Everglades Agricultural Area Reservoir A-1

Final Environmental Impact Statement

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U.S. Army Corps of Engineers
Jacksonville District

ANNEX A
SECTION 404(B)(1) GUIDELINES EVALUATION

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SECTION 404(B)(1) EVALUATION

Everglades Agricultural Area Reservoir A-1
Palm Beach County, Florida

I. Project Description

a. Location. The proposed Everglades Agricultural Area (EAA) Reservoir A-1 would be located in western Palm Beach County. The EAA Storage Reservoirs would lie between Lake Okeechobee to the north, Water Conservation Area (WCA) 3A on the south, Miami Canal on the west and North New River Canal (NNRC) on the east in the EAA. It would be bordered on the north, east and west by agricultural interests. Just to the south are the South Florida Water Management District (SFWMD) stormwater treatment areas (STAs).

b. General Description. The preferred alternative plan includes an approximate 12.5 foot deep above-ground reservoir providing 190,000 acre-feet of storage with associated levees, canals, pump stations and water control structures. The proposed reservoir would have a footprint of approximately 16,768 acres.

c. Authority and Purpose. Section 404 of the Clean Water Act (33 U.S.C. 1344) and Section 10 of the Rivers and Harbor Act (33 U.S.C. 403).

The basic purpose of the project is to construct a reservoir for storing water. The overall purpose of the project is to provide water storage, with a capacity of 190,000 acre-feet at an approximate depth of 12.5-feet in order to improve timing of water deliveries from the EAA to the Water Conservation Areas (WCAs), reduce Lake Okeechobee regulatory releases to the estuaries, meet supplemental agricultural irrigation demands, and increase flood protection within the EAA. This would enhance habitat function and quality in Lake Okeechobee's littoral zone, the WCAs and the Caloosahatchee River and St. Lucie estuaries (the northern estuaries), and improve native plant and animal species abundance and diversity by retaining natural waters in the system.

d. General Description of Dredged or Fill Material.

(1) General Characteristics of Material. The excavation of the seepage canal, borrow areas and construction of the reservoir embankments will begin with the scrapping off the top layer of peat/topsoil which is estimated to be between 1 and 2 feet deep. The peat will be excavated from the entire embankment, seepage canal, and borrow area footprints. The second type of material encountered for excavation will be the caprock layer which varies in depth between 3 and 8 feet, and averages 4 feet deep. All of this type of material will be used either for riprap revetment

protection or as embankment building material. The last layer of material to be excavated will be the silty sand layer (which is part of the upper Ft. Thompson Formation). This layer extends beyond the required seepage canal bottom elevation and will constitute the remaining construction material for the embankments. The two types of embankment construction materials will be mechanically processed in different gradations of construction fill.

(2) Quantity of Material. Earthen embankment: 5,500,000 CY of caprock and 7,200,000 CY of Ft. Thompson material will be excavated from the seepage canal and borrow areas. This amount is equal to the quantity required for building the embankments. 5,600,000 CY of Peat/Topsoil will be scrapped off the surface and used to face the exterior slope of the embankment with any excess to be deposited in spoil mounds on the exterior of the embankment and replaced within the seepage buffer area i.e., the area extending from the maintenance corridor to the seepage canal.

(3) Source of Material. On-site.

e. Description of the proposed Discharge Site.

(1) Location. Any excess material would be disposed on-site within the footprint of the seepage canal and seepage buffer area, or constructed reservoir.

(2) Size. The plan consists of a 16,768-acre project site including a 15,211-acre open water reservoir.

(3) Type of Site. Constructed reservoir and associated canals, pump stations and water control structures would replace agricultural fields primarily in sugarcane production.

(4) Type of Habitat. Currently the habitat consists of 16,253.68 acres of agricultural land, primarily in sugar cane production; 187.63 acres of natural wetlands; 164.59 acres of uplands including roads, levees, and a former industrial site; and 163 acres of ditches/canals. Most of the site would be converted to a (up to 12.5 foot depth) reservoir with attendant features and would primarily consist of open water habitat after construction.

(5) Timing and Duration of Discharge. Discharge would be during construction. Construction is estimated to begin in 2006 and take 3 years to complete.

f. Description of Disposal Method. Upland disposal. The material required for the embankment construction would be excavated from the required seepage canals and borrow areas. The quantity of materials to be obtained from the excavation of the seepage canals is limited to the size of the canals which is determined by seepage control and/or conveyance requirements. The balance of the material for the construction of the embankments would be obtained from borrow areas inside the reservoirs. The design concept aims to balance the quantities of fill needed to be excavated on-site as close as possible so that there is not any surplus material to dispose off. It is expected and assumed that very little of the excavated material will be classified as unsuitable for the construction of the embankments. Therefore, any minimal amount of unsuitable excavated material will be disposed of within the interior of the reservoir and seepage canal footprints and excess topsoil and peat that will be scrapped off the surface prior to embankment foundation preparation and seepage canal excavation will be placed within the seepage buffer area or seepage canal.

II. Factual Determinations

a. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. The embankment would be constructed to a 34 ft elevation with a 12.5–foot wide crest and a slope of 1V:3H on both sides. The interior would be constructed of a soils and cement mix and riprap lined. Exterior side of the levees will be earthen. A soil-bentonite cutoff wall will be installed below the centerline of the embankment to a -22 ft elevation along the northwest, north, and east sides of the reservoir and a 10-ft deep cutoff along STA-3/4 and Holey Land. The seepage canal would excavated to -7 ft elevation with a bottom width of 20 ft and side slopes of 1V:2.5H to center along all sides of the reservoir.

(2) Sediment Type. The proposed fill for the embankments will be composed from on-site soils of select granular materials primarily limestone or quartz, gravel and sand sized particles. Cutoff wall will be composed of a soil-bentonite slurry.

(3) Dredge/Fill Material Movement. The fill material will be stabilized and would not be subject to erosion. Erosion control measures would be used during canal widening to prevent and contain any turbidity during excavation or movement of dredge materials.

(4) Physical Effects on Benthos. Benthic organisms may be temporarily displaced during construction activities. Short-term impacts to benthos are expected in seepage canals with removal of material. However, they should re-establish rapidly.

b. Water Circulation, Fluctuation and Salinity Determination.

(1) Water Column Effects. The water column in the immediate vicinity of excavation within the canals is anticipated to be temporarily impacted during construction as widening activities and slopes are created. Turbidity and erosion will be controlled during and post-construction.

(2) Current Patterns and Circulation. Construction and expansion of the seepage canal would have minimal effect on current hydrologic circulation patterns. Construction of the levees and cutoff wall will have an impact to hydrological patterns within the EAA footprint. Surface flow would be collected within the EAA reservoir. The pathlines for the movement of water particles from the reservoir will be intercepted by the cutoff walls. Seepage will be forced to flow between the bottom edge of the cut-off wall and the impervious layer. Any underseepage that re-emerges within the project's seepage buffer would be collected in the seepage canals. The off-site migration of water will be restricted by the canal system. The fraction of seepage passing through the bottom of the cutoff wall will be collected to avoid any adverse effects in the near and far field areas. Holding water in the EAA Reservoir should reduce flows to St. Lucie and Caloosahatchee Estuaries from Lake Okeechobee, reduce withdrawals from the lake for water supply, and increase water deliveries to the WCAs.

(3) Normal Water Level Fluctuations and Salinity Gradients. Water level fluctuations should improve as the EAA Reservoir A-1 holds water for managed deliveries. Surface and ground water levels would be minimally impacted in the immediate project footprint where seepage will be collected in buffer areas and canals. Salinity gradients should improve in the affected St. Lucie and Caloosahatchee Estuaries as reduced fresh water flows from the lake would help stabilize salinity in these areas.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of the Disposal Site. There may be a temporary increase in turbidity levels in the project area during dredging of canals. Turbidity will be short-term and localized and no significant adverse impacts are expected. State standards for turbidity will not be exceeded. Turbidity will be controlled during and post construction.

(2) Effects on the Chemical and Physical Properties of the Water Column. There may be temporary impacts to the chemical and physical properties of nearby waters during construction activities. There are no acute or chronic chemical impacts anticipated as a result of construction.

An environmental protection plan, to be prepared during detailed design, will address concerns regarding monitoring of equipment, maintenance and security of fuels, lubricants etc.

(a) Light Penetration. Some decrease in light penetration may occur in the immediate vicinity of the construction area. This effect will be temporary, limited to the immediate area of construction, and will have no adverse impact on the environment.

(b) Dissolved Oxygen (DO). There may be a slight decrease in DO in the immediate construction area of the canal during dredging operations. DO levels are anticipated to return to normal post-dredging. This is not anticipated to cause a significant impact.

(c) Toxic Metals, Organics, and Pathogens. No toxic metals, organics, or pathogens are expected to be released by the project. The EAA Reservoir area will require remediation of toxic metals, specifically toxaphene, prior to construction. A monitoring plan has been developed to confirm water held and released from the reservoir is safe for plant and animal life.

(d) Aesthetics. The aesthetic quality of the water in the immediate area of the project may be temporarily affected by turbidity during construction. This will be a short-term and localized condition. Seepage canals will be sloped to provide vegetation and wildlife habitats. The exterior reservoir embankment would be earthen and grassed and provide some aesthetic value. The 150-foot seepage buffer along the sides of the reservoir, would include a wetland mosaic that would provide a visual screen of the embankment and provide a natural green space, an overall improvement to aesthetics. An approximate 50-foot area between the property limits and the seepage canal would be left undisturbed as well as a 650-acre area along the northern border of the reservoir. These "undisturbed" lands would be managed for exotic plant species in order to encourage recruitment of natural plant species and to provide ecologic as well as aesthetic value.

(3) Effects on Biota.

(a) Primary Productivity and Photosynthesis. Dredging and sloping canals should provide littoral habitat within the canals. Wetlands within the buffer area would be incidentally created through seepage and rainfall and redistribution of muck following. The seepage buffer wetlands would be hydraulically connected to

the canals as well. The reservoir footprint will likely be too deep to support any wetland vegetation except during drydowns, but floating vegetation may colonize the reservoir.

(b) Suspension/Filter Feeders. An increase in turbidity in the canals could adversely impact burrowing invertebrate filter feeders within and adjacent to the immediate construction area. It is not expected that a short-term, temporary increase in turbidity will have any long-term negative impact on these highly fecund organisms.

(c) Sight Feeders. No significant impacts on these organisms are expected as the majority of sight feeders are highly mobile and can move outside the affected area.

(d) Contaminant Determinations. Fine-grained materials at the bottom of canals will be sampled prior to dredging to determine whether they contain significant levels of toxic materials. The toxic materials of primary concern are persistent pesticides. Other deposited fill material which will be dredged from the proposed borrow site will not introduce, relocate, or increase contaminants at the fill area.

(e) Aquatic Ecosystem and Organism Determinations.

(1) Effects on Plankton. No adverse impacts on autotrophic or heterotrophic organisms are anticipated.

(2) Effects on Benthos. No adverse impacts to benthic organisms are anticipated.

(3) Effects on Nekton. Mostly small forage fish may be temporarily displaced by construction and turbid water. However, no long-term adverse impacts on nekton are anticipated.

(4) Effects on the Aquatic Food Web. No adverse impacts on aquatic organisms are anticipated. There is expected to be a relatively minor temporary effect on the aquatic food web due to construction activities. Aquatic resources within canals, adjacent natural areas, and Lake Okeechobee should maintain their functional value.

(5) Effects on Special Aquatic Sites.

(a) Hardground and Coral Reef Communities. There are no hardground or coral reef communities located within the proposed project site.

(b) Sanctuaries and Refuges. Adjacent wildlife management areas (Rotenberger Wildlife Management Area and Holey Land) should not be negatively impacted by the project

(c) Wetlands. As proposed, construction of the project would impact approximately 16,603.31 acres of Waters of the United States including 15,467.48 acres of jurisdictional atypical wetlands (farmed sugarcane fields), 187.63 acres of jurisdictional wetlands, and 149.83 acres of other Waters of the United States i.e., jurisdictional canals and ditches by dredging, filling, and/or flooding. The 187.63 acres of natural wetlands on site were determined by an interagency team as retaining natural wetland vegetation, although degraded, but maintaining some functional value to fish and wildlife resources. The jurisdictional areas proposed for impact were evaluated using UMAM. The proposed impacts will result in a loss of 5889.05 Functional Capacity Units (FCUs) as shown in Table 5-1.

As part of the project, a seepage buffer would be created which would allow approximately 205 acres of upland and wetland mosaic with an additional approximately 13 acres of wetland habitat as littoral shelves in the seepage canals. Approximately 878.83 acres of deepwater refugia would also be incorporated into the proposed reservoir through existing ditches/canals and constructed borrow canal. In addition, approximately 768 acres of atypical wetlands within the project site would not be disturbed. In addition, the open water reservoir may provide foraging habitat for wading birds during draw downs. The SFWMD, however, does not intend to operate, manage, or monitor the reservoir or any of its project features in a manner conducive to maintaining aquatic resource function and value. Since the primary purpose of the project is to store water and this goal

will not be comprised for wetland and aquatic resource function within the reservoir, the USACE is requiring full mitigation for the project impacts and has not assessed the project or any project features for mitigation credit to balance the loss.

The mitigation plan includes accounting for the system-wide interdependencies and watershed benefits of the Acceler8 projects operated together as a system consistent with the C&SF Project as modified. The Acceler8 projects are anticipated to provide watershed functions to the south Florida ecosystem consistent with the goals and objectives of CERP. The goal of the Acceler8 program is to assist in the restoration, preservation, and protection of the south Florida ecosystem while providing for other water related needs of the region. This program of projects will be designed to accomplish this by helping to provide the quantity, quality, timing, and distribution of water necessary to achieve and sustain those essential hydrological and biological characteristics that defined the undisturbed south Florida ecosystem.

In general, anticipated improvements in ecological performance can be expected by moving closer to the NSM depth targets for wetlands in the WCAs and ENP. Additional improvements can be expected in Lake Okeechobee, the Caloosahatchee and St. Lucie Estuaries, and Picayune Strand by moving closer to hydrologic and ecological restoration targets identified by RECOVER. A preliminary UMAM analysis indicates that 6439.58 FCUs will be provided through implementation of Acceler8 and the projects' environmental lift to the nearshore habitat of Lake Okeechobee, St. Lucie Estuary, and Caloosahatchee Estuary. The WCAs, ENP, and other areas within the south Florida ecosystem are also anticipated to benefit ecologically from Acceler8, however, UMAM evaluations for these areas are not yet complete (see Table 5-2). The Acceler8 system-wide benefits and mitigation evaluation and the mitigation monitoring requirements are discussed in detail in Chapter 5 and Annex B, respectively.

It is also anticipated that there will be project specific benefits directly related to EAA A1 Reservoir project objectives: reduction of freshwater pulse releases and stabilization of salinities such that oyster reefs and submerged aquatic vegetation in the Caloosahatchee and St. Lucie Estuaries will increase; reduction of extreme high and low stage levels in Lake Okeechobee such that the amount and quality of submergent and emergent plant communities will increase thereby improving foraging and habitat for wading birds and native fish; and improvements to the water quality entering the WCAs. Independently, the EAA Reservoir will move toward the NSM depth targets and anticipated corresponding ecological benefits and goal UMAM scores identified for these areas, although the project, stand alone, is not expected to achieve all targets.

Based on the Acceler8 mitigation plan, the USACE has determined the on-site removal of i.e., the adverse impact to 15,804.94 acres of jurisdictional Waters of the United States is believed to be mitigated by the system-wide environmental benefits of the EAA Reservoir A-1 working in concert with the other Acceler8 projects.

(d) Mud Flats. Mud floats should not be impacted by this project.

(e) Vegetated Shallows. None should be impacted by the project.

(f) Riffle and Pool Complexes. None should be impacted by the project.

(6) Endangered and Threatened Species. There will be no significant adverse impacts on any threatened or endangered species or on critical habitat of any threatened or endangered species. The USFWS has concurred with the USACE's determinations of no effect and may affect, not likely to adversely affect for twelve listed species found with the project footprint or areas anticipated to be affected by the project. The USFWS concluded formal consultation for the Florida panther on April 14, 2006, with a Biological Opinion that the project will not jeopardize the continued existence of

the Florida panther. In the BO, the USFWS stated that implementation of the CERP Band 1/Acceler8 projects will result in preservation and enhancement of 59,294 acres and 41,772 acres of habitat used by the Florida panther in the Primary and Other Zones, respectively. These "core area" lands include the majority of home ranges of the current population of the Florida panther.

The NMFS has concurred with the USACE's determination of may affect, not likely to adversely affect for the species within the NMFS' purview.

(7) Other Wildlife. No adverse impacts to small foraging mammals, reptiles, or wading birds, or wildlife in general are expected. Environmental features, such as the seepage buffer area, deep water fish refugia, and canal seepage littoral areas will provide opportunities and minimize impacts to fish and wildlife.

(8) Actions to Minimize Impacts. All practical safeguards will be taken during construction to preserve and enhance environmental, aesthetic, recreational, and economic values in the project area. Specific precautions are discussed in the Section 6.1 of the Final EIS. Environmental features, such as the seepage buffer area, deep water fish refugia, and canal seepage slopes are being incorporated into the project plan to increase opportunities and minimize impacts. Monitoring programs have been developed to ensure the project does not harm, but in fact aids in the recovery of the Everglades ecosystem.

d. Proposed Disposal Site Determinations.

(1) Mixing Zone Determination. The dredged material will 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.

(2) Determination of Compliance with Applicable Water Quality Standards. Because of the inert nature of the material to be used as fill, applicable State water quality standards would not be violated.

(3) Potential Effects on Human Use Characteristics.

(a) Municipal and Private Water Supplies. No municipal or private water supplies would be adversely impacted by the implementation of the project. Minor improvements to water intake for municipal supplies may take place by reducing the back-pumping of storm water from agricultural lands to Lake Okeechobee. Private water supplies (primarily agricultural) would not be impacted, but sources may change as reservoir water is utilized in place of Lake Okeechobee deliveries. In addition, the reservoir will act to recharge both the surficial and Floridan aquifers.

(b) Recreational and Commercial Fisheries. The reservoir is anticipated to provide recreational fishing opportunities. Recreational and commercial fisheries should not be negatively impacted by the implementation of the project.

(c) Water Related Recreation. Water related recreation in the immediate vicinity of construction will likely be impacted during construction activities within the canals. This will be a short-term impact. The 15,211-acre open water reservoir would provide additional recreational opportunities in the form of boating, fishing and wildlife viewing.

(d) Aesthetics. The existing environmental setting would be altered from agricultural fields to a reservoir system surrounded by an emergent wetland ecosystem. Construction activities will cause a temporary increase in noise and air pollution caused by equipment as well as some temporary increase in turbidity. Some vegetation and natural areas within the footprint would be unavoidably removed during construction. These impacts are not expected to adversely affect the aesthetic resources over the long term. The proposed project includes 844 acres of undisturbed lands around the north, east, and west of the reservoir. These lands would be undisturbed except for maintenance of exotic plant species providing aesthetic value as well as somewhat of a visual buffer between adjacent lands and the reservoir.

(e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. State and local parks do exist south and east of the project site. These include the WCAs, Holey Land Wildlife Management Area, and Rotenberger Wildlife Management Area. These would be temporarily impacted by construction activities as described in (d) above. These impacts would be minimized and avoided as practicable.

e. Determination of Cumulative Effects on the Aquatic Ecosystem. There will be no adverse cumulative impacts as a result of the placement of fill at the project site. The proposed EAA Reservoir project is part of the State of Florida's Acceler8 Program. Anticipated future projects that may occur as a result of the proposed project include construction of the remaining suite of Acceler8 projects, specifically improvements to Bolles and Cross canals (See Figure 1-2). This Acceler8 project includes conveyance capacity increases for the both canals in order to provide improved flood protection and water flow capabilities for moving water to and from the EAA Reservoir and STAs. The Acceler8 projects are designed to contribute to many of the benefits from CERP as early as possible. The remainder of the CERP projects will follow as time and resources allow.

The SFWMD's Acceler8 Program and the CERP are both anticipated to convert large areas within the EAA, around Lake Okeechobee, in the Caloosahatchee River basin, and on the upper east coast to reservoirs for increasing water storage for the overall gain and long-term benefit of the regional system. These project features will provide important storage functions which the C&SF Comprehensive Review Study, April 1999, deemed essential to the overall restoration of the freshwater marshes, the estuaries and the downstream Everglades. Some improvement to lake water quality will occur as a result of the project by redirecting nutrient rich EAA drainage to the reservoirs rather that directly to Lake Okeechobee. The overall benefit to the regional system is expected to be far greater than the localized adverse effects. As these features occur disparately across the landscape within different hydrologic basins, and as distinct units rather than multiple features within a single watershed, they will not likely result in a significantly detrimental cumulative effect.

Project features of both Acceler8 and CERP will cause some adverse consequences to agricultural land uses - permanently removing tens of thousands of acres from agricultural production. These impacts may be felt locally and/or regionally as the economic base derived from agriculture is incrementally reduced relative to other sectors of the economy. The overall benefit to the regional system is expected to be far greater than the localized adverse effects. As these features occur disparately across the landscape within different hydrologic basins, and as distinct units rather than multiple features within a single watershed, they will not likely result in a significantly detrimental cumulative effect. See Section 4.20 for more detail on the cumulative impacts.

f. Determination of Secondary Effects on the Aquatic Ecosystem. There will be no adverse secondary impacts on the aquatic ecosystem as a result of the construction. During construction the site will be contained enclosing the construction areas with sedimentation barriers. Erosion will be controlled by compaction of soils, construction of ditches, and embankments, maintenance of relatively flat grades, and other appropriate erosion control techniques.

Sedimentation will be controlled during construction by use of sediment controls basins and traps, filter berms, straw bales, etc. Impacts associated with construction traffic and equipment will be localized due to construction occurring in phases. Phasing construction will allow wildlife to utilize undisturbed portions of the site. Once constructed the initial flooding of the reservoir will be at a rate of one-half inch per day until a depth of six inches is attained in order to minimize negative impacts to slow moving wildlife species. Monitoring plan would be implemented during and after construction to ensure no adverse impacts to water quality. Chapter 6 includes a discussion of specific environmental commitments, engineering and design commitments, and operational commitments in order to avoid, minimize, and/or mitigate for adverse effects during construction.

III. Findings of Compliance or Non-compliance with the Restrictions on Discharge.

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. No practicable alternative exists which meets the study objectives that does not involve discharge of fill into waters of the United States.

c. After consideration of disposal site dilution and dispersion, the discharge of fill materials will not cause or contribute to, violations of any applicable State water quality standards for Class III waters. The discharge operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

d. The construction of the EAA Reservoir A-1 project will not jeopardize the continued existence of any species listed as threatened or 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.

e. The placement of fill material will not 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 will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values will not occur.

f. On the basis of the guidelines, the proposed disposal site for the discharge of dredged material is specified as complying with the requirements of these guidelines.

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ANNEX B
DRAFT EAA RESERVOIR A-1
MITIGATION MONITORING PLAN

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B DRAFT EAA RESERVOIR A-1 MITIGATION MONITORING PLAN

As a result of construction and operation of the Acceler8 EAA Reservoir A-1 project, approximately 15,467.48 acres of atypical wetlands, 187.63 acres of natural wetlands, and 149.83 acres of agricultural canals/ditches would be impacted by flooding, dredging, and/or filling. Impact to these jurisdictional Waters of the United States would result in a loss of 5,889.05 functional units based on the Uniform Mitigation Assessment Method (UMAM), Chapter 62-345 F.A.C. This section describes the EAA A-1 Reservoir project mitigation monitoring plan which will compensate for the unavoidable impact to Waters of the United States.

Mitigation monitoring for the SFWMD's EAA Reservoir A-1 Project includes system-level monitoring to assess system-wide environmental benefits of the Acceler8 projects as discussed in Chapter 5, Compensatory Mitigation. Although it is recognized that certain project features will provide some incidental ecological benefits, monitoring of these ecological features is not required since such benefits will not be used to offset compensatory mitigation requirements. The mitigation monitoring plan incorporates portions of the REstoration COordination VERification (RECOVER) programs Monitoring and Assessment Plan (MAP) performance measures and restoration targets. A review of existing monitoring efforts proposed by the RECOVER team has revealed the Acceler8 system-wide benefits can be assessed using existing monitoring programs as described in the RECOVER Monitoring and Assessment Plan (MAP), Part 1 (RECOVER, 2004).

B.1 EAA SYSTEM-WIDE ENVIRONMENTAL BENEFITS

The EAA project specifically will provide system-wide benefits within the WCA 2 & 3 (ridge & slough, tree islands), the St. Lucie Estuary, Caloosahatchee Estuary, and Lake Okeechobee. These system-wide benefits directly correspond to the performance measures developed by RECOVER for CERP evaluation. These performance measures which will be used to determine the success of the EAA Reservoir A-1 project are described in this section and in Table B-1. For information on the methodologies, sampling sites, etc, refer to the Monitoring and Assessment Plan, Part 1, 2004.

B.1.1 Lake Okeechobee

Reductions in extreme lake stages, progressing towards a desirable stage envelope, and improvements to water quality, will benefit the flora and fauna communities. As a result of these improvements, enhanced ecological conditions conducive to the restoration of littoral and near shore zone habitats will affect submerged plant communities, benthic macroinvertebrates and provide improvements to the taxonomic structure of

zooplankton. Table B-1 outlines a representative set of RECOVER performance measures designed to monitor the following components:

- Stage levels: Preferred stage envelope, extreme high and low stage events
- Submerged aquatic vegetation monitoring and mapping
- Benthic macroinvertebrates
- Fish condition and population structure
- Total phosphorus monitoring at stations L001-L008
- Total phosphorus load calculated using standard SFWMD nutrient load program from data at inflow structures
- TP:TN ratios based on water quality monitoring
- Chlorophyll a samples collected during water quality

B.1.2 Northern Estuaries

Improvements to salinity patterns by attenuating freshwater flows, reducing the high and low salinity extremes, will enhance mesohaline and oligohaline conditions in near-shore estuarine environments. As a result of improved salinity regimes and water quality, improved conditions that are conducive to enhanced productivity, decreased algal blooms and improvements to the structural and spatial extent of submerged plant communities and the recruitment and survivorship of the eastern oyster.

