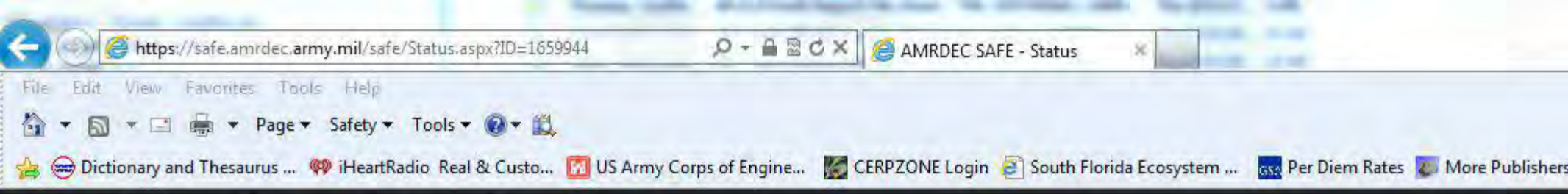
As per request of your Office, the draft report titled, *Archaeological Testing of 8BD4836, 8BD4837, and 8BD4838, Addendum to Technical Report: Central Everglades Planning Project Water Conservation Areas 3A and 3B, Broward and Miami-Dade Counties, Florida* has been provided electronically for review.

In accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, we ask for your comments on the above referenced draft report within 30 calendar days of receipt of this letter. If you have any questions, please contact Ms. Cindy Thomas at (904) 232-1180 or via email Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

Copy Furnished:
Anne Mullins, Deputy THPO, Seminole Tribe of Florida
Bradley Mueller, Compliance Supervisor, Seminole Tribe of Florida
Alison Swing, Compliance Analyst, Seminole Tribe of Florida



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Date Uploaded:	8/13/2013 4:30:04 PM
Description	FILES SHARED: 1. Consultation Letter 2. WCA 3 Draft Addendum Report - Phase II Excavation of sites 8BD4836, 8BD4837, 8BD4839. Please review the electronically shared CEPP WCA 3 Draft Addendum Report and transmittal letter. A hard copy of the transmittal letter will be sent via U.S. Postal Service. Please contact Cindy Thomas at Cynthia.G.Thomas@usace.army.mil should you have any questions.
Delete Date:	8/27/2013

Package Contents

File(s)	Privacy Act Data
(2013-8-13) USACE to STOF CEPP WCA3 Addendum Phase II Draft Rpt Ltr.pdf (182 KB)	No
WCA 3 Phase II Addendum Revised Draft Report.pdf (15 MB)	No

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JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
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Document Transmittal Form

Date:	2013 Aug 21
To: **cc:**	Paul Backhouse, Museum Director and Tribal Historic Preservation Officer Anne Mullins Alison Swing Bradley Muller
Organization:	Seminole Tribe of Florida
Address:	30290 Josie Billie Hwy, PMB 1004 Clewiston, Florida 33440
Contact No.:	(863) 983-6549 Ext. 12244
Item(s) Sent:	Final report titled, "Technical Report: Performance Work Statement #W912EP-10-D-0018, Central Everglades Planning Project Cultural Resources Survey of Water Conservation Areas 3A and B, Broward and Miami-Dade Counties, Florida"
Sent By:	Cindy Thomas
Contact No.:	(904) 232-1180
Transmitted Via:	FTP File Share
Message:	As per request of your office, attached is an electronic copy of the final report.

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
AH-TAH-THI-KI MUSEUM

30290 JOSIE BILLIE HWY
PMB 1004
CLEWISTON, FL 33440

PHONE: (863) 983-6549
FAX: (863) 902-1117

August 26, 2013

Cynthia Thomas
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232

THPO#: 0012390
CONTRACT#: W912EP-13-F-0010

Subject: Central Everglades Planning Project, Cultural Resources Investigation of Everglades Agricultural Area Cell A-2, Palm Beach County, Florida

Dear Ms. Thomas,

The Seminole Tribe of Florida's Tribal Historic Preservation Office (STOF-THPO) received the CEPP A-2 cultural resource and assessment survey on July 26, 2013. The STOF-THPO has no objection to the proposed project at this time. However, the STOF-THPO would like to be informed if cultural resources that are potentially ancestral or historically relevant to the Seminole Tribe of Florida are inadvertently discovered at any time.

Thank you for the opportunity to review the information that has been sent to date regarding this project. Please reference ***THPO-0012390*** for any related issues.

Sincerely,

Geoffrey Wasson
Compliance Review Analyst
Seminole Tribe of Florida
30290 Josie Billie Hwy, PMB 1004
Clewiston, Florida 33440

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
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Document Transmittal Form

Date:	2013 Sept 21
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Organization:	Seminole Tribe of Florida
Address:	30290 Josie Billie Hwy, PMB 1004 Clewiston, Florida 33440
Contact No.:	(863) 983-6549 Ext. 12244
Item(s) Sent:	Final report titled, "Central Everglades planning Project, Cultural Resources Investigation of the Everglades Agricultural Area Cell A-2, Palm Beach County, Florida"
Sent By:	Cindy Thomas
Contact No.:	(904) 232-1180
Transmitted Via:	Fed-ex

Message:

DEPARTMENT OF THE ARMY
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Address:	30290 Josie Billie Hwy, PMB 1004 Clewiston, Florida 33440
Contact No.:	(863) 983-6549 Ext. 12244
Item(s) Sent:	Final report titled, "Phase I Archeological Survey of a 5.38-Mile Corridor Along the L-67 Extension, Miami-Dade County, Florida"
Sent By:	Cindy Thomas
Contact No.:	(904) 232-1180
Transmitted Via:	Fed-ex

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Sent By:	Cindy Thomas
Contact No.:	(904) 232-1180
Transmitted Via:	Fed-ex

Message:

SEMINOLE TRIBE OF FLORIDA

6300 STIRLING ROAD
HOLLYWOOD, FLORIDA 33024
PHONE (954) 966-6300

WEBSITE:
http://www.semtribe.com

Dr. Gretchen Ehlinger
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

***See CEPP PIR/EIS Appendix C.3 for detailed responses to comments listed in this letter.

Dear Dr. Ehlinger:

We are writing to provide comments on the Central Everglades Planning Project (CEPP) *Draft Integrated Project Implementation Report/Environmental Impact Statement* (CEPP PIR/EIS) on behalf of the Seminole Tribe of Florida. The Seminole Tribe continues to support the protection of water for the natural system and appreciates the opportunity to comment on the CEPP PIR/EIS. The Seminole Tribe and the Army Corps of Engineers (USACE) have a long history of working together for the preservation and restoration of the Everglades, and the Seminole Tribe looks forward to continuing this relationship. Please accept for review the Seminole Tribe's combined comments addressing some general, water resource, environmental, and cultural resource issues for the CEPP PIR/EIS. Additional and more detailed comments are attached as Appendix A to this letter.

The Seminole Tribe is a long standing supporter of Everglades restoration, supporting the Restudy and CERP, including funding a cost share Critical Project with the USACE to bring water to the Big Cypress Seminole Indian Reservation and ultimately to historic flow-ways when conditions allow. This project is still in construction and is not yet achieving all of its intended benefits for wetland restoration on the Reservation, Addition lands, and the Big Cypress National Preserve.

As the Central Everglades Planning Project is being planned and moved forward the Seminole Tribe of Florida has continued to ask for inclusion of the Big Cypress Seminole Indian Reservation in the planning and study area to ensure no harm occurs to the Seminole Tribe's resources and more importantly to identify opportunities for CEPP to provide water to the Western Everglades for restoration purposes. The Seminole Tribe appreciates the anticipated benefits to WCA-3A where the Seminole Tribe has hunting, fishing, trapping and frogging rights and the modeling efforts that have been done to ensure that the Seminole Tribe's water rights continue to be delivered. However, the Seminole Tribe remains concerned that there is still no solution included to supply water to the Western Everglades for restoration of this area. There has not been enough attention paid to this area, including necessary monitoring and modeling to adequately assess

impacts from CEPP to the area and to assess restoration alternatives. To that end the Seminole Tribe has brought to the attention of the USACE and the SFWMD from the beginning of the CEPP scoping effort its concerns about the restoration needs in the western Everglades. As a result your agency and the SFWMD as a part of the Task Force for South Florida Ecosystem Restoration (Task Force) has been meeting with the Seminole Tribe and other agencies to discuss these issues and to start work on a plan for the restoration of this important part of the Everglades.

The current draft EIS recognizes the meetings that are occurring among the Task Force member agencies and Tribes, including the Seminole Tribe of Florida, to discuss the issues the Tribe has raised, including restoration of the wetlands on the Tribe's Big Cypress Reservation, Big Cypress National Preserve, and Addition lands. However, due to the lack of data, monitoring, and modeling in this area the agencies are not yet at a point to make significant commitments to the Seminole Tribe of Florida for restoration of the area. The Seminole Tribe remains concerned about the lack of attention given to the Western Everglades. The Seminole Tribe's continued support of CEPP is based on the understanding that the USACE and the SFWMD will continue to work with the Seminole Tribe towards restoring and rehydrating the Western Everglades system including the Big Cypress Reservation, Big Cypress National Preserve, and the Addition lands. Specific comments on water resources are included in Appendix A to this letter.

The Seminole Tribe appreciates the USACE's consultation efforts with regard to cultural resources. The USACE's archaeologist Cynthia Thomas has made an admirable effort to consult with the Seminole Tribe early and often. This is the first project that the USACE has conducted early formal government to government consultation on cultural resources with the Seminole Tribe. This approach is greatly appreciated, and we are hopeful this approach will be taken with existing and future projects. During the consultation process, the Seminole Tribe expressed concerns about the level and quality of the archaeological work conducted by the USACE's consultants. The Seminole Tribe also expressed concerns over the numerous unknowns regarding cultural resources within the area of potential effect. In response to the unknowns, the USACE committed to the completion of a human remains policy that would be a binding agreement governing the treatment of burial resources and would serve as an adaptive management plan for the protection of burial resources. The development of such an agreement was first proposed by Colonel Pantano, which the Seminole Tribe supported. The Seminole Tribe is encouraged by the USACE's assurance to continue to honor Colonel Pantano's commitment to protect burial resources in a culturally sensitive manner. The human remains agreement has not yet been finalized; however, we look forward to continuing to work with the USACE on its completion. It is critically important that the District Engineer's recommendations for CEPP capture this commitment to develop this Agreement. Therefore, we respectfully request that the development of this human remains agreement be included in the District Engineer's recommendations in the PIR. Attached in Appendix A

are more detailed comments regarding cultural resources. We thank you in advance for your consideration of these comments and continuation of the consultation process.

Finally, please find attached a copy of an earlier commentary email with some attached handwritten comments to the draft PIR which was sent in on behalf of the Seminole Tribe to the USACE but not included in the comments section of the document. Please include these in Appendix B as part of the consultation record with the Seminole Tribe.

Again, the Seminole Tribe appreciates the opportunity to review and comment on the Central Everglades Planning Project *Draft Integrated Project Implementation Report/Environmental Impact Statement.* Thank you for your consideration of these comments.

Yours Sincerely,

Cherise Maples, Interim Director
Environmental Resource Management Department
6300 Stirling Road, Suite 109
Hollywood, FL 33024

Paul Backhouse, Tribal Historic Preservation Officer
Tribal Historic Preservation Office
34725 West Boundary Road
Clewiston, FL 33440

c: James E. Billie – Seminole Tribe of Florida
Danny Tommie – Seminole Tribe of Florida
Jim Shore – Seminole Tribe of Florida
Stephen Walker – Lewis, Longman & Walker, P.A.
Michelle Diffenderfer – Lewis, Longman & Walker, P.A.
James Charles – Lewis, Longman & Walker, P.A.
Cynthia Thomas – U.S. Army Corps of Engineers
Armando Ramirez – South Florida Water Management District

SEMINOLE TRIBE OF FLORIDA

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Appendix A

This Appendix A contains the Seminole Tribe of Florida's additional, more detailed environmental, water resource and cultural resource comments on the CEPP PIR/EIS.

I. Seminole Tribe's Hunting, Fishing, Trapping, and Frogging Rights

In Section 2.6 of the Main Report, the document recognizes the Seminole Tribe's hunting, fishing, and frogging rights in WCA 3A. The Seminole Tribe appreciates that the CEPP PIR/EIS recognizes these rights but requests that the word "trapping" be added to this list to more completely describe the Seminole Tribe's rights and match the language in the 1987 Seminole Tribe of Florida and State of Florida Settlement Agreement. Similarly, Section 5.3 states that subsistence activities for members of the Seminole Tribe include hunting and fishing; the Seminole Tribe requests that the terms "trapping" and "frogging" be added to this sentence.

Additionally, in Section 6.1.2.3, which is in the Tentatively Selected Plan section under Lands and Interests in Lands for Water Conservation Area 3A and 3B, the Seminole Tribe requests that language be added stating that the Seminole Tribe has customary usage rights in WCA 3A. The Seminole Tribe has legally protected interests in these lands that should be acknowledged here. It should also be acknowledged that this area holds significant cultural significance to the Seminole Tribe in addition to its customary usage rights.

II. Seminole Tribe of Florida

Annex B (Analyses Required by WRDA 2000) refers to the Seminole Tribe by a variety of different names, including but not limited to the "Seminole Indian Tribe" and the "Seminole Indian Tribe of Florida." The Seminole Tribe requests that this document be changed to refer to the Seminole Tribe consistently as "the Seminole Tribe of Florida."

III. Water Supply to the Seminole Tribe

In Table B-4 of Annex B, under (ii), the table contains the following sentence fragment: "Implementation of the project will not reduce the levels of service for flood protection within the areas affected by the project including". This sentence should be

completed to say "including the Seminole Tribe of Florida's Brighton and Big Cypress Reservations."

Also in Annex B, Section. B.3.1.3 states "the Seminole Indian Tribe also withdrawals groundwater ..." In addition to changing the document to refer to the Seminole Tribe as the Seminole Tribe of Florida, this sentence should change the word "withdrawals" to "withdraws."

Additionally, on page C-19 of Annex C (Draft Project Operating Manual) a sentence reads "S-630 would be located in the L-4 Canal, east of the existing L-4 Levee gap, to maintain existing water supply deliveries to the Seminole Tribe reservation ..." The Seminole Tribe appreciates that the document references maintaining the existing water supplies, but requests that this sentence specifically identify the Reservation so as to provide greater clarity.