B.1.2.1 Caloosahatchee Estuary

Table B-1 outlines a representative set of RECOVER performance measures designed to monitor the following components:

- Monitoring flows at the S-79 structure
- Salinity monitoring network
- Submerged aquatic vegetation monitoring
- Submerged aquatic mapping from aerial photography
- Water quality monitoring at stations CES01-08

B.1.2.2 St. Lucie Estuary

Table B-1 outlines a representative set of RECOVER performance measures designed to monitor the following components:

- Monitoring flow at the S-97 structure

- Salinity monitoring network
- Benthic macroinvertebrate monitoring in St. Lucie Estuary and the Southern Indian River Lagoon
- Eastern Oyster monitoring
- Water quality monitoring at stations SE01-03 and SE08

B.1.3 Greater Everglades

Improvements to the timing and distribution of flows will improve hydropatterns throughout the Greater Everglades including the WCAs and ENP. The beneficial affects will be system-wide and provide ecological conditions that will restore and sustain the microtopography, directionality and spatial extent of the ridge and slough landscape, including tree islands, and native vegetation community structures. Restoration of these habitats will positively influence spatio-temporal patterns of prey production and concentration, which directly affects wading bird nesting success. Additional anticipated benefits in water quality are expected as a result of low TP concentrations flowing into STA 3/4 from the EAA A-1 Reservoir, thereby lowering TP concentrations flowing out of STA 3/4 and into the Everglades Protection Area. Table B-1 outlines a representative set of RECOVER performance measures designed to monitor the following components:

- Stage levels associated with the hydrology monitoring network
- Landscape Patterns:
    - System-wide vegetation mapping, tracking temporal and spatial changes in community composition
    - Landscape patterns of the ridge and slough tree island mosaic
- Wading bird nesting patterns:
    - Wading bird foraging, distribution and abundance
    - Dry and wet season aquatic fauna concentrations
    - Wading bird nesting colony location, size and timing
    - Systematic reconnaissance flights for wading bird distribution surveys
    - Annual SFWMD wading bird report
- Water Quality:
    - Flow and TP concentrations at inflow and outflow structures
    - Regional distribution of soil nutrients
    - Periphyton studies

Table B-1: System-wide Ecological Monitoring Plan Using CERP MAP Performance Measures

Monitoring Component	MAP Section	Performance Measure
Lake Okeechobee		
Stage: Preferred Envelope, Extreme High and Low Events	3.5.3.1	LO-1 LO-2 LO-3
Water Quality	3.4.3.1	LO-4 LO-5 LO-6
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B.2 EAA RESERVOIR A-1 MITIGATION WORK SCHEDULE

The schedule for the proposed mitigation is contingent on the date that the EAA Reservoir A-1 project and the other Acceler8 projects come on line. The Acceler8 projects are all scheduled to be in operation by 2011, pending receipt of all necessary permits. Based on a 2011 date of operation, the environmental benefits should be realized by 2020.

B.3 MONITORING REQUIREMENTS

The performance measures identified for the EAA Reservoir A-1 Project and the associated monitoring components are currently in existence. The USACE has determined that the SFMWD may use the results of other monitoring efforts such as RECOVER to fulfill its obligations. If RECOVER ceases to monitor any of the performance measures identified for the project, the SFWMD will be responsible for fulfilling the monitoring requirements. The scientific and technical information generated by the MAP, provides the process for RECOVER to evaluate system performance and responses. For this project, however, the SFWMD will be responsible for evaluating and presenting the system-wide monitoring information to the USACE annually on March 1 in the *South Florida Environmental Report*. Annual evaluation will enable the USACE to determine if the project is trending towards success and achievement of the restoration targets, and the projected functional lift outlined in the mitigation ledger. Although the full benefits are not expected until 2020, annual evaluation of the monitoring information will allow the USACE to determine early on if adaptive management strategies are required to achieve success on time.

In addition to evaluating the performance and responses as described above, the South Florida Consolidated Report shall also contain a UMAM, Chapter 62-345 F.A.C., scoring, discussion, and conclusion regarding trending toward or achievement of the projected UMAM scores for the Lake Okeechobee nearshore habitat, Caloosahatchee Estuary, St. Lucie Estuary, and the Greater Everglades including WCA 2A, WCA 2B, WCA 3A, and WCA 3B. The annual evaluation report should also include the summary report of the previous year's monitoring results including an evaluation of performance in terms of success, a representative photograph from each monitoring station, a narrative describing problems encountered during the year including climatic events, and a discussion of remedial measures or adaptive management, if applicable. Photographs shall include date taken, direction, and station number.

B.4 ADAPTIVE MANAGEMENT

The CERP MAP employs an Adaptive Management (AM) Program to maximize restoration success by anticipating future uncertainties and responding to system responses. These uncertainties include unpredicted (inherent natural variability) and undesired responses and events in the natural system, anthropogenic influences, or from non-CERP influences. Additionally, AM recognizes natural systems are remarkably complex and difficult to predict and that the current generation of numerical models often lack the predictive power to accurately characterize ecological responses to management actions, especially at large spatial scales. A successful adaptive

management program will identify early indications of undesired impacts associated with ecological and hydrological uncertainties and provide a process allowing decision makers to effectively integrate ecosystem science and management to adjust and make improvements to ensure desired restoration goals are met.

B.5 MAINTENANCE AND RESPONSIBLE PARTY

Monitoring data and the SFWMD and USACE's professional judgment will dictate the type and frequency of maintenance activities including AM necessary to ensure the mitigation areas are trending toward success. The SFWMD is the responsible party for long-term management of the mitigation areas and attainment of success.

B.6 FORCE MAJEURE CLAUSE

The requirements of this mitigation plan shall not be enforced against the SFMWD if precluded from performing and meeting the conditions of this mitigation monitoring plan due to unusually severe weather, acts of war, acts of God, rebellion, strikes, or natural disaster, including hurricane, flood, or fire. If the unusually severe weather, acts of war, acts of God, rebellion, strikes, or natural disaster, including hurricane, flood, or fire do not preclude the SFWMD from performing the work defined in the mitigation monitoring plan, the SFWMD shall not be relieved of its obligation under this document.

B.7 REFERENCES

RECOVER. 2004. CERP Monitoring and Assessment Plan: Part 1 Monitoring and Supporting Research. Restoration Coordination and Verification Program, c/o United States Army Corps of Engineers, Jacksonville District, Jacksonville, Florida, and South Florida Water Management District, West Palm Beach, Florida.

ANNEX C
CZMA CONSISTENCY EVALUATION

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C COASTAL ZONE CONSISTENCY EVALUATION

This document describes the Coastal Zone Consistency Evaluation for the federal CERP EAA Storage Reservoirs project. This evaluation was also used by the USACE Regulatory Division in evaluation of the SFWMD's proposed EAA Reservoir A-1 project.

C.1 FLORIDA COASTAL ZONE MANAGEMENT PROGRAM FEDERAL CONSISTENCY EVALUATION PROCEDURES - EVERGLADES AGRICULTURAL AREA STORAGE RESERVOIR

C.1.1 Chapter 161, Beach and Shore Preservation

The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed plans and information will be submitted to the state in compliance with this chapter. No work is proposed seaward of the mean high water line in beach areas.

C.1.2 Chapters 186 and 187, State and Regional Planning

These chapters establish the State Comprehensive Plan that sets goals that articulate a strategic vision of the State's future. Its purpose is to define in a broad sense, goals and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: The proposed project has been coordinated with various Federal, State and local agencies during the planning process. The proposed project would achieve the goals of this chapter by contributing to a long-range master plan for South Florida's water resources, which would support the continued orderly social, economic and physical growth of the region.

C.1.3 Chapter 252, Disaster Preparation, Response and Mitigation

This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: This statute is not applicable to this project.

C.1.4 Chapter 253, State Lands

This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water

resources; fish and wildlife resources; near shore reefs; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: The proposed project would make a positive contribution to preserving cultural, water, fish and wildlife, wetland and estuarine resources, including the Everglades, which is a unique natural resource. The proposed project would comply with the intent of this chapter.

C.1.5 Chapters 253, 259, 260, and 375, Land Acquisition

This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: The property proposed for this project is already in public ownership. The proposed project would comply with the intent of this chapter.

C.1.6 Chapter 258, State Parks and Aquatic Preserves

This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: The proposed project would help enhance environmental conditions at state parks or aquatic preserves in the region. The project is consistent with this chapter.

C.1.7 Chapter 267, Historic Preservation

This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities and for implementing the Section 106 of the National Historic Preservation Act of 1966, as amended; and the National Environmental Policy Act of 1969, as amended.

Affects of the reservoir on known and undiscovered historical properties were determined upon review of the Florida Master Site Files, sites visits and CRM investigations. Compartment A contained no known historical sites or high probability areas; it has also been heavy impacted by long-term agricultural practices; and both canal and road construction. The SHPO concurred with the determination there were no historical properties within Compartment A. Consultation is complete for Compartment A. Compartment B contained evidence of tree hammocks and a Phase I CRM Survey was conducted in high probability areas. No historical properties were discovered and the SHPO concurred the project would have no impact on Compartment B. Consultation is

complete for Compartment B. Both North New River and Miami Canals are potentially eligible to the National Register of Historic Places and a professional evaluation is pending. A professional evaluation was conducted of the Bolles/Cross Canal and a known pre-historic site, 8PB50. It was recommended that both Bolles/Cross Canal and 8PB50 did not meet the criteria for eligibility to the National Register of Historic Places. The USACE concurred with this recommendation and the SHPO's final response is pending. The Florida SHPO concurred with the recommendation the project manager complete the State of Florida's Archaeological Resource Manager (ARM) training course and that an archaeological consultant be on call to perform periodic monitoring throughout the grand-disturbing phase. This project will comply with Section 106 of the National Historic Preservation Act of 1966 (PL 89-665), as amended in 2000; it's implementing regulations (36 CFR 800) and the Archaeological and Historic Perseveration Act of 1974 (PL 93-291), as amended.

The project will be consistent with the goals of this chapter.

C.1.8 Chapter 288, Economic Development and Tourism

This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: The proposed project would achieve the goals of this chapter by contributing to a long-range master plan for South Florida's water resources, which would support economic diversification and tourism.

C.1.9 Chapters 334 (Transportation Administration), 335 (State Highway System), 338 (Intrastate Highway System and Toll Facilities) and 339 (Public Transportation)

These chapters authorize the planning and development of a safe, balanced and efficient transportation system.

Response: No public transportation systems would be impacted by this project.

C.1.10 Chapter 370, 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 is inland and not expected to have a direct adverse impact on saltwater resources. The project is expected to benefit both the St. Lucie and Caloosahatchee estuaries by helping to regulate high freshwater releases to those systems.

C.1.11 Chapter 372, 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 project will have a long-term beneficial effect on freshwater aquatic life and wild animal life.

C.1.12 Chapter 373, Water Resources

This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: The non-federal sponsor for this project is the South Florida Water Management District, which is the state agency responsible for implementing this statute. Coordinated planning has been done with this agency to ensure compatibility with established policies. The project is consistent with the goals of this chapter.

C.1.13 Chapter 376, Pollutant Spill Prevention and Control

This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor adopt safe and sanitary measures for the disposal of solid wastes. A spill prevention plan will be required.

C.1.14 Chapter 377, Oil and Gas Exploration and Production

This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This project does not involve the exploration, drilling, or production of gas, oil or petroleum product and therefore, this chapter does not apply.

C.1.15 Chapter 380, Environmental Land and Water Management

This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact of proposed large-scale development on natural systems.

Response: The proposed project would benefit Lake Okeechobee, WCA 2, WCA 3, and the St. Lucie and Caloosahatchee estuaries. The project is consistent with the goals of this chapter.

C.1.16 Chapter 388, Arthropod Control

This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The project would not further the propagation of mosquitoes or other pest arthropods.

C.1.17 Chapter 403, Environmental Control

This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Regulation (now a part of the Florida Department of Environmental Protection).

Response: An Environmental Impact Statement addressing project impacts has been prepared and will be reviewed by the appropriate resource agencies including the Florida Department of Environmental Protection. Environmental protection measures will be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources will occur. Water Quality Certification will be sought from the State prior to construction. The project complies with the intent of this chapter.

C.1.18 Chapter 582, Soil and Water Conservation

This chapter establishes policy for the conservation of state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

Response: Project construction and implementation will include appropriate erosion control plans and measures to ensure compliance with the intent of the chapter.

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ANNEX E
RESPONSES

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E. RESPONSES

Comment	Response
Natural Resources Defense Council (NRDC) – I.A	In Section 2.2 the USACE responds to your concern that a discussion was not provided as to why a larger Reservoir is eliminated as an alternative. The environmental effects of the alternatives are shown in Table 2.1 Alternative Evaluation Matrix, that ranks the alternatives based on ability to meet project objectives, environmental impacts, socioeconomic impacts, storage capacity, location, and construction features. In addition, environmental effects are summarized in each subsection of Chapter 4.
NRDC – I.A.1	In Chapter 2, Table 2.1, Alternative Evaluation Matrix, has been included which shows adverse environmental effects associated with each alternative i.e., impacts related to the project footprints and operations. As noted previously, Chapter 4 summarizes adverse environmental effects of the Build Alternatives. In response to your comment regarding the effects that are caused by the project throughout the south Florida ecosystem additional modeling information has been included. The system wide effects of the Acceler8 projects are described in Sections 5.3.1-3 and in Sections 5.3.5-7 for the EAA A-1 Reservoir. Also, the USACE has added Annex D which includes more detailed modeling information for these two modeling evaluations.
NRDC – I.A.2	The 190,000 acre feet of storage provided by Cell A-1 is greater than that provided by the other alternatives analyzed and is most likely to be implemented in a timely way to achieve project objectives. The overall goal of Acceler8 is to provide environmental benefits sooner than would occur under CERP and in a cost-effective manner avoiding inevitable increases in construction materials and labor costs due to delay. Imposition of realistic limitations on the scope of individual Acceler8 projects is crucial in achieving system-wide benefits throughout the south Florida ecosystem. In Section 2.2 of Chapter 2 the USACE responds to your concern that a larger reservoir was eliminated as an alternative. Building the entire CERP EAA Storage Reservoirs project would have eliminated other Acceler8 projects designed to provide system-wide benefits for other areas of the south Florida ecosystem.

Comment	Response
NRDC – I.B	In response to your comment regarding the environmental effects of the build alternatives in Chapter 2 Table 2.1, Alternative Evaluation Matrix, has been added which clearly differentiates the effects of each alternative. In addition, environmental effects are summarized in each subsection of Chapter 4 and the differences between each alternative are provided. Cumulative Impacts associated with this project are described in Chapter 4 Section 4.2.
NRDC – I.B.1	This comment specifically relates to the requirements of WRDA 2000 and the Programmatic Regulations which do not apply to USACE Regulatory actions. This project is being implemented through the SFWMD's Acceler8 program which is funded totally by the SFWMD. Should an Acceler8 project become a Congressionally authorized Federal project the SFWMD must be in compliance with all WRDA 2000 requirements and Programmatic Regulations when a Project Cooperation Agreement is signed. Until such time, the Acceler8 projects are subject to USACE regulatory authorities and programmatic regulations requirements do not apply. Chapter 6 Section 6.4 and Annex G, Draft Permit Template, further detail the relationship between Acceler8 and CERP.
NRDC – I.B.2	In response to your comment, the proposed project's ability to provide water to the natural system and provide environmental lift to offset wetland impacts has been evaluated and documented in Chapter 5, Sections 5.3.3-7, Compensatory Mitigation along with more detailed documentation of modeling assumptions and outputs in Annex D, Modeling. In response to your comments regarding the operations of the project, additional detail has been provided in the Chapter 6, Section 6.2, Operational Commitments. As noted previously, additional information has been added to Chapter 4 which describes environmental effects of all of the "build" alternatives. In addition, the USACE has added a Draft permit template, Annex G. See specifically permit condition number 11.
NRDC – I.B.3	In response to your comment regarding evaluation of alternatives, more detail has been added to both Chapters 2 and Chapter 4. Specifically in Chapter 2, Table 2.1 ranks the alternatives based on ability to meet project objectives, environmental impacts, socioeconomic impacts, storage capacity, location, and construction features. In addition, environmental effects are summarized in each subsection of Chapter 4 and the differences between each alternative are provided.

Comment	Response
NRDC – II	In response to your comment a PIR for this project is not required. A PIR is a requirement of the federal process for authorization and appropriation by Congress of CERP projects. The USACE is proceeding with two separate and independent but related actions, the regulatory evaluation of the SFWMD's proposed Acceler8 EAA Reservoir project which is the action identified within this EIS and the planning evaluation of the federal CERP EAA Storage Reservoirs project. The Regulatory Division of the USACE is evaluating the SFWMD's proposed Acceler8 EAA Reservoir project in this Final EIS for the 404 permit alone, while the USACE Civil Works Planning Process continues with a separate and independent evaluation of the CERP project through the PIR process.
NRDC – III	In response to your comments regarding the projects impacts to wetlands Chapter 5 Section 5.2 discusses the proposed compensatory mitigation, Section 5.3.4 details the monitoring requirements to ensure success, and Section 5.4 details the assurances for achieving the environmental benefits including alternative compensatory mitigation in Section 5.4.1 if it's deemed to be necessary. In addition, the USACE has added Annex A which contains a 404(b)(1) Guidelines Evaluation.
NRDC – III.A	One of the purposes of the NEPA process (preparing Draft and Final EISs) is to obtain information upon which to make a determination as to whether an action is within the interest of the public. Information/comments generated from the public and agency comment process will be reviewed in order to make an informed decision regarding public interest. The record of decision will include a public interest evaluation. As noted in the previous response Chapter 5 details the compensatory mitigation process to be used for this project.
NRDC – III.B	In response to your comment regarding the adverse wetland impacts of the build alternatives in Chapter 2 Table 2.1, Alternative Evaluation Matrix, has been added which clearly differentiates the wetland impacts of each alternative. In response to your comment regarding alternatives greater than 190,000 ac-ft as noted previously Section 2.2 of Chapter 2 responds to your concern. Building the entire CERP EAA Storage Reservoir project would have eliminated other Acceler8 projects designed to provide system-wide benefits for other areas of the south Florida ecosystem.

Comment	Response
Department of Interior (DOI) – 1	Environmental benefits associated with the EAA A-1 Reservoir and the Acceler8 projects as a system have been identified and are discussed in Chapter 4, Environmental Effects and Chapter 5, Compensatory Mitigation. In addition, Annex D includes model runs.
DOI – 2	The Acceler8 projects will be designed, constructed, and operated consistent with the C&SF Project, as modified. See Section 6.2 Operational Commitments, and Annex G, Draft permit template
DOI – 3	The operating plan, mitigation monitoring, and the SFWMD's water allocation authority will be used to ensure that water is protected for the natural system so that environmental benefits are achieved. See Chapter 6 and special condition number 11 in Annex G. In addition, the USACE has added Annex B which contains the Draft Mitigation Monitoring Plan for the EAA A-1 Reservoir project.
DOI – 4	The savings clause analysis is a CERP requirement that does not apply to USACE regulatory actions. However, the Acceler8 projects are intended to provide environmental benefit, specifically to accelerate Everglades restoration. Therefore, as part of the regulatory evaluation water will be protected for the natural system in order to assure environmental benefits are achieved and project purposes are being met. See special condition 11 in Annex G.
DOI – 5	Natural recruitment of vegetation within the seepage buffer is anticipated. See Section 2.5.1.8, Wetlands Buffer.
DOI – 6	The cumulative impact analysis has been updated. See Section 4.19, Cumulative Impacts, and Annex A.
U.S. Fish and Wildlife Service (USFWS) – 1	Comment Noted.
USFWS – 2.1	The proposed EAA A-1 Reservoir includes a wetlands buffer and littoral shelves within the seepage canal. Both features are anticipated to provide ecological benefits. See Section 2.5.8, Other Features / Wetland Buffer / Littoral Shelves including Figure 2.11.
USFWS – 2.2	The SFWMD is committed to redistributing remaining muck throughout the seepage buffer area following construction activities. See Section 6.1, Environmental Commitments.

Comment	Response
USFWS – 2.3	Incidental ecological benefits are anticipated within the EAA A-1 seepage buffer as a result of construction techniques and environmental commitments. See Section 6.1, Environmental Commitments. It should be noted that the purpose of the project is to provide water storage in order to ecologically benefit the lake, estuaries, and downstream ecosystem – not to provide ecological benefits within project footprint.
USFWS – 2.4	The EAA A-1 Reservoir seepage buffer is set at 150 feet for constructability and cost effectiveness. See Section 2.5.8.1, Other Features.
USFWS – 2.5	Littoral habitat that will be created is incidental as a result of caprock blasting during construction of the seepage canal. The current design phase (30% plans) cannot specify the physical description of the edge of the seepage canal indicating the type, extent, and functionality of littoral habitat that will be created, as well as the approximate percentage of time the seepage canal will be completely inundated to provide potential adjacent littoral habitat. See Section 2.5.8.1, Other Features.
USFWS – 3	Model simulation assumptions and results can be found in Appendix D. In addition, Chapter 5 includes an analysis of environmental benefits anticipated as a result of model runs.
USFWS – 3. 1	Description of system wide benefits in Chapter 5 has been updated based on the above modeling and more details included.
USFWS – 3.2	Description of system wide benefits in Chapter 5 has been updated based on the above modeling and more details included.
USFWS – 3.3	Additional information has been added to Section 2.5.2, Operations in response to the comment.
USFWS – 3.3.a	Modeling results are shown in Annex D and described in Chapter 5. Section 2.5.2, Operations, and Section 6.2, Operational Commitments, have both been updated.
USFWS – 3.3.b	System-wide benefits and impacts as a result of the project are describes in Chapter 5 with supporting documentation in Annex D.
USFWS – 3.4	Description of system wide benefits and impacts in Chapter 5 has been updated to include STA ¾ bypass volumes.

Comment	Response
USFWS – 3.5	Model simulation assumptions and results can be found in Annex D. System-wide modeling has been updated to a 2010 timeframe and includes all Acceler8 projects. The 2010 timeframe enables inclusion of all Acceler8 projects.
USFWS – 4	The project has been redesigned such that the upper two thirds of the Woerner Farm 3 property, approximately 600 acres, would not be included in the wetted footprint of the reservoir. In addition, the soil within the lower third of the property, covering approximately 300 acres, would be removed and used to provide soil on the northern exterior face of the reservoir, which would then be vegetated. In a letter dated March 24, 2006, the FWS concurred that the project as redesigned does not pose any risk of contamination. The FWS' recommendations for eliminating risk of contamination as stated in the concurrence letter have been included in Section 6.1, Environmental Commitments.
USFWS – 5.1	This has been updated. See Section 4.6.1
USFWS – 5.2	This has been updated. See Section 3.4.5.2.
USFWS – 5.3	This has been updated. See Section 3.4.5.4.
USFWS – 5.4	The USACE consulted with the NOAA Fisheries on the project's potential effects on sea turtles in the downstream aquatic areas. The NOAA Fisheries has concurred that the project will not adversely affect swimming sea turtles.
USFWS – 5.5	This comment has been incorporated into Section 6.1, Environmental Commitments # 10.
USFWS – 5.6	This comment has been incorporated into Section 6.1, Environmental Commitments # 8.
Natural Resource Conservation Service (NRCS) – 1	This comment refers to the savings clause analysis which is a CERP requirement that does not apply to USACE regulatory actions. The project has been reviewed for effects on water supply pursuant to NEPA. Chapter 4 has been updated with additional information and improvements to agricultural, urban and tribal water supplies are anticipated as a result of the project.

Comment	Response
NRCS – 2	The purpose of the project is to store water from Lake Okeechobee that would normally be discharged to tide and EAA runoff. One of the primary results of storing lake releases and runoff is that more water is available for natural system areas from both the reservoir and Lake Okeechobee. The reservoir project also provides an alternative source of water for agricultural water supply in the EAA, lessening the demand on Lake Okeechobee.
NRCS – 3	Chapter 9 has been updated with this information.
NRCS – 4	This requirement pertains to federally funded projects. The proposed EAA A-1 Reservoir would be fully funded by the State thus the Prime or Unique Farmlands determination is not applicable.
Sierra Club – 1	See response to NRDC comment number III.B above.
Sierra Club – 2	See response to NRDC comment number I.A.1 above.
Sierra Club – 3	Additional information has been added to Section 2.5.2, Operations and Section 6.2, Operational Commitments.
Sierra Club – 4	Additional information has been added to Chapter 4 and modeling results have been included in Annex D. Environmental benefits and impacts of the EAA A-1 project are described in Chapter 5, Compensatory Mitigation.
Sierra Club – 5	Environmental benefits and impacts of the EAA A-1 project are described in Chapter 5, Compensatory Mitigation as well as modeling results in Annex D.
Sugar Cane Growers Cooperative of Florida	The USACE originally proposed to use the PIR/EIS that is being completed for the Comprehensive Everglades Restoration Plan (CERP) EAA Storage Reservoirs project as the NEPA document for the regulatory action for the Acceler8 EAA Reservoir Project. Since the date of the USACE's November 21, 2005, letter the SFWMD, however, decided to pursue construction of a reservoir, and requisite permitting, ahead of the schedule for completing the PIR/EIS. Therefore the proposed action is being reviewed under normal regulatory procedures which do not require WRDA/CERP assurances to water users. The regulatory evaluation does include an evaluation of the public interest factors as well as environmental impacts and benefits. The USACE has added Annex D which includes model runs in order to demonstrate environmental benefits as a result of the proposed project and other future, Acceler8 projects. In addition, more information has been added to Chapter 4, Environmental Effects.

Comment	Response
U.S. Environmental Protection Agency (USEPA) – 1	The environmental consequences to the reservoir's stated goals as a result of the project changes are negligible. Commensurate with the decision to exclude the Woerner Farm #3 tract from the wetted footprint of the project it was also decided to increase the normal pool of the reservoir. Therefore, enough though the spatial extent of the project has been reduce the ability of the A-1 reservoir to capture and store the same volume of water, as originally proposed, has not changed. The environmental consequences that result from leaving the remaining portions of the Woerner Tract in its existing condition are also negligible. Based upon the revised Ecological Risk Assessment (January 20, 2006), the mean soil toxaphene concentration at the Woerner Farm #3 property is 3.0 mg/kg. Florida Administrative Code, Chapter 62-777 lists Soil Cleanup Target Levels (SCTLs) for toxaphene (based upon direct exposure/human health) as 0.9 mg/kg for a residential scenario, 4.5 mg/kg for a commercial/industrial scenario and 31 mg/kg for leaching to groundwater (meaning that soil with concentrations below the leachability based concentration should not leach at concentrations that exceed the corresponding groundwater standard). The SFWMD has committed to maintaining drainage on the northern two thirds of the property so as to inhibit the ponding effect from natural rain water across the site. Again, given the concentrations cited above the environmental consequences of these actions are negligible.
USEPA – 2	The USACE has added Annex F which is the Draft Water Quality Monitoring Plan for the federal CERP EAA Storage Reservoirs project. This plan which includes additional monitoring for cyanobacteria and dissolved oxygen as well as a monitoring station in the interior of the reservoir.
USEPA – 3	The proposed reservoir would be managed in such a manner so as to achieve water quality sufficient for its designated use as determined by the State of Florida. The facility will be operated to satisfy water quality certification conditions mandated by the State that is to be issued in accordance with the Clean Water Act.
USEPA – 4	Additional information has been provided in Annex D, regarding water quality treatment related to the reservoir and STA 3/4 in response to the comment.
USEPA – 5	A monitoring program will be put in place once the reservoir is operational that will identify if and when these concerns are realized. Should a situation arise where the operation of the reservoir will have a detrimental impact on the downstream stream receiving water bodies, then the SFWMD will implement operational constraints so as to eliminate those impacts.

Comment	Response
USEPA – 6	The USACE concurs with this comment. Monthly interagency meetings with USACE, USEPA, USFWS, and the SFWMD are held in order to discuss permit status of the Acceler8 projects.
USEPA – 7	Additional information has been added to Section 2.5.2, Operations as well as Section 6.2, Operational Commitments. Releases from the reservoir into STA-3/4 would not exceed volumes that would result in failure to meet discharge requirements.
USEPA – 8	Modeling results using the SFWMM indicate that total bypasses are shown to slightly increase to approximately 5,000 acre feet per year on an average annual basis with the EAA A-1 Reservoir in place. It is anticipated that this small volume will be dealt with during the normal course of operations. In addition, the existing STA 3/4 has the capacity to effectively treat the optimized average annual flows from reservoir prior to delivery to the WCAs. Additional information has been added to Annex D.
Florida Department of Environmental Protection (FDEP) – 1	Additional information has been added to Chapter 2, Alternatives and Chapter 4, Environmental Effects in response to comments. In addition, Chapter 2 includes a table that ranks the alternatives based on ability to meet project objectives, environmental impacts, socioeconomic impacts, storage capacity, location, and construction features.
FDEP – 2	The project is being constructed under the State's Acceler8 initiative and is purely a USACE regulatory action. The South Florida Water Management District as the permittee will be the entity overseeing the construction of the project if permitted. The USACE concur that proper handling of potentially contaminated soils is paramount. The SFWMD has coordinated with the Department of Environmental Protection Waste Clean Up Section. As stated in the Section 3.2.9 of the EIS all cleanup efforts have been done to the satisfaction of the FDEP.
FDEP – 3	The USACE has added Chapter 5, Compensatory Mitigation, as well as Annex A, 404(b)(1)Guidelines Evaluation.
FDEP – 4	Comment noted.
Florida Department of Transportation (FDOT) – 1	Comment has been addressed. See Section 3.20.4 Roadway Facilities.

Comment	Response
FDOT – 2	The pump station location is shown in the 30% design drawings which were provided to FDOT on March 14, 2006. The intake and discharge canal will be designed to prevent erosion and scour to the canal embankments and bridge structure foundations.
FDOT – 3	The subject feature is associated with construction of Cell A-2 which is part of the CERP EAA Storage Reservoirs project. This feature is not a part of the proposed action and therefore is not evaluated in this EIS.
FDOT – 4	The bridge location is shown in the 30% design drawings which were provided to FDOT on March 14, 2006. Coordination has been ongoing with the FDOT for the bridge, access and MOT. A permit to build the bridge and intake canal will be applied for in close coordination with FDOT. All necessary permits, easements and ROW will be applied for.
FDOT – 5	The subject feature is associated with construction of Cell A-2 which is part of the CERP EAA Storage Reservoirs project. This feature is not a part of the proposed action and therefore is not evaluated in this EIS.
FDOT – 6	The subject feature is associated with construction of Cell A-2 which is part of the CERP EAA Storage Reservoirs project. This feature is not a part of the proposed action and therefore is not evaluated in this EIS.
FDOT – 7	The subject feature is associated with construction of Cell A-2 which is part of the CERP EAA Storage Reservoirs project. This feature is not a part of the proposed action and therefore is not evaluated in this EIS.
FDOT – 8	The cross-section from the Final Basis of Design Report (BODR) has been added to Chapter 2. The SFWMD is currently coordinating with the FDOT for the appropriate setback requirements for the reservoir considering future FODT activities.
FDOT – 9	A 'Reservoir Seepage Analysis' Appendix was included in the Final BODR.
FDOT – 10	No impact is anticipated due to seepage. The water table is primarily controlled by the stages in the North New River and will remain the same as is currently operated. Model information is available in the Final BODR

Comment	Response
FDOT – 11	No impact is anticipated due to seepage. The water table is primarily controlled by the stages in the North New River and will remain the same as is currently operated. Model information is available in the Final BODR provided.
FDOT – 12	No impact is anticipated due to seepage. The water table is primarily controlled by the stages in the North New River and will remain the same as is currently operated. Model information is available in the BODR provided earlier. However, should the water table rise within the dry swale system, minimal operational impacts may be realized and are noted.
FDOT – 13	No impact is anticipated due to seepage. The water table is primarily controlled by the stages in the North New River and will remain the same as is currently operated. Model information is available in the BODR provided earlier.
FDOT – 14	The subject feature is associated with construction of Cell A-2 which is part of the CERP EAA Storage Reservoirs project. This feature is not a part of the proposed action and therefore is not evaluated in this EIS.
Florida Fish and Wildlife Conservation Commission	The Acceler8 plan allows a portion of the total water deliveries to the Holey Land Wildlife Management Area to be supplied via seepage. No net increase in volumes of water supply will be made under the current operation schedule. The result will be better quality of water entering the Holey Land with a significant reduction in cost due to shallower cutoff wall requirements.
State Historic Preservation Office	Comment Noted.

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March 24, 2005

Ms. Tori White (561-472-8888)
U.S. Army Corps of Engineers, Jacksonville Division
1400 Centrepark, Suite 750
West Palm Beach, FL 33401

By Federal Express

RE: Jan 2006 Draft Supplemental Environmental Impact Statement for the Everglades Agricultural Area Reservoir A-1

Dear Ms. White:

On behalf of the Natural Resources Defense Council ("NRDC"), I write to provide the following comments concerning the Jan 2006 Draft Supplemental Environmental Impact Statement for the Everglades Agricultural Area Reservoir A-1 ("Draft SEIS").

Discussion

I. The Draft SEIS does not comply with the Natural Environmental Policy Act ("NEPA") because it fails to identify and assess reasonable alternatives to the proposed action.

A. The Draft SEIS neglects to examine alternatives to the proposed design that would avoid or minimize adverse effects of the proposed action and enhance the quality of the environment. I.A

Federal NEPA regulations identify the alternatives analysis as "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. To that end, they require agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." Id. Because it fails to evaluate reservoirs with storage capacity greater than 190,000 acre-feet, the Draft SEIS fails to meet this requirement.

The Draft SEIS very briefly – in only four pages – examines six alternatives for the South Florida Water Management District's ("SFWMD's") Everglades Agricultural Area A-1 ("EAA-

A1") Reservoir Project, including the no action alternative and five alternate locations for the storage reservoir. It does not appear that any of the examined alternatives would provide more than 190,000 acre-feet of water storage. All but a half page of the SEIS's alternatives analysis focuses on building a reservoir in one of two cells that, as currently envisioned by the agencies, comprise the Everglades Agricultural Area Storage Reservoirs Project ("EAASR Project"). Cell A1 would cover approximately 17,000 acres at 12 feet deep for a total of 190,000 acre-feet of water storage. Cell A2 would cover approximately 14,000 acres at 12 feet deep, for approximately 150-160,000 acre-feet of water storage. Two other parcels of land, which were originally acquired for the planned water storage reservoirs pursuant to the Comprehensive Everglades Restoration Plan (CERP), are briefly suggested, either independently or together, as possible locations for SFWMD's planned reservoir. Draft SEIS at § 2.3.

The Draft SEIS never explains why it limits its analysis of reservoirs to providing 190,000 or less acre-feet of storage. While the Draft SEIS sets forth reasons for rejecting alternatives that would have stored additional water in aquifer storage and recovery systems and in a flow-way running south of the Lake to the Water Conservation Areas ("WCAs"), it says nothing *at all* about why reservoirs with a larger storage capacity would not meet the project goals. Draft SEIS at § 2.2.

By neglecting to analyze configurations of reservoirs that would provide more storage, the Draft SEIS ignores reasonable alternatives that would minimize the project's adverse effects and would enhance the quality of the environment, as required by NEPA and its implementing regulations. 40 C.F.R. § 1500.2(f). It is particularly surprising, given the project's stated goal of providing additional water to meet natural system demands, that the Draft SEIS fails to discuss in any detail how much *beneficial* water it would provide to Everglades National Park or the WCAs; although it states that, on an average annual basis, the project will provide 210,000 acre-feet of "environmental deliveries" to WCA 3, it does not specify when or under what conditions that or other water would be provided to that area, other WCAs, or Everglades National Park. Draft SEIS at 4-25. In any event, a larger reservoir would likely be able to deliver more beneficial water to WCA 3 as well as other WCAs and Everglades National Park. As discussed in greater detail below, this would both potentially provide greater environmental benefits to offset the project's adverse effects (the loss of wetland habitat and air quality effects) and help to address consumptive use demand increases that are higher than projected during CERP's development, and delays in implementation of other CERP storage projects – thus enhancing the area's environmental quality and better meeting CERP and project goals.

I.A.1

1. *The alternatives analysis must identify and examine alternative reservoir designs that would minimize the project's significant adverse environmental effects.*

The proposed EAA-A1 Reservoir Project would destroy 16,253 acres of jurisdictional wetlands. Draft SEIS at 3-14, 4-8, 4-27. The area contains natural wetland plant species and supports a wide variety of animal species, including 12 federally listed threatened and endangered species. Draft SEIS at 3-14 – 3-21. Notably, several endangered Florida panthers – one of the most endangered large mammals in the world – have been documented in the EAA in the vicinity of the proposed reservoir.[1] Draft SEIS at 3-16. Destruction of this wetland habitat is a significant

[1] Formal consultation regarding panther impacts is ongoing. Draft SEIS at 4-13.

adverse environmental impact – especially considering CERP's recognition of the need to expand the spatial extent of the Everglades and the ongoing significant loss of wetlands in South Florida.

The Draft SEIS claims it has chosen a project with environmental benefits that offset these adverse effects in the form of "[r]egion-wide improvements in water quality from reductions in phosphorus concentrations entering [stormwater treatment area ("STA")]-3/4,[2] improved timing of water deliveries to WCA 3, and reductions in pulse releases from Lake Okeechobee to the estuaries." Draft SEIS at 4-14; see also Draft SEIS at 4-20. Nowhere, however, does the Draft SEIS detail exactly how the project will in fact realize these benefits, such as with data and/or modeling and with commitments to certain project operations. To the contrary, it says only that it is "anticipated" that *ultimate* operations will result in most of the water in the reservoir being released to STA 3/4 and, presumably, from there to the Everglades – whenever there is a need – and that remaining water will be used to supplement EAA irrigation needs. Draft SEIS at 2-25, 4-43. For an undefined and unlimited "initial" period, releases to the Everglades will be "limited to avoid undesirable impacts due to constraints of the existing [Central and South Florida] Project." Draft SEIS at 2-25, 4-43. Although the Draft SEIS states that the project will result in an additional 210,000 acre-feet of "environmental" water deliveries to WCA 3 on an average annual basis, it does not document when – wet or dry season, wet or dry year – these (or other) deliveries would arrive, nor does it ensure that any beneficial deliveries would be protected in face of competing needs. Draft SEIS at 4-25.[3] The environmental benefits of the EAA-A1 Project are thus ambiguous at best, and fail to counterbalance the adverse effects of the project.

The Draft SEIS also contends that benefits of Florida's "Acceler8 program" – the state plan to keep the construction of a subset of CERP projects on CERP's original timeline – will offset the EAA-A1 Reservoir Project's adverse environmental effects. Draft SEIS at 4-29. However, recent modeling (available at http://modeling.cerpzone.org/pmviewer/index.jsp) shows few positive effects on the Everglades, the estuaries and Lake Okeechobee resulting from the Acceler8 program by 2020. In several areas, the Everglades appear to be *worse* off in 2020 with Acceler8 than they were at the time Congress authorized CERP in 2000.[4]

This recent modeling shows that of 42 indicator regions spread throughout the historic Everglades (from the Loxahatchee National Wildlife Refuge to the southern tip of Everglades

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[2] The Draft SEIS also fails to examine alternatives that would address water quality needs in some other manner, i.e., requiring additional treatment (by the sugar growers) prior to discharge to the project.

[3] The other project benefits the Draft SEIS identifies are: (1) an approximate 3"-6" reduction in Lake Okeechobee stages, (2) 15% reduction in Lake Okeechobee releases to the estuaries, (3) 42% and 33% reductions in backpumping into Lake Okeechobee from North New River Canal and Miami Canal respectively, and (4) 17% reduction in phosphorus concentrations entering STA-3/4. Again, the Draft SEIS does not make clear when Lake Okeechobee's stages will be reduced nor does it put in place operational rules to ensure any project benefits are protected in face of competing needs.

[4] Relying on CERP's previously projected cumulative environmental benefits to somehow render the EAA-A1 Project's impacts insignificant, as the Draft SEIS appears to do, is also inappropriate given the significant delays in many CERP projects coming online and the failure, in the CERP programmatic regulations and related guidance documents, to ensure that the natural system is given a sufficient priority in receiving benefits from those projects that do come on-line. Draft SEIS at 4-26; see also January 10, 2005 comments of NRDC regarding the Master Implementation Sequencing Plan ("MISP")(discussing need for a supplemental EIS), attached as Exhibit 1.

National Park), less than half will be better off in 2020 with Acceler8 than they were in 2000 in terms of extreme low water events, and a full third will be worse off.[5] Looking at 23 of those indicator regions more closely, only three show significant improvement from 2000 conditions in 2020 with Acceler8 (greater than 50% improvement, relative to Natural System Model targets, from 2000 to 2020 with Acceler8); many others show no or little improvement, and in eight regions, conditions will have deteriorated by 2020 with Acceler8 implementation – in six, markedly so (greater than 50% improvement, relative to Natural System Model targets, from 2000 to 2020 with Acceler8).[6]

Dry season and drought conditions in Lake Okeechobee will also deteriorate by 2020 with Acceler8 implementation (in conjunction with increased consumptive use demands). The number of times the Lake stage is below 11 feet will increase from 10 without Acceler8 in 2000 to 13 with Acceler8 implementation as of 2020 (an almost 30 percent increase). The number of times the Lake Okeechobee proposed minimum water level and duration (less than 11 feet for more than 80 days) would be exceeded would double – going from 2 in 2000 to 4 in 2020.

High water problems will also continue to plague most parts of the Everglades in 2020 with the Acceler8 projects operational and increased consumptive use demand. Modeling shows Lake Okeechobee surpassing its extreme high water classification (17 feet) eight times during the period of record – compared to six times without Acceler8 projects operational. Total time spent above 17 feet would decrease, but only by 17%. The number of times the Lake would be above 15 feet for more than 365 days would be unaffected (two times with Acceler8 in 2020 and two times without Acceler8 in 2020); the number of times the Lake would be above 15 feet for more than 30 days would decrease, but only from 22 times to 19 times.

Acceler8 provides similarly small benefits in terms of reducing high water pulses released to the St. Lucie and Caloosahatchee estuaries. Mean monthly flows to the Caloosahatchee estuary exceed the high discharge criteria of 2800 cubic feet per second (cfs) 59 times with Acceler8 projects and 2020 conditions – compared to 74 times without Acceler8 (a 20% reduction). Mean monthly flows exceed the high discharge criteria in the St. Lucie estuary (2000 cfs) 64 times with Acceler8 and 2020 conditions, compared to 68 times without Acceler8 (a six percent reduction).

Documentation from the Acceler8 modelling concerning impacts on Lake Okeechobee and the St. Lucie and Caloosahatchee estuaries is attached as Exhibit 3.

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[5] Comparison is derived from data on CERP's modeling website, http://modeling.cerpzone.org/pmviewer/index.jsp, Chart GE - E3: Extreme High Water/Low Water Summary for Indicator Regions. An indicator region was considered "better" in 2020 if the number of weeks of extreme dry events was closer to the natural system model and "worse" if the number of weeks was further from the natural system model.

[6] Analysis is derived from data on CERP's modeling website, http://modeling.cerpzone.org/pmviewer/index.jsp, Chart GE - E3: Extreme High Water/Low Water Summary for Indicator Regions. Comparisons were made by examining the decrease in the number of extreme high water events as percentages relative to Natural Systems Model targets for the following indicator regions: WCA1-N, WCA1-C, WCA-1S, WCA2A-N, WCA2A-S, WCA2B-N, WCA2B-S, WCA3A-N, WCA3A-NE, WCA3A-NW, WCA3A-NC, WCA3A-SC, WCA-3A-S, WCA3B-N, WCA3B-W, WCA3B-E, the Pennsuco wetlands, Northeast Shark River Slough ("SRS"), Mid-SRS, and Southwest SRS, Taylor Slough, and the Rocky Glades East and Rocky Glades West. See also "Acceler8 Project Benefits for Lake Okeechobee and Related Regions," Interagency Modeling Center ("IMC") presentation to the Water Resources Advisory Commission ("WRAC"), July 7, 2005, attached as Exhibit 2.

Finally, although Acceler8 does not intend to provide the Everglades with more water when it needs it, Acceler8 does intend to provide the Everglades with more water when it does not need, indeed does not want, it. In 2020, *most* Everglades wetlands will be *worse off* in terms of extreme high water levels with Acceler8 than they would be without it. Modeling of the effects of Acceler8 projects and 2020 conditions shows that of 42 indicator regions spread throughout the historic Everglades, half will be worse off in 2020 (in terms of extreme highs) with Acceler8 than they would be without it, and only 17% would be better off.[7] Looking at 23 of those indicator regions more closely, in only five are conditions better in 2020 with Acceler8 than they would be without it , relative to Natural System Model targets, and in only one more than 20% better. In 12 – more than half – conditions are worse, and all of those regions are 20% or more worse, again relative to Natural System Model targets.[8]

Alternative project designs that store additional water or have different operational rules could minimize the project's adverse effects and enhance the area's environmental quality. NEPA requires examination of these alternatives. 40 C.F.R. § 1502.1.

I.A.2

2. *Additional water storage is needed to enhance environmental quality and meet CERP goals.*

As the Corps is well aware, the need for water storage beyond that assumed in the 2000 CERP has become clear. CERP was premised on the development of additional water storage sufficient to provide both for most of then-predicted water use through 2050 and for significant restoration of the natural system. Projected water use in South Florida is, however, surpassing CERP predictions.[9] Because of these increases, the amount of water CERP planned to make available for public supply will not satisfy now-projected demand. At the same time, construction of

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[7] Comparison is derived from data on CERP's modeling website, http://modeling.cerpzone.org/pmviewer/index.jsp, Chart GE - E3: Extreme High Water/Low Water Summary for Indicator Regions. An indicator region was considered "better" in 2020 if the number of weeks of extreme dry events was closer to the natural system model and "worse" if the number of weeks was further from the natural system model.

[8] Analysis is derived from data on CERP's modeling website, http://modeling.cerpzone.org/pmviewer/index.jsp, Chart GE - E3: Extreme High Water/Low Water Summary for Indicator Regions. Comparisons were made by examining the decrease in the number of extreme high water events as percentages relative to Natural Systems Model targets for the following indicator regions: WCA1-N, WCA1-C, WCA-1S, WCA2A-N, WCA2A-S, WCA2B-N, WCA2B-S, WCA3A-N, WCA3A-NE, WCA3A-NW, WCA3A-NC, WCA3A-SC, WCA-3A-S, WCA3B-N, WCA3B-W, WCA3B-E, the Pennsuco wetlands, Northeast Shark River Slough ("SRS"), Mid-SRS, and Southwest SRS, Taylor Slough, and the Rocky Glades East and Rocky Glades West.

[9] Compare water demand predictions in the Plan, available at http://www.evergladesplan.org/docs/comp_plan_apr99/app_e.pdf, at Appendix E-46 – E-50, with 2005 predictions developed as part of updates to the Lower East Coast Regional Water Supply Plan ("LECRWSP"), available at http://www.sfwmd.gov/org/wsd/wsp/lec/update2005/jointmeetings/may2605/baselineprojections.pdf. For post-Plan updated 2000 use numbers, see an earlier LECRWSP update, available at http://www.sfwmd.gov/org/wsd/wsp/lec/update2005/june2404/projections/summarycomparison.pdf. Total water use from the Plan should be adjusted to be comparable to public supply numbers in the May 2005 and June 2004 LECRWSP presentations. See Final Report, Municipal & Industrial Water Use Forecast, Initial CERP Update (August, 2003), available at http://www.evergladesplan.org/pm/recover/recover_docs/icu/muni_ind_water_report_final.pdf, at 173 (discussing adjustments to United States Geological Survey estimates to make numbers comparable).

many of CERP's water storage projects has been delayed, thus exacerbating the problem.[10] If water supplies in addition to those envisioned in CERP are not made available, and absent a decision to provide the natural system with the now-lacking priority for benefits in CERP implementation, CERP may simply help to stop the natural system from suffering additional declines, or reduce the extent of additional declines, while providing and subsidizing the cost of water that enables additional growth in the region.[11] Considering alternatives to the design of SFWMD's EAA-A1 Reservoir Project that would provide for the storage of *additional* water beyond that contemplated in CERP's EAASR Project would offer opportunities to improve the quality of the human environment, to meet CERP goals, and to meet the SFWMD's EAA-A1 Project goals of reducing harmful discharges to the estuaries and providing additional water to meet Everglades and agricultural water demands.

To these ends, the Draft SEIS's alternatives analysis should include detailed evaluation of larger impoundments – both one with a larger aerial extent and a deeper one, and including a combination of the alternatives discussed in the Draft SEIS (a project incorporating reservoirs in cells A1 and A2, as well as in compartments B and C). NEPA requires consideration of whether costs and concerns that may be associated with larger reservoirs are outweighed by the greater environmental benefits that might come with a larger reservoir with greater water storage capacity.

In further elaboration of the above discussion, we attach as Exhibit 5 the following charts: (1) two charts showing the delays in water being made available by CERP; and (2) two charts showing how few dry season benefits are expected to accrue to the Everglades as a result of CERP implementation, given current implementation schedules and increased permitted consumptive use demands.

B. The Draft SEIS Fails to Identify and Examine Environmental Effects of Proposed Alternatives in Adequate Detail. 1.B

The Draft SEIS fails to identify and examine the environmental effects of the alternatives it does

[10] See MISP, available at http://www.evergladesplan.org/pm/pm_docs/misp/040605_misp_report_1.0.pdf, and Re-Engineering Water Storage in the Everglades: Risks and Opportunities (National Academies Press, 2003), available at http://www.nap.edu/books/0309095298/html/, at 28-29 (Table 2-1)(allowing comparison of total storage, in thousand acre-feet, scheduled to be made available in different "bands" under the Plan and the MISP). See the PIRs or Draft PIRs for the Site 1 Impoundment, the EAASR, and the Indian River Lagoon- South projects for more up-to-date estimates of timing and storage capacity for those projects, and the South Florida Water Management District ("SFWMD") website for an up-to-date discussion of plans for Phase 1 of the EAASR project (http://xlr8.sfwmd.gov/portal/page?_pageid=35,226351&_dad=portal&_schema=PORTAL&_piref35_296035_35_276576_276576.pid=3&_piref35_296035_35_276576_276576.cid=2). See the 2000 LECRWSP, available at http://www.sfwmd.gov/org/wsd/wsp/lec/lecdoc.htm, at Table 53, for storage capacity estimates for the C-9 and C-11 reservoirs.

[11] See "Acceler8 Project Benefits for Lake Okeechobee and Related Regions," IMC presentation to the WRAC, July 7, 2005, attached as Exhibit 2 (few benefits accrue to Everglades Protection Area as a result of CERP projects scheduled for completion by 2020, given increased public water supply demands). In fact, the SFWMD recently acknowledged concerns about increasing public water supply demands on Everglades restoration, given delayed CERP implementation schedules. See "Policy Issues Regarding Regional System Water Availability," Scott Burns presentation to the WRAC, February 2, 2006, attached as Exhibit 4 (proposing to begin process of changing permitting rules to address concerns).

consider in adequate detail to allow their comparison and evaluation. The Draft SEIS generally discusses the environmental effects of all the build alternatives together – claiming that the environmental effects of all the build alternatives would be similar. Draft SEIS at 4-1, 4-6, 4-17, 4-24. The Draft SEIS does not indicate how much water would be identified to be reserved for the natural system for each alternative, nor does it explain how each alternative would affect water available as of December 2000 to Everglades National Park and fish and wildlife. To the extent the Draft SEIS does discuss the water the project might make available, it only notes the average annual number of acre-feet the selected alternative is expected to deliver to WCA 3; it does not discuss how water deliveries would vary in wet and dry seasons or wet and dry years, whether the water delivered to WCA 3 is "beneficial" (i.e., how it compares to environmental targets), how the project would affect water delivered to other WCAs and Everglades National Park,[12] specific plans to reserve beneficial water made available by the project for the natural system, operational plans to protect beneficial water made available by the project, or the extent to which the project helps achieve CERP goals. A discussion of all of these issues is needed to allow a meaningful analysis of the environmental effects of the alternatives. For the non-selected alternatives, the Draft SEIS does not even discuss average annual amount of water deliveries.