The Seminole Tribe would also like to reiterate that it remains interested in continued discussions on assisting the USACE and SFWMD in their water management goals by taking excess water from Lake Okeechobee for storage on the Big Cypress Reservation, thereby helping restore the natural areas on the Reservation, as well as Big Cypress National Preserve and the Addition lands. This would be an achievable, positive step towards restoration of the Western Everglades and the Seminole Tribe continues to support CEPP with the understanding and expectation of further consultation on this matter with the USACE and the South Florida Water Management District.

IV. Modeling

The Seminole Tribe has continuously requested that the USACE consider discussing the possibility of sending water from Lake Okeechobee to the Big Cypress Reservation for storage, which would also benefit the ecological health of the Western Everglades. Although the modeling for CEPP has considered the Seminole Tribe's entitlement to water, it has not considered the Seminole Tribe's restoration needs for the Western Everglades area and the Tribe's potential ability to store excess water from Lake Okeechobee. The Seminole Tribe requests further modeling so the Seminole Tribe, the USACE and the SFWMD can better understand the quality and quantity of any water that might be delivered to determine if such a delivery would be mutually beneficial. Additionally, the modeling fails to address the Seminole Tribe's water needs for natural resources and customary usage. The modeling should consider the impact on the Seminole Tribe's Big Cypress Reservation and the western basins with regard to these concerns.

V. Cultural Resource Comments

The CEPP Area of Potential Effects ("APE") landscape is populated with over 20,000 known archaeological sites, including numerous burial sites. It is suspected that there are many more sites that have not yet been discovered. These sites (known and unknown), especially the burial sites, hold significant cultural/religious importance to the Seminole Tribe. The tree island landscape, which usually host these sites, form the fabric of the

Seminole Tribe's cultural identity. As the PIR/EIS acknowledges, there have been decades of unmitigated impacts to tribal cultural resources due to water control projects. The Seminole Tribe is encouraged by the commitments made by the USACE during the consultation process to move forward with treating these sites in a culturally sensitive manner. We respectfully request the PIR/EIS be amended to reflect those commitments as the Seminole Tribe has made significant efforts to be a partner in Everglades restoration, including CEPP.

The Seminole Tribe is also encouraged by the stated goals of restoring historic water levels/hydrological patterns and restoring/preserving tree islands and ridge/slough systems. Appropriately designing the CEPP project to achieve and monitor these goals will enhance the protection of cultural sites within the APE. Generally, most cultural sites are located on tree islands. Various studies have been conducted noting the significant impacts water control projects have had on tree islands (for example: http://www.sfwmd.gov/portal/page/portal/PG_GRP_SFWMD_WATERSHED/Tree_Island_Research413?project=1338&ou=440; http://www.sfwmd.gov/portal/page/portal/PG_GRP_SFWMD_WATERSHED/WCA_Historical_Tree_438?project=1354&ou=440). We are encouraged that the USACE is committed to restoring and preserving these environmentally and culturally significant resources.

A. District Engineer's Recommendations

During the government to government consultation process, the Seminole Tribe raised a significant concern about the USACE relying on insufficient data (unknowns) concerning cultural resources and impacts. The Seminole Tribe's comments were based on the concern that the lack of cultural resource data and potential errors in hydrological modeling could result in unintended impacts to burial resources. The USACE acknowledged the Seminole Tribe's concerns and a mutual commitment was made that the Jacksonville District Human Remains Policy (currently in development) would serve as the mechanism to address treatment of burial resources within the CEPP APE. This Policy would be formalized as a binding agreement between the USACE and the participating tribal governments. In essence, the Human Remains Policy would serve as a legal agreement: (1) to resolve impacts to burial resources under both Federal Trust Responsibility and Section 106 of the National Historic Preservation Act and (2) to be the basis for an adaptive management plan for cultural resources if unintended impacts occurred.

The purpose of the District Engineer's Recommendations in any PIR is to set forth all the necessary agreements with federal, state, Tribal and local governments. However, the current PIR does not include the development of the Jacksonville District Human Remains Policy, which will govern the CEPP project. We therefore request the following language be added to Section 8, the District Engineer's Recommendations: "The USACE is in the process of entering into a binding agreement with the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida setting forth protocols for the appropriate treatment of burial resources throughout the Jacksonville District pursuant to the Federal Trust Responsibility and Section 106 of the National Historic Preservation Act. The USACE

shall enter into this binding agreement and it will govern the treatment of burial resources that are culturally/religiously significant to the participating tribal governments."

B. Compliance with the National Historic Preservation Act

The PIR/EIS repeatedly states that the project is in compliance with the National Historic Preservation ACT ("NHPA"); however, the USACE does not state how it is in compliance. It is important to note that the Advisory Council on Historic Preservation's regulations and case law is clear that Section 106, NHPA is not satisfied when an agreement to resolve adverse impacts is not finalized before completion of the National Environmental Policy Act documentations or before the Record of Decision. We understand that the USACE is in the process of developing a human remains policy that would resolve, pursuant to the Trust Responsibility and Section 106, impacts to burial resources. These burial resources may also be Section 106 properties in addition to being trust resources. We also understand that the USACE is in the process of completing studies pursuant to the Environmental Restoration Transitional Plan Programmatic Agreement in order to assess Section 106 impacts resulting from water control projects. However, at some point the USACE will need to develop a legally binding agreement to address Section 106 impacts that are not covered by the human remains policy. Until such time as the human remains policy and the Section 106 agreement are finalized, the USACE is in process of complying with the NHPA but is not yet in compliance. The Seminole Tribe is hopeful that the USACE will continue to honor its commitment to develop the human remains policy. The USACE acknowledges that compliance has not yet been achieved on page C.2.2-121 of Appendix C but erroneously provides it is in compliance in other sections. The acknowledgement that compliance is not yet achieved but ongoing should be consistently stated throughout the document.

C. Effects of the Alternatives and the Tentatively Selected Plan

i. The USACE outlines its assessment of direct and cumulative impacts to cultural resources both in the Main Report and in Appendix C. The Seminole Tribe is concerned that this evaluation does not reference avoidance and minimization efforts and implies that only mitigation (excavation of resources) will occur. In Sections 5.1.16 and 6.3.3 of the Main Report, the USACE simply notes that direct and cumulative impacts to cultural resources will be adverse and significant and that mitigation measures might lessen the impacts. There is absolutely no mention of the USACE undertaking avoidance or minimization efforts. The same is true in Sections C.2.1.17, C2.2.17, and C.2.2.19/Table2.2-16 (Appendix C); the PIR/EIS does not provide any discussion of avoidance or minimization of direct or cumulative impacts to cultural resources. Conversely, the USACE specifically provides it will undertake efforts to avoid, minimize and mitigate environmental impacts. Based on the exclusion of avoidance and minimization with regard to cultural resources, the Seminole Tribe is concerned that the USACE is not planning on considering or pursuing such measures. Such an approach is inconsistent with both the Federal Trust Responsibility and the NHPA. We respectfully request that the assessment of impacts include a discussion on avoidance and minimization.

ii. Further, it appears the assessment of impacts was only evaluated under the NHPA. It is important that the PIR/EIS evaluate impacts pursuant to the Federal Trust Responsibility as well. The federal government's trust obligation is more than just formal consultation and requires consideration and protection of cultural resources. The Advisory Council on Historic Preservation defined the federal trust obligation as "establish[ing] [a] fiduciary obligation to the tribes including duties to protect tribal lands and cultural and natural resources for the benefit of tribes and individual members/land owners." See *ACHP Policy Statement Regarding the ACHP's Relationships with Indian Tribes*, dated November 17, 2000. Similarly, the Department of Defense implemented its *American Indian and Alaska Policy* in October 1998 ("Department of Defense American Indian Policy"), recognizing the significance tribes "ascribe to certain natural resources and properties of traditional or customary religious or cultural importance."

The Department of Defense's American Indian Policy provides for enhancing tribal capabilities to "effectively protect and manage natural and cultural tribal trust resources whenever [Department of Defense] acts to carry out a program that may have the potential to significantly affect those tribal trust resources." By memorandum dated February 18, 1998, the USACE announced six basic tribal policy principles that must guide the USACE' decision-making when actions may affect tribes and trust resources: (1) tribal sovereignty; (2) trust responsibility; (3) government to government relations; (4) pre-decisional and honest consultation; (5) self reliance, capacity building and growth; and (6) natural and cultural resources. Specifically, the USACE stated that it "will act to fulfill obligations to preserve and protect trust resources" whereby trust resources include cultural resources. See *Memorandum for Commanders, Major Subordinate Commands, and District Commands*, dated February 18, 1998. In doing so, the USACE "will reach out...to involve Tribes in collaborative processes designed to ensure information exchange, consideration of disparate viewpoints before and during decision making, and utilize fair and impartial dispute resolution mechanisms." *Id.*

Therefore, the USACE owes the Seminole Tribe the obligation to preserve and protect the cultural resources within CEPP in addition to its obligations under the NHPA (NHPA does not supersede the Trust Responsibility). The Seminole Tribe respectfully requests the PIR/EIS include an evaluation of the impacts pursuant to the Trust Responsibility.

iii. Finally, the assessment of impacts is completely void of any discussion of the Jacksonville District Human Remains Policy, which will govern both the treatment of impacts to burial resources and set forth how impacts to such resources will be assessed. This agreement will be critical to the assessment and treatment of impacts to burial resources and should be included in the discussion of impacts to cultural resources.

D. Relationship to ERTP

The ERTP APE overlaps with the CEPP APE. Throughout the PIR/EIS the USACE references studies that will be required pursuant to the ERTP Programmatic Agreement. The ERTP Programmatic Agreement also provides that treatment of burial resources will be conducted consistent with the ERTP Human Remains Policy, which is a binding

agreement between the USACE and the Seminole Tribe (along with other state and federal parties). Until such time as the Jacksonville District Human Remains Policy is formalized, the ERTP Human Remains Policy remains the governing document for resolution of impacts to burial resources within the ERTP APE. The PIR/EIS should be revised to include the ERTP Human Remains Policy in the discussion of existing conditions/present actions and assessment of impacts.

E. Government to Government Consultation

The Seminole Tribe appreciates the USACE's early consultation efforts concerning cultural resources. This approach has helped create a mutual understanding and hopefully will help avoid future conflicts regarding cultural resources. We hope that the USACE will duplicate this approach for future projects. The Seminole Tribe does want to point out that the CEPP consultation process concerning cultural resources was not just conducted pursuant to the NHPA. The cornerstone of the federal government's relationship with Indian Country is the Federal Trust Responsibility. It is a special fiduciary obligation that carries with it the duty to act "with good faith and utter loyalty to the best interests" of federally recognized Indian Tribes such as the Seminole Tribe. The principal component of a federal agency's fiduciary trust obligation to Indian Tribes is the duty to formally consult with Indian Tribes (government-to-government) on actions that may impact their interests including historic properties. Although the NHPA includes a specific requirement for federal agencies to consult with Indian Tribes during the Section 106 review process, the duty to conduct government-to-government consultation is primarily a Trust obligation mandating federal agencies to act in a fiduciary capacity. In short, the NHPA requirements do not supersede the Federal Trust Responsibility.

F. Archaeological Data

As noted earlier, at this point there are more unknowns about cultural resources within the APE than there are known data. In part, this is due to the archaeological surveys being done during a very wet period which prevented the USACE contracted archaeologists from completing sufficient surveys. Less than one percent of the APE was selected for survey and out of that sample size only a few sites were dry enough to partially test. It is important to note that despite the self imposed limitations, the surveys discovered culturally significant material including burial resources at a high percentage rate. Therefore, it is highly likely that there are numerous unknown cultural sites within the APE. As the project moves forward, we respectfully request the USACE conduct more survey work during dry periods. We are also confident that if the USACE protects and restores the tree islands within the APE, that the likelihood of unintended impacts will be greatly lessened. However, sufficient monitoring will be necessary to determine impacts and to appropriately identify sites. The PIR/EIS is currently void of any discussion regarding archaeological monitoring. The Seminole Tribe suspects that archaeological monitoring can be done in conjunction with monitoring tree islands if the right protocols are developed. We respectfully request that the PIR/EIS be revised to note the limitations of the cultural resource data, link the protection and restoration of tree islands to the preservation of cultural resources, and include the commitment to develop archaeological monitoring protocols.

G. Existing Conditions of Native Americans

The Seminole Tribe appreciates that the USACE included a section concerning the existing conditions of the Native Americans. However, it is important to note that it may not be appropriate to rely on the Seminole Tribe's website or its Museum website as the source for this section. The Seminole Tribe's website serves several functions which include advertising for is commercial activities. It would be more appropriate to consult with the tribal governments in the development of this section versus taking information from websites.

Also, the Seminole Tribe's websites are not intended to represent the history or culture of the Miccosukee Tribe of Indians. Finally, the section is entitled "Existing Conditions of Native Americans;" however, the only language concerning the existing conditions is one sentence: "Today most Tribal members live within the confines of their reservations located in South Florida." All of the other language summarizes the Seminole Tribe's history and does not provide any information about the Tribe's existing conditions.

We therefore respectfully request the USACE consult with both Tribes and the Independent Native Americans living in the area to more accurately detail the existing conditions for Native Americans.

H. Compliance with Laws

In Section 7 of the Main Report, the USACE discusses how the project is in compliance with various legal obligations. While this section discusses compliance with cultural resource related federal statutes and orders, it is void of any discussion on compliance with the Federal Trust Responsibility. The Federal Trust Responsibility is a legal obligation that requires the USACE's compliance. Therefore, we respectfully request the USACE include a discussion on compliance with the Trust Responsibility regarding cultural resources and environmental resources.

I. Funding

The PIR/EIS does not provide any estimate on the cost of identifying, evaluating and treating cultural resources. Cost is briefly mentioned in a memorandum for the record that is included in the PIR/EIS. The Seminole Tribe requests that the USACE consult with its Tribal Historic Preservation Office on the appropriate cost estimates for cultural resources and that funding for cultural resources (under NHPA and Trust Responsibility) be a specific line item budget for the project.

We are aware that the Corps' Engineering Regulations provide for the cost of "data recovery" for the Federal sponsor to be no more than 1% of the total project cost. We believe that is a fair cost estimate for data recovery. We are also aware that the same Regulations provide that the following activities are not considered "data recovery:" (1) measures for avoidance, minimization and mitigation; and (2) activities to survey, test and evaluate archeological resources. We request further consultation with the Corps to determine what would be a reasonable cost estimate for the activities and measures that are not considered "data recovery."