Moreover, the Draft SEIS fails to discuss the cumulative impacts of the EAA-A1 Reservoir Project. 40 CFR § 1508.7 (defining cumulative impacts as incremental impacts resulting from proposed action when "added to other past, present, and reasonably foreseeable future actions"). The Draft SEIS neglects to examine the effects of the EAA-A1 Reservoir Project in connection with (a) the other EAA reservoir component (currently proposed cell A2), (b) the State's

[12] Based on information in other documents concerning the full EAASR Project, we have significant concerns regarding the project's effects on Everglades wetlands. The Everglades Agricultural Area Storage Reservoirs Revised Draft Integrated PIR/EIS – February 2006 ("Revised Draft EAASR PIR") suggests that the EAASR Project – especially its initial operations – as a whole will have adverse effects in many years on water deliveries to WCA 1, WCA 2A, WCA 3A, WCA 3B and Everglades National Park. Revised Draft EAASR PIR at Ann. G-45 – G-75. The Revised Draft concedes that the project "will slightly decrease inflows and outflows" to WCA 2A. This appears to be the case in almost all years during initial project operations and an overwhelming number of years even if project operations are optimized at some point in the future. The Revised Draft EAASR PIR states that the project "will not substantially change" inflows or outflows for several other WCAs. However, the graphs included in the revised draft make it clear that the project will often reduce inflows and outflows to those areas. For example, for WCA 1, the graphs show inflows being reduced in approximately 50% of years in the period of record with the project and outflows being reduced in almost 70% of years (it is unclear whether these are the same years). For WCA 2B, the graphs show inflows being slightly reduced approximately 50% of years in the period of record with the project and outflows appearing to stay the same – at 0 – for almost all of the period of record. Although the Revised Draft EAASR PIR suggests that the EAASR Project will benefit WCA 3A by creating "in most years" additional inflows to the area, the graphs show that inflows increase in only 70% to 75% of the period of record (depending on whether the focus is initial or optimal project operations); no attempt is made to analyze when – wet season or dry season, wet year or dry year – the project will increase or reduce flows to the area and whether the increased flows are "beneficial." To similar effect, under initial operations, outflow volumes will also decrease with the project approximately 25% of the period of record, and no information elaborates on when and why these reductions take place with project operations. The Revised Draft EAASR PIR also claims that "in most years" the EAASR Project will create "a significant quantity of water through inflows to WCA 3B." However, graphs documenting results of modeling initial project operations show only very small increases in inflows two-thirds to three-quarters of the time, along with similar sized decreases in inflows in 25% to 30% of years. Finally, the Revised Draft EAASR PIR states that the project will increase flows to Everglades National Park "in most years." Under initial operations, however, according to the graphs, the project will in fact decrease flows into the Park in one of every four years. Again, there is no adequate discussion of the environmental implications of the timing of increases and decreases in flows to the Park.

Acceler8 program, and (c) CERP as a whole. Although there was some NEPA documentation conducted at one point for CERP as a whole, i.e., the 1999 EIS, that NEPA analysis cannot be relied on here both because the Corps is claiming that this project is not part of CERP (yet) and the 1999 EIS is wholly outdated and thus now inadequate (as discussed above, because of changes in projects and schedules).

NEPA regulations state that where a draft EIS "is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft." 40 C.F.R. § 1502.9(a). That is what is required here. NRDC requests that the public receive at least as much time to comment on the revised draft as it received to comment on this incomplete one (six weeks).

I.B.1

1. *The Draft SEIS must evaluate differences among the proposed alternatives in the amount of water dedicated and managed for the natural system and in effects on baseline water available to the natural system as of December 2000.*

A meaningful analysis of the environmental effects of the various alternatives would require an understanding of differences among the alternatives regarding how much water would be dedicated, managed, and reserved for the natural system as a result of each alternative;[13] it would also require an assessment of differences in the effects of the alternatives on water available to the natural system as of December 2000. An alternatives analysis that, as required by NEPA, examined all reasonable alternatives would include groups of reservoirs with greater storage capacity. This broader group of alternatives should include options that would dedicate and manage different amounts of water for the natural system and might also have different effects on baseline water available to the natural system as of December 2000. If there were no differences among the alternatives with regard to these issues, the Draft SEIS should make this clear. If there are differences, however, the revised Draft SEIS needs to discuss them, and NRDC looks forward to examining, and expressly reserves its right to comment on, any differences among the proposed alternatives related to these issues.

2. *The Draft SEIS must discuss under what circumstances the different alternatives will make water available to the natural system.* I.B.2

The Draft SEIS fails to discuss in adequate detail the circumstances under which each alternative will deliver water to Everglades National Park and/or the WCAs. Given that the EAA-A1 Reservoir Project (and the EAASR Project of which it is a part) is designed to improve the timing of water deliveries to the Everglades, this information is crucial to allowing a meaningful comparison of the various alternatives. Because the current draft does not provide sufficient information to allow meaningful comparison, a revised draft SEIS is required.

The Draft SEIS needs to be revised to discuss how each of the alternatives – including, as discussed above, alternatives examining larger reservoirs with greater storage capacity –will affect dry and wet season (and wet and dry year) flows to WCAs 1, 2 and 3 and to Everglades National Park.[14] Moreover, a closer look at wet and dry season and wet and dry year effects

[13] The Draft SEIS states only that SFWMD "will use its reservation or allocation authorities . . . to protect water necessary for ecosystem restoration." Draft SEIS at 4-32.

[14] The Revised Draft EAASR PIR makes it clear that there will be significant variations in water deliveries

might help differentiate various alternatives. According to the scientists with Restoration, Coordination, and Verification ("RECOVER") who reviewed the EAASR Project, the effects of different alternatives might be more pronounced in particularly wet or particularly dry years. Revised Draft EAASR PIR at Annex E-8, E-12.[15]

The Draft SEIS suggests the primary purpose of the reservoir is to route water currently sent down the Caloosahatchee and St. Lucie canals from Lake Okeechobee into this reservoir. If there is an actual benefit during wet years to the St. Lucie estuary, the Caloosahatchee estuary, and Lake Okeechobee, it follows then that significantly more than an average of 600,000 acre-ft per year (as suggested in one place in the Basis of Design Report for the EAA-A1 Project) would be routed to the WCAs. However, the Draft SEIS provides no information indicating that such large quantities of water can be moved into the WCAs and the Park without causing harm to the natural system – a concern that has been raised in recent discussions and environmental analyses related to the Modified Water Deliveries Project. The Draft SEIS nowhere specifies how much water will be delivered to the WCAs in wet and dry seasons or wet and dry years and thus does not demonstrate the project can or will be operated in an environmentally beneficial manner, consistent with the goals and objectives of CERP.

Moreover, the Draft SEIS fails to adequately discuss the operating rules for the project and related projects' operations. The Draft SEIS needs to be revised to address how various alternative formulations of the proposed reservoirs would be operated – how and when water would be routed to satisfy agricultural needs as opposed to environmental ones, when Lake Okeechobee stages would be reduced, and how different reservoir designs might allow for operational regimes that would help protect water quality.[16]

I.B.3

3. *The Draft SEIS must evaluate the full range of impacts of the different alternatives and identify methods used in the analyses.*

An EIS is required to clearly identify the methodologies and scientific information used to support conclusions. 40 CFR 1502.24. The Draft SEIS fails to disclose the basis of critical

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throughout the year for the EAASR Project. As one annex to the draft notes:

> Although the EAASR will provide water to the [stormwater treatment areas] much of the year, there are long periods in which the EAASR may be below grade (less than 0 feet). The Draft Water Quality Assessment Report (Water and Air Research, Inc. 2005) indicates that 20% of the time the EAASR will be below grade and an additional 28% of the time the reservoir will be from 0-1 foot.

Revised Draft EAASR PIR at Annex E-11.

[15] Annex E to the Revised Draft EAASR PIR notes, at E-14:

> It may also be worthwhile for the project team to request output for all four [Next added Increment, (NAI)] alternative plans based on wettest and driest years when the updated modeling is generated. This output could then be examined for potential significant differences between the four NAI options. Currently this was done for only a single alternative.

[16] Another operational issue several agencies raised in reviewing the Draft PIR/EIS for the EAASR Project is the effect reservoir dry-out could have on water quality, especially mercury pollution. See, e.g., Revised Draft EAASR PIR at Annex E-9. The Draft SEIS indicates only that a monitoring program will be put in place to address this issue. Draft SEIS at ES-12.

conclusions. Specifically, the Draft SEIS claims in several places (pages ES-3, ES-7, 1-5, 4-25) that the project will result in benefits to in Lake Okeechobee, the St. Lucie and Caloosahatchee estuaries, the WCAs, and Everglades National Park. Section 4.7 of the Draft SEIS makes broad assertions about the expected cumulative effects of the selected alternative, and claims significant environmental benefits from the project. Yet, nowhere in the document is there a rigorous or objective analysis of these claimed effects. No appropriate scientific information is put forward or referenced, and no methodologies are identified.

Not only are the conclusions in Section 4.7 not supported, but they are inconsistent with information in other documents concerning the same project. Section 4.7 claims the reservoir will result in improved water quality to the WCAs.[17] However, in the Revised Draft EAASR PIR, the Corps anticipates that the capacity of STA-3/4 will be exceeded, and adds a "conceptual" STA.[18] If the capacity of the STA is exceeded, then it is incorrect to claim simply that water quality will improve, or even meet water quality standards. Section 4.7 also states that the project will provide 200,000 ac-ft of additional water to WCA 3, yet the Basis of Design Report claims an average delivery from EAA-A1 Reservoir to STA-3/4 of 901,000 ac-ft per year, with a maximum of 2.256 million acre-ft per year.[19] Section 4.7 claims reduction in discharges to the coastal estuaries; other sections claim "reduction of harmful discharges to the coastal estuaries." Draft SEIS at ES-3. However, the RECOVER analysis concludes, even with both EAA reservoir cells complete, there would be no change in the number of high volume discharge events to the Caloosahatchee, the St. Lucie, or the Lake Worth Lagoon.[20] Section 4.7 claims a timing benefit from the EAA-A1 Reservoir, yet the analysis by RECOVER[21] indicates longer hydroperiods and deeper ponding in WCA 3, which likely indicates a problem with timing, and strongly indicates that there are significant potential and un-examined environmental damages resulting from implementation of the project as proposed.

An EIS is also required to evaluate the areas affected by the alternatives. 40 CFR 1502.15. The Draft SEIS in Section 4.7 claims to have beneficial effects in Lake Okeechobee, the St. Lucie and Caloosahatchee estuaries, the WCAs, and Everglades National Park. Yet, there is no rigorous or objective analysis of the effects of the selected alternative on any of those areas. Section 3, which should contain a description of all of the areas affected by the alternatives, does not even describe those areas, nor does it describe what the potential effects of the project on those areas would be. Thus, the Draft SEIS fails to identify and evaluate all of the areas affected by the alternatives.

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[17] Draft SEIS (at Section 4.7, pages 4-25 – 4-26) states, "Increased residence times of water within the STAs will ensure better treatment of waters released to the WCAs and have beneficial water quality effects on all downstream ecosystems.

[18] Corps of Engineers, Everglades Agricultural Area Storage Reservoirs, Revised Draft PIR, dated Feb 2006, Section 5.3.11.4, page 5-26.

[19] SFWMD and Black and Veatch, EAA Storage Reservoir A-1 Basis of Design Report, October 2005 ("BODR"), page 6-4.

[20] Revised Draft EAASR PIR at Ann. E-8, E-9.

[21] Revised Draft EAASR PIR at Ann. E-19 – E-29 (Tables A-2 and A-3).

II. The Draft SEIS fails to Include a Project Implementation Report ("PIR") as Required by the Water Resources Development Act ("WRDA") 2000 § 601(b)(2)(D)(i).

WRDA 2000 § 601(b)(2)(D)(i) states that "[b]efore implementation of a project described in any of the clauses (i) through (x), [which include at clause (ii) the Everglades Agricultural Area Storage Reservoirs – Phase I,] the Secretary shall review and approve for the project a [PIR] in accordance with subsections (f) and (h)." See also WRDA 2000 § 601(c)(2). Subsection (h), in turn, requires that projects be implemented "to ensure the improvement of the environment of the South Florida Ecosystem and to achieve and maintain the benefits to the natural system and human environment described in [CERP]." In particular, PIRs must be consistent with CERP and WRDA 2000's programmatic regulations, identify the appropriate quantity, timing and distribution of water dedicated and managed for the natural system, and identify the amount of water to be reserved or allocated for the natural system. WRDA 2000 § 601(h)(4)(A)(iii).[22]

Despite the fact that the proposed EAA-A1 Reservoir project is part of CERP and initially authorized by WRDA 2000, the SFWMD proposes to move ahead with construction of the reservoir without a completed PIR. The Draft SEIS contends that SFWMD's EAA-A1 Reservoir Project is separate and independent from the EAASR Project as a whole and, apparently as a result, that a PIR need not be completed before work on the project commences. Draft SEIS at ES-2, 1-2, 1-4. This is, at best, disingenuous, and at worst an effort to do an end run around WRDA 2000's carefully crafted requirements for CERP projects. These requirements were designed, among other things, to ensure that a specified group of projects aiming to restore the Everglades ecosystem were carefully developed to ensure that they dedicate and manage sufficient water for the natural system, that the identified natural system water is adequately protected, and that the projects do not reduce beneficial water available to the natural system or existing users as of December 2000. The Draft SEIS concedes that the EAA-A1 Reservoir Project is comprised of one of the two currently proposed cells of the EAASR Project as a whole and in several instances explicitly references and relies on analyses completed as part of the PIR process for the EAASR Project. Draft SEIS at ES-1, ES-2, 1-1, 3-1, 3-8, 3-12, 3-16, 3-24, 3-27,

[22] Even if the Corps is taking the position that legal requirements for PIRs can be satisfied through use of a document other than an actual PIR – a position without legal support – the Draft SEIS does not meet these requirements. (Notably, the BODR (at pages 4-6 – 4-7) indicates that a PIR would be completed to comply with CERP requirements.) The Draft SEIS does not comply with Section 601(h)(4)(A)(iii)(I) of WRDA 2000 because it is not consistent with CERP: it fails to provide sufficient information to show that the project will meet CERP goals and does not identify water to be reserved for the natural system. The Draft SEIS also fails to comply with Sections 601(h)(4)(A)(iii)(V) and 601(h)(2)(A) of WRDA 2000, with the Comprehensive Everglades Restoration Plan Assurance of Project Benefits Agreement ("CERP Agreement"), and with Section 601(h)(5)("Savings Clause") – the document includes no information at all about these issues. Finally the Draft SEIS fails to comply with federal regulations and WRDA 2000 § 601(h)(4(C)(i) because the Draft SEIS contains no draft operating manual. The BODR contains a draft Project Operating Manual ("POM"); however, it is unclear if the Corps intends to change or incorporate this draft into project documents, and, in any event, the draft POM in the BODR nowhere specifies (as it must) how operations would protect environmental benefits in the event of conflicts among, for example, agricultural and environmental needs. See, e.g., BODR at 20-15 (describing how the reservoir might be operated to provide water to the EAA and the Everglades during dry conditions, but not discussing how choices would be made among recipients). Nor does the draft POM demonstrate how operations would be consistent with the identification or reservation of water for the natural system, nor how they would be consistent with savings clause protection for Everglades National Park or fish and wildlife. BODR at 20-16 – 20-17. See also 33 C.F.R. §§ 385.11, 385.26(a)(3), 385.35, 385.35, 385.28(a)(6)(vi), 385.26(a)(3)(xvi), 385.28(a)(1) and (a)(6)(i), 385.28(c), and 385.35(c).

4-12, 4-24, 4-28, 5-3. A reservoir – like the proposed EAA-A1 reservoir – that is situated in the footprint of a CERP project and relies on CERP project analyses for permitting purposes cannot proceed without complying with CERP project requirements.

The Draft SEIS claims that allowing SFWMD to proceed with construction of what amounts to slightly more than half of the EAASR Project, as the agencies now conceive it, will not interfere with the "independent" process by which the EAASR Project as a whole is designed and approved. Draft SEIS at ES-2 – ES-3. This claim, however, is undermined by the text of the document itself. Once SFWMD has constructed the EAA-A1 Reservoir, the Corps will be limited in its ability to alter the design of that reservoir cell as part of its approval process for the EAASR Project: even if a different reservoir cell A1 configuration would have made sense for the EAASR Project in the first instance, once the cell is constructed, the cost and practical difficulties of changes may mean that a less environmentally optimal configuration becomes the best *available* option. For example, the Draft SEIS indicates that SFWMD's design for the A1 cell includes only a 150-foot wetland buffer, instead of the 200-foot buffer included in the September Draft PIR/EIS for the EAASR Project. Draft SEIS at 2-24.[23] Once the A1 cell is constructed with a 150 foot buffer, the larger one recommended as part of the CERP approval process may become impractical to construct. Similarly, if members of the public provide comments suggesting that the EAASR Project should use deeper reservoirs to supply more water for Everglades restoration, the Corps' ability to accede to those comments would be limited if a significant portion of the proposed reservoir was already constructed at a lesser depth.

III. Approval of the EAA-A1 Reservoir Project Based on the Information in the Draft SEIS Would Violate the Clean Water Act.

Section 404 of the Clean Water Act ("CWA") authorizes the Corps to issue permits for the discharge of "dredged or fill materials" into waters of the United States provided that permitted activities comply with specified legal requirements. 33 U.S.C § 1344.[24] Those regulations require the Corps to give wetlands the highest possible level of protection. As the regulations explain, "wetlands constitute a productive and valuable public resource, the unnecessary alteration and destruction of which should be discouraged as contrary to the public interest." 33 C.F.R. § 320.4(b). To similar effect, the regulations state: "[f]rom a national perspective, the degradation or destruction of . . . wetlands is considered to be among the most severe environmental impacts," and that "[t]he guiding principle should be that degradation or destruction of [wetlands] may represent an irreversible loss of valuable aquatic resources." 40 C.F.R. § 230.1(d).

Despite these requirements, the Draft SEIS for the EAA-A1 Reservoir Project dismisses the harm it will cause to more than 16,000 acres of wetlands, including almost 200 acres of

[23] This 200 foot buffer also serves to provide wetland habitat to partially offset the adverse effects of the EAASR Project as a whole on wetlands. Revised Draft EAASR PIR at Annex B.

[24] There are two sets of implementing regulations governing the Corps' decisions to issue 404 permits, 33 C.F.R. § 320.4(b)(4) – one that was promulgated by the Corps itself, 33 C.F.R. Parts 320-330, and one that was promulgated by the Environmental Protection Agency ("EPA"), called the "404 Guidelines." 40 C.F.R. §§ 230.1-230.80. The EPA's regulations – called "guidelines" – are binding on the Corps. 40 C.F.R. Part 230; 33 C.F.R. § 320.4(b)(4).

remaining natural wetlands, in South Florida by pointing in large part to the benefits that *other* projects *may* provide to wetlands in the area. The Draft SEIS in no way requires the construction of those other projects, however; nor does it in fact show that those projects will realize sufficient benefits to offset the harm caused as a result of construction of a water supply reservoir in historic Everglades wetlands. Moreover, the Draft SEIS fails to examine other practicable alternatives to the design of the proposed reservoir itself that would provide greater environmental benefits and thus have less of an adverse impact on the aquatic ecosystem. In short, the analysis in the Draft SEIS falls far short of what the CWA requires.

III.A

A. *The EAA-A1 Reservoir Project is Contrary to the Public Interest.*

In deciding whether to grant or deny a Section 404 Permit, the Corps must determine – based on a variety of factors – that a proposed project is not contrary to the public interest.
33 CFR §§ 320.1, 320.4(a)(listing factors relevant to the public interest review).
To make that determination, the Corps must find (among other things) that a proposed discharge "will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern," and will not "cause or contribute to significant degradation of [wetlands]" by destroying wildlife habitat, for example. 40 CFR §§ 230.1(c), 230.10(c), 230.10(c)(3). In addition, the Corps may not permit discharges into most wetlands[25] unless it finds that "the benefits of the proposed alteration outweigh the damage to the wetlands resource." Id. § 320.4(b)(4).

According to current Corps and EPA Guidance, permittees must first seek to avoid wetland impacts, then minimize wetland impacts and, only as a last resort, compensate for wetland impacts with mitigation. 33 CFR § 320.4(r), 40 CFR § 1508.20; see also Memorandum of Agreement: The Determination of Mitigation Under The Clean Water Act Section 404(b)(1) Guidelines, available at http://www.epa.gov/owow/wetlands/regs/mitigate.html ("MOA"). Generally speaking, the guidance indicates that mitigation should take the form of restoration of existing degraded wetlands or creation of man-made wetlands on or near a project site. Importantly, functional values of impacted wetlands must be assessed to determine whether offsetting compensatory mitigation is sufficient to ensure no net loss of wetland functions. MOA at II.B, II.C.3. Moreover, although mitigation completed after a project is approved and completed may, in limited instances, be permissible, the guidance states that in those cases Districts should require: "1) a Corps-approved mitigation plan; 2) a secured mitigation project site; 3) appropriate financial assurances in place; and, 4) legally protected, adequate water rights, where appropriate." Corps Regulatory Guidance Letter, December 24, 2002 ("2002 Guidance Letter"), at 7, available at http://www.epa.gov/owow/wetlands/pdf/RGL_02-2.pdf (also requiring mitigation work plans, performance standards, and monitoring and long-term management, among other things).

Despite these requirements, the Draft SEIS does not make any assessment of the functional values of the wetlands that would be destroyed by the project, require the creation, protection or

[25] The regulations identify seven types of functions performed by wetlands that are "important to the public interest." Id. These include "[w]etlands which serve significant natural biological functions, including food chain production, general habitat and nesting, spawning, rearing and resting sites for aquatic or land species," and "[w]etlands which are unique in nature or scarce in quantity to the region or local area." 33 C.F.R. § 320.4(b)(2) (emphasis added).

restoration of any wetlands (let alone any specific wetlands), or include any detailed mitigation plan. Instead, the Draft SEIS suggests that mitigation has been provided for the EAA-A1 Reservoir Project's adverse effects on wetlands in a section of the executive summary titled "Feasible Measures to Avoid or Minimize Potential Adverse Effects to the Human Environment." There, the Draft SEIS contends briefly that Florida's proposed Acceler8 projects:

> [o]perated together as a system . . . are anticipated to provide environmental benefit to the south Florida ecosystem through improving water deliveries and maintaining natural salinity balance in the estuaries; improving natural habitats throughout the south Florida ecosystem by reducing high water levels; restoring and enhancing wetlands by improving timing and hydrology, restoring sheet flow and controlling seepage; and improving water quality by water diversion and storage prior to discharge into the natural system.

Draft SEIS at ES-10. The Draft SEIS also lists several actions SFWMD plans to take to minimize the project's adverse effects. Among others, SFWMD plans to employ best management practices, use special protocols to protect endangered and threatened species, and monitor mercury levels in the reservoir. Draft SEIS at ES-11 – ES-12. Finally, the Draft SEIS commits the State of Florida to using its reservation authorities under state law to "protect water necessary for ecosystem restoration." Draft SEIS at ES-12, 4-32. The Draft SEIS apparently contends that this "mitigation" offsets the adverse effects of the EAA-A1 Project.[26] Draft SEIS at ES-10. It does not.[27]

First, the bulk of the so-called "mitigation" is comprised of speculative future projects – projects in varying stages of design and implementation, and which may or may not proceed according to current designs and schedules. Completion of those projects is in no way guaranteed, nor are the benefits of those projects assured with issuance of a Section 404 permit for the EAA-A1 Reservoir Project. A mere statement that future projects, if completed as proposed in the Draft SEIS, would offset the adverse effects of current construction of a water supply reservoir in Everglades wetlands falls far short of true mitigation – that is, concrete changes to the design of a project or, at the least, offsetting wetland purchase, creation, and/or protection required by a permit.[28] See Corps 2002 Guidance Letter at 7-11; see also, e.g., Wetlands Action Network v.

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[26] The Draft SEIS does not specifically point to benefits of the EAA-A1 Reservoir Project itself as "mitigation" offsetting the project's adverse effects. In any event, relying on the benefits the EAA-A1 Reservoir Project itself discussed in the SEIS is inappropriate because, as discussed above, those benefits have not been adequately demonstrated.

[27] Moreover, this type of mitigation must be included as a condition of the permit, pursuant to 33 CFR part 325.4.

[28] The Revised Draft EAASR PIR (made available for public comment on February 24; comments are due April 10) contains a draft 404(B)(1) Guidelines Evaluation in Annex B, which focuses almost exclusively on footprint impacts, fill characteristics, etc. The Revised Draft PIR contends that the destruction of 206 acres of functional (though degraded) wetlands in the reservoir footprint is mitigated by the creation of 560 acres of engineered wetlands and uplands in the seepage buffer and 76 acres of littoral shelves in the canals. The Revised Draft PIR states – without supporting documentation – that this represents a doubling of wetland function at the site. Revised Draft PIR at Ann. B-8. No similar analysis appears in the Draft SEIS regarding the effects of the EAA-A1 Reservoir Project on either the 16,000+ total acres of wetlands or the 187 acres of remaining natural wetlands on the site. Draft SEIS at 3-14. The Revised Draft PIR also claims that the "benefits of the project" help offset project impacts; as in the Draft SEIS, these benefits are not adequately documented. Revised Draft PIR at Ann. B-8.

U.S. Army Corps of Engineers, 222 F.3d 1105, 1121-22 (9th Cir. 2000)(mitigation plan incomplete at time of permit issuance but project could not proceed until detailed plans submitted to and approved by the Corps); National Wildlife Fed'n v. Whistler, 27 F.3d 1341, 1343, 1346 (8th Cir.1994)(requiring enhancement of 20-acre mitigation area); Wyoming Outdoor Council Powder River Basin Resources Council v. U.S., 351 F. Supp. 2d 1232 (D. Wyo. 2005)(general permit unlawful where finding that effects on wetlands would be insignificant based on "speculative" mitigation).