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

November 20, 2013

SUBJECT: Seminole Tribe of Florida Letter Dated October 15, 2013 Providing Comments for the Central Everglades Planning Project Draft PIR/EIS

Paul Backhouse, Ph.D, RPA
Museum Director and Tribal Historic Preservation Officer
30290 Josie Billie Hwy, PMB 1004
Clewiston, Florida 33440

Dear Dr. Backhouse:

The U.S. Army Corps of Engineers (Corps) would like to thank the Seminole Tribe of Florida for providing comments on the Central Everglades Planning Project (CEPP) draft integrated Project Implementation Report and Environmental Impact Statement (PIR/EIS). Our government-to-government consultation throughout the CEPP feasibility study has been invaluable throughout the process.

Currently, the CEPP team is working on responses to the comments provided in your letter and associated attachments titled *Appendix A* and *Appendix B*. All comments and responses will be recorded in Appendix C of the final CEPP PIR/EIS, which will go out for another government and public review in 2014.

The Corps recognizes the working history that it has with the Seminole Tribe of Florida in preservation and restoration projects and we look forward to strengthen our relationship today and into the future as we move toward that common goal. We would also like to reiterate our commitment to continuing consultation on and completion of the policy guidance memorandum to update and expand the 2008 CERP Policy on Human Remains that will apply to all Civil Works and Regulatory actions within the respective jurisdiction of these Jacksonville District Programs.

An electronic copy of this letter will be provided to recipients listed below. Please contact Ms. Cynthia Thomas at Cynthia.G.Thomas@usace.army.mil should you have any questions or concerns.

***See CEPP PIR/EIS Appendix C.3 for detailed responses to comments listed in the letter referenced above.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Electronic Copies Furnished:
Chairman James E. Billie, Seminole Tribe of Florida
Mr. Danny Tommie, Seminole Tribe of Florida
Ms. Cherise Maples, Seminole Tribe of Florida
Ms. Anne Mullins, Seminole Tribe of Florida
Mr. Bradley Muller, Seminole Tribe of Florida
Ms. Alison Swing, Seminole Tribe of Florida
Mr. Geoffry Wason, Seminole Tribe of Florida
Mr. Jim Shore, Lewis, Longman & Walker, P.A.
Ms. Michelle Diffenderfer, Lewis, Longman & Walker, P.A.
Ms. James Charles, Lewis, Longman & Walker, P.A.
Ms. Cynthia Thomas, U.S. Army Corps of Engineers
Mr. Armando Ramirez, South Florida Water Management District

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

November 20, 2013

SUBJECT: Seminole Tribe of Florida Comments Letter Dated October 15, 2013 for the Central Everglades Planning Project Draft PIR/EIS

Ms. Cherise Maples
Interim Director, Environmental Resource Management Department
Seminole Tribe of Florida
6300 Stirling Road, Suite 109
Hollywood, Florida 33024

Dear Ms. Maples:

The U.S. Army Corps of Engineers (Corps) would like to thank the Seminole Tribe of Florida for providing comments on the Central Everglades Planning Project (CEPP) draft integrated Project Implementation Report and Environmental Impact Statement (PIR/EIS). Our government-to-government consultation throughout the CEPP feasibility study has been invaluable.

Currently, the CEPP team is working on responses to the comments provided in the above referenced letter and attachments titled *Appendix A* and *Appendix B*. All comments and responses will be recorded in Appendix C of the final CEPP PIR/EIS, which will go out for another government and public review in 2014.

The Corps also recognizes the working history that it has with the Seminole Tribe of Florida in preservation and restoration projects and we look forward to strengthen our relationship today and into the future as we move toward that common goal.

An electronic copy of this letter will be provided to recipients listed below. Please feel free to contact Ms. Kimberley Taplin via email at Kimberley.A.Taplin@usace.army.mil should you have any questions or concerns.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

***See CEPP PIR/EIS Appendix C.3 for detailed responses to comments listed in the referenced letter.

Electronic Copy Furnished:
Chairman James E. Billie, Seminole Tribe of Florida
Mr. Danny Tommie, Seminole Tribe of Florida
Dr. Paul Backhouse, Seminole Tribe of Florida
Mr. Jim Shore, Lewis, Longman & Walker, P.A.
Ms. Michelle Diffenderfer, Lewis, Longman & Walker, P.A.
Ms. James Charles, Lewis, Longman & Walker, P.A.
Ms. Cynthia Thomas, U.S. Army Corps of Engineers
Mr. Armando Ramirez, South Florida Water Management District

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

Document Transmittal Form

Date:	January 26, 2014
To:	Dr. Paul Backhouse, Museum Director and Tribal Historic Preservation Officer
Organization:	Seminole Tribe of Florida
Address:	30290 Josie Billie Hwy, PMB 1004 Clewiston, Florida 33440
Contact No.:	(850) 245-6339
Cc:	Anne Mullins Bradley Mueller Alison Swing Geoffrey Wasson
Items Sent:	1. Corrections to final report titled, "Phase I Historical and Archaeological Survey of the Miami Canal within WCA-3A, Levee 4-5 Spreader Channel, and Levee 5 Spreader Channel Pump Station, Broward and Dade Counties, Florida" **DHR Project File No. 2012-2895 / 1A-32 Permit No.: 1112.001** 2. Updated/New FMSF Forms 3. STOF to USACE response letter to review of above referenced report.
Sent By: **Contact No.:**	Cynthia Thomas (904) 232-1180
Transmitted Via:	FTP
Message:	Enclosed is correction/clarification, and updated and/or new FMSF forms, that should accompany the above referenced report. Please contact me should you have any questions.

C.5.5 Written Correspondence: Public

January 31, 2014 USACE to Airboat Association of Florida CEPP Section 106 Consultation Follow-up Letter

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

January 31, 2014

SUBJECT: Central Everglades Planning Project Assessment of Effects to the Airboat Association of Florida and Section 106 Consultation, Miami-Dade County, Florida

Airboat Association of Florida
25400 SW 8th Street
Miami, Florida 33196

Dear Officers and Members of the Airboat Association of Florida:

The U.S. Army Corps of Engineers (Corps), Jacksonville District, would like to extend our appreciation to you for meeting with Modified Waters Deliveries (Mod Waters) Project team members and the Central Everglades Planning Project (CEPP) team members January 18, 2014, and especially for your hospitality. During our meeting, we covered the following topics: 1. The status of CEPP 2. How CEPP could potentially impact the Traditional Cultural Property (TCP) Airboat Association of Florida (AAF) located at 25400 SW 8th Street 3. Once Congress has approved the project, how the Corps would continue consultation with the Airboat Association of Florida.

As required by federal law, Section 106 of the National Historic Preservation Act, we are required to notify you that we have initiated Section 106 consultation and are currently assessing our needs for information regarding historic and undocumented traditional cultural properties that might be affected by this project. Pursuant to Section 106 of the National Historic Preservation Act and implementing regulations, the Corps has conducted an extensive review of the Florida Master Site Files to identify recorded cultural resource sites within the project area. Those results included the identification of four sites recorded as or associated with the AAF. As you know, the AAF is recognized as a TCP, site number 8DA6768A, that is associated with the modern Gladesmen culture. There are also three historic buildings related to the TCP that are located on the property; the main clubhouse (site number 8DA6768), the care takers house (8DA11526) and the kitchen (8DA11527). As required by Section 106 of the Historic Preservation Act, we will need to consider how the project may impact these sites and consult with you on those effects. In the future, once the project has been authorized by Congress, the Corps will re-initiate consultation with you specifically for the CEPP.

In the interim, should you have any questions or concerns regarding the Airboat Association of Florida TCP and/or associated historic structures that may be impacted by the Mod Waters Project, please contact Dan Hughes at (904) 232-3028 or email at Daniel.B.Hughes@usace.army.mil. For concerns regarding the CEPP, please contact Cindy Thomas at (904) 232-1180 or by email: Cynthia.G.Thomas@usace.army.mil.

Sincerely,

Eric Summa
Chief, Environmental Branch

C.5.6 2008 Policy Statement and Guidelines Regarding Human Remains and the Comprehensive Everglades Restoration Plan (CERP 2008 HR Policy)

The Corps has committed to and is currently developing the "Policy Guidance Memorandum Regarding American Indian Burial Resources for Civil Works and Regulatory Projects" which will be utilized as an update to, and extension of the CERP 2008 HR Policy. This document is an internal guidance document designed to consolidate and clarify existing Corps documents regarding the treatment of human remains pursuant to Section 106 of the National Historic Preservation Act and the Jacksonville District's Federal Trust Responsibilities for the state of Florida.

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

OCT 15 2012

Planning and Policy Division
Environmental Branch

Mr. Jim Shore
Seminole Tribe of Florida
General Council
6300 Stirling Road
Hollywood, Florida 33024

Dear Mr. Shore:

On behalf of the U.S. Army Corps of Engineers (Corps), Jacksonville District, I would like to thank the Seminole Tribe of Florida for collaborating with the Corps on the development and ratification of the Everglades Restoration Transition Plan (ERTP) Programmatic Agreement and Human Remains Policy, and for the continued participation in ongoing formal consultation for the Central Everglades Planning Project (CEPP).

In your letter dated September 26, 2012, your office requested formal consultation concerning the development of a broader human remains protocol in connection with the ongoing consultation for CEPP. As you know, CEPP is an accelerated planning project, which requires a great deal of consultation and coordination to insure that all interested parties' concerns are considered. Currently, CEPP is covered under the Comprehensive Everglades Restoration Plan (CERP) Human Remains Policy that was signed in 2008. Due to the importance placed on human remains and burial resources and our Trust responsibilities, the Corps does not view it as appropriate for the human remains protocol covering all Jacksonville District civil works projects within Florida to be developed in connection with CEPP (which focuses on water and related resources in the south Florida region). A broader human remains policy covering all of the Corps of Engineers' civil works missions within the Jacksonville District's area of responsibility in Florida should be developed separately and independently of any project.

We would like to extend an invitation for you or a designated member(s) of your staff to discuss the path forward toward achieving our mutual goal of developing the human remains protocol. Mr. Daniel Hughes has been designated as the Jacksonville District staff archaeologist for the development of this document and will be initiating contact with you (or your designee) by November 16, 2012.

Please contact Mr. Hughes at (904) 232-3028 or via email: Daniel.B.Hughes@usace.army.mil, or the Jacksonville District's Tribal Liaison, Ms. Natalie Garrett at (561) 472-8878 or via email: Natalie.S.Garrett@usace.army.mil with any concerns or questions you may have.

Sincerely,

Alan M. Dodd
Colonel, U.S. Army
District Commander

Copy Furnished:

Mr. James Charles, Lewis, Longman & Walker, P.A., 515 North Flagler Drive, Suite 1500 West Palm Beach, Florida 33401
Mr. Stephen Walker, Lewis, Longman & Walker, P.A., 515 North Flagler Drive, Suite 1500, West Palm Beach, Florida 33401
Ms. Patricia Power, Bose Public Affairs Group, 1120 20th Street, N.W., Washington, DC 20036
Mr. Danny Tommie, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Mr. Craig Tepper, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Mr. Paul N. Backhouse, Seminole Tribe of Florida, 30290 Josie Billie Hwy, PMB 1004, Clewiston, Florida 33440
Ms. Anne Mullins, Seminole Tribe of Florida, 30290 Josie Billie Hwy, PMB 1004, Clewiston, Florida 3340
Mr. Matthew Morrison, South Florida Water Management District, 3301 Gun Club Road, West Palm Beach, Florida 33406
Ms. Cynthia Thomas, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Ms. Kimberley Taplin, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Mr. Daniel Hughes, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Mr. John Pax, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Mr. Matt Donaldson, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207
Ms. Natalie S. Garrett, U.S. Army Corps of Engineers, 701 San Marco Boulevard, Jacksonville, Florida 32207

SEMINOLE TRIBE OF FLORIDA

TELEPHONE
(954) 967-3900

FAX
(954) -967-3463

WEBSITE:
www.seminoletribe.com

6300 STIRLING ROAD
HOLLYWOOD,
FLORIDA 33024

Tribal Officers:

JAMES E. BILLIE
Chairman

TONY SANCHEZ, JR.
Vice Chairman

PRISCILLA D. SAYEN
Secretary

MICHAEL D. TIGER
Treasurer

VIA ELECTRONIC & REGULAR U.S. MAIL

September 26, 2012

Colonel Alan M. Dodd
U.S. Army Corps of Engineers
Jacksonville District
Post Office Box 4970
Jacksonville, Florida 32331-0019

Re: Everglades Restoration Transition Plan

Dear Colonel Dodd:

I am pleased to inform you that on September 14, 2012, the Seminole Tribe of Florida's Tribal Council formally ratified both the Programmatic Agreement and Human Remains Policy for the Environmental Restoration Transition Plan ("ERTP"). Further, the Tribal Council has elected to participate in the Programmatic Agreement as a Signatory Party. Please find attached a copy of the Programmatic Agreement signed by Chairman James E. Billie. We appreciate the United States Army Corps of Engineers' ("Corps") efforts in cooperatively developing both documents with the Seminole Tribe. Burial resources hold significant cultural and religious importance to the Seminole Tribe. Therefore, we are especially pleased with the development of the Human Remains Policy for ERTP and the Corps' commitment to protect burial resources as trust resources.

This commitment was acknowledged by Colonel Pantano during our May 15, 2012, formal consultation. During that meeting, Colonel Pantano suggested and committed to the development of a Human Remains Policy for ERTP. Colonel Pantano also suggested and committed to developing, in consultation with the Seminole Tribe, a global human remains

policy that would govern all Corps activities throughout Florida. This commitment by Colonel Pantano is reflected in the ERTP Programmatic Agreement. As Colonel Pantano suggested, the global policy would build off the ERTP Human Remains Policy and the 2008 Comprehensive Everglades Restoration Plan Human Remains Policy.

We look forward to the opportunity to collaborate with the Corps in fulfilling the Corps' commitment to the Seminole Tribe to develop a global human remains policy. Both the Corps and the Seminole Tribe will benefit from an agreed upon, streamlined process for the treatment of burial resources. Such a policy will ensure outcomes that timely further project goals in a culturally sensitive manner. The Corps staff has committed to developing a global policy by June 2013, which we believe is a reasonable timeframe.

We are currently conducting formal consultation with the Corps in connection with the Central Everglades Planning Project ("CEPP"). We appreciate the Corps involving the Seminole Tribe and considering cultural resource issues early on in the process. Considering the early stages of CEPP, we believe that CEPP presents an excellent opportunity for the timely development of the global human remains policy. It is important that both the Seminole Tribe and the Corps continue to act on the commitments made to ensure a cooperative approach to the treatment of burial resources and the progress made thus far continues. Therefore, we respectfully request, in connection with CEPP, the Corps initiate formal consultation with the Seminole Tribe to develop the global human remains policy. Thank you again for your time and consideration.

Sincerely,

Jim Shore, General Counsel
Seminole Tribe of Florida

cc:

Cynthia Thomas – U.S. Army Corps of Engineers
Matt Morrison – U.S. Army Corps of Engineers
Kim Taplin – U.S. Army Corps of Engineers
Daniel Hughes – U.S. Army Corps of Engineers
John Pax – U.S. Army Corps of Engineers
Matt Donaldson – U.S. Army Corps of Engineers
Natalie S. Garrett – U.S. Army Corps of Engineers
Danny Tommie – Seminole Tribe of Florida
Paul N. Backhouse – Seminole Tribe of Florida
Anne Mullins – Seminole Tribe of Florida
Craig Tepper – Seminole Tribe of Florida
Patricia Power – Bose Public Affairs Group
Stephen Walker – Lewis, Longman & Walker, P.A.
James Charles – Lewis, Longman & Walker, P.A.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JUN 29 2007

Planning Division
Environmental Branch

Mr. Billy Cypress, Chairman
Miccosukee Tribe of Indians of Florida
Post Office Box 440021
Tamiami Station
Miami, Florida 33144

Dear Chairman Cypress:

In August of 2006 at the Tribe's request, Mr. Grady Caulk, of my staff, along with representatives of the South Florida Water Management District met with Mr. Fred Dayhoff and Mr. Steve Terry to discuss concerns that the Miccosukee Tribe had about impacts that the Comprehensive Everglades Restoration Plan (CERP) would have on cultural resources. Specifically that intentional inundation of Native American burials is unacceptable, along with your requests that the Jacksonville District make every possible attempt to avoid project caused inundation of burial sites, and if that is not possible, that we protect these burials from inundation by relocating them.

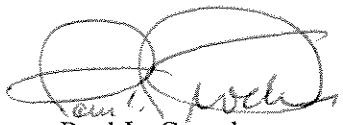
In considering how to meet your request, the Jacksonville District reevaluated the policies to be used in treating burials. While it would be possible to continue to use Section 106 of the National Historic Preservation Act (NHPA) as the only means of protecting burials; our consultation with you suggested that protecting burials from this unacceptable impact is much more significant than the consideration required for archeological sites. In order to address this concern, we concluded that it is more appropriate to consider Native American burials "Protected Tribal Resources" in accordance with the Department of Defense American Indian and Alaska Native Policy (October 20, 1998). As such, the Jacksonville District considers our treatment of such burials to be a part of our Trust responsibility to federally recognized Sovereign Indian Nations. Therefore, protecting them from impacts falls under our Government-to-Government responsibilities which take precedence over Section 106 of the National Historic Preservation Act. By treating burials as part of our Trust relationship with Sovereign Indian Nations, the Jacksonville District believes that we can meet both our Trust and NHPA responsibilities while also complying with Florida Statutes. We will continue to use the Section 106 process and the guidelines that you have provided to facilitate this policy and to protect the archeological resources located in the sites.

Most of the CERP projects which may inundate burials are located on lands owned by the State of Florida, therefore the Native American Graves Protection and Repatriation Act does not apply as it is specific only to federally owned lands. Chapter 872, Florida Statutes provides for protection of Human Remains on public and private property in the State of Florida.

Every attempt will be made to avoid impacting sites with burials; however, because of the size of the Everglades Restoration project, unfortunately this will not be possible in all instances. Therefore, the Jacksonville District, with the State Archeologist and the South Florida Water Management District, are developing guidelines and procedures to honor your request. For projects where inundation is not an effect, we propose to continue our policy of expeditiously reburying Human Remains as close as possible to their original location.

Your comments or concerns regarding the use of Federal Trust responsibilities instead of Section 106 as a means of protecting burials from project impacts would be appreciated. We were applying your request to protect burials to specific projects when we made the determination that burials in archeological sites were more appropriately "Protected Tribal Resources" and not archeological resources. We are currently working on two projects where avoidance of all burials does not appear to be possible. We will be requesting project specific comments, in the near future, under separate correspondence, in accordance with guidelines you have provided. If there are any questions, please contact Mr. Grady Caulk at 904-232-1786 or e-mail at grady.h.caulk@saj02.usace.army.mil.

Sincerely,



Paul L. Grosskruger
Colonel, U.S. Army
District Commander

Enclosure

Copy Furnished:

Mr. Steve Terry, Cultural Representative, Miccosukee Tribe of Indians of Florida, Post Office Box 440021, Tamiami Station, Miami, Florida 33144

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JUN 2 9 2007

Planning Division
Environmental Branch

Mr. Mitchell Cypress, Tribal Council Chairman
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, Florida 33024

Dear Chairman Cypress:

In the course of the U.S. Army Corps of Engineers (Corps), Jacksonville District's ongoing tribal consultations regarding projects that are a part of the Comprehensive Everglades Restoration Plan (CERP), the Miccosukee Tribe of Indians of Florida has stated that intentional inundation of burials is unacceptable. The Tribe specifically requests that the Corps and the South Florida Water Management District (SFWMD) make every possible attempt to avoid project-caused inundation of burial sites. When avoidance is not possible, the Tribe requests that we protect these burials from inundation by relocating them (see the enclosed Miccosukee Position statement).

In considering how to meet the Miccosukee's request, the Jacksonville District, in collaboration with the SFWMD and the State Archeologist, reevaluated the policies to be used in treating burials in CERP project areas. While it would be possible to continue to use Section 106 of the National Historic Preservation Act (NHPA) as the only means of protecting burials, consultation with the Miccosukee Tribe clarified that their concerns regarding the protection of burials are much more significant than the consideration required for archeological sites. In order to address this concern we concluded that it is more appropriate to consider burials as "Protected Tribal Resources" in accordance with the Department of Defense American Indian and Alaska Native Policy (October 20, 1998). As such, the Jacksonville District considers our treatment of burials to be a part of our Trust responsibility to federally recognized Sovereign Indian Nations. Therefore, protecting burials from impacts falls under our Government-to-Government responsibilities, which take precedence over Section 106 of the National Historic Preservation Act. By treating burials as part of our Trust relationship with Sovereign Indian Nations, the Jacksonville District believes that we can meet both our Trust and NHPA responsibilities while also complying with Florida Statutes. We will continue to use the Section 106 process to facilitate this policy and to protect the archeological resources located in the sites.

Most of the CERP projects which may inundate burials are located on lands owned by the State of Florida, therefore the Native American Graves Protections and Repatriation Act does not apply as it is specific only to federally owned lands. Chapter 872, Florida Statutes administered by the State Archeologist provides for protection of Human Remains on public and private property in the State of Florida.

Every attempt will be made to avoid impacting sites with burials; however, because of the size of the Everglades Restoration project this will not be possible in all instances. Therefore, the Jacksonville District, with the State Archeologist and the SFWMD are developing guidelines and procedures to honor the Miccosukee's request. For projects where inundation is not an effect, we propose to continue our policy of expeditiously reburying human remains as close as possible to their original location.

Your comments or concerns regarding the use of Federal Trust responsibilities instead of Section 106 as a means of protecting burials from project impacts would be appreciated. Any comments, concerns, and guidance you may have about the implementation of the Miccosukee Tribe's request would also be appreciated. We are currently working on two CERP projects where avoidance of all burials does not appear to be possible. We will be requesting project specific comments, in the near future, under separate correspondence. The Jacksonville District is available to meet to discuss the Miccosukee Tribe's request and its implementation if desired. If there are any questions or to schedule a meeting, please contact Mr. Grady Caulk at 904-232-1786 or e-mail at grady.h.caulk@saj02.usace.army.mil.

Sincerely,

Paul L. Grosskruger
Colonel, U.S. Army
District Commander

Enclosures

Copy Furnished:

Mr. Willard Steele, Tribal Historic Preservation Officer, Seminole Tribe of Florida, Ah Tha Thi Ki Museum, HC-61 Post Office Box 21-A, Clewiston, Florida 33440

Department of Defense
American Indian and Alaska Native Policy

PREAMBLE

These principles establish the Department of Defense's (DoD) American Indian and Alaska Native Policy for interacting and working with federally-recognized American Indian and Alaska Native governments (hereinafter referred to as "tribes"[1])**(a)**. These principles are based on tribal input, federal policy, treaties, and federal statutes. The DoD policy supports tribal self-governance and government-to-government relations between the federal government and tribes. Although these principles are intended to provide general guidance to DoD Components on issues affecting tribes[2] **(b)**, DoD personnel must consider the unique qualities of individual tribes when applying these principles, particularly at the installation level. These principles recognize the importance of increasing understanding and addressing tribal concerns, past, present, and future. These concerns should be addressed prior to reaching decisions on matters that may have the potential to significantly affect **(c&d)** protected tribal resources, tribal rights, or Indian lands[3] **(e)**.

[1] *As defined by most current Department of Interior/Bureau of Indian Affairs list of tribal entities published in Federal Register pursuant to Section 104 of the Federally Recognized Indian Tribe List Act.*

[2] *This policy is not intended to, and does not, grant, expand, create, or diminish any legally enforceable rights, benefits, or trust responsibilities, substantive or procedural, not otherwise granted or created under existing law. Nor shall this policy be construed to alter, amend, repeal, interpret, or modify tribal sovereignty, any treaty rights, or other rights of any Indian tribes, or to preempt, modify, or limit the exercise of any such rights.*

[3] *Definition of Key Terms:*

- ***Protected Tribal Resources**: Those natural resources and properties of traditional or customary religious or cultural importance, either on or off Indian lands, retained by, or reserved by or for, Indian tribes through treaties, statutes, judicial decisions, or executive orders, including tribal trust resources.*
- ***Tribal Rights**: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.*
- ***Indian Lands (f)**: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.*

(a) This policy governs Department interactions with federally recognized tribes only; it does not govern interaction with unrecognized tribes, state-recognized tribes, Alaska Native village or regional corporations, or Native Hawaiians. [In Alaska, as a practical matter, the Department may need to discuss proposed actions with Alaska Native village or regional corporations simply because these corporate entities own and manage much of the land in Alaska. In such cases, the relationship between the Department and the corporate entity is a business relationship between the government and a private party, not a government-to-government relationship.]

(b) This policy neither enlarges nor diminishes the Department's legal obligations with respect to federally recognized tribes, nor does the policy provide an independent cause of action upon which the Department may be sued.

(c) The phrase "may have the potential to significantly affect," which appears throughout the policy, establishes the general threshold or "trigger" for consultation to be used unless a statute or other legal obligation specifically establishes a lower threshold for consultation. It is expected that DoD personnel will informally contact interested tribes whenever there is any real possibility that tribal interests may be affected by proposed DoD actions, but that continued, more formal consultation will be necessary only when it appears, from initial discussions with a tribe, that tribal interests will be *significantly* affected by the proposed action. In other words, the policy anticipates a two-step process designed first, to overcome the fact that, as non-Indians, we may not always recognize the effect our actions may have on tribal interests unless we ask; and second, to permit DoD to proceed without the need for further consultation unless potentially *significant* consequences are identified during this initial discussion. [Note: The word "significantly" is used in this policy in its ordinary dictionary sense; i.e., as a synonym for "material" or "important." It is should not be interpreted in the NEPA or Council on Environmental Quality NEPA Regulations sense, as that would set a higher threshold for consultation than is intended.]

(d) There is no obligation to consult with tribes in advance of a proposal that "may have the potential to significantly affect" tribal interests. In other words, the obligation to consult with tribes under this policy is event- or proposal-driven. Nonetheless, as a matter of discretion, general consultation may be desirable where an installation expects to have frequent interaction with a tribe and wishes to establish a stand-by protocol for consultation absent the pressures associated with a particular proposal.

(e) The phrase "protected tribal resources, tribal rights, or Indian lands," which appears throughout the policy, works in conjunction with the "may have the potential to significantly affect" trigger to determine when DoD must consult with tribes. Generally speaking, DoD must consult with tribes only when its proposed actions may have the potential to significantly affect Indian lands, treaty rights, or other tribal interests protected by statute, regulation, or executive order. [Note: Some statutes may establish a lower threshold for consultation than the default threshold established in this policy (see, e.g., 16 U.S.C. 470a(d)(6)(B)); in such cases, the Department must consult with tribes in accordance with the statutory requirements.] [Note also, that individual rural residents of Alaska, including both Natives and non-Natives, generally have a right to engage in nonwasteful subsistence uses of fish, wildlife, and other wild, renewable resources on public lands in Alaska. While this right is not a *tribal* right *per se*, installations nonetheless may find it both convenient and beneficial to consult with the appropriate Alaska Native entity whenever a proposed DoD action may have the potential to adversely affect the subsistence activities of several members of the same village or tribe.]

(f) With respect to Alaska, the term "Indian Lands" does not include lands held by Alaska Native Corporations or lands conveyed in fee to an Indian Reorganization Act entity or traditional village council; the term may include village-owned townsite lands (depending on the particular status of the village itself and upon a fact-specific inquiry into whether the area at issue qualifies as a dependent Indian community), and individual Native townsite lots and Native allotments (so long as these properties remain in either restricted fee or trust allotment form).

I. TRUST RESPONSIBILITIES

DoD will meet its responsibilities to tribes. These responsibilities are derived from:

- Federal trust doctrine (g) (i.e., the trust obligation of the United States government to the tribes);

- Treaties, Executive Orders, Agreements, Statutes, and other obligations between the United States government and tribes, to include:

    1. Federal statutes (e.g., Native American Graves Protection and Repatriation Act, American Indian Religious Freedom Act, National Environmental Policy Act, National Historic Preservation Act, Alaska National Interest Lands Conservation Act, Alaskan Native Claims Settlement Act, and Archeological Resources Protection Act); and

    2. Other federal policies (e.g., Executive Order 12898, "Environmental Justice"; Executive Order 13007, "Indian Sacred Sites"; Executive Order 13021 "Tribal Colleges and Universities"; "Executive Memorandum: Government to Government Relations with Native American Tribal Governments," dated 29 April 1994; and Executive Order 13084, "Consultation and Coordination with Indian Tribal Governments").