Second, as discussed at length above, even assuming that the Acceler8 projects proceed according to current plans, recent modeling (available at http://modeling.cerpzone.org/pmviewer/index.jsp) shows few positive effects on the Everglades, the estuaries and Lake Okeechobee resulting from the Acceler8 program by 2020. In several areas, the Everglades appear to be *worse* off in 2020 with Acceler8 than they were at the time Congress passed CERP in 2000.[29]

Finally, although the Draft SEIS states that the State intends to use its reservation authority to protect water "necessary" for Everglades restoration, it is unclear about whether the EAA-A1 Reservoir Project will actually generate water needed for Everglades restoration, and thus whether any water will be reserved for the natural system as a result of the project. In fact, the Draft SEIS says that, at least as an "initial" matter, the environmental benefits of the project (in terms of providing needed water to Everglades wetlands) will be "limited to avoid creating undesirable impacts due to constraints" of existing infrastructure. Draft SEIS at 4-33. Although the Draft SEIS indicates that the project (as operated in 2010) will reduce water levels in Lake Okeechobee on average by 3-6 inches, it does not indicate when the levels would be reduced, when they would not be reduced, and when they might increase. Similarly, although the Draft SEIS indicates that the project would provide 210,000 acre-feet of annual average "environmental" water deliveries to WCA 3, it fails to document when it would provide those deliveries. This information is crucial to determining the true benefits of these changes and thus whether and when water would be available for reservation purposes.

In short, the Draft SEIS neither requires nor adequately demonstrates the so-called benefits of the EAA-A1 Reservoir Project and other Acceler8 projects, which the Draft SEIS contends minimize and mitigate for the project's adverse effects. Moreover, it ignores CWA requirements and guidance that require (1) mitigation to occur as a last resort – i.e., only after adverse effects on wetlands have been avoided and minimized, and (2) sufficient evaluation of proposed mitigation to ensure that a project causes, to the extent practicable, no net loss of wetland functions.

B. *The Draft SEIS Fails to Examine Practicable Alternatives With Less Adverse Impacts on Wetlands.* III.B

Regulations also strictly prohibit the Corps from issuing any permit "if there is a practicable alternative . . . which would have less adverse impact on the aquatic ecosystem." 40 C.F.R. § 230.10(a). An alternative is considered "practicable" if it is "available and capable of being done

[29] As discussed above, relying on CERP's previously projected cumulative environmental benefits to somehow render the EAA-A1 Project's impacts insignificant, as the Draft SEIS appears to do, is also inappropriate.

after taking into consideration cost, existing technology, and logistics in light of overall project purposes." Id. § 230.10 (a)(2). Practicable alternatives are presumed to be available unless "clearly demonstrated otherwise." 40 C.F.R. § 230.10(a)(3).

As discussed above, the Draft SEIS fails to examine any alternative reservoirs that would provide more than 190,000 acre-feet of water storage. By neglecting to analyze configurations of reservoirs that would provide more storage, the Draft SEIS ignores potentially practicable alternatives that would achieve project goals while minimizing adverse effects. A larger reservoir would likely be able to deliver more beneficial water to WCA 3 as well as other WCAs and Everglades National Park. This would provide greater environmental benefits to offset the project's adverse effects on important wetland habitat.[30]

Approval of the proposed EAA-A1 Reservoir Project without proper evaluation of all practicable alternatives and without proper determination of the public interest is in violation of Section 404 of the Clean Water Act, 33 U.S.C. § 1344; and the Defendant Corps' regulations and guidelines, 33 C.F.R. §§ 320, 323; 40 C.F.R. § 230.10.

* * * *

In further support of these comments, I include the following:

(1) Exhibit 6: Letter to Col. R. Carpenter from B. Sewell, dated Feb. 4, 2005;
(2) Exhibit 7: Letter to R. Weiss from B. Sewell, dated April 4, 2005;
(3) Exhibit 8: Letter to U.S. Army Corps of Engineers from B. Sewell, dated June 6, 2005;
(4) Exhibit 9: Letter to U.S. Army Corps of Engineers from B. Sewell, dated June 3, 2005;
(5) Exhibit 10: Letter to R. Weiss from B. Sewell, dated Feb. 6, 2006;
(6) Exhibit 11: The Economist, "Water, bird and man," Oct. 8, 2005.

Sincerely,

Bradford H. Sewell
Senior Attorney

[30] Also, as discussed above, an adequate discussion of practicable alternatives would include information about the amount of water that would be dedicated, managed and reserved for the natural system as a result of each alternative, as well as of operational regimes that would protect project benefits.

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

March 27, 2006

Colonel Robert Carpenter
Commander
United States Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Colonel Carpenter: Bob

Thank you for the opportunity to review and provide comments on the *Everglades Agriculture Area Reservoir A-1, Draft Supplemental Environmental Impact Statement, January* 2006 (Acceler8 EIS), which has been prepared to support the Department of the Army's regulatory evaluation pursuant to Section 404 of the Clean Water Act on the South Florida Water Management District (SFWMD) Everglades Agricultural Area (EAA) Reservoir A-1 (Reservoir A-1) Acceler8 Project. It is our understanding that that the Acceler8 EIS is a supplemental EIS for the *Central and Southern Florida Project EAA Storage Reservoirs Revised Draft Integrated Project Implementation Report Environmental Impact Statement, February 2006* (PIR EIS) and as such is interlinked with the PIR EIS. A discussion of this linkage should be part of the Administrative Record on the permit action. We are reviewing the Acceler8 EIS in light of the letter dated October 13, 2004, from Colleen M. Castille and Henry Dean to John Paul Woodley and Marti Allbright which reaffirms the guiding principles agreed upon by the State of Florida and the federal agencies to implement the Acceler8 projects efficiently and effectively including, in particular:

- Focus on implementing the Plan (Comprehensive Everglades Restoration Plan);
- Assure consistency with the requirements of the Water Resource Development Act of 2000 and applicable state and federal law; and
- Assure full compliance with all existing state and federal regulatory programs, including National Environmental Policy Act, through efficient timely integration with the project development efforts.

The Department believes that the expeditious increase in water storage is essential to the successful implementation of CERP and commends the efforts of the State of Florida in moving ahead to accelerate construction of the Reservoir A-1.

The Department of the Interior (Department) supports the SFWMD's proposed Acceler8 project, Reservoir A-1, consisting of the construction of an above-ground reservoir for water storage, with a capacity of 190,000 acre-feet at an approximate depth of 12-feet. It is the understanding of the Department that the SFWMD's proposed Reservoir A-1 project footprint is the same footprint as Cell A-1 of the Comprehensive Everglades Restoration Plan (CERP) tentatively selected plan contained in the *Central and Southern Florida Project EAA Storage Reservoirs*

Revised Draft Integrated Project Implementation Report Environmental Impact Statement, February 2006 (PIR EIS). Funds contributed by the Department for Everglades restoration pursuant to the Farm Bill Section 390 of the Federal Agriculture Improvement and Reform Act of 1966 (Public Law 104-127, 110 Stat. 1022) were utilized to purchase lands within the Reservoir A-1 project footprint. The discussion of the linkage to the CERP PIR is essential in assuring that these lands are used consistent with legislative requirements.

The goals and objectives of the SFWMD's proposed Reservoir A-1 appear to be consistent with the EAA Storage Reservoirs CERP project purpose of providing storage for releases from Lake Okeechobee to reduce the harmful effects of flood control releases on the St. Lucie and Caloosahatchee Estuaries, enabling more effective management of water levels in Lake Okeechobee to promote recovery of fish and wildlife habitat resources in the Lake, providing a source of additional water to improve fish and wildlife habitat in the Everglades, and providing an alternate source of water for agricultural water supply needs in the EAA. The Acceler8 EIS describes anticipated benefits, but it is unclear how the benefits of the project will be provided. We recommend that in the final Acceler8 EIS, these identified benefits be explained in more detail.

We believe it is essential that this facility be operated in accordance with the operating protocols discussed in the final PIR EIS for the EAA Storage Reservoirs and that the permit be conditioned accordingly. This linkage will ensure that the project benefits contemplated by the CERP will be achieved and maintained. Given that Acceler8 is an advancement by the State of planned federal projects within the CERP, it is important for the SFWMD to design, construct, and operate the Acceler8 projects consistent with CERP, the Programmatic Regulations, and the Central and Southern Florida Project purposes as a whole.

We are pleased that the Acceler8 EIS states that the "State will use its reservation or allocation authorities pursuant to Chapter 373 Florida Statutes to protect water necessary for ecosystem restoration". We believe that protection of this water is an essential component for assuring the benefits of Everglades restoration. We believe that the amounts of water identified in the PIR EIS should be used as the basis for the reservation or allocation pursuant to Florida law. As stated above, we recommend that the Administrative Record for this permit action memorialize this linkage and understanding for the basis for water reservations or allocations.

We are also pleased that in keeping with the purpose of the CERP project, the Acceler8 EIS correctly states that "releases will be made into the North New River Canal to provide supplemental irrigation for water users in the EAA when there is water remaining in the reservoir after deliveries to the Everglades, otherwise irrigation supply will be maintained via deliveries from Lake Okeechobee". However, the Acceler8 EIS does not discuss the CERP Savings Clause transfer of water for agricultural users from Lake Okeechobee to the A-1 Reservoir, nor does the Acceler8 EIS discuss any other Savings Clause eliminations or transfers. We believe that the PIR EIS analysis will ensure that the Savings Clause issues are properly addressed and is a further reason to link and reference the PIR EIS as part of the action on this permit.

The Department is interested in continuing conversations to determine the potential wetland habitat functionality. We believe that the Corps and the SFWMD intend to implement

Everglades Rainfall Driven Operations in the operation of this project. Implementation of that operational regime in this project, combined with changes to the Lake Okeechobee Regulation Schedule, will provide important benefits to the natural system. The Department is supportive of allowing natural recruitment of vegetation within the buffer and supports continued discussions and evaluation as indicated in the Acceler8 EIS.

Technical comments from the United States Fish and Wildlife Service are attached. In particular, we ask the Corps and the SFWMD to consider incorporating into the project designs the recommendations in Section 2, Ecological Features, to minimize any adverse environmental effects of the project. We also believe that the draft Acceler8 EIS can be improved by clarifying the cumulative impacts from the full build-out of the EAA Storage Reservoirs. It is important that the environmental impacts be fully disclosed and analyzed. The Department appreciates the efforts of the Corps and the SFWMD to develop this draft report and we look forward to working with you as this important project is implemented.

Sincerely,

Terrence C. Salt
Director of Everglades Restoration Initiatives

Attachment

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U.S. Fish and Wildlife Technical Comments

Draft Supplemental Environmental Impact Statement (SEIS) for the Everglades Agricultural Area Reservoir A-1 Project (A-1 Project) – South Florida Water Management District (District)

1. Seepage to Holey Land: Section 2.4.1.2, Groundwater Modeling Evaluation
Of the five groundwater modeling alternatives discussed in the A-1 Project draft SEIS, Alternative 1 was determined to be the most effective at preventing migration of seepage to the adjacent agricultural areas, Stormwater Treatment Area 3/4 (STA-3/4), and Holey Land, and preventing impacts to US 27. However, due to costs, it was eliminated from consideration. Alternative 3 was chosen. The seepage to STA-3/4 and to the Supply Canal in Alternative 3 is estimated to be approximately 10 percent (63,000 acre-feet per year) of the STA-3/4 annual treatment capacity. The additional flow to Holey Land would be approximately 3,600 acre-feet per year and groundwater levels would rise by up to 2 feet (ft) when the EAA Reservoir A-1 is at its average water depth of 8.8 ft. The Service recommends the District contact the Florida Fish and Wildlife Conservation Commission (FWC) to ascertain potential ecological effects to Holey Land as a result of the seepage. 1

2. Ecological Features: Section 2.5.8; Other Features/Wetland Buffer; Section 4.8 Irreversible and Irretrievable Commitment of Resources; Section 4.2.9.2 Fish and Wildlife/Build Alternatives

(1) The A-1 Project draft SEIS indicates that the "Seepage Buffer Wetlands and Littoral Shelves in Cap Rock" shall be placed elsewhere within the project. It is unclear where these features will be located. We are currently coordinating with the District project manager to determine the potential wetland habitat functionality of the proposed non-contoured and non-vegetated buffer, as well as the non-contoured littoral shelf (see below). 2.1

(2) Both the Comprehensive Everglades Restoration Plan (CERP) revised draft Project Implementation Report/Environmental Impact Statement (PIR/EIS) and the A-1 Project draft SEIS include a 50-ft wide maintenance road along the exterior toe of the reservoir levee. The draft SEIS indicates that according to the District's Basis of Design Report (BODR), the entire buffer must remain clear and dry for visual inspections. The Service understands that the Florida Department of Environmental Protection (DEP) recommends that an additional 50-ft wide area be established adjacent to the maintenance road and the area be kept dry and clear for a period of time in order to conduct visual inspections related to seepage. Recent conversations indicate that the Corps does not agree with these assessments or recommendations. The A-1 Project draft SEIS also indicates that the possibility of allowing natural recruitment of vegetation within the buffer (appropriate to the hydroperiod attained at that elevation) is under evaluation. However, based on recent conversations with the District, we understand that the A-1 Project will likely include scraping the entire buffer area down to the cap rock in order to allow movement of heavy equipment, and that all or some of the soil may not be 2.2

replaced. A scraped buffer will not allow natural recruitment of vegetation except perhaps in small isolated pockets and is unlikely to provide local ecological benefits.

(3) The A-1 Project draft SEIS indicates that although the CERP project is including a 200-ft seepage buffer complete with ecological features, the A-1 Project will include a 150-ft seepage buffer without ecological features. The establishment of a 150-ft buffer would be irreversible, and preclude or reduce inclusion of the ecological features along the eastern and northern portions of the A-1 Reservoir (Cell 1) as outlined in the revised draft PIR/EIS for the CERP project. The removal of soil would also be irreversible unless soil was brought in to the project area from another source. The Service continues to support a 200-ft buffer with a 50-ft maintenance area along the toe of the levee, the replacement of soil and natural recruitment of vegetation along the next 50 ft of land, and the establishment of additional wetland, upland, and littoral shelf ecological features along the remaining 100-ft area as described in the revised draft PIR/EIS for the EAA CERP Project which contains the Service's draft Fish and Wildlife Coordination Act (FWCA) report. The only exception would be the buffer area along the Woerner tract where creation of upland rather than wetland habitat would be preferable due to contaminant issues (see item 4. below). We recommend the final supplemental SEIS include: 1) whether and over what percentage of area the soil will be replaced; 2) whether the District will allow natural recruitment of vegetation within the buffer area; and 3) specifics as to whether contoured ecological features with benefits similar to those discussed in the revised draft PIR/EIS will be included. 2.3

(4) According to the A-1 Project draft SEIS, the District estimates that the 150-ft buffer strip "strikes an appropriate balance among function, local environmental enhancements, and cost." From the description provided in the draft SEIS, there appears to be limited local environmental enhancements associated with the A-1 Project buffer, when compared to the revised draft PIR/EIS. We recommend the District provide in the final SEIS a justification as to why the buffer area will be less than 200 ft wide as described in the draft revised PIR/EIS, and how the proposed seepage buffer provides "environmental enhancements." 2.4

(5) The A-1 Project draft SEIS indicates that a littoral zone will be constructed between the reservoir and seepage canal and that it will provide habitat for invertebrates, fish, and amphibians. From recent conversations with the District, it appears that a littoral shelf will not be "constructed", but, rather, that the non-contoured edge of the seepage canal is expected to provide littoral habitat, without contouring to a 1:5 slope as indicated in the revised draft PIR/EIS for the CERP project. Although this non-contoured area may provide some limited habitat, it is unlikely to provide the intended ecological function as outlined in the revised draft PIR/EIS. We recommend that the contoured littoral shelf be included in the A-1 Project. We recommend the final SEIS include a physical description of the edge of the seepage canal indicating the type, extent, and functionality of littoral habitat that will be created, as well as the approximate percentage of time the seepage canal will be completely inundated to provide potential adjacent littoral habitat. 2.5

3. Draft SEIS Identified Benefits: Section 2.5.9 Operations; Section 4.3.2 Water Quality/Build Alternatives; Section 4.2.6.2 Federally Listed Species/Build

Alternatives; Section 4.7 Cumulative Impacts; and Section 4.11.2 Operation Commitments 3

These sections, among others, refer to the operations, modeling, and potential benefits of the A-1 Project. The District has indicated that based on initial system-wide modeling assuming a 2010 condition, benefits of the A-1 Project for the natural environment include: 1) approximately 3 to 6-inch reduction in Lake Okeechobee stages; 2) reduced Lake Okeechobee releases to the St. Lucie and Caloosahatchee estuaries by 15 percent; 3) improved timing of deliveries to Water Conservation Area 3 (WCA 3); 4) a 42 percent reduction in back-pumping to Lake Okeechobee from the North New River Canal and 33 percent from the Miami Canal; and 5) a 17 percent reduction in phosphorus concentrations entering STA-3/4 from water released from the reservoir. We recommend that for the final SEIS, these identified benefits be explained in more detail, models be identified, and modeling analyses explained.

(1) For the first identified benefit, a reduction in Lake Okeechobee stages may or may not be beneficial depending on conditions in the lake. Rather than a general decrease in stage, the frequency of high water and low water events are the primary consideration when evaluating benefits to Lake Okeechobee. Does the reduction in stages occur over an average annual basis and/or does it help contribute to a reduced number of high water events? If it reduces the number of high water events, how many high water events does it eliminate? Does the reduction contribute to increased deleterious low water events to the lake? 3.1

(2) The same can be true for the estuaries in the second identified benefit. A general reduction in freshwater releases to the estuaries may not be as important as a decrease in the number of large volume discharges. Does the project contribute to a decrease in large volume discharges, and if so, how many? In addition, a general reduction in water released to the Caloosahatchee Estuary could result in an increase in deleterious low water events resulting in increased salinity intrusion. Does the indicated reduction to the estuaries further reduce available water during deleterious low-flow events? The Caloosahatchee River has a designated Minimum Flow and Level (MFL) requirement. Does modeling indicate that reduced flows to that estuary are likely to increase the probability of MFL violations? 3.2

(3) Regarding the third identified benefit of improved timing of deliveries to WCA 3, the A-1 Project draft SEIS indicates in section 2.5.9 that initial operations will focus on storing Lake Okeechobee releases in the reservoir to provide lake and estuary benefits and that releases through STA-3/4 into WCA 3 will be limited to avoid creating undesirable impacts due to constraints of the existing Central and South Florida Project, including treatment capacity of the STAs and other infrastructure constraints. We support that this section also anticipates: 1) that most of the water will be released into STA-3/4 from the reservoir when an environmental need is identified in the Everglades that could be provided by the reservoir; 2) that this water should be routed through STAs to meet applicable water quality standards; and 3) that releases for permitted water users in the EAA will be provided when there is water remaining in the reservoir after deliveries to the Everglades, otherwise irrigation supply will be maintained via deliveries from Lake Okeechobee. 3.3

(a) Does systemwide modeling indicate potential negative impacts related to water levels in any areas downstream (WCA 3A, WCA 3B, or Everglades National 3.3a

Park)? For the improved timing of deliveries to WCA 3, we recommend it be made clear in Section 4.7 that deliveries to WCA 3 will not be made unless it can be shown that the releases will not negatively impact areas downstream. We also recommend that this section and Section 4.11.2 include specific language indicating that the reservoir will be operated to meet downstream environmental demands as a priority when there is a need for water in the natural system to the south.

(b) How is the rest of the Everglades Protection Area affected by the project? If WCA 3 realizes benefits from the project by receiving improved timing of deliveries, does Everglades National Park also benefit? Are there any differences in flows to or from WCA 2A and 2B as a result of the project? 3.3b

(4) Regarding the improved function of STA 3/4 listed above, does the modeling show any increase in bypass of STA 3/4 or other STAs as a result of the A-1 Project? If so, are there contingency plans for operations during storm events that could reduce/prevent the need to bypass the STA and/or prevent negative impacts to other natural areas? What is the total volume of water being sent through STA 3/4 as a result of the project? Does that volume exceed the treatment capacity of the STA? 3.4

(5) The modeling/benefit results seem to conflict with those in the revised draft PIR/EIS. Modeling assumptions and results for the A-1 Project should be provided. The rationale for using 2010 modeling assumptions rather than assumptions for existing conditions should also be provided. 3.5

4. Contaminants on Woerner Farm 3: Section 3.2.9 Hazardous, Toxic, and Radioactive Waste

At the time the A-1 Project draft SEIS was written, this section discussed the presence of toxaphene on the Woerner property, that an Environmental Risk Assessment was under review by the Service, and that the District was anticipating Service agreement that the toxaphene issue was resolved. During informal consultation, the Service did not respond to the effect determinations for the bald eagle and wood stork, pending the Woerner review. At a meeting on February 10, 2006, the Service, District, and Corps discussed potential concerns related to contaminants on the property. Due to concerns related to toxaphene, the Service presented three potential options: 1) remove the Woerner tract from the project footprint; 2) remove all soil from the Woerner tract and ensure placement was in an area of no inundation; or 3) conduct further sampling for toxaphene. The District advised that a combination of the first and second options would be the most expedient and cost-effective measure. The District informed the Service that the majority of Woerner (northern portion) would not be included in the footprint, and the soil in the southern portion that would be part of the project footprint would be removed and placed on the exterior side of the levee (no inundation) and/or be sequestered/removed from the site. Upon receiving in writing from the District or Corps Regulatory Division that the above actions will be taken, the Service will re-evaluate the Corps' "may affect, but not likely to adversely effect" determination for the wood stork and bald eagle for the A-1 Project. 4

5. Wildlife Resources: Section 3.3.4 - Federally Listed Species; Section 4.2.6.2 Federally Listed Species/Build Alternatives; Section 4.9.1 EAA Reservoir A-1 /Federally Listed Species; Section 4.11 Commitments

(1) Section 4.2.6.2 indicates that water quality improvements in the WCAs as a result of any of the "Build Alternatives" would benefit the wood stork, snail kite, and bald eagle by increasing the available forage, improving access to prey species, and reducing possible exposure to contaminants including pesticides. We recommend that this be changed to read that "water quality *and water level* improvements in the WCAs…." Better water quality will certainly be beneficial, but stages can be equally important, and sometimes more important, to these species, particularly during their respective nesting seasons. 5.1

(2) The most recent information regarding manatee access within EAA canals can be found in the Draft Interim Report, Manatee Suitability Survey in the Everglades Region of the Central and South Florida Project; CERP Interagency Manatee Task Force; November 29, 2004. 5.2

(3) The closest documented bald eagle nest to the EAA Reservoir is located in STA 2 adjacent to the southeastern side of Compartment B. Page 3-17 should be updated. 5.3

(4) Regarding potential effects to sea turtles in their aquatic habitat downstream, the National Marine Fisheries Service should be consulted. 5.4

(5) The A-1 Project draft SEIS indicates that eagle, wood stork, and burrowing owl surveys will be performed prior to the start of construction. The first two species are federally listed, the owl is state-listed, and all three species are protected under the federal Migratory Bird Treaty Act. Due to limited appropriate nesting habitat, it is unlikely that storks or eagles will nest within the footprint after the initial survey. Therefore, the surveys for these two species may take place across the entire project footprint one month prior to the start of initial project construction. However, the owl surveys should be conducted approximately one month prior to the start of construction in the immediate vicinity of current construction. Because the construction will likely be phased (not take place within or along the entire footprint at the same time) and owls may move into the areas where construction is not actually occurring at any given time, owl surveys should also be phased. Also, prior to initial inundation of the reservoir, we recommend a final burrowing owl survey be undertaken within the inundation zone as owls may have established burrows in the interim. The FWC should be contacted for further guidance regarding burrowing owl surveys and permitting procedures if burrows are found. 5.5

(6) We recommend that project managers and construction and maintenance personnel be trained to identify federally and state listed species potentially on-site. 5.6

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NRCS

USDA Natural Resources Conservation Service (NRCS)
East National Technology Support Center (NTSC)
200 East Northwood Street, Suite 410
Greensboro, NC 27401

William Reck, Environmental Engineer
Phone: (336) 370-3353
Fax: (336) 273-8132
E-mail: bill.reck@gnb.usda.gov

Loren Mason, Ph.D.
Chief, Special Project/Enforcement Branch
Department of Army
Jacksonville District Corps of Engineers
South Florida Restoration Program Office
1400 Centrepark Suite 750
West Palm Beach, FL 33401

Received MAR 27 2006 USACE

RECEIVED MAR 27 2006 ACCELER8

SUBJECT: Comments on DRAFT Supplemental EIS, Everglades Agricultural Area, Reservoir A-1

The Central and Southern Florida (C&SF) Project Comprehensive Review Study (Restudy) and Final Integrated Feasibility Report and Programmatic Environmental Impact Statement (hereafter referred to as the "yellow book") stated that "Compartment 1 discharges will be used to meet Everglades Agricultural Area (EAA) irrigation demands only." During formulation of the "yellow book", it was recognized that impact to water supply for the Everglades Agricultural Areas would need to be met by a supplemental source other than Lake Okeechobee. The EAA reservoirs main purposes included replacement of EAA irrigation water supply, improved timing of environmental deliveries (including reducing damages caused by flood releases), increasing flood protection to the EAA, and improved meeting of environmental water demands. As currently written, this the EAA Reservoir A-1 EIS leaves the impression that the project will "meet supplemental agricultural irrigation demands". The document needs to go into further detail to state that irrigation demands supplied by the reservoir will be replacing demands that would have otherwise been supplied by Lake Okeechobee. The document does not supply the needed level of assurance that irrigation demand impact as a result of the Comprehensive Everglades Restoration Project (CERP) are to be mitigated by irrigation supply provided by the EAA reservoirs. It is understood that this is not a water supply project, although there may be incidental water supply benefits, but rather a method of providing flexibility in the source of water to meet EAA irrigation demand. 1

Section 2.5.9 states that the priority of releases from the EAA will be first to supply environmental demands and then only after those demands are met will releases be made for EAA irrigation water supply. It is understood that the water from the EAA reservoir will be of better water quality than water released from Lake Okeechobee and thus more desirable for environmental release. However, statements like this are the reason that further clarification needs to be made that impacts to agricultural water supply as a result of CERP are addressed. Mitigation of impact to EAA irrigation supply was a primary purpose of the EAA reservoir as stated in the "yellow book". 2

Section 5.4 incorrectly lists the U.S. Natural Resources Conservation Service. The correct listing should be, U.S. Department of Agriculture, Natural Resources Conservation Service. 3

The Natural Resources Conservation Service provides leadership in a partnership effort to help people Conserve, maintain, and improve our natural resources and environment.