DoD will annually review the status of relations with tribes to ensure that DoD is:

- Fulfilling its federal responsibilities; and

- Addressing tribal concerns related to protected tribal resources, tribal rights, or Indian lands.

(g) Under the federal trust doctrine, the United States--and individual agencies of the federal government--owe a fiduciary duty to Indian tribes. The nature of that duty depends on the underlying substantive laws (i.e., treaties, statutes, agreements) creating the duty. Where agency actions may affect Indian lands or off-reservation treaty rights, the trust duty includes a substantive duty to protect these lands and treaty rights "to the fullest extent possible." Otherwise, unless the law imposes a specific duty on the federal government with respect to Indians, the trust responsibility may be discharged by the agency's compliance with general statutes and regulations not specifically aimed at protecting Indian tribes.

II. GOVERNMENT TO GOVERNMENT RELATIONS

Build stable and enduring relationships with tribes by:

- Communicating with tribes on a government-to-government basis **(h)** in recognition of their sovereignty;
- Requiring meaningful communication addressing tribal concerns between tribes and military installations at both the tribal leadership-to-installation commander and the tribal staff-to-installation staff levels **(i)**;
- Establishing a senior level tribal liaison in the Office of the Secretary of Defense **(j)** and other appropriate points of contact within DoD to ensure that tribal inquiries are channeled to appropriate officials within DoD and responded to in a timely manner;
- Providing, to the extent permitted by DoD authorities and procedures, information concerning opportunities available to tribes to: 1) compete for contracts, subcontracts, and grants, and participate in cooperative agreements; 2) benefit from education and training; 3) obtain employment; and 4) obtain surplus equipment and property;
- Assessing, through consultation, the effect of proposed DoD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and Indian lands before decisions are made **(k)**;
- Taking appropriate steps to remove any procedural or regulatory impediments to DoD working directly and effectively with tribes on activities that may have the potential to significantly affect protected tribal resources, tribal rights, and Indian lands; and
- Working with other federal agencies, in consultation with tribes, to minimize duplicative requests **(l)** for information from tribes.

(h) Indian tribes have been called "domestic dependent nations"--i.e., nations within a nation. As such, consultation with tribes on a "government-to-government basis" requires a high degree of formality (see attached sample framework for consultation). Unless--or until--a tribal-specific protocol for consultation has been developed, formal contact with a tribe should be made by the installation commander, and should be directed to the tribe's senior elected official, usually referred to as the tribal chair, governor, or president.

(i) Although communication with tribes on a government-to-government basis demands attention--at least initially--at a relatively senior level of command, the goal should be to develop mutually acceptable protocols or procedures that will allow most day-to-day liaison and work with interested tribes to be accomplished on a staff-to-staff basis. Senior commanders and tribal leaders should be kept apprised of this day-to-day interaction, but--once these protocols are in place--need act personally and directly only when requested to do so by the other party.

(j) Although the Deputy Under Secretary of Defense for Environmental Security will provide tribes with a senior-level liaison to ensure tribal inquires are promptly addressed, DoD officials at all levels of command should strive to make it easier for tribes to receive timely answers to the questions they may have concerning DoD activities that may affect them. One way to accomplish this at the installation level could be to designate and announce a principal point-of-contact for the receipt of tribal inquiries.

(k) The single most important element of consultation is to initiate the dialogue with potentially affected tribes *before* decisions affecting tribal interests are made. Meaningful consultation demands that the information obtained from tribes be given particular, though not necessarily dispositive, consideration; this can happen only if tribal input is solicited early enough in the planning process that it may actually influence the decision to be made. Consultation is worth very little if decisions have already been made.

(l) Keep in mind that many tribes have relatively few enrolled members and only a limited staff to respond to your requests. This being the case, coordinate your requests for information with other federal agencies whenever doing so may reduce the administrative burden on the affected tribe.

III. CONSULTATION

Fully integrate (down to staff officers at the installation level) the principle and practice of meaningful consultation and communication with tribes by:

- Recognizing that there exists a unique and distinctive political relationship between the United States and the tribes that mandates that, whenever DoD actions may have the potential to significantly affect protected tribal resources, tribal rights, or Indian lands, DoD must provide affected tribes an opportunity to participate in the decision-making process that will ensure these tribal interests are given due consideration in a manner consistent with tribal sovereign authority **(m)**;

- Consulting consistent with government-to-government relations and in accordance with protocols mutually agreed to **(n)** by the particular tribe and DoD, including necessary dispute resolution processes;

- Providing timely notice to, and consulting with, tribal governments prior to taking any actions that may have the potential to significantly affect protected tribal resources, tribal rights, or Indian lands;

- Consulting in good faith throughout the decision-making process **(o)**; and

- Developing and maintaining effective communication, coordination, and cooperation with tribes, especially at the tribal leadership-to-installation commander level and the tribal staff-to-installation staff levels.

(m) What constitutes "due consideration...consistent with tribal sovereignty" depends, in part, on the underlying law that dictates that consultation take place. "Consultation" can vary from simple notice of a pending action to negotiation to obtain the tribe's formal consent to a proposed action (the absence of which may be enough to stop that action from proceeding). The attached table summarizes the specific legal obligations owed tribes under the trust doctrine and various statutes. In general, two principles should be kept in mind. One, tribes are not just another interested party; where tribal interests may be significantly affected, tribes must be regarded as separate from the general public for the purposes of consultation. Second, in most cases, consultation should include an invitation to potentially affected tribes to provide information to DoD concerning actions that may significantly affect tribal interests; that information should be given special consideration. In some instances, e.g., where Indian lands or treaty rights may be significantly and adversely affected, tribal rights may take precedence and dictate that DoD protect these rights to the fullest extent possible.

(n) The are over 570 federally recognized Indian tribes, each with its own distinctive cultural identity. Just as is true with foreign nations, a "one-size-fits-all" prescription for consultation with Indian tribes is neither appropriate nor possible. Instead, installations should expect to have to negotiate a mutually agreeable protocol with each separate tribe with which it must consult. While certain elements can be expected be a part of any such protocol, installations should be mindful of the fact that tribes all have different ways of controlling property, harvesting natural resources, revering the environment, and even conducting consultations.

(o) Keep it in mind that the consultation trigger contemplates a two-step process.
Consultation need continue throughout the decision-making process only for those proposals that have the potential to *significantly* affect tribal interests.

IV. NATURAL AND CULTURAL RESOURCES PROTECTION

Recognize and respect the significance tribes ascribe to certain natural resources and properties of traditional or customary religious or cultural importance by:

- Undertaking DoD actions and managing DoD lands consistent with the conservation of protected tribal resources and in recognition of Indian treaty rights to fish, hunt, and gather resources at both on- and off-reservation locations **(p)**;

- Enhancing, to the extent permitted by law, tribal capabilities to effectively protect and manage natural and cultural tribal trust resources **(q)** whenever DoD acts to carry out a program that may have the potential to significantly affect those tribal trust resources;
- Accommodating, to the extent practicable and consistent with military training, security, and readiness requirements, tribal member access to sacred and off-reservation treaty fishing, hunting, and gathering sites located on military installations; and

- Developing tribal specific protocols to protect **(r)**, to the maximum extent practicable and consistent with the Freedom of Information Act, Privacy Act, National Historic Preservation Act, and Archeological Resources Protection Act, tribal information regarding protected tribal resources that has been disclosed to, or collected by, the DoD.

(p) Fulfillment of the trust responsibility demands that federal agencies protect the lands and habitats that support the resources upon which the meaningful exercise of tribal hunting, fishing, and gathering rights depend. This includes actions on non-Indian-owned lands (including DoD installations) that may affect Indian lands or off-reservation treaty rights (such as reserved rights to hunt, fish, or gather on treaty-ceded lands or "usual and accustomed" grounds and stations). In addition, in Alaska, DoD must endeavor to protect the continued viability of all wild, renewable resources in order to minimize, to the extent possible, the adverse effects of its actions on rural residents who depend upon subsistence uses of such renewable resources.

(q) Where a proposed DoD action may have the potential to significantly affect tribal *trust* resources (i.e., Indian lands or treaty rights to certain resources) or DoD has been given express statutory authority (e.g., §8050 of the Department of Defense Appropriations Act of FY 1999), DoD may have limited authority to help develop and enhance the affected tribe's capacity to better manage these resources. This, however, is an area fraught with fiscal law pitfalls; consequently, installations are advised to consult with legal counsel before committing to expend appropriated funds for this purpose.

(r) Presently, legal authority to protect tribal information concerning sacred sites is very limited. Section 9 of the Archeological Resources Protection Act (16 U.S.C. § 470hh) and Section 304 of the National Historic Preservation Act (16 U.S.C. § 470w-3) may provide some protection from a request for such information, but may not be enough to guarantee confidentiality in the face of a Freedom of Information Act request for disclosure--especially the NHPA provision. A written consultation agreement with a tribe may be appropriate in some circumstances and permit an installation to withhold disclosure under FOIA Exemption 5, but even this tactic may prove to be ineffective. As a consequence, installations should be careful not overstate their ability to keep sensitive tribal information confidential.

U.S. ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
AND
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Policy Statement and Guidelines Regarding Human Remains and the Comprehensive Everglades Restoration Plan (CERP)

Executive Summary

The Comprehensive Everglades Restoration Plan (CERP), a joint effort by the U.S. Army Corps of Engineers (USACE), the South Florida Water Management District (SFWMD), and other local sponsors, has the potential to affect archaeological sites that contain human remains. The Army Corps of Engineers and the South Florida Water Management District are committed to managing any such remains in full compliance with all applicable Federal and State laws and legislation. Additionally, both agencies understand the sensitivity of this issue to Native American groups and wish, to as full an extent as possible, to treat such remains in a manner that is sensitive to Tribal concerns. The Miccosukee Tribe in particular has made clear specific concerns that they have regarding human remains, their treatment and what may or may not be acceptable to them. The Miccosukee Tribe's proposal is described in detail later in this document and is included in Appendix A. As such, this document provides policies and guidelines that are intended to guide future archaeological work associated with CERP in ways that are both legal and sensitive to Tribal concerns while still maximizing overall project goals.

The overarching concept that underlies both the Federal and State response to the Miccosukee Tribe's request is the concept of consultation. The Federal Trust Doctrine with regard to Indian Tribes, which guides federal actions in this instance, is based on consultation as a way to come to a culturally sensitive outcome when a federal action may affect a tribal resource. State actions are in this case guided by Section 872.05, Florida Statutes which also prescribes consultation as a way to come to final resolution on how human remains encountered in the course of a project should be treated. Both the Federal process and the State process are based on consultation as a way to come to final agreement on how human remains and culturally sensitive sites are to be treated and as such, the consultation process can be entered into jointly by Federal and State actors in order to come to final resolution on any human remains that may be affected by joint Federal-State projects. While other laws, policies, regulations and Executive Orders may come into play as the Tribe's request is addressed, the process is fundamentally based on consultation as directed by the Federal Trust Doctrine and Section 872.05, Florida Statutes and as such will be implemented as a joint, seamless, Federal-State process.

Because the CERP is a joint partnership between Federal and State agencies, several Federal and State laws concerning cultural resources, specifically human remains can provide guidance on implementing the Tribe's proposal. This legislation and policy includes:

- The American Indian and Alaska Native Policy, issued by the Department of Defense
- Section 106 of the National Historic Preservation Act
- The Advisory Council on Historic Preservation's (ACHP) Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects
- Executive Order No. 13175: Consultation and Coordination With Indian Tribal Governments
- Section 872.05, Florida Statutes: Unmarked Human Burials
- Federal Trust Responsibility

During ongoing consultation for Acceler8 Projects (now known as the SFWMD's Everglades Ecosystem Restoration effort), the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida expressed their wishes for how archaeological sites, particularly sites with human remains, should be treated during the course of project implementation. Additionally, the State Archaeologist, responsible for upholding Section 872.05, Florida Statutes, has provided input on how unmarked human burials should be handled during project implementation. As both of these views have merit under applicable legislation and share much common ground, the following document provides an attempt at a balanced approach between the two.

Throughout this document, consultation between all interested parties, including the USACE, the SFWMD, Native Tribes, the State Archaeologist, and the State Historic Preservation Officer (SHPO), is stressed. Similarly, although specific guidelines are provided herein, they are not to be taken as rigid steps that must be followed in every situation. All interested parties are in agreement that each archaeological site is unique, each site will require consultation between interested parties and, unique procedures may be required for each site.

Introduction

The Comprehensive Everglades Restoration Plan (CERP) has the potential to affect archaeological sites that contain human remains. The Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) are committed to managing any such remains in full compliance with all applicable Federal and State laws and legislation. Additionally, both agencies understand the sensitivity of this issue to Native American groups and wish, to as full an extent as possible, to treat such remains in a manner that is sensitive to Tribal concerns. As such, this document provides policies and guidelines that are intended to guide future archaeological research associated with CERP in ways that are both legal and sensitive to Tribal concerns while still maximizing overall project goals. While different policy and legal frameworks exist that guide Federal and State actions, the SFWMD and USACE, in working towards a common goal, will be guided by the overarching concept of consultation. Federal actions, while having to be cognizant of a variety of federal laws and regulations, will be primarily guided by Federal Trust Doctrine towards Indian Tribes. State actions will be primarily guided by Florida Statutes including Section 872.05, Florida Statutes: Unmarked Human Burials. Within their respective legal and policy contexts, Federal and State actors will endeavor to implement the Miccosukee Tribe's proposal on how archeological sites containing human remains should be treated.

Federal Trust Responsibility and How It Applies to the CERP Project Areas

The main goal behind the Trust Responsibility and all federal policy, statutes, and regulations dealing with Indian tribes is to encourage consultation with Indian tribes in an attempt to recognize and respect their sovereignty and their heritage. As a federal agency we begin each cultural resources study by consulting with the potentially affected tribes to meet our Trust Responsibility and to fulfill the requirements of Section 106 of NHPA. Ongoing consultation with the tribes has produced guidelines for dealing with sites encountered in the CERP project areas that is unopposed by all consulting parties, upholding the spirit of the Trust Responsibility and complying with all federal and state laws.

Federal Trust Responsibility

The unique legal relationship that exists between Indian tribes and the United States government was born out of the first treaties entered into by the government and the tribes. "In these treaties, the United States pledged to 'protect' Indian tribes, thereby establishing one of the bases for the federal Trust responsibility in our government-to-government relations with Indian tribes" (DOJ, 1995). In the past this protection referred to usurpation of tribal lands and resources by states and encroachment by settlers. Today the protection refers to "environmental and other threats to tribal lands, resources, burials, and traditional cultural practices" (Van Ness, 2004). The Supreme Court, Congress, and Executive Orders have, over the years reaffirmed this Trust Doctrine or Trust

Responsibility and directed federal agencies to honor this policy in all activities that may impact tribal resources, tribal rights, and Indian lands.

Why the Trust Responsibility Applies Over Other Federal Legislation or Policy

It is under this broad umbrella of Trust Responsibility and the specific guidance to the Department of Defense to honor this responsibility in the American Indian and Alaska Native Policy that the USACE wishes to clarify policy to address the presence of Human Remains in archeological sites in the CERP project areas. Other federal regulations, Executive Orders, Departmental policies, and State laws can also apply. In certain circumstances, however, utilization of the Trust Responsibility can be a more direct, efficient, and mutually beneficial route to resolve these issues.

Specifically, the Miccosukee tribe has stated:

> No more archaeological digs are necessary. What is in the ground should remain in the ground, after it has been determined that it is there through shovel tests or other means. It is in the ground for reasons unknown to us. . . . These unknown reasons are enough for the Tribe to state that all sites, from kitchen middens to lithic scatter sites to village sites to burial sites, are significant and should remain undisturbed. This applies to sites that have been disturbed and may not be culturally intact enough to be eligible for listing in the National Register of Historic Places (Dayhoff and Terry, 112).

Presented at the Thinking About Significance Workshop, 2001.

- Executive Order No. 13007: Indian Sacred Sites, like NAGPRA, applies only to Federal lands.
- Executive Order No. 13175: Consultation and Coordination with Indian Tribal Governments, Nov. 6, 2000 is not limited to Federal lands. It is meant to "establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications." It directs federal agencies to consult with Indian tribal governments in cases where policymaking may have an effect on tribes and states "where possible, defer to Indian tribes to establish standards".
- Section 106 of the National Historic Preservation Act refers specifically to properties listed or eligible for listing in the National Register of Historic Places. Standard techniques to determine eligibility would require a level of study of the site that is in opposition to the Miccosukee's above-stated position and their position on the previously named Acceler8 Everglades Restoration Projects in particular that all sites are significant and should remain undisturbed and that any archaeological data recovery is not appropriate.

- The Advisory Council on Historic Preservation's Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects, Principle 1 Discussion directs, "Through consultation with descendants, culturally affiliated groups, descendant communities and other parties, federal agencies should discuss and reach agreement on what constitutes respectful treatment."
- The American Indian and Alaska Native Policy issued by the Department of Defense reiterates the Federal Trust Responsibility and is intended to provide general guidance to DoD Components on issues affecting tribes and to recognize the importance of increasing understanding and addressing tribal concerns, past, present, and future. These concerns should be addressed prior to reaching decisions on matters that may have the potential to significantly affect protected tribal resources, tribal rights, or Indian lands.

When these conditions arise involving a site in a CERP project area, application of the federal government's Trust Responsibility is an appropriate and effective means to resolve issues regarding the disposition of Human Remains in a way that has been agreed upon by all consulting parties.

Relevant Cultural Resources Legislation

The CERP consists of many distinct projects, some of which are now being implemented mainly by the SFWMD. All CERP projects are joint efforts between a Federal agency, the USACE, and a State agency, the SFWMD. Both agencies are providing funding and services for the overall CERP. Additionally, the State of Florida is providing the majority of the land upon which each CERP project will be undertaken.

While the implementation of this guidance is based on the overarching concept of consultation, both under Federal Trust Doctrine and Section 872.05, Florida Statutes, several Federal and State laws concerning cultural resources and human remains can also provide guidance. Specific legislation beyond the Federal Trust Responsibility is described in this section and includes brief summaries of the following and how they specifically relate to these projects:

- The American Indian and Alaska Native Policy issued by the Department of Defense
- Section 106 of the National Historic Preservation Act
- The Advisory Council on Historic Preservation's (ACHP) Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects
- Native American Graves Protection and Repatriation Act
- Executive Order No. 13007: Indian Sacred Sites
- Executive Order No. 13175: Consultation and Coordination With Indian Tribal Governments
- Section 872.05, Florida Statutes: Unmarked Human Burials, and Chapter 1A-44 Procedures for Reporting and Determining Jurisdiction Over Unmarked Human Burials

Note: *The properties that are being and will be impacted by the CERP projects are mostly in State, rather than Federal, ownership. As such, the Native American Graves Protection and Repatriation Act (NAGPRA) and Executive Order No. 13007: Indian Sacred Sites are applicable only in the limited areas where CERP projects have potential affect on Federal or Indian Trust lands.*

Department of Defense: American Indian and Alaska Native Policy

The American Indian and Alaska Native Policy was issued by the Department of Defense on October 20, 1998. The purpose of the policy is to establish principles for interacting and working with Federally recognized American Indian and Alaska Native governments, to address tribal concerns prior to reaching decisions on matters that may have the potential to significantly affect protected tribal resources, tribal rights, or Indian lands. Protected tribal resources includes "those natural resources and properties of traditional or customary religious or cultural importance, either on or off Indian lands, retained by, or reserved by or for, Indian tribes through treaties, statutes, judicial decisions, or executive orders, including tribal trust resources." Specifically the policy states that Department of Defense Components are to "recognize and respect the significance tribes ascribe to certain natural resources and properties of traditional or customary religious or cultural importance by:…enhancing, to the extent permitted by law, tribal capabilities to effectively protect and manage natural and cultural tribal trust resources whenever DoD acts to carry out a program that may have the potential to significantly affect those tribal trust resources."

Section 106 of the National Historic Preservation Act (NHPA)

Section 106 of the NHPA requires Federal agencies to consider the effects of their actions on historic properties. The purpose of Section 106 is to take into account effects of federal actions on historic properties and afford the Advisory Council on Historic Preservation reasonable opportunity to comment on those actions. The goal of consultation under Section 106 is to identify and assess historic properties and to seek ways to avoid, minimize, or mitigate for any adverse effects likely to be caused by federal actions. As the USACE is considered the lead agency for all CERP projects, the USACE is obliged to comply with the requirements of Section 106 of the NHPA.

The USACE and the SFWMD are conducting on-going consultation with the Miccosukee Tribe of Indians of Florida as well as the Seminole Tribe of Florida concerning the CERP. The Miccosukee have issued a position paper outlining their concerns about the project (Appendix A). The Seminole Tribe of Florida has offered no objection to the Miccosukee position.

Since the Miccosukee issued their position paper, Steve Terry, the Tribe's Section 106 coordinator, has met with members of the SFWMD and clarified some of the points included therein. During a field meeting on February 2, 2007, Terry emphatically re-

stressed points 1-6 and 9-10 of the paper. However, he modified points 8 and 9 by stating the following:

- He stated that he does not have the time or the inclination to provide professional archaeologists with specific methodologies for archaeological projects.
- Instead, he stated that he trusts archaeologists to be able to determine, based on their testing and all of the years of archaeological research that have been conducted in southern Florida to date, whether sites are likely to contain human remains or not.
- He stated that he does not believe that additional investigations need to be conducted to try to identify human remains in faunal bone middens if the archaeologists believe that such sites represent areas of habitation and not ceremonial areas.

The Advisory Council on Historic Preservation's (ACHP) Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects

The ACHP has recently issued a final policy statement designed to guide Federal agencies in making decisions about the identification and treatment of burial sites, human remains, and funerary objects encountered in the Section 106 process. While the ACHP's policy can be instructive and may aid in the implementation of this guidance document, it only applies under the auspices of Section 106. As previously stated, the Miccosukee Tribe's proposal is being jointly implemented by Federal and State actors under the overarching concept of consultation, as guided by the Federal Trust Doctrine and Section 872.05, Florida Statutes. The ACHP policy statement lists eight principles that should be followed. The principles are:

> **Principle 1:** Participants in the Section 106 process should treat all burial sites, human remains and funerary objects with dignity and respect.
>
> **Principle 2:** Only through consultation, which is the early and meaningful exchange of information, can a Federal agency make an informed and defensible decision about the treatment of burial sites, human remains and funerary objects.
>
> **Principle 3:** Native Americans are descendants of original occupants of this country. Accordingly, in making decisions, Federal agencies should be informed by and utilize the special expertise of Indian tribes and Native Hawaiian organizations in the documentation and treatment of their ancestors.
>
> **Principle 4:** Burial sites, human remains and funerary objects should not be knowingly disturbed unless absolutely necessary, and only after the Federal agency has consulted and fully considered avoidance of impact and whether it is feasible to preserve them in place.
>
> **Principle 5**: When human remains or funerary objects must be disinterred, they should be removed carefully, respectfully and in a manner developed in consultation.

Principle 6: The Federal agency is ultimately responsible for making decisions regarding avoidance of impact to or treatment of burial sites, human remains and funerary objects. In reaching its decisions, the Federal agency must comply with applicable Federal, Tribal, State, or local laws**.**

Principle 7: Through consultation, Federal agencies should develop and implement plans for the treatment of burial sites, human remains and funerary objects that may be inadvertently discovered.

Principle 8: In cases where the disposition of human remains and funerary objects is not legally prescribed, Federal agencies should proceed following a hierarchy that begins with the rights of lineal descendants, and if none, then the descendant community, which may include Indian tribes and Native Hawaiian organizations.

Several important points concerning this policy statement should be made. First, this policy only provides general principles and perspectives that should be considered during Section 106 consultation. Accordingly, the policy does not recommend a specific outcome from the consultation process.

Additionally, and consistent with Section 106, the policy is technically applicable only to burial sites that are or are part of a historic property. Again, "historic properties" are properties that are listed or are eligible for listing, in the NRHP.

Finally, and perhaps most importantly for this discussion, the policy is designed as a guide in "instances where Federal or State law **does not prescribe a course of action"** (sic.). As described later in this section, Florida State law does prescribe a course of action that is applicable to any unmarked human burials that may be encountered in archaeological sites during the course of the CERP. This course of action also directs that consultation with the Tribes will be utilized to determine the disposition of human remains. Therefore the ACHP's policy serves as a clarification of the common goals shared by the Federal and State agencies when human remains are encountered.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act is a Federal law passed in 1990. NAGPRA provides a process for museums and Federal agencies to return certain Native American cultural items -- human remains, funerary objects, sacred objects, or objects of cultural patrimony -- to lineal descendants, and culturally affiliated Indian tribes and Native Hawaiian organizations. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items, intentional and inadvertent discovery of Native American cultural items on Federal and tribal lands, and penalties for noncompliance and illegal trafficking. In addition, NAGPRA authorizes Federal grants to Indian tribes, Native Hawaiian organizations, and museums to assist with the documentation and repatriation of Native American cultural items, and establishes the Native American Graves Protection and Repatriation Review Committee to monitor the NAGPRA process and facilitate the resolution of disputes that may arise concerning repatriation under NAGPRA.

As stated in the note above, current CERP projects have no features on federal lands; therefore, NAGPRA would not apply. It is included in this discussion only as a reminder that some CERP projects may have indirect impacts on nearby federal lands such as Tribal reservations held in Trust and the Everglades National Park, and the law must not be excluded from consideration.

Executive Order No. 13007: Indian Sacred Sites

Executive Order No. 13007: Indian Sacred Sites, was issued by President William J. Clinton on May 24, 1996. This Executive Order states that Federal land management agencies, such as the USACE, should, to the extent practicable, avoid adversely affecting the physical integrity of sites on Federal lands held sacred by Indian tribes. This Executive Order may be relevant to the CERP in that archaeological sites containing human remains might be considered sacred by the Miccosukee and Seminole Tribes but it is limited in that it only applies to lands owned or managed by the Federal government.

Executive Order No. 13175: Consultation and Coordination With Indian Tribal Governments

Executive Order No. 13175: Consultation and Coordination with Indian Tribal Governments, was issued by President William J. Clinton on November 6, 2000. This Executive Order was created to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes.

Section 872.05, Florida Statutes: Unmarked Human Burials

Chapter 872, Florida Statutes ("Offenses Concerning Dead Bodies and Graves") decrees that all human burials and human skeletal remains be accorded equal treatment and respect based upon common human dignity without reference to ethnic origin, cultural background or religious affiliation. This applies to all human burials, human skeletal remains and associated burial artifacts, found upon or within any public or private land in the state, including submerged lands. The law mandates that all types of human burial sites, including Indian mounds, "lost" historic and prehistoric cemeteries, and other unmarked burials, are responsibly treated once they are discovered.

Briefly, Section 872.05, Florida Statutes the subsection of 872, Florida Statutes that deals specifically with unmarked human burials, states that the State Archaeologist may assume jurisdiction over all unmarked human remains more than 75 years in age. In such cases, the State Archaeologist takes the lead in determining appropriate options and treatments for the remains. If the remains in question are Native American, the State Archaeologist determines appropriate options and treatments in consultation with designated representatives of the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida. It is through this latter consultation process that the State,

acting in concert with the Federal government, will implement the Tribe's proposal. Complementing Section 872.05, Florida Statutes, is Chapter 1A-44, Florida Administrative Code: Procedures for Reporting and Determining Jurisdiction Over Unmarked Human Burials. Chapter 1A-44, F.A.C., lists guidelines to follow should unmarked human remains be found in the field.

Summary

In summary, several Federal and State laws concerning cultural resources, specifically human remains, are relevant to the CERP. The USACE and the SFWMD have consulted with and received comments from the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida. These tribes have indicated that human remains are of particular importance to them. Additionally, the Miccosukee Tribe of Florida has stated that it is their strong preference that such remains are not disturbed by any man-made activities, including periodic inundation associated with water management activities. The Seminole Tribe of Florida has stated that it defers to the Miccosukee Tribe of Florida with regard to the inundation of human remains as a result of CERP projects.

Obviously, the USACE, the SFWMD, Native American Section 106 specialists and/or Tribal Historic Preservation Officers (THPO's), and the State Archaeologist, will need to work closely with each other throughout all stages of the CERP. A close consultative effort between each of these parties will be needed to ensure compliance with all applicable laws, the respectful and sensitive treatment of all human remains identified, and a successful implementation of the projects in question.