An Equal Opportunity Provider and Employer

Since this project will be taking 16,252.68 acres of sugarcane fields out of production, the U.S. Army Corps of Engineers will need to submit form AD-1006 to the USDA Natural Resources Conservation Service for a Prime or Unique Farmlands determination. Since sugarcane is a specialty crop grown on EAA muck soils, it is very likely that the proposed project area contains Unique Farmland and an evaluation will have to be done prior to expenditure of federal funds. Contact Warren Henderson, NRCS State Soil Scientist, at (352) 338-9533 for more information on this requirement.

If you have any questions about the comments contained in this letter, please feel free to contact me.

William R. Reck, P.E.
Environmental Engineer

cc: T. Niles Glasgow, State Conservationist, NRCS, Gainesville, FL
Ed Wright, Environmental Liaison, NRCS, Palatka, FL
Rosalind Moore, Natural Resource Specialist, NRCS, Gainesville, FL
Carolyn Adams, Director, ENTSC, NRCS, Greensboro, NC

From: forglades [mailto:forglades@bellsouth.net]
Sent: Monday, March 27, 2006 2:43 PM
To: Weiss, Rebecca J SAJ
Subject: re: Supplemental Public Notice for Permit Application No. 2005-53 (IP-TW)

March 15, 2005

Col. Robert M. Carpenter, District Commander
U.S. Army Corps of Engineers, Jacksonville Division
1400 Centrepark, Suite 750
West Palm Beach, FL 33410
RE: February 13, 2006 Supplemental Public Notice for Permit Application No. 2005-53 (IP-TW)

MAJOR CONCERNS:

1. NRDC's: 2006 Draft Supplemental Environmental Impact Statement for the Everglades Agricultural Area Reservoir A-1 ("Draft SEIS") EAA Storage Reservoir
We have serious concerns regarding the proposed EAA-A1 Reservoir Project would destroy 16,253 acres of jurisdictional wetlands. Draft SEIS at 3-14, 4-8, 4-27 to produce about 30,000 acres of storage reservoirs (more pits).

2. "Finally, although Acceler8 does not intend to provide the Everglades with more water when it needs it, Acceler8 does intend to provide the Everglades with more water when it does not need, indeed does not want, it. In 2020, *most* Everglades wetlands will be *worse off* in terms of extreme high water levels with Acceler8 than they would be without it."

3. "Draft SEIS at 4-14; see also Draft SEIS at 4-20. Nowhere, however, does the Draft SEIS detail exactly how the project will in fact realize these benefits, such as with data and/or modeling and with commitments to certain project operations. To the contrary, it says only that it is "anticipated" that *ultimate* operations will result in most of the water in the reservoir being released to STA 3/4 and, presumably, from there to the Everglades – whenever there is a need – and that remaining water will be used to supplement EAA irrigation needs."

4. "Although the Draft SEIS states that the project will result in an additional 210,000 acre-feet of "environmental" water deliveries to WCA 3 on an average annual basis, it does not document when – wet or dry season, wet or dry year – these (or other) deliveries would arrive, nor does it ensure that any beneficial deliveries would be protected in face of competing needs. Draft SEIS at 4-25. The

environmental benefits of the EAA-A1 Project are thus ambiguous at best, and fail to counterbalance the adverse effects of the project."

5. "High water problems will also continue to plague most parts of the Everglades in 2020 with the Acceler8 projects operational and <u>increased consumptive use demand</u>."

Sincerely,

Roderick Tirrell
Sierra Club, Florida Chapter-Everglades Committee
2101 NE 55 CT
Fort Lauderdale, FL 33308-3111
phone: 954.202.9263
Email: forglades@bellsouth.net

Sugar Cane Growers Cooperative of Florida

POST OFFICE BOX 666 BELLE GLADE, FLORIDA
33430-0666

March 27, 2006

Col. Robert M. Carpenter, District Commander
U.S. Army Corps of Engineers, Jacksonville Division
1400 Centrepark, Suite 750
West Palm Beach, FL 33410

Dear Col. Carpenter:

On behalf of Sugar Cane Growers Cooperative of Florida, I wish to restate our continuing concerns regarding the Draft Supplemental Environmental Impact Statement (EIS) for the Everglades Agricultural Area Reservoir A-1 project. The Draft EIS remains incomplete in that it does not quantify when, where or how the water managed by the project is to be used, and it does not address the issue of assurances to water users.

In a letter to us dated November 21, 2005, Lawrence Evans, Chief of the Regulatory Division said that "the South Florida Water Management District will provide model runs for the EAA A-1 Reservoir during the 30% design phase (previously scheduled to begin in December 2005).... and Regulatory Division will re-circulate a 30-day public notice for the EAA A-1 Reservoir Project when information concerning model assumptions and assurances is provided." (See attached letter)

We now understand that the 30% design report should be available in late May 2006. We respectfully request that the 30-day notice be re-initiated after the District produces the necessary information for us to analyze the benefits associated with the EAA A-1 phase of the project.

We thank you for your consideration in initially extending the time period for comment and ask that you do so again. We look forward to receiving the information necessary for us to understand and evaluate the merits and impact of the A-1 project so that we can be assured that the project will truly advance the goals of the Comprehensive Everglades Restoration Plan.

Sincerely,

George H. Wedgworth
President & C.E.O.

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Attachment

Telephone (561) 996-5556 Fax No. (561) 996-4747

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DEPARTMENT OF THE ARMY
SONVILLE DISTRICT CORPS OF ENGINEERS
FLORIDA RESTORATION PROGRAM OFFICE
1400 CENTREPARK, SUITE 750
WEST PALM BEACH, FLORIDA 33401

November 21, 2005

ement Branch

Mr. George Wedgworth
President & C.E.O.
Sugar Cane Growers Cooperative of Florida
Post Office Box 666
Belle Glade, Florida 33430-0666

Dear Mr. Wedgworth:

This is in reference to your October 25, 2005, letter requesting an extension to the public notice comment period for the EAA Reservoir Project located north of Stormwater Treatment Areas 3 and 4 between the Miami and North New River Canals in Palm Beach County, Florida. The permit application number is 2005-53(IP-TKW).

In preparing the public notice, we inadvertently included a statement that preliminary review indicates an Environmental Impact Statement (EIS) will not be required. In fact, the Regulatory Division has determined that the South Florida Water Management District's (SFWMD) proposed EAA A-1 Reservoir Project requires an EIS. We propose to use the EIS prepared by the Planning Division for the Comprehensive Everglades Restoration Plan EAA Storage Reservoir Project as the primary National Environmental Policy Act (NEPA) document for this project. Other information necessary to complete the NEPA evaluation for the EAA A-1 Reservoir as a stand-alone project will be included in the record of decision for this Regulatory action.

The SFWMD will provide model runs for the EAA A-1 Reservoir during the 30 percent design phase that is scheduled to begin next month. The Regulatory Division will re-circulate a 30-day public notice for the EAA A-1 Reservoir Project when the information concerning model assumptions and assurances is provided. If you have any additional questions concerning this project, please contact Tori White at the letterhead address, by

-2-

telephone at 561-472-8888, by facsimile at 561-683-2418, or by email at tori.white@saj02.usace.army.mil.

Sincerely,

Lawrence C. Evans
Chief, Regulatory Division

Copy Furnished:
CESAJ-DP-O/Pauline Smith
CESAJ-PD-PR/Stuart Mclean
CESAJ-OC/Beth Lewis
SFWMD, John Mitnik

GLADES SUGAR HOUSE

Sugar Cane Growers Cooperative of Florida

POST OFFICE BOX 666 BELLE GLADE, FLORIDA

33430-0666

October 25, 2005

Mr. Lawrence C. Evans, Division Chief
Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Evans:

We are in receipt of the Public Notice of the Corps' intent to undertake 404 permitting on the first phase of the Everglades Agricultural Area (EAA) Reservoir project.

The notice states that the EAA PIR has been competed and was published in the October 7, 2005 Federal Register with a 30-day comment period. It also states that no EIS is necessary under NEPA.

The EAA PIR analyzes the reservoir as a 30,000+ acre unit and does not analyze the first phase or approximately 17,000 acres as a stand alone project. In Guidance Memorandum 2, next added increment analysis is required. Further, the Corps of Engineers recognizes that the PIR only provides partial information with the assurances (Savings Clause determination) and model assumptions sections still to come. We understand that the comment period will be extended an additional 45 days after these key sections are provided.

We respectfully ask that the comment period for 404 permitting for the EAA Reservoir project be extended so it coincides with the yet to be determined comment period for the entire PIR.

Sincerely,

George H. Wedgworth

George H. Wedgworth
President & C.E.O.

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cc: Col. Robert Carpenter, ACOE Jacksonville District
Ms. Beth Lewis, ACOE, West Palm Beach District

Telephone (561) 996-5556 Fax No. (561) 996-4747

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UNITED STATES ENVIRONMENTAL **PROTECTION** AGENCY
REGION 4
ATLANTAFEDERALCENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

March 27,2006

Regulatory Division
U.S. Army Corps of Engineers
Jacksonville District
1400 Centerpark, Suite 750
West Palm Beach, FL 33401

Attention: Ms. Tori White

Subject: Supplemental Draft Environmental Impact Statement [SDEIS] for the Everglades Agricultural Area Storage Reservoir *A-1* [EAASR A-1, *Acceler8*], Palm Beach County, Florida, CEQ# 20060041, ERP# COE-E34031-FL, [dated January 2006]

Dear Sir:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the subject document, an evaluation of **construction/operation** of a **<16,000-acre** reservoir [190,000 acre-feet] between the Miami and North New River Canals in the Everglades Agricultural Area **[EAA].** This project is an element of the Comprehensive Everglades Restoration Plan [CERP] which seeks to improve the quantity, quality, timing, and distribution of water within the greater Everglades ecosystem. EPA is an active cooperating agency with the Corps of Engineers [COE] in CERP and strongly supports its expeditious implementation. The EAASR A-1, ***Acceler8*** project is a central component of the CERP effort and will provide critical regional water storage benefits to the Everglades.

The ***A-1*** reservoir will capture and store water which is now retained in Lake Okeechobee to fulfill dry-season agricultural needs. Upon completion, the proposed structure would provide an alternative source for this irrigation water. Moreover, A-1's retention capabilities will reduce stress on the Lake's littoral zone which in some years is inundated by elevated lake stages. When full, ***A-1*** will mitigate these Lake Okeechobee high water conditions by three to six inches. The impoundment should also provide an increment of Lake Okeechobee water for environmental restoration and is projected to reduce adverse rainy-season back pumping from the EAA to Lake Okeechobee. Further, ***A-1*** operations will reduce 15% of the regulatory releases from Lake

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Okeechobee which presently are directed into the St. Lucie and Caloosahatchee estuaries [thereby benefiting the ecology of the latter water bodies].

The ***A-1*** reservoir will work in conjunction with the 16,500-acre STA-314 to improve the latter's water quality pollutant removal performance via reduction of the **frequency/duration** of bypass events together with flow attenuation. Phosphorus concentrations entering STA 314 from the ***A-1*** reservoir are projected to be reduced by 17% [due to direct pollutant settling]. In turn, the Water Conservation Areas (WCA) should receive water with improved quality and timing.

Reservoir Footprint Changes

Soil contamination [Toxaphene] discovered within the northern portion [Woerner Farm #3 tract] of the original ***A-1*** Reservoir footprint could have posed significant environmental ramifications. Fortunately, this problem was resolved via coordination [South Florida Water Management District (SFWMD) and the U.S. Fish and Wildlife Service (FWS) Vero Beach office] whereby the northern 600-acres of the Woerner Farm **#3** tract will be excluded and the adjacent 300-acre site to the south will have all soils removed down to the **caprock**. This excavated material will be used to construct the exterior side of the northern embankment of the reservoir. We presume that these agencies have fully analyzed this issue and found this material suitable for the proposed use. With these changes, the current size of the ***A-1*** reservoir has been reduced to 15,233-acres [with maximum water depth of approximately 12.5 feet]. While we concur with these modifications, the environmental consequences of these project changes should be evaluated in the Final EIS. 1

Water Quality Monitorina Plan

Water quality **[WQ]** monitoring [page 4-32] will be conducted for **"mercury** levels and other contaminants", at the ***A-1's*** intake and discharge locations. Instead, EPA strongly urges that WQ monitoring associated with this proposal be consistent with the Water Quality Monitoring Plan [WQMP] associated with the CERP EAASR federal project. An excellent example of a CERP WQMP can be found in Annex D of the December 2005, Site 1 Impoundment Revised Draft Integrated PIR and Environmental Assessment. The Site 1 WQMP examines a comprehensive suite of WQ parameters [including nutrients] along 2

with sampling points at the intake and discharge structures as well as a central reservoir location. EPA recommends that a commitment to this type of WQMP

be made in the Final EIS [and subsequent Record of Decision]. Additionally, at the central ***A-1*** reservoir WQ monitoring location, monthly algal sampling **[including** blue-green **algal/cyanobacteria** collection] should be required. Dissolved Oxygen [DO] monitoring conducted at the central reservoir location should be done at 1-foot increments to get DO profile information. WQ monitoring information [from the completed ***A-1*** reservoir] should be provided in regular annual reports to the COE, FWS, EPA, and the Florida Department of Environmental Protection [FDEP]. The actual WQ performance of CERP reservoirs is essential information for subsequent adaptive management and development of water quality model efforts associated with the CERP program.

Additional Water Quality Issues

The nature of the proposed project dictates that it will be considered Waters of the U.S. and state class III water quality standards will apply. Therefore, its design should be such that all of its releases are [at least] projected to meet state water quality standards. During interagency formulation sessions about the project, EPA staff voiced concerns about this potential for water quality problems, viz., the anticipated high **nutrient/pesticide** concentrations of impounded flows, their low dissolved oxygen, and prevalence of nuisance aquatic plants **(e.g.,** algae) in the system. Since ***A-1*** could set a precedent for future CERP reservoirs, we suggest that the full spectrum of design [aeration devices] and operational **[timing/volume]** measures be evaluated in the Final EIS to improve the quality of discharge waters [to the maximum extent practicable]. 3

The model predictions estimate that average annual environmental deliveries to WCA 3 will increase 210,000 acre feet above existing conditions. EPA is concerned that the STA 3/4 may be unable to treat these additional water deliveries to the degree that they will meet the requirements of the State's Everglades Forever Act **and/or** its NPDES permit. As you are aware, this degree of treatment will not be easy as current phosphorus **[TP]** concentrations of Lake Okeechobee surface waters are elevated to the 220-240 ppb TP range. The Final EIS should fully assess the how these additional flows will affect the nutrient treatment ability of STA 3/4.

5

Specific Comments

It would be helpful if all the details of the WQ model [together with their underlying assumptions] used to make predictions about the design and operation of the ***A-1*** reservoir were included in the Final EIS. We are especially interested in the basis of the premise that there will be a 17% reduction of TP concentrations in water released from the reservoir. 4

As noted, reservoir water quality impairment [low dissolved oxygen and cyanobacteria algal blooms] is a potential issue of concern. The Final EIS should detail what practical measures are available to lessen downstream water quality problems attendant to reservoir releases from this and other WQ facilities. 5

In the **SDEIS** executive summary [pg ES-12, #8] the SFWMD agrees to maintain an open and cooperative consultation process with the USFWS and FWC throughout the design, construction, and operation of the ***A-1*** reservoir project. EPA would also like to be involved in this process. 6

The Final EIS should clearly state that the ***A-1*** reservoir will be operated to meet downstream environmental demands in the WCA. While this is a very important objective, EPA understands that this priority must be balanced against the immediate WQ treatment goals of STA *314.* 7

The Final EIS should fully discuss the ramification of ***A-1*** reservoir operations as regards the probability of STA bypass [both in terms of frequency and duration]. As a minimum, the total annual volume of water [average-, **wet-**, and dry-year] which will be sent through STA **3/4** as a result of the ***A-1*** reservoir project should be specified along with an appraisal of whether or not [and to what degree] the treatment capacity of STA *3/4* will be exceeded. 8

EPA has participated as a member of the interagency team that performed the plan formulation, alternatives' development, and evaluation effort for the EAASR project. While there have been some design changes in the

proposed *A-1* project, we continue **to support** this element of the original selected 'alternative as having reasonable and feasible objectives while providing sufficient environmental restoration benefits. After consideration of all project impacts, a rating of EC-1 has been assigned. That is, we have some environmental concerns [EC] about certain aspects of the proposal, but believe that additional interagency consultation can adequately address these issues. Attached are some specific comments which should aid in the preparation of the Final EIS and in reaching this resolution.

If you have questions about our evaluation, feel free to contact Mr. Eric Hughes (904-232-6424), whereas Dr. Gerald Miller is available (404-562-9626) to discuss NEPA-related issues.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

cc:

FDEP - Greg Knecht, Diane Crigger
US **FWS/Vero** Beach - Tim Pinion, Sharon Fauver
SFWMD - Matt Morrison, Shawn Waldeck

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Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

March 27, 2006

Ms. Tori White
South Florida Restoration Program Office
U. S. Army Corps of Engineers
1400 Centrepark Boulevard, Suite 750
West Palm Beach, FL 33401

RE: Department of the Army, Jacksonville District Corps of Engineers – Acceler8 Project Permit Application – Draft Supplemental Environmental Impact Statement, Everglades Agricultural Area (EAA) Reservoir A-1 – Palm Beach County, Florida.
SAI # FL200602011868C

Dear Ms. White:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the Draft Supplemental Environmental Impact Statement (DSEIS).

Though the Florida Department of Environmental Protection (DEP) supports the EAA storage reservoir, staff has provided a number of comments and notes that the features of a shallower reservoir or stormwater treatment area, which would be more beneficial for the second cell of the EAA reservoir, should be investigated. In an effort to reduce water quality and quantity concerns, DEP recommends that the report include an alternative analysis of the cost and benefits of increasing the reservoir storage volume to preclude back pumping from the EAA. Project managers should also coordinate closely with DEP staff on contaminated sediment removal and disposal, and hazardous and toxic waste site cleanup. Please see the enclosed DEP memorandum for additional details and recommendations.

The Florida Department of Transportation (FDOT) requests that project managers provide additional detailed information regarding all proposed pump stations, culverts, bridges, and canal modifications located in proximity to or affecting FDOT right-of-way. Construction activities proposed within state road right-of-way will require permits from the FDOT District 4 Permits office, phone (954) 777-4377. The FDOT also requests further analyses of the potential impacts of canal modifications and ground water increases on state roadway and

Florida State Clearinghouse

Ms. Tori White
March 27, 2006
Page 2 of 2

stormwater facilities in the area. Please see the enclosed FDOT memorandum and contact Ms. Amie K. Goddeau, P.E., at (954) 777-4343 for additional information and coordination.

The Florida Fish and Wildlife Conservation Commission (FWC) notes that the South Florida Water Management District is proposing the construction of a shallow curtain wall between the EAA reservoir and the north side of the Holey Land Wildlife Management Area (WMA) in an effort to provide additional seepage water into the WMA. A deeper curtain wall is being proposed by the Corps of Engineers. The FWC is supportive of the less expensive, shallow curtain wall if the model output for a shallow curtain wall predicts a post-construction hydroperiod in the Holey Land WMA that better reflects historical conditions, compared to what would be realized if a deeper curtain wall was constructed.

Based on the information contained in the DSEIS and the enclosed state agency comments, the state has determined that, at this stage, the proposed project is consistent with the Florida Coastal Management Program (FCMP). Please continue to coordinate with DEP, FDOT, and FWC staff regarding the issues raised above. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Ms. Lauren Milligan at (850) 245-2170.

Sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm
Enclosures

cc: John Outland, DEP, MS 45
Greg Knecht, DEP, MS 3560
Tim Gray, DEP, Southeast District
Lisa Stone, FDOT, Tallahassee
Larry Hymowitz, FDOT, Ft. Lauderdale
Mary Ann Poole, FWC

Florida State Clearinghouse

Florida
Department of Environmental Protection

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Categories

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Project Information	
Project:	FL200602011868C
Comments Due:	03/06/2006
Letter Due:	03/27/2006
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - ACCELER8 PROJECT PERMIT APPLICATION - DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT, EVERGLADES AGRICULTURAL AREA RESERVOIR A-1 - PALM BEACH COUNTY, FLORIDA.
Keywords:	ACOE - SDEIS, EVERGLADES AGRICULTURAL AREA RESERVOIR A-1 - PALM BEACH CO.
CFDA #:	99.997

Agency Comments:

TREASURE COAST RPC - TREASURE COAST REGIONAL PLANNING COUNCIL

The proposed project is not in conflict or inconsistent with the Strategic Regional Policy Plan. The project furthers Regional Goal 6.9, Protection and Sustainability of the Everglades Ecosystem.

PALM BEACH -

AGRICULTURE - FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

No comment

COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

The FWC notes that the South Florida Water Management District is proposing the construction of a shallow curtain wall between the Everglades Agricultural Area reservoir and the north side of the Holey Wildlife Management Area (WMA) in an effort to provide additional seepage water into the WMA, whereas a deeper curtain wall is being proposed by the Corps of Engineers. The FWC is supportive of the less expensive, shallow curtain wall if the model output for a shallow curtain wall predicts a post-construction hydroperiod in the Holey WMA that better reflects historical conditions, compared to what would be realized if a deeper curtain wall was constructed.

STATE - FLORIDA DEPARTMENT OF STATE

No Comment/Consistent

TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION

The Department provided comments via email dated 3/3/06 under separate cover.

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Though the DEP supports the EAA storage reservoir, staff has provided a number of comments and notes that the features of a shallower reservoir or stormwater treatment area, which would be more beneficial for the second cell of the EAA reservoir, should be investigated. In an effort to reduce water quality and quantity concerns, DEP recommends that the report include an alternative analysis of the cost and benefits of increasing the reservoir storage volume to preclude back pumping from the EAA. Project managers should also coordinate closely with DEP staff on contaminated sediment removal and disposal, and hazardous and toxic waste site cleanup.

SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT

The SFWMD is a partner with the USACOE in this project. Consequently, a consistency determination is not necessary.

For more information please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000

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Memorandum

Florida Department of Environmental Protection

TO: Stacey Feken

THROUGH: Kim Shugar

FROM: John Outland

DATE: March 10, 2006

SUBJECT: USACE, Jacksonville District – Acceler8 Project Permit Application – Supplemental Draft EIS, Everglades Agricultural Area Reservoir A-1 – Palm Beach County, Florida – SAI # FL06-1868C

Background:

The proposed Everglades Agricultural Area (EAA) reservoir is an element of the Comprehensive Everglades Restoration Plan (CERP) and one of the WRDA 2000 initially authorized projects. A portion (Cell 1) of the reservoir is also an *Acceler8* project. The preferred plan, EAA Reservoir A-1, consists of the construction of a component (Cell A-1) of the EAA Storage Reservoirs. This alternative is an above ground reservoir for water storage constructed on 16,768 acres, with a capacity of 190,000 acre feet at an approximately depth of 12 feet. Construction of the project will impact sugar cane fields and 187 acres of Corps jurisdictional wetlands. The project will also include a seepage buffer, pump stations, gated culverts, levees, bridges and perimeter canals.

The project is designed to reduce Lake Okeechobee water levels and regulatory releases to the St. Lucie and Caloosahatchee estuaries, improve the quality of releases from Lake Okeechobee to the Everglades Protection Area, reduce the need to back pump water from the EAA to Lake Okeechobee, and optimize STA treatment performance by equalizing flows from runoff events and improve flood management and water supply for the EAA. It is anticipated that most of the water will be released into STA 3/4 from the reservoir when an environmental need is identified. Other releases will be made to the North New River Canal when there is water remaining in the reservoir after deliveries to the Everglades.

Anticipated benefits from the EAA Reservoir include the following:

- 3" to 6" reduction in Lake Okeechobee stages
- Reduced Lake Okeechobee releases to the St. Lucie and Caloosahatchee estuary 15 percent
- Improved timing of deliveries to WCA 3
- Back pumping into Lake Okeechobee is reduced by 42 percent from the North New River Canal and the Miami Canal
- Phosphorus concentrations entering STA 3/4 is reduced by 17 percent

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March 10, 2006
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Several alternatives were screened, including the flow-way from Lake Okeechobee, ASR, No Action alternative and the EAA Reservoir A-2 alternative. I have also used information from the PIR/EIS to develop my comments.

Comments:

1. Implementation of the selected alternative reduces back pumping volumes from the EAA into Lake Okeechobee. Back pumped water increases Lake water levels which may increase the likelihood of regulatory releases to the estuaries and adversely impacts the Lake's littoral zone vegetation. This water also contains pollutants (nutrients, metals and pesticides) that are directly discharged to a Class 1 Drinking Water Supply water body. Accordingly, the report should include an alternative analysis of the cost and benefits of increasing the reservoir storage volume to preclude back pumping from the EAA.

2. The issue of soil contamination associated with canal modifications poses a significant risk to adjacent wetlands and water bodies if not handled properly. Improper handling could lead to direct exposure to fish and wildlife resources. The Corps construction contractor should coordinate closely with the Department and the USFWS on the removal and disposal of contaminated sediments from the canals. Similarly, the hazardous and toxic waste sites identified on the reservoir site and addressed on pages 3-8 through 3-12 should be cleaned to pose no threat to fish and wildlife resources. Conveyances of oil, gas and mineral rights to the Department from previous land owners should be completed before construction.

3. 183 acres of wetlands occur in the reservoir footprint and will be replaced by open-water habitat. The DSEIS does not elaborate on how the project will mitigate for the loss of these wetlands.

4. DSEIS Section 3.2.7, pages 3-7 and 3-8 and PIR Table 2.2-1 (Appendix F) provides a discussion and summary of existing surface water quality for the EAA and Lake Okeechobee. This data characterizes the water that may be directed to the EAA reservoirs. Comparing the average concentrations of the listed parameters to the State Class III water quality criteria reveals two parameters, dissolved oxygen and iron, exceed the Class III criterion. Phosphorus concentrations averaged 113 ppb, which is relatively high in comparison to the interim discharge limit (50 pbb) for discharges to the Everglades Protection Area. Several pesticides including ametryn, atrazine and simazine were also detected in the canal waters.

The PIR water quality assessment prepared by Water and Air Research points out that water routed to the proposed EAA storage reservoirs may or may not receive the average water quality characteristics summarized for the primary canals. They also use several models to estimate reservoir and reservoir STA assisted outflows. PIR Tables 5.4-1 and 5.4-2 summarize the estimated RASTA water quality. The data show total phosphorus levels at 36 ppb and 32 ppb respectively for RASTA assessment with and without a reservoir in place.

Memorandum
March 10, 2006
Page 3 of 3

The analysis of water depth variation on reservoir quality stated that the effects of reservoir depth variation on water quality are not well known. However, *Water and Air Research* analysis did note that "extensive data indicate that shallow water, macrophyte dominated wetlands are more effective at reducing pollutant concentrations than ponds or lakes. For this reason, it can be assumed that a shallow reservoir or impoundment, especially if it is colonized by submerged vegetation and continuously wet, will tend to have lower total phosphorus levels as well as total suspended solids, turbidity oxidized iron and other particulate pollutants associated with phytoplankton production."

In sum, the EAA storage reservoir is a critical Everglades restoration project and should be supported. However, a closer look should be given to the features of a shallower reservoir or stormwater treatment area which may be more beneficial for the second cell of the EAA Reservoir.

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Memorandum

Florida Department of Transportation

TO: **Florida State Clearinghouse**

FROM: **Larry Hymowitz, AICP**
District Four, Office of Modal Development

DATE: **March 3, 2006**

SUBJECT: **ACOE – Acceler8 Project Permit Application – Supplemental Draft EIS Everglades Agricultural Area Reservoir A-1 – Palm Beach County, Florida. SAI # FL200602011868C (Reference SAI # FL200509281550C)**

The Florida Department of Transportation has reviewed the above referenced document with the following comments:

1. This comment is a repeating concern with all CERP documents which never seems to get addressed. Project Maps need to clearly identify the location of US 27/SR 25 and SR 80 in regards to the proposed work. These pubic facilities are designated on the Strategic Intermodal System (SIS), and are of extreme importance to the mobility of people and goods in the region. They support the designated rural areas of economic concern in Pahokee, Belle Glade and South Bay; and are integral to the freight movement associated with the local agricultural industries. Any impact to these facilities will have severe consequences for the economy of the region. The only maps which reference these facilities are buried in the Appendices, which is not acceptable.

2. More information is needed regarding the proposed new pump station at S-610 adjacent to US 27. Has the exact location of this facility been determined? If so, then please forward the applicable plans and specifications for review. We need to ensure the pump operations will not have a negative impact on the roadway due to potential scour, erosive forces, etc.

3. Similar information (i.e. exact location, plans and specifications, etc.) is needed for the new gated culvert structure S-601 associated with the existing pump station G-370.

4. As discussed previously with staff from the South Florida Water Management District (SFWMD), there is a new bridge associated with gated culvert structure S-609. We recommend that coordination occur with FDOT early on in the design of this bridge to ensure that it is developed in accordance with applicable FDOT standards and operational concerns. FDOT permits will be required for this new bridge to be constructed within the right-of-way for US 27/SR 25. We understand that the ACOE does not obtain permits from State Agencies. However, some form of permission from FDOT will be required whenever the ACOE needs to work within the roadway right-of-way.

Memorandum
March 3, 2006
Page 2 of 3

5. The document refers to canal modifications at the Miami Canal. However, from the diagrams it is difficult to determine how far north these improvements are needed. At present, FDOT has started the design for a replacement bridge on SR 80 over the Miami Canal. The proposed bridge will basically provide the same horizontal and vertical clearance that exists today. The project schedule is as follows: Initial Engineering (about 40% Design) on 11/4/2005, Final Engineering (about 90% Design) on 10/4/2006, Letting (Open Bids) on 8/29/2007, and construction to begin in January/February of 2008. Any changes to the bridge clearances would need to be communicated immediately for any potential incorporation into the ongoing design work. Otherwise, the ACOE will have to make the necessary changes to the bridge at a later date with their own Contractor and funding. Please coordinate with FDOT as soon as possible on this issue.

6. The document refers to canal modifications at both the Bolles and Cross Canals. However, from the diagrams it is difficult to determine what changes are proposed at the US 27 crossing. At present, there are two 72" pipes at this crossing. FDOT has a future project proposed at this location to resurface the roadway, but no replacement of these pipes is proposed or needed. If the ACOE determines an increased conveyance is needed under US 27/SR 25, there is the possibility of including this work in the future FDOT project through a Joint Participation Agreement (JPA). The ACOE would need to determine what size cross drain/bridge is required, and complete the design in coordination with FDOT. Then, FDOT could include this work in the roadway plans for completion by one Contractor. The ACOE would need to provide construction funding to FDOT for this work via the JPA.

7. The document refers to canal modifications at the North New River as well. The proposed typical shows deepening of the section, and widening to the east with no changes to the western side slope adjacent to US 27/SR 25. Depending on the soil conditions in the area, this canal deepening may or may not adversely impact the stability of this western slope. FDOT would need some analysis of the final proposed section to ensure the integrity of US 27/SR 25 will not be impacted. Please provide this information if available.

8. We have been in discussion with SFWMD staff on a typical section from Canal 601 (cell 1 perimeter seepage/conveyance canal) to the US 27/SR 25 right-of-way. In particular, what distance is needed from this seepage canal berm to the roadway right-of-way to ensure an acceptable set-back. Please coordinate your work with us as well for concurrence on a final typical section.

9. To ensure the LOS for Flood protection has not been impacted, we request the model be rerun following design completion of the seepage canals, cutoff walls, etc. for the Reservoir. Final model results should be communicated back to FDOT for a final assessment of any potential impact to our facilities in the area. No statement should be

Memorandum
March 3, 2006
Page 3 of 3

made in this document relative to potential impact to FDOT facilities without our concurrence.

10. How was the <0.10 foot allowable threshold value for the rise in the groundwater level adjacent to the reservoir on the eastern boundary of the EAA along US 27 developed? Was anyone at FDOT involved in the development of this criteria, and if so, then who?

11. The typical section for the US 27/SR 25 four lane facility adjacent to this project utilizes a system of dry detention swales for water quality and flood control. This dry swale has a minimum bottom elevation of 12.5 ft NGVD, which provides the one foot of minimum clearance as required by SFWMD permit criteria above the SHGWT (seasonal high ground water table) at 11.5 ft as shown in the plans. Any rise in the ground water table will essentially violate this permit criteria. We need to make sure FDOT will not be penalized by this change by either SFWMD or ACOE for this project as well as any future facilities in the area.

12. Please note that any rise in the water table will create operational and maintenance issues with the US 27/SR 25 swale system in that they will remain wet for a longer period of time. While utilizing the <0.1 foot threshold seems reasonable, there will still be an operational impact to the US 27/SR 25 facility, which should be noted.

13. Once the model has been rerun as requested above, FDOT will review these results against our minimum roadway elevations for potential impacts to the integrity of the roadway base. Typically FDOT requires a 2 to 3 ft. of clearance between the SHGWT and the bottom of the roadway base, which is typically 15" from the roadway elevation. The minimum roadway elevation from the US 27/SR 25 plans appears to be 16.5' NGVD in the vicinity of the EAA.

14. Until all the final design elements are complete for the Reservoir, and the model has been rerun, FDOT does not concur with the following statement made on Page G-78 in Annex G section 2.7.2: "It is anticipated that the EAA Reservoir project can be built without adversely impacting FDOT's existing or future facilities in this area."

If additional information is required on these comments, please feel free to contact Ms. Amie Goddeau at (954) 777-4343 or amie.goddeau@dot.state.fl.us.

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FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

RODNEY BARRETO
Miami

SANDRA T. KAUPE
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Enterprise

DAVID K. MEEHAN
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MARY ANN POOLE, DIRECTOR
OFFICE OF POLICY AND STAKEHOLDER COORDINATION
(850)488-6661 TDD (850)488-9542
FAX (850)922-5679

February 20, 2006

Mr. Dennis Duke
U.S. Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207-0019

Dear Mr. Duke:

The Florida Fish and Wildlife Conservation Commission (FWC) is aware South Florida Water Management District (SFWMD) is proposing the construction of a shallow curtain wall between the Everglades Agricultural Area reservoir and the north side of the Holey Land Wildlife Management Area in an effort to provide additional seepage water into the management area, whereas a deeper curtain wall is being proposed by the Corps of Engineers. The FWC is supportive of the less expensive, shallow curtain wall if the model output for a shallow curtain wall predicts a post-construction hydroperiod in Holey Land Wildlife Management Area that better reflects historical conditions compared to what would be realized if a deeper curtain wall was constructed.

Sincerely,

Mary Ann Poole

Mary Ann Poole, Director
Office of Policy and Stakeholder Coord.

map/sc
ENV 1-5-2
u:\traci.wallace\ACOE Holey Land WMA
cc: Pauline Smith, COE
Ken Ammon, SFWMD
Tommy Strowd, SFWMD
Tom Teets, SFWMD
Matt Morrison, SFWMD

620 South Meridian Street • Tallahassee • FL • 32399-1600
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Responses

COUNTY: PALM BEACH

SCH- CORPS- ~~S~~EIS- CERP
2006-00947

DATE: 2/1/2006
COMMENTS DUE DATE: 3/6/2006
CLEARANCE DUE DATE: 3/27/2006
SAI#: FL200602011868C
REFER TO: FL200509281550C

MESSAGE:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
AGRICULTURE	SOUTH FLORIDA WMD		
COMMUNITY AFFAIRS			
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.**

_ **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.**

X **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, ACCELER8 PROJECT PERMIT APPLICATION - SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT, EVERGLADES AGRICULTURAL AREA RESERVOIR A-1 - PALM BEACH COUNTY, FLORIDA.

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EO. 12372/NEPA

- [x] No Comment
- [ ] Comment Attached
- [ ] Not Applicable

Federal Consistency

- [x] No Comment/Consistent
- [ ] Consistent/Comments Attached
- [ ] Inconsistent/Comments Attached
- [ ] Not Applicable

From:

Division/Bureau: Division of Historical Resources, Bureau of Historic Preservation

Reviewer: Janice Machado — Laura A. Kammerer, Deputy SHPO

Date: February 24, 2006 — 2.27.2006

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ANNEX F
WATER QUALITY MONITORING PLAN

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F WATER QUALITY MONITORING PLAN

This document describes the Water Quality Monitoring Plan for the federal CERP EAA Storage Reservoirs project. Therefore, the reader is referred to the Revised Draft Integrated Project Implementation Report Environmental Impact Statement dated February 2006, for all citations and references noted within this document. For consistency purposes this Water Quality Monitoring Plan would be implemented by the SFWMD for the Acceler8 EAA Reservoir A-1 project, if permitted and constructed, absent a federally accepted Water Quality Monitoring Plan for the EAA A-1 Reservoir project by the Florida Department of Environmental Protection, or a revised Water Quality Monitoring Plan for the federal CERP EAA Storage Reservoirs project.

F.1 INTRODUCTION AND BACKGROUND

This document serves as a reference for monitoring of various matrices (water sediment and fish) for the Everglades Agricultural Area (EAA) Storage Reservoirs. The Everglades Agricultural Area is located south of Lake Okeechobee within a belt of highly organic hydric soils originally deposited by the historic Everglades wetland called the "River-of-Grass". These organic soils have served as a fertile agricultural area since they were initially drained. Overdrainage and environmental impacts eventually led to the construction of the Central and Southern Florida Project for Flood Control and Other Purposes (C&SF Project) whose intention was to provide water storage in Water Conservation Areas (WCAs) and to better manipulate water levels in the existing and former Everglades for multiple purposes.

The revised water management system allowed extensive agricultural development in the EAA. However, environmental effects continued to be observed in the downstream areas of the remaining Everglades ecosystem. Increased loading of phosphorus from the EAA was found to be causing unacceptable ecological changes to the WCAs and the Everglades National Park which comprise the Everglades Protection Area (EPA). The Everglades Forever Act of 1994 (EFA) required that all waters discharged to the EPA meet applicable water quality standards. The South Florida Water Management District (SFWMD) has implemented the Everglades Construction Project (ECP) to achieve these goals. Interim water quality improvement measures included design and construction of a number of Stormwater Treatment Areas (STAs) to provide an interim reduction in these phosphorus loads. In addition, a broad suite of agricultural best management practices (BMPs) were implemented to further lower phosphorus discharges to the Everglades Protection Area (EPA). Based on a phosphorus water quality criterion of 10 µg/L, additional activities were determined to be necessary to insure eventual compliance with applicable standards in the EPA. A long-term plan for achieving this compliance was published by the SFWMD in October 2003 (B&M, 2003).

The EAA Storage Reservoir is intended to improve the timing of environmental deliveries to the Water Conservation Areas (WCA), including reducing the damaging flood releases from the Everglades Agricultural Area; reducing Lake Okeechobee regulatory releases to the estuaries; meeting Everglades Agricultural Area irrigation and Everglades water demands; and increasing flood protection in the Everglades Agricultural Area. Constructing and operating the reservoir would reduce water demands from Lake Okeechobee, reduce the need to back-pump EAA storm water to the Lake, and reduce the pulsed regulatory releases from Lake Okeechobee to the Caloosahatchee River and the St. Lucie Canal. An important secondary objective of the project is to provide benefits for long-term phosphorous removal. The long-term downstream average phosphorous should be decreased as a result of the storage reservoirs.

The guidance contained in this document will assist in maintaining consistency in sampling locations, parameter lists and frequencies as well as providing documentation of the project scope and an ongoing historical perspective.

F.1.1 Active Mandates and Permits

The EAA Storage Reservoir Project is authorized as one of the initial projects for implementation under Section 601(b) (2) (C) of the Water Resources Development Act (WRDA) 2000. This water quality monitoring plan meets the requirements outlined in the CERP Guidance Memorandum 023.01: Water Quality Considerations for the Project Implementation Report Phase (CGM 023, dated March 1, 2004) and the CERP Memorandum 42.00: Toxic Substances Screening Process – Mercury and Pesticides (CGM 42.00, dated September 17, 2005). These guidance memoranda address water quality considerations necessary for the formulation, evaluation, and design of project alternatives during the PIR development. This monitoring plan will also be modified, if necessary, to be compliant with any future water quality certification conditions.

To clarify the intent of WRDA 2000 with respect to attaining Everglades water quality restoration objectives, CGM 023 establishes three categories of CERP projects. Category A, B, and C projects must not attain their primary water quantity performance objectives by degrading water quality. For a Category B project, design or operational alternatives with net water quality benefits must also be pursued, as long as this does not compromise the attainment of its primary water quantity performance objectives. The EAA Storage Reservoir meets the CGM definition of a Category B project.

F.1.2 Purpose and Scope

The monitoring sites described in this document were established to satisfy requirements of the CERP Project Implementation Report (PIR). This monitoring plan will provide an outline for quantifying water quality, assist in creating a water budget for the project, measure constituents of interest (i.e.,

phosphorous and nitrogen) in surface water entering and leaving the project area and measure and evaluate pollutant sources. As a Category B component, this project does not include water quality improvement features; however, it is anticipated the project will reduce pollutant loading into downstream receiving water bodies through the attenuation of surface flows and reduction of associated pollutant loads prior to discharge. The metering of water from the proposed storage reservoir into the STAs will allow the STAs to consistently improve water quality before release to the WCAs and eventually to the Everglades Protection Area.

F.1.3 Duration

F.1.3.1 Initiation Conditions

The Plan was initiated by the Water Quality Monitoring Division and technical review provided by staff of the Environmental Resource Assessment Department of the South Florida Water Management District (SFWMD). Development of this Plan is required by the issuance of the Project Management Plan (PMP) and the development of the Project Implementation Report (PIR) document, due in November 2005. The PIR development phase has requirements for sections detailing the water quality monitoring and adaptive assessment methods for the recommended alternative. This water quality monitoring plan is to be implemented at the project start date and will be adhered to for the length of time the project is operational. Changes to the plan may occur in the future as the project nears completion as outlined in the following Section 1.3.2.

F.1.3.2 Modification or Termination Conditions

Modification of the Plan will be determined by the needs of the project as it nears towards the estimated completion date of 2009. This plan may be changed to reflect any future design changes, permit requirements and/or may be terminated according to permit expiration dates or changes to the project objectives. The plan will be reviewed and/or modified annually or more frequent if necessary, to reflect new requirements.

F.2 GEOGRAPHIC LOCATION

F.2.1 Regional Area

The Everglades Agricultural Area encompasses 620,797 acres of mostly existing or former agricultural land. It is located south of Lake Okeechobee, extending to WCAs 1, 2A, 2B, 3A and 3B on the east and south borders and to the C-139 Basin on the western border. Existing agriculture in the EAA is dominated by sugarcane production with a smaller production of vegetables, rice and sod. The EAA is characterized by an extensive network of canals within its boundaries. These canals are of several types defined for this report as primary (canals that

convey water generally from Lake Okeechobee through the EAA to tide), secondary (canals that interconnect the primary canals), and agricultural (canals that provide water management and control within specific farming operations). Primary canals include the West Boundary Canals, Miami, Hillsboro, West Palm Beach, L-8 Borrow, and North New River Canals. Secondary canals include the L-1 East, Bolles (L-16 and L-21), and Ocean Canals. Agricultural canals are generally unnamed. The canals within the EAA serve multiple purposes including water routing for flood prevention, water supply for agriculture, and water supply for environmental needs.

Surface waters adjacent to the EAA include Lake Okeechobee to the north and the wetlands known as the EPA to the south and east. Lake Okeechobee is a 1,891 km2 shallow natural lake that was formerly the headwaters of the Everglades. Lake Okeechobee is entirely enclosed within a water control levee and all surface inflows and outflows, with the exception of precipitation and evapotranspiration, receive some human regulation. There are typically interior and exterior canals or ditches along the entire length of this encircling levee. The WCAs are natural Everglades' wetlands that are also surrounded by levees and highly managed. These WCAs typically include a rim canal located on the inside of the levees and then largely undisturbed peat soils and wetland plant communities within the majority of the WCA area.

The EAA Storage Reservoir Project lies between Lake Okeechobee to the north, WCA 3A on the south, Miami Canal on the west and North New River Canal on the east in the Everglades Agricultural Area of western Palm Beach County. It will be bordered on the north, east, and west by agricultural interests. Just to the south are the SFWMD storm water treatment areas. A site map showing the boundary of the EAA Storage Reservoir Project and the surrounding area is shown as Figure F-1 below.

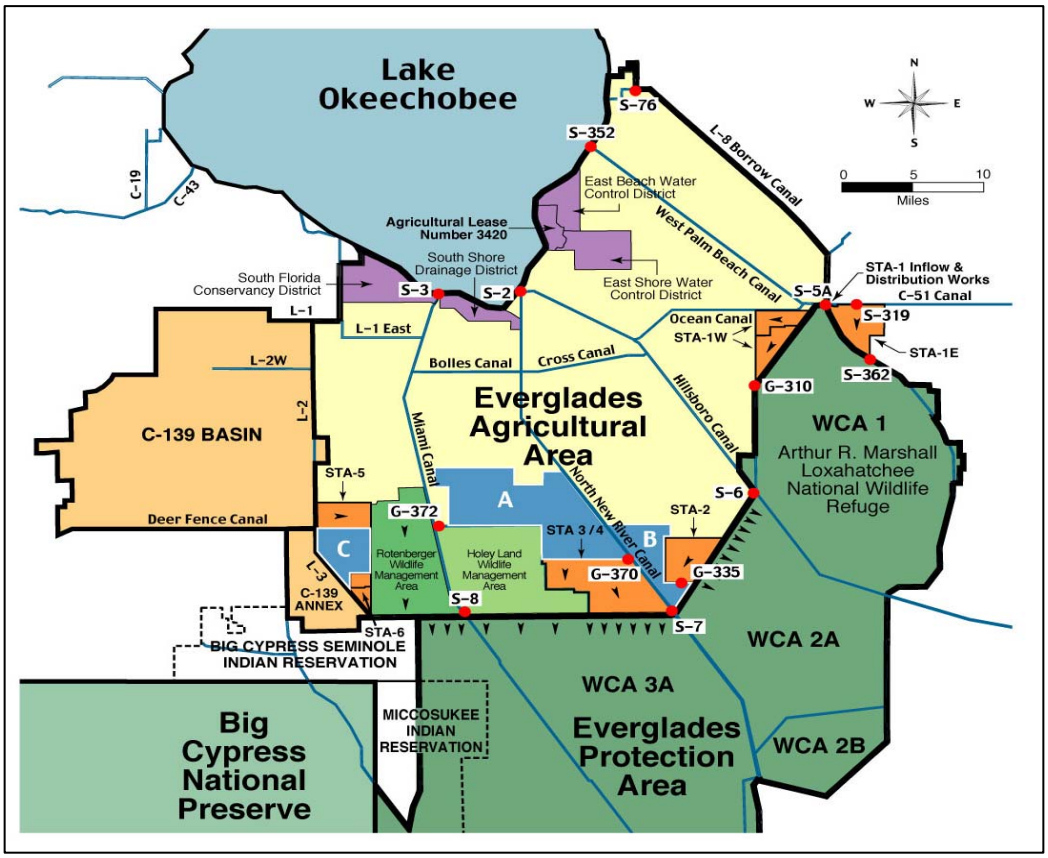

FIGURE F-1: PROJECT LOCATION MAP

F.2.2 Sampling Locations

Monitoring will be designed to provide compliance with applicable state and federal surface water criteria. Project features are shown in Figure F-2.

Sampling stations will be registered in the Laboratory Information Management System (LIMS). Table F-1 provides information on each proposed monitoring location. The locations of all monitoring sites are depicted on the map in Figure F-2 with the exception of the interior sites located in the center of each compartment that will be used for surface water monitoring and the STA discharge point.

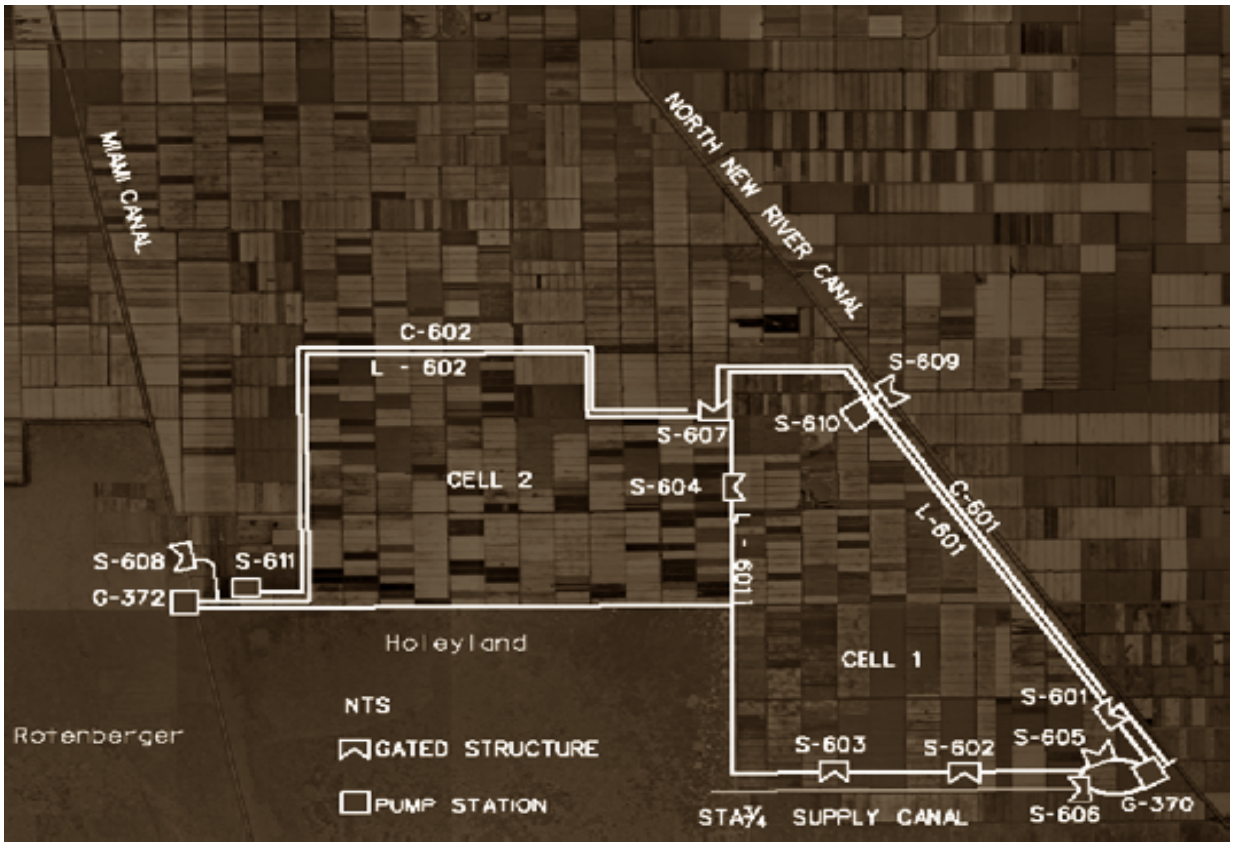

FIGURE F-2: PROJECT FEATURES

F.2.3 Access and Authority

The Project will be accessed from US-27 which runs parallel along the North New River Canal. Monitoring sites within the project will be accessed along the system of levees that surround the reservoir.

F.3 DATA QUALITY OBJECTIVES

F.3.1 Data Uses

The data will be used to fulfill purposes and to assure the project is meeting the water quality constraint defined as not contributing to violation of state water quality standards.

F.3.2 Data Quality

Routine samples and routine quality control samples are collected in accordance with the FDEP Quality Assurance Rule, 62-160.200 and 62-160.320, F.A.C. and the District Field Sampling Quality Manual (FSQM). Applicable sections of the FSQM include surface water grab and auto-sampler collection methods; decontamination; field test methods; and quality control procedures. Data is qualified in accordance with the District Laboratory Quality Manual. Data not

meeting the quality objectives is qualified using standard FDEP qualifier codes (F.A.C. 62-160) or corrective actions may be taken as outlined in the Quality Assurance Systems Requirement (QASR) Chapters 3 through 5. Refer to Table F-2 for SFWMD data quality requirements.