Archaeological Procedures to Minimize Impacts on Human Remains associated with the CERP

The preceding discussion illustrates that there are several legitimate stakeholders, including Native American groups and the State Archaeologist, who may be concerned with human remains identified during the course of the CERP. Further, any such remains can be considered under several different pieces of Federal and State legislation. For instance, both Section 106 of the National Historic Preservation Act (NHPA) and Section 872.05, Florida Statutes are directly relevant to a discussion concerning any human remains identified during the CERP. Thus, any document designed to provide procedures for the minimization of impacts to human remains identified during the course of the CERP must strike a balance between these two laws, at the very least, so that both Federal and State requirements can be met.

During the course of Section 106 consultation, Native American groups, including the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida, have informed the USACE of their preferences for the identification and treatment of human remains identified during archaeological research associated with the CERP. Additionally, Section 872.05, Florida Statutes outlines an existing set of procedures that must also be followed upon the identification of human remains during a project such as the CERP. As such, the procedures outlined below take into account the concerns of Native Americans as well as the State Archaeologist for any human remains that may be identified during the course of the CERP. It is believed that these procedures consist of a "good faith effort" upon the part of the USACE, the SFWMD, and their respective contractors to manage this issue in a way that is both legal and sensitive to Tribal concerns while still maximizing the overall goals of the CERP.

It must be stressed that all interested parties, including the USACE, the SFWMD, the Miccosukee Tribe of Indians of Florida, the Seminole Tribe of Florida, the State Archaeologist, and the State Historic Preservation Officer (SHPO) recognize that each archaeological site is unique. Thus, any and all archaeological procedures listed in this document must be viewed only as general guidelines rather than a rigid set of procedures that must be followed in all circumstances. It is fully expected that all interested parties will review, adopt, and amend these procedures as necessary throughout the course of the CERP.

Background Research

Background research is completed early in the planning stage of an archaeological project in order to assess the following items: to identify any previously documented cultural resources within a given project area, to conduct initial consultation with the State Historic Preservation Officer (SHPO), and to assist in properly planning the initial survey, the Phase I cultural resources survey. During archaeological projects associated with the CERP, project consultation with the Miccosukee Tribe of Indians of Florida and

the Seminole Tribe of Florida should be conducted at the same time that project consultation is initiated with the SHPO. This will provide the Tribes an opportunity to easily identify areas that are known to have significant resources. There should be increased sensitivity during the planning process to identify sites recorded as containing unmarked human remains; and sites that have a potential to contain unmarked human remains in an attempt to avoid all possible impacts. However, it must be acknowledged and understood that the tribal representatives may legitimately refuse to discuss matters involving possible burial locations, burial practices, etc. based on traditional cultural beliefs concerning these subjects.

Phase I Survey

The main goal of a Phase I is to identify any historic properties that may be eligible for listing in the NRHP. In the USACE planning process, a Phase I cultural resources survey is the appropriate method to identify potential NRHP eligible sites. Conducted early in the process, this method allows project planners the ability to reconsider project design to avoid potentially eligible or eligible sites. In addition to this goal, any Phase I archaeological survey associated with the CERP should include the following procedures in order to better address the issue of human remains at identified archaeological sites:

- All archaeologically positive shovel tests should be recorded and marked in such a way that they can be found on return field trips
- Any obvious human remains identified in the field should be left in-situ
- Follow procedures in Section 872.05, F.S. and Rule 1A-44, F.A.C. The State Archaeologist's Office should be contacted immediately if human remains are identified in the field or during laboratory analysis (Figure 1)
- Expedited laboratory identification of faunal bone to determine if human remains are present
- A Tribal consultation section in the cultural resources survey report
- Serious consideration of avoidance and minimization of impacts, including inundation, to archaeological sites known to contain human remains, and if possible, faunal bone.

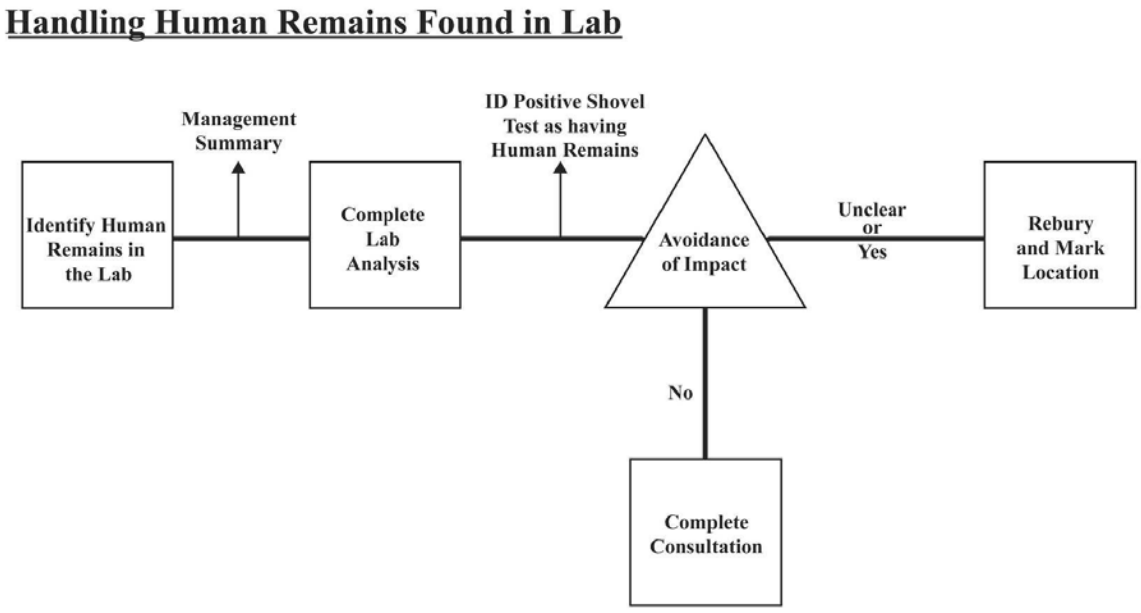


Figure 1: Procedure for Handling Human Remains Found in the Lab

Phase II Evaluations

The ultimate goal of standard Phase II archaeological investigations is to be able to determine if the tested site is eligible for listing on the National Register of Historic Places (NRHP) and if needed, to develop mitigation measures. To this end, Phase II archaeological investigations are used to determine a site's contents, condition (integrity), and extent (both horizontally and vertically).

"Phase II-like" investigations should also be utilized during CERP projects for archaeological sites that are known to contain human bone. In such cases, Phase II-like investigations would be used to identify the general extent of any human remains located at a site, regardless of that site's eligibility for listing in the NRHP (Figure 2).

It is important to stress that all options to avoid impacts, including inundation, to sites should be explored before Phase II or Phase II-like investigations are conducted on sites identified during the course of the CERP. **Phase II and Phase II-like investigations should be considered only if project impacts to sites cannot be avoided**.

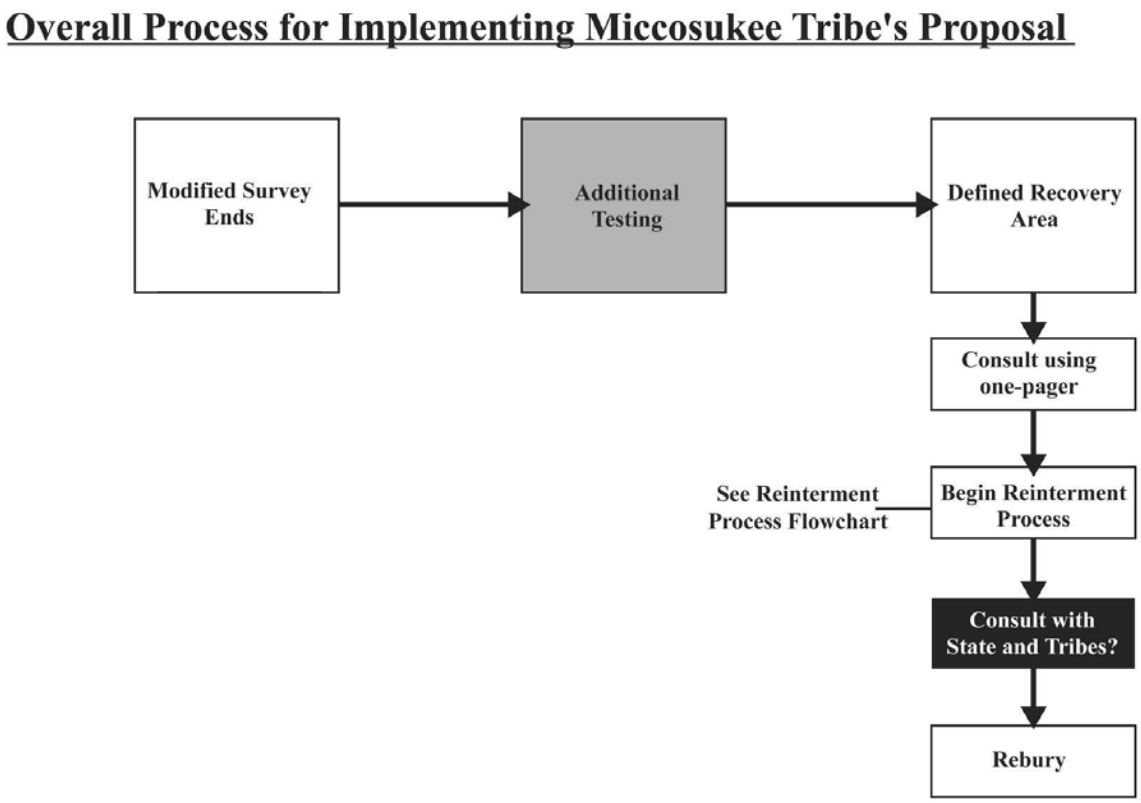


Figure 2: Overall Process for Implementing Miccosukee Tribe's Proposal

For CERP projects, the following procedures and considerations should be included in Phase II and Phase II-like archaeological investigations in order to better address the issue of human remains at tested archaeological sites:

- Phase II or Phase II-like investigations should only be conducted if impacts, including inundation, to the archaeological site cannot be avoided
- Phase II or Phase II-like investigations must not be conducted until the State Archaeologist and SHPO are fully consulted
- Shovel tests should be excavated at a minimum of 10 meter intervals in areas of known or suspected human bone in order to adequately bound such features
- All bone collections recovered from all shovel tests must be analyzed for the possible presence of human bone by a specialist in identifying human remains
- All work must cease within five meters of a location where articulated human remains are encountered until further consultation with the State Archaeologist
- All archaeologically positive shovel tests should be recorded and marked in such a way that they can be found on return field trips
- An archaeologically positive excavation unit (1x1 m or larger) should be marked in the field with rebar in at least one of the unit corners

- Curation of human remains should be avoided if possible; to this end, a temporary field laboratory may be useful
- All recovered human remains and associated artifacts found in the same unit should be reburied in the designated reburial area
- If no reburial area has been established yet and impacts to an archaeological site containing human bone are not expected to occur for a year or more, all human material recovered should be reburied in the excavation units from which they were recovered until a reburial area is established
- If plans to impact a site containing human bone are changed to include avoidance of impacts, including inundation, to the site, all recovered human material should be reburied in the locations of their initial recovery
- Avoidance options should be reevaluated based on the results of the Phase II or Phase II-like investigations

It has been suggested by the State Archaeologist that the preceding procedures be tried at a site as an experiment. If this approach is successful at locating unmarked human burials, then it could be incorporated more generally as an approach to other sites that will be impacted by CERP projects. If it is unsuccessful, then it should not be continued.

Phase III Excavations/Mitigation for Human Remains

For the purposes of the CERP, mitigation for human remains must serve to protect human remains from inundation. If the effect to burials is other than inundation additional site and project specific consultation should be conducted prior to applying the procedures.
As such, mitigation efforts must consist of making a "good faith effort" to locate, remove, and relocate all human remains and associated artifacts to an area close-by that will not be affected by the project. Such mitigation efforts for human remains should be made regardless of the NRHP eligibility for the site from which the remains are known.

It is recognized that NRHP-listed or eligible sites may be impacted by CERP projects. These sites may be the subject of Phase III mitigation excavations designed to comply with Section 106 requirements. Such excavations would be focused on recovering important scientific data from the site or sites before unavoidable project impacts.

For efficiency and the best use of resources, the relocation of human remains during CERP projects may be conducted at the same time as archeological data recovery. However, it should be recognized that there may be an inherent conflict between the two activities. If Phase III excavations to recover important archaeological data and to locate and remove human remains are planned for the same site, careful planning and consultation with the State Archaeologist and SHPO are required.

It is important to stress again that each site is unique. As such, it is impossible to develop specific procedures to address all of the issues that may be involved in a mitigation effort. The procedures listed below provide only a very general outline of the minimal methods that would be part of a human remains relocation plan for CERP projects. The overall goal should be to make a good faith effort to relocate human remains to areas that will not be impacted by the project. The particular methods used to achieve this goal should

be flexible and always open to change. Again, the State Archaeologist has suggested the following procedures be tried at a site as an experiment. If this approach is successful at locating unmarked human burials, then it could be incorporated more generally as an approach to other sites that will be impacted by CERP projects. If it is unsuccessful, then it should not be continued.