TABLE F-1: SURFACE WATER QUALITY MONITORING SITES

Site Name	Description
S-601	Gated culverts; outflow from Cell 1 to NNR Canal
S- 602	Gated culverts; outflow to STA 3/4
S-603	Gated culverts; outflow to STA 3/4
S-604	Gated culverts; interior levee site between Cells 1 and 2
S-605	Gated culverts; inflow to Cell 1
S-606	Gated culverts; inflow to STA 3/4
S-607	Gated culverts; outflow from Cell 2
S-608	Gated culverts; outflow from Cell 2 to Miami Canal
S-609	Gated culverts; discharge to NNR when discharge to STA 3/4 is not possible
S-610	Cell 1 inflow Pump Station
S-611	Seepage Pump Station for Cell 2
Internal Site-Cell 1	Composite of grabs taken from within designated collection site (TBD)
Internal Site-Cell 2	Composite of grabs taken from within designated collection site (TBD)
STA	Gated culverts, inflow and outflow points

TABLE F-2: QUALITY CONTROL AND ACCEPTANCE CRITERIA

QC Measure	Description and Purpose	Frequency	Target Limits
Initial Calibration Verification (ICV)	Verify the accuracy of calibration prior to running actual samples.	Once, beginning of analytical run, and if recalibration was preformed	
Continuing Calibration Verification (CCV)	Determining any evidence of drift or shift in calibration during the course of the analysis.	At end of sampling event (within 24 hours from ICV)	
Instrument Calibration (Field Testing)	Set the instrument to proper calibration setting and range	Each event day, prior to testing at first site.	If ICV or CCV fails, recalibration should be performed or instrument removed from service.
Instrument Calibration (Laboratory)	Set the instrument to proper calibration setting and range. At least 3 valid calibration points, bracketing the sample concentrations and within instrument acceptable working range	Beginning of each analysis, and if ICV or CCV fails.	
Method Blank	Evaluate absence or present of contamination.	Laboratory analytical and preparation blank per 20 samples or less, per matrix, per preparation batch.	<MDL
Field Cleaned Equipment Blank (FCEB)/Equipment blank (EB)	Field and equipment blank prepared and handled as routine field sample, to assess effectiveness of decontamination, preservation, processing, and handling of samples.		<MDL (Data for field blanks >MDL are qualified. Sample data associated with failing field blank should be qualified for sample results <5X the positive blank value)
Laboratory precision	Matrix samples or matrix spike duplicates are analyzed in duplicate. Assessment of analytical precision.	Laboratory duplicates, analyzed for every batch of 20 samples or less	10% Relative Percent Difference or Relative Standard Deviation
Laboratory accuracy	Laboratory control spike (LCS; second source standard) and matrix spike (MS). Assessment of	One LCS and one MS analyzed for every batch of 20 samples or less	90-110% Recovery

	accuracy of analysis.		
Field precision	Assessment of precision of actual sample collection.	Quarterly- water matrix, inorganics; Annually- water organics, sediment, and tissue matrices	20% Relative Standard Deviation for water matrix; 30% for sediment and tissue matrices

The following Table F-3 lists the specific parameters required to be collected under the plan, the laboratory analytical method and detection limits for each parameter.

TABLE F-3: PARAMETER LIST, ASSOCIATED ANALYTICAL METHOD AND MDL FOR EAA STORAGE RESERVOIR PROJECT

Organochlorine Compounds	Water Methods	Water MDL1,2 ug/L	Solid/Sediment Methods	Sediment MDL1,3 ug/kg	Fish Tissue MDL1 ug/kg (GPC/AP)
Aldrin	GC-011-5 (trace)	0.002	8081	0.33	0.48
BHC - Alpha	GC-011-5 (trace)	0.0022	8081	0.33	0.32
BHC – Beta	GC-011-5 (trace)	0.0034	8081	0.33	0.80
BHC - Gamma	GC-011-5 (trace)	0.002	8081	0.33	0.64
BHC – Delta	GC-011-5 (trace)	0.002	8081	0.67	1.40
Carbophenothion	GC-011-5 (trace)	0.016	GC-011-5	1.7	NA
Chlordane	GC-011-5 (trace)	0.020	8081	5.0	0.48
Chlordane - Alpha	GC-011-5 (trace)	0.010	8081	0.40	NA
Chlordane - Gamma	GC-011-5 (trace)	0.010	8081	0.40	NA
Chlorothalonil	GC-011-5 (trace)	0.016	GC-011-5	1.70	NA
Cypermethrin	GC-011-5 (trace)	0.020	GC-011-5	1.70	NA
4,4'-DDE	GC-011-5 (trace)	0.004	8081	0.67	NA
4,4'-DDT	GC-011-5 (trace)	0.006	8081	2.1	NA
4,4'-DDD	GC-011-5 (trace)	0.0048	8081	0.67	NA
Dicofol	GC-011-5 (trace)	0.044	8081	5.0	NA
Dieldrin	GC-011-5 (trace)	0.002	8081	0.33	0.96
Endosulfan - Alpha	GC-011-5 (trace)	0.004	8081	0.33	0.96
Endosulfan – Beta	GC-011-5 (trace)	0.004	8081	0.33	0.48
Endosulfan - Sulfate	GC-011-5 (trace)	0.0048	8081	0.67	0.48
Endrin	GC-011-5 (trace)	0.01	8081	1.70	0.64
Endrin – Aldehyde	GC-011-5 (trace)	0.0044	8081	0.67	NA
Heptachlor	GC-011-5 (trace)	0.0024	8081	0.33	0.32
Heptachlor Epoxide	GC-011-5 (trace)	0.002	8081	0.33	2.1
Methoxychlor	GC-011-5 (trace)	0.01	8081	1.70	0.96
Mirex	GC-011-5 (trace)	0.012	8081	1.30	1.10

1 Subject to change
2 MDLs are stricter of experimental design, stated methodology, or QASR Appendix F requirements. NA= not applicable
3 Stricter of experimental design, SW 846, or DVS SOP QA-021A

Toxaphene	GC-011-5 (trace)	0.1	8081	25.0	80
Trifluralin	GC-011-5 (trace)	0.008	8081	1.30	NA
Permethrin	GC-011-5 (trace)	0.016	8081	2.0	NA
PCB 1016	GC-011-5 (trace)	0.02	8082	10.0	NA
PCB 1221	GC-011-5 (trace)	0.02	8082	6.7	NA
PCB 1232	GC-011-5 (trace)	0.02	8082	15.0	NA
PCB 1242	GC-011-5 (trace)	0.02	8082	10.0	NA
PCB 1254	GC-011-5 (trace)	0.02	8082	6.7	NA
PCB 1260	GC-011-5 (trace)	0.02	8082	10.0	NA
Organophosphorus and Nitrogen Compounds	Water Methods	Water MDL4,5 ug/L	Solid/Sediment Methods	Sediment MDL1,6 ug/kg	Fish Tissue MDL1 ug/kg (GPC/AP)
Alachlor	GC-012-3 (trace)	0.05	GC-012-3	20	NA
Ametryn	GC-012-3 (trace)	0.01	GC-012-3	1.7	NA
Atrazine	GC-012-3 (trace)	0.01	8141	1.7	NA
Atrazine Desethyl	GC-012-3 (trace)	0.01	NA	NA	NA
Atrazine Desisopropyl	GC-012-3 (trace)	0.01	NA	NA	NA
Azinphos Methyl	GC-012-3 (trace)	0.02	8141	1.7	NA
Bromacil	GC-012-3 (trace)	0.04	GC-012-3	1.3	NA
Butylate	GC-012-3 (trace)	0.02	NA	NA	NA
Chlorpyrifos Ethyl	GC-012-3 (trace)	0.02	8141	1.7	NA
Chlorpyrifos Methyl	GC-012-3 (trace)	0.01	8141	3.3	NA
Demeton	GC-012-3 (trace)	0.12	8141	33	NA
Diazinon	GC-012-3 (trace)	0.02	8141	3.3	NA
Disulfoton	GC-012-3 (trace)	0.02	8141	3.3	NA
Ethion	GC-012-3 (trace)	0.02	8141	1.7	NA
Ethoprop	GC-012-3 (trace)	0.02	8141	3.3	NA
Fonofos	GC-012-3 (trace)	0.02	8141	3.3	NA
Hexazinone	GC-012-3 (trace)	0.02	GC-012-3	6.7	NA
Malathion	GC-012-3 (trace)	0.03	8141	5	NA
Metalaxyl	GC-012-3 (trace)	0.05	NA	NA	NA
Metolachlor	GC-012-3 (trace)	0.01	8081	1.7	NA
Metribuzin	GC-012-3 (trace)	0.02	GC-012-3	3.3	NA
Mevinphos	GC-012-3 (trace)	0.08	8141	6.7	NA
Naled	GC-012-3 (trace)	0.08	8141	27	NA
Norflurazon	GC-012-3 (trace)	0.02	GC-012-3	3.3	NA
Parathion Ethyl	GC-012-3 (trace)	0.02	8141	5	NA
Phorate	GC-012-3 (trace)	0.03	8141	1.7	NA
Prometryn	GC-012-3 (trace)	0.02	GC-012-3	5	NA
Simazine	GC-012-3 (trace)	0.01	8141	1.7	NA
					NA
Urea and other Pesticides					NA
Diuron	DEP SOP LC-008-3	0.2	DEP SOP LC-008-3	6.5	NA

4 Subject to change
5 MDLs are stricter of experimental design, stated methodology, or QASR Appendix F requirements. NA= not applicable
6 Stricter of experimental design, SW 846, or DVS SOP QA-021A
* Analyte is not listed as a target but an additional compound in Methods 608 and 617 GC-ECD.
** Compounds are not found in the EPA Methods, are detectable by 608 and 8081.
*** No corresponding 600 series method for determination.

Linuron	DEP SOP LC-008-3	0.2	DEP SOP LC-008-3	6.5	NA
Imidicloprid	DEP SOP LC-008-3	0.2	NA	NA	NA
Zinc Phosphide	GC-017-2	0.5	NA	NA	NA
Other Compounds	Water Methods	Water MDL1	Solid/Sediment Methods	Sediment MDL1 ug/kg	Fish Tissue MDL1 ug/kg
Total Mercury (ultra trace)	EPA 1631	0.1 ng/L	NA	NA	NA
Methyl Mercury (ultra trace)	EPA 1630 (Draft)	0.022 ng/L	NA	NA	NA
Total Mercury	EPA 245.6	NA	NA	NA	0.5-0.20
Total Mercury	EPA 245.5	NA	NA	0.03	NA
Methyl Mercury	FDEP SOP HG-003	NA	NA	0.002	NA
Total Phosphorus	SM4500PF	0.002 mg/L	NA	NA	NA
NOX	SM4500NO3F	0.004 mg/L	NA	NA	NA
TKN	EPA 351.2 (modified)	0.05 mg/L	NA	NA	NA
NH4	SM4500-NH3H	0.008 mg/L	NA	NA	NA
Sulfate	EPA 300.0	0.1 mg/L	NA	NA	NA
Color	SM2120B (modified)	1.0 unit	NA	NA	NA
Priority Pollutants	Water Methods	Water MDL1 ug/L	Solid/Sediment Methods	Sediment MDL1 ug/kg	Fish Tissue MDL1 ug/kg
1,2,4 Trichlorobenzene	625	1	8270	180	NA
1,2 Dichlorobenzene	625	1	8270	180	NA
1,2 Diphenylhydrazine	625		8270	NA	NA
1,3 Dichlorobenzene	625	1	8270	180	NA
1,4 Dichlorobenzene	625	1	8270	180	NA
2,3,7,8 TCDD	625		8270	NA	NA
2,4,6 Trichlorophenol	625	1	8270	60	NA
2,4 Dichlorophenol	625	1	8270	60	NA
2,4 Dimethylphenol	625	50	8270	1800	NA
2,4 Dinitrophenol	625	15	8270	360	NA
2,4 Dinitrotoluene	625	1	8270	60	NA
2,6 Dinitrotoluene	625	1	8270	60	NA
2 Chloronaphthalene	625	1	8270	60	NA
2 Chlorophenol	625	1	8270	180	NA
2 Methyl-4, 6-Dinitrophenol	625	3	8270	60	NA
2 Nitrophenol	625	1	8270	60	NA
3,3 Dichlorobenzidine	625	40	8270	3600	NA
4 Bromophenyl phenyl ether	625	1	8270	60	NA
4 Chloro 3 methylphenol	625	1	8270	60	NA
4 Chlorophenyl phenyl ether	625	2	8270	60	NA
4 Nitrophenol	625	15	8270	60	NA
Acenaphthene	610	1	8270, 8100	60	NA
Acenaphthylene	610	1	8270, 8100	60	NA

Anthracene	610,625	1	8270	60	NA
Benzidine	625	100	8270	1300	NA
Benzo (A) anthracene	610,625	1	8270, 8100	60	NA
Benzo (A) pyrene	610,625	1	8270, 8100	60	NA
Benzo (B) flouranthene	610,625	1	8270, 8100	60	NA
Benzo (G,H,I) perylene	610,625	1	8270, 8100	60	NA
Benzo (K) fluoranthene	625	1	8270, 8100	60	NA
BIS (2-chloroethoxy) methane	625	1	8270	60	NA
BIS (2-chloroethyl) ether	625	1	8270	60	NA
BIS (2-chloroisopropyl) ether	625	3	8270	60	NA
BIS (2 ethylhexyl) phthalate	625	15	8270	360	NA
Chrysene	610,625	1	8270, 8100	60	NA
Dibenz (A,H) Anthracene	610,625	1	8270, 8100	60	NA
Diethyl phthalate	625		8270	660	NA
Dimethyl phthalate	625		8270	660	NA
Di-n-butylphthalate	625		8270	660	NA
Di-n-octylphthalate	625		8270	660	NA
Fluoranthene	610,625		8270, 8100	660	NA
Fluorene	610,625	1	8270, 8100	60	NA
Hexachlorobenzene	625	1	8270	60	NA
Hexachlorobutadiene	625	3	8270	180	NA
Hexachloroethane	625	3	8270	180	NA
Indeno (1,2,3-CD) pyrene	625	1	8270, 8100	60	NA
Isophorone	610,625	1	8270	60	NA
Naphthalene	625	1	8270, 8100	60	NA
Nitrobenzene	625	2	8270	60	NA
N-nitrosodimethylamine	625	2	8270	60	NA
N-nitrosodi-n-propylamine	625	2	8270	60	NA
N-nitrosodiphenylamine	625	3	8270	60	NA
Pentachlorophenol	625	3	8270	60	NA
Phenanthrene	610,625	1	8270, 8100	60	NA
Phenol	625	1	8270	60	NA
Pyrene	610,625	1	8270, 8100	60	NA
Aluminum	200.7, 200.8	TBD	6010, 6020	1000	NA
Antimony	200.7, 200.8	TBD	6010, 6020	250	NA
Arsenic	200.7, 200.8	TBD	6010, 6020	250	NA
Beryllium	200.7, 200.8	TBD	6010, 6020	5	NA
Cadmium	200.7, 200.8	TBD	6010, 6020	50	NA
Chromium	200.7, 200.8	TBD	6010, 6020	50	NA
Copper	200.7, 200.8	TBD	6010, 6020	50	NA
Iron	200.7	TBD	6010	1500	NA
Lead	200.7, 200.8	TBD	6010, 6020	50	NA
Nickel	200.7, 200.8	TBD	6010, 6020	50	NA
Selenium	200.7, 200.8	TBD	6010, 6020	25	NA
Silver	200.7, 200.8	TBD	6010, 6020	2.5	NA
Thallium	200.7, 200.8	TBD	6010, 6020	50	NA
Zinc	200.7, 200.8	TBD	6010, 6020	50	NA
Mercury	245.1, 245.2	TBD	245.5, 7471	0.5	NA

1 Subject to Change

F.3.3 Parameter and Frequency Rationale

F.3.3.1 Baseline Monitoring

SFWMD maintains a water quality monitoring network for surface waters within and at the boundaries of the EAA. Surface water samples have been analyzed for multiple constituents and at various frequencies from a variety of sampling stations over the years. These water quality data are compiled in the SFWMD's DBHYDRO database. Additional sources include the U.S. Environmental Protection Agency, the U.S. Geological Survey, FDEP, and numerous public and private research and monitoring efforts.

Existing water quality conditions in the EAA have been summarized in the Draft Water Quality Assessment Report prepared by Water & Air Research, Inc. (Appendix F), For the purposes of this preliminary water quality assessment, it is assumed the water quality entering the proposed EAA Storage Reservoir Project will be similar to the existing water quality in the primary canals (i.e., West Boundary, Miami, North New River, Hillsboro, West Palm Beach, and L-8 Canals).

In addition to the above data, sediment samples will be collected at one interior site within both Cells 1 and 2 to determine baseline conditions for mercury and organochlorine pesticide compounds. Refer to CERP Guidance Memorandum 42.00 "Toxic Substances Screening Process – Mercury and Pesticides", effective September 17, 2005 for detail. The selection of the interior sites within these two cells will be based on previous land use and susceptibility of a particular area as a pollutant source. Otherwise, the sites can be evenly selected over the geographical area of the compartments. The sediment cores will be collected at each site and composited to form a soil sample. These samples will be split and analyzed for mercury and pesticide compounds. Additional interior sites may be added in both cells if it is determined that previous land use created conditions for contamination in other parts of the project area.

F.3.3.2 Initial Start up Monitoring Prior to Discharge

The USACE shall initiate start-up monitoring prior to discharge as follows:

F.3.3.2.1 Mosquitofish

i. When construction of the reservoir is complete, the USACE shall notify the Department and, within one month of flooding or within one month following permit issuance, collect mosquitofish from multiple locations within each flow way (to total at least 100 fish) and physically composite them into one (spatially-averaged) sample per flow way or cell for THg analysis (note, a single aliquot should be analyzed per composite). Additionally, mosquitofish (to total at least 100 fish) will be collected

from a single site located in the receiving water downstream from the project and analyzed for THg. This downstream site will be located in an area with flow velocities that will allow for a resident population. The data for the downstream site will serve as a baseline for any future evaluations of potential impacts to the receiving waters.

ii. The USACE shall provide the Department with the results of the first collection of mosquitofish as well as the appropriate action levels for comparison (90% upper confidence level of the basin-wide average or the 75th percentile concentration for the period of record for all basins). If tissue-concentrations from an individual flow way are below the 90% upper confidence level of the basin-wide average or, if basin-specific data are lacking, are below the 75th percentile concentration for the period of record for all basins, may initiate flow-through operation and routine monitoring for that flow way (for details on routine monitoring, see below).

However, if Hg concentration in any of the mosquitofish composites from within the STA exceed one of the above referenced action levels, the USACE shall immediately (within 14 days of receiving quality assured data from the laboratory) collect a sample(s) to confirm the exceedance(s). In addition, the USACE shall consult with the Department to determine the most appropriate course of action and obtain authorization to initiate flow-through operation. At a minimum, the course of action will include implementation of Tier 2 Expanded Monitoring and Risk Assessment by the USACE during initial flow-through operations (collection of monthly mosquitofish within the STA and at one station downstream of the STA at a minimum), additional details on expanded monitoring are provided below. The recommended course of action may also include additional measures as determined to be appropriate. When results of expanded monitoring demonstrate concentrations in each flow way has decreased to acceptable levels (below action levels referenced above) and the concentrations at the downstream site are not significantly elevated above baseline levels, the USACE shall notify the Department and request that the monitoring revert back to Tier 1 routine monitoring.

F.3.3.2.2 Sediment

Prior to discharge, soil/sediment cores from the reservoir footprint shall be collected from within each 1000-acre parcel or operable unit (OU) within .the reservoir footprint. These cores shall be collected at five locations within each 1,000-acre parcel or operable unit (I.e., OU -- each independently operated treatment train of an STA or reservoir), whichever is smaller. The location of each sub-sample shall be exactly determined using GPS. At each location or site, three cores from the 0-to-4 cm horizon are to be collected and composited as

a single soil sample. To conserve resources at such a large project, sub-samples from each of the soil samples from the five different locations can be pooled to form a single supercomposite sample for each OU or 1,000 acres. In this two-staged sampling approach, the analyses of the supercomposite representing the entire OU or 1,000 acres can be used as a screening mechanism to identify if additional, individual analysis are need to be performed (on each of the individual soil/sediment samples) Accordingly, remaining material from each soil sample will be achived separately for up to one year to allow for possible future analysis (SFWMD, CGM 42, Sept. 2005). Efforts will be made to co-locate sediment sites with mosquitofish collection sites. Sediment cores shall also be collected at locations representative of the Miami, NNR, and Bolles canals excavation sites, however, these latter tasks shall be performed as part of construction activities described in Appendix A - Engineering (A.2.4.1.2 Canals).

To serve as baseline for future comparison, if future conditions warrant follow-up sampling of sediments (i.e., if Tier 2 were triggered), sediment samples will be analyzed for THg, MeHg, moisture content, total organic carbon (TOC), total sulfur (TS), and total iron (TFe). To allow for possible future analysis, remaining material from each sediment sample will be archived separately for the maximum hold time allowable for the specified parameter list.

Additionally, these sediment samples will be analyzed and assessed for the following toxicants other than mercury: Organochlorine Pesticide Compounds, Organophosphorus and Nitrogen Compounds, Urea and other Pesticides, Priority Pollutants.

F.3.3.2.3 Water

Although bioaccumulative toxicants, in particular mercury, will be monitored and assessed prior to discharge based on tissue concentrations, because of the concern for potential acute toxicity, water will be collected as a grab sample from immediately upstream of inflows and outflows of the project and analyzed for toxicants other than mercury as shown in Table F-4. Monitoring of the water column within project canals is not necessary due to the existing SFWMD water quality network that encompasses the Miami Canal, North New River Canal, Bolles Canal, and the agricultural canals.

TABLE F-4: START UP MONITORING -WATER

Location	Collection Method	Matrix	Frequency	Parameter
All inflows and outflows	Grab	Water	One-time event	Organochlorine Pesticide Compounds, Organophosphorus and Nitrogen Compounds, Urea and other Pesticides, Priority Pollutants, TOC, total sulfur and total iron
All inflows and outflows	Grab	Water	Biweekly if flowing or monthly	NOX, TKN, NH4, TPO4, OPO4, TURB, Sulfate, Alkalinity
Internal Sites (Cells 1 & 2)	Grab	Water	Biweekly if flowing or monthly	NOX, TKN, NH4, TPO4, OPO4, TURB, Sulfate, Alkalinity

The USACE shall provide the Department with the results of these analyses as well as the appropriate action levels for comparison. If the following criteria are met for a given flow way or cell, the SFWMD may initiate flow-through operation and routine monitoring for that flow way or cell (for details on routine monitoring, see below).

- If ambient mosquitofish do not demonstrate excessive bioaccumulation that exceeds a critical tissue benchmark used to establish SQAGs or in site-specific risk assessments;
- If concentrations in sediments do not exceed an effects-based, numerical sediment quality assessment guideline (SQAGs for sediment dwelling organisms, MacDonald Environmental Sciences Ltd.; USGS, 2003);
- If concentrations in sediments do not exceed an established bioaccumulative-based SQAG, if available (MacDonald Environmental Sciences Ltd.; USGS, 2003), a action level reported in the ESA or a level that was determined to be critical in a site-specific risk assessment;
- If water-column concentrations do not exceeded a WQS in Chapter 62-302, F.A.C.

However, if one of the above referenced action levels is exceeded, the USACE shall immediately (within 14 days of receiving quality assured data from the laboratory) collect a sample(s) to confirm the exceedance(s). In addition, the USACE shall consult with the Department to determine the most appropriate course of action and obtain authorization to initiate flow-through operation from that cell or flow way. At a minimum, the course of action will include implementation of Tier 2 Expanded Monitoring and Risk Assessment by the USACE during initial flow-through operations. The recommended course of action may also include additional measures as determined to be appropriate.

When results of expanded monitoring demonstrate concentrations in each flow way has decreased to acceptable levels (below action levels referenced above), and the concentrations at the downstream site are not significantly elevated above baseline levels, the USACE shall notify the Department and request that the monitoring revert back to Tier 1 routine monitoring and for transfer of the WQC into the Operations Phase.

F.3.3.3 Monitoring During Stabilization Period

The SFWMD shall initiate monitoring after initial discharge and during the stabilization period as follows:

F.3.3.3.1 Tier 1: Routine Monitoring During Stabilization Period

F.3.3.3.1.1 Water

On a quarterly basis, an unfiltered surface water sample (n = 1) shall be collected in accordance with Chapter 62-160, F.A.C., at the inflows and immediately upstream of the outflows from the project. These samples will be analyzed for THg, MeHg, sulfate (the latter not to be duplicative if listed as a parameter under routine monitoring described elsewhere in the general plan).

During stabilization of the EAA Storage Reservoir, flow proportional auto-samplers will be installed at three inflow and seven outflow sites. Auto-samplers will be visited once per week regardless of flow in order to maintain data integrity. Refer to Table F-5 for auto-sampler, grab and in situ collection summary and Section F.5.1.2 for detail on auto-sampler collection. Sondes will be deployed four consecutive days per quarter at the inflows and outflows of both cells to monitor physical parameters (refer to Table F-5). This collection process will supply sufficient data to characterize the seasonal diel patterns of these measurements.

Grab surface water and sediment samples will be collected as detailed in Table F-5 and the QASR Chapter 3. Grab sampling at the inflow and outflow sites of both cells will occur during flow events for nutrients and other parameters listed, while ultra trace total and methyl mercury will be collected quarterly at the same locations (as outlined in CERP Guidance Memorandum 42.00 "Toxic Substances Screening Process – Mercury and Pesticides"). Refer to Section F-5.1.1 for detail on grab collection procedures. Monitoring of the water column within project canals is not necessary due to the existing SFWMD water quality network that encompasses the Miami Canal, North New River Canal, Bolles Canal, and the agricultural canals.

TABLE F-5: ROUTINE MONITORING STABILIZATION – AUTO-SAMPLER, GRAB SAMPLE AND INSITU COLLECTION

Location	Collection Method	Matrix	Frequency	Parameter
All inflows and outflows	Autosampler	Water	Weekly	TPO4
All inflows and outflows	Grab	Water	Biweekly if flowing or monthly	NOX, TKN, NH4, TPO4, OPO4, TURB, Sulfate, Alkalinity
All inflows and outflows	In situ	Water	Four Consecutive Days/Quarter (continuous reading