- Mitigation excavations to remove human remains and associated artifacts are not essential unless and until it is absolutely necessary to protect them from inundation or other unacceptable project impacts
- Extensive testing to locate all potential human remains should not be undertaken until Phase III Mitigation effort
- In areas of a site identified during previous testing to contain human remains, shovel tests should be excavated at 10 meter intervals or closer
- Postholes should be excavated at 2 to 3 meter intervals between the shovel tests
- The location of all shovel tests, postholes, and excavation units should be marked in the field with pin flags, wooden stakes, flagging tape, and/or spray paint
- Shovel or posthole test units for which human bone are identified should be expanded with a 1x1 meter test unit centered over the initial shovel/posthole (see Figure 3)
- Such a 1x1 test unit will be excavated in quadrants and expanded by 50 cm around any quadrant with identified human remains until there is a 50 cm-wide strip with no identified human remains (Figure 4)
- The orientation of any articulated remains and associated artifacts will be recorded so that they can be reburied in the same relationship
- All bone collections recovered from all shovel tests must be analyzed for the possible presence of human bone by a specialist in identifying human remains
- Curation of human remains should be avoided if possible; to this end, a temporary field laboratory may be useful
- All recovered human remains and associated artifacts should be reburied in the designated reburial area as soon as possible
- Potential reburial areas should be considered High Probability Zones and surveyed as such to ensure that no other cultural resource site will be disturbed by the relocation
- The designated reburial area should be as close as possible to the archaeological site
- The designated reburial area must be approved by the State Archaeologist prior to the commencement of mitigation excavations to recover human remains
- The designated reburial area must have long-term management measures in place to protect it from future disturbances; these measures should be designed in consultation with the State Archaeologist
- If an area of fill or spoil is used as the reburial area, it must be stabilized prior to use

- Prior to mitigation excavations to locate, remove, and rebury human remains and associated artifacts, all field crew involved should undergo cultural awareness training
- The designated reburial location should be treated as confidential information

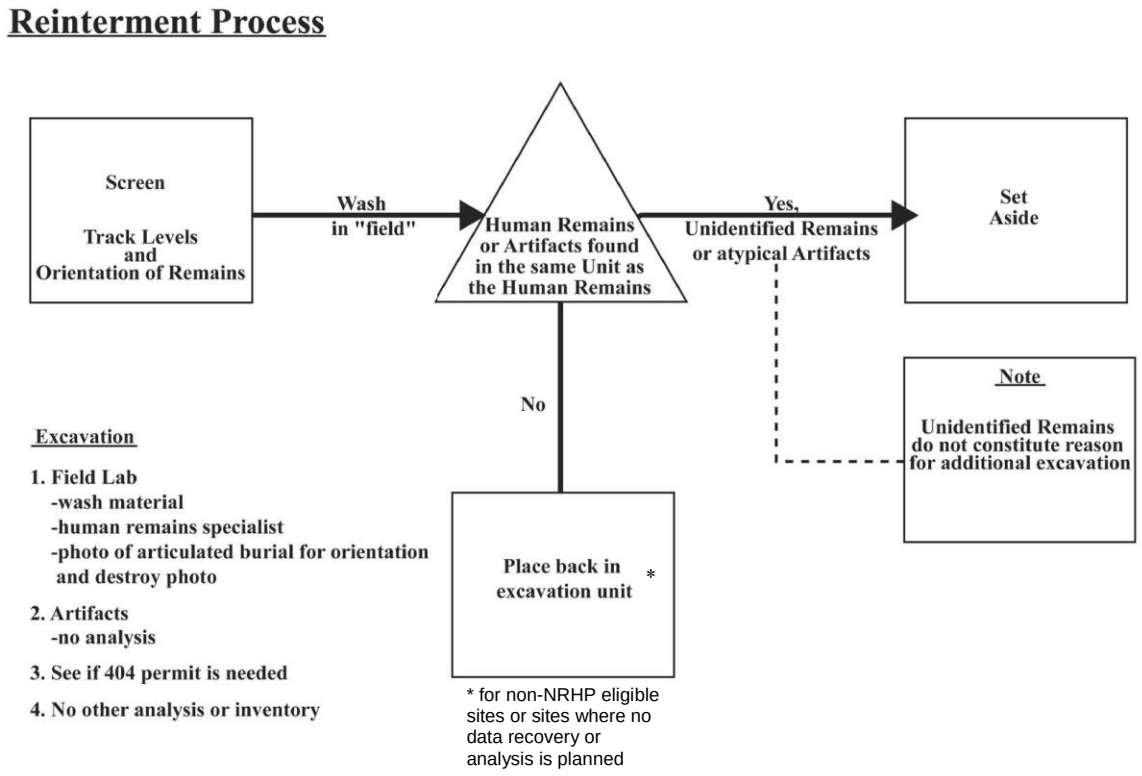


Figure 3: Reinterment Process

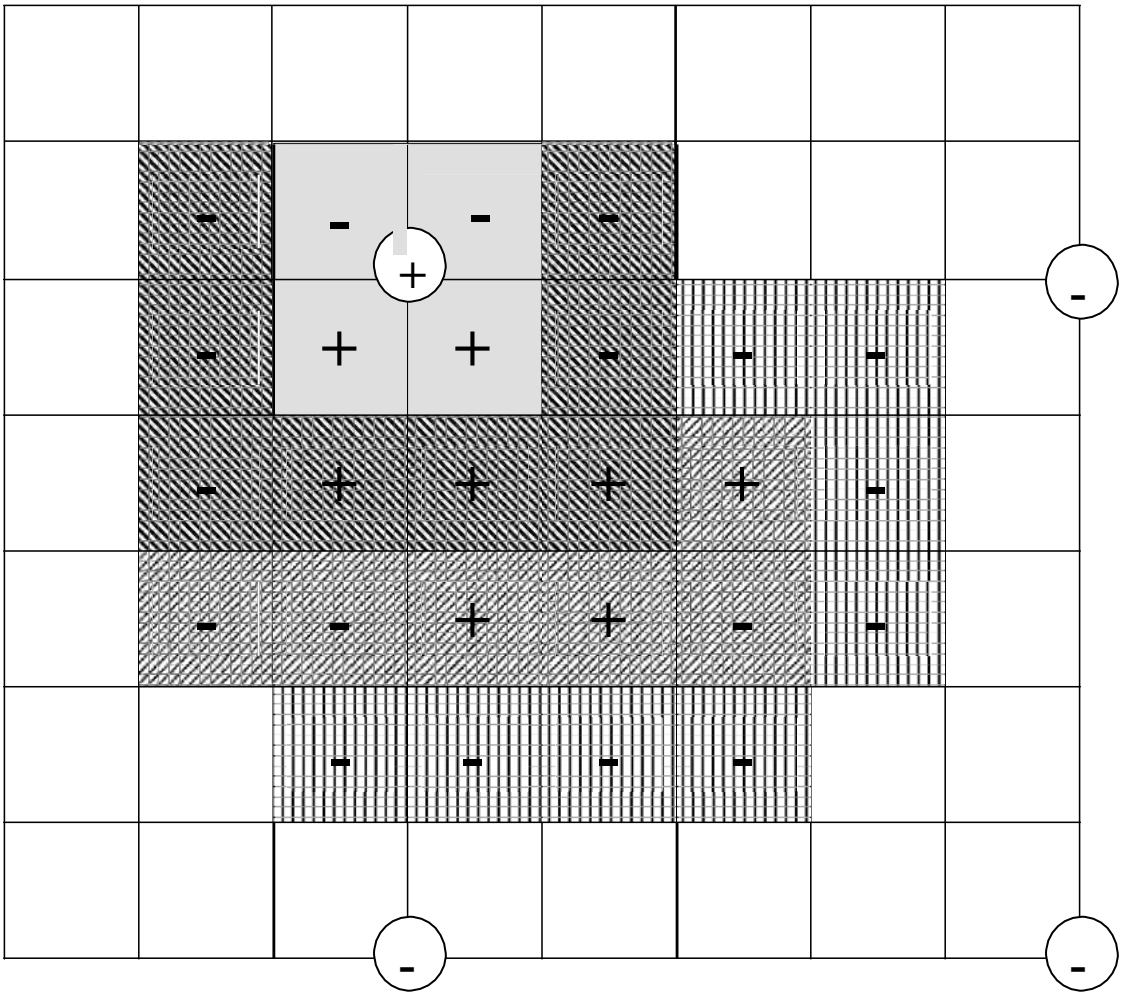


Figure 4: Hypothetical excavation procedure of a 1x1 on a positive shovel test. Each square is 50x50 cm.

+ Human remains present

- No Human remains

Initial 1x1

First expansion

Second expansion

Third expansion

Not excavated

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C.5.7 Florida Division of Historical Resources, June 25, 2007 Meeting Minutes – Linear Resources: Canals and Associated Features

The notes provided in this section is a summary of the discussion between the South Florida Water Management District, U.S. Army Corps of Engineers Jacksonville Regulatory Division, Florida Department of Historical Resources (FDHR) Florida Master Site File, FDHR Bureau of Historic Preservation, and Florida Department of Transportation Central Environmental Office regarding canals, levees, drainage basins, culvers, water control structures and pump stations. This document is provided for informational purposes only.

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Meeting Minutes
June 25, 2007
Florida Division of Historical Resources
R.A. Gray Building, Tallahassee, Florida

Attendees:
Brenda Mills, Joel Arrieta, Jim Sturgis, South Florida Water Management District (SFWMD);
David Pugh, US Army Corps of Engineers (USACOE);
Laura Kammerer, Florida Division of Historical Resources/State Historic Preservation Officer (FDHR/SHPO); Bob Jones, FDHR; Chip Birdsong, FDHR/Florida Master Site File (FMSF);
Scott Edwards, FDHR/Bureau of Historic Preservation (BHP); Brian Yates, FDHR/BHP; Sherry Anderson, FDHR/BHP;
Roy Jackson, George Ballo, Florida Department of Transportation Central Environmental Office (FDOT CEMO);
Ken Hardin, Amy Streelman, Janus Research

Laura Kammerer, who invited all participants and hosted the meeting, welcomed the group. The participants then introduced themselves.

Ken Hardin talked about the origin and purpose of the meeting. He then briefly summarized that previously linear historic resources were typically encountered during FDOT projects. The SFWMD plans to continue their plan to operate and maintain the Central and South Florida Project, which includes oversees 2,750 miles of canals and levees, of which long segments may be 50 years or older. In addition, as part of the Everglades Restoration the SFWMD plans to expand several canals as part of the CERP or as part of the state's Acceler8 initiative. The focus of the meeting was to develop a treatment for FDHR/SHPO to address historic canals. Major goals of the meeting were to understand the canal's operations and maintenance, National Register of Historic Places (NRHP) eligibility of canals, NRHP integrity of canals, and Section 106 adverse effects to the canals.

Joel Arrieta and Jim Sturgis gave a Powerpoint presentation that covered the Operations and Maintenance (O&M) of the canals and structures within the SFWMD area, that extends from north of Lake Okeechobee throughout South Florida. This area includes the canals and structures of the early twentieth century, then the later Central and South Florida Project (C&SF) that was authorized in 1948 and still being implemented today. The C&SF project's purposes are flood control, water supply, and protection of fish and wildlife.

The O&M Division manages the canals and implements design memorandums produced by the USACOE. They oversee 2,750 canals and levees, 160 major drainage basins, 755 culverts, 2,000

water control structures, 200 major structures (manned), 130 manual operations, and 60 pump stations. These canals and structures must be maintained, hardened for storms, and updated.

Sherry Anderson asked about the 200 major structures and when they were constructed. Only about 1/3 were built during the initial construction push. SFWMD has a database with the dates of resources and structures. Major pump stations built before 1957 are the S-9, S-2, S-6, S-5A, and S-3. However, these have undergone storm hardening, in which 4-6 inches of concrete and steel is added to exterior. Ms. Anderson also asked about abandoned structures that are no longer in use, and SFWMD said there are not many remaining.

Culverts have a life of approximately 15-18 years, most would not meet the 50 year life span. Many are now concrete box culverts, some are corrugated metal pipes (aluminum) depending on number and function. The historic culverts would have been tar-coated steel pipes. FDHR/SHPO did not seem concerned with culverts based on the likelihood no historic ones remain.

SFWMD works off original as-built plans to maintain the C&SF Project. The C&SF Project is always being modified and updated, and parts of the project have never been built. Major project efforts happen to occur in 20 year intervals, such as 1948, 1968, 1988.

Overall the participants appreciated the presentation as it showed the magnitude and complexity of the system, which had previously been evaluated in small segments by SHPO/FDHR/BHP.

Questions were directed to Chip Birdsong of the FMSF. Recordation in the FMSF for linear historic resources currently takes place on a Resource Group form. For example, the canal itself is documented on a Resource Group form, and if it is being documented as a linear historic district, that district must be recorded on a Resource Group form too. As part of the historic district documentation, associated historic resources (such as locks, pump houses etc.) would be noted on this historic district Resource Group form and then the associated resources would also get separate structure forms. The main concern regarding the documentation of canals was that numerous small segments of canals have been recorded and assigned separate numbers, making it difficult for the recorders and reviewers to fully understand the significance and integrity of the resource. As it is now, FMSF numbers are assigned by county, which can hinder the continuity of documentation for resources such as canals that traverse multiple counties.

Following the discussion of recordation, it was noted that a context would be an appropriate vehicle to assist in the understanding of the primary canal system in a global way. The system was designed based on watersheds; it is a closed system. The following elements of the overall system were outlined: canals, pump stations, locks, culverts, levees, berms, dikes, boat ramps, field stations, bridges, weirs. This context would focus on the early portions of the system, which were constructed prior to the C&SF project, but also the historic portions of the C&SF projects,

centering mostly on the primary canal system. There was a general recognition of the significance of the major canals, including the St. Lucie Canal, West Palm Beach Canal, North New River Canal, Ocean Canal, Hillsboro Canal, Miami Canal, and Bolles/Cross Canal. The many ancillary canals would have to be addressed at a later time. Questions that should be answered in the context would include: What are the major canals? What are the major elements or components? How are they inter-related?

During the discussion of significance, the Interstate Highway Exemption was explained by Roy Jackson, and how as a model this worked fine, but it took an Act of Congress to institute its exemption from the Section 106 process. One of the major premises of this exemption was that the improvements and maintenance activities would not change the original use of the highway system.

It was acknowledged that the system is dynamic and must change. It is an engineering system that must be improved over time. Ms. Kammerer pointed out that Cape Canaveral is similar in that it must change to continue operations, but these changes are not considered adverse effects to the characteristics that make it eligible for inclusion in the National Register of Historic Places (NRHP). She also noted that based on the presentation, FDHR/SHPO is not concerned with the O&M operations in relation to the significance of the canal system and further coordination does not have to take place with FDHR/SHPO.

Ms. Anderson made an important point during the discussion that although a segment of a canal has experienced changes (such as the addition of bulkheads) these changes may not necessarily make the segment non-contributing. This is directly related to assessing the effects of O&M activities. In addition, changes made to portions of the canal may not make an appreciable difference to the overall system.

Prior the conclusion of the meeting the following summation was made:

- Following the presentation, participants gained a much better understanding of the whole system; however, a context of the historic canals of South Florida will be instrumental in defining essential historic features and their significance. Original structures and elements are of particular importance.
- The issue of integrity must be addressed at a system-wide level taking into account the size and complexity of the C&SF Project.
- Effects that changes may have to the system must be relative to the system as a whole.
- Because of the nature of O&M operations presented at the meeting, FDHR/SHPO has determined those activities do not constitute an adverse effect. In addition, minor changes such as widening and deepening do not rise to the level of adverse effect. Changes that

may result in an adverse effect determination could include major changes in direction or reorientation, and major changes to the canal shape or function.

- FDHR/SHPO agreed that this context and treatment will be specific to the SFWMD projects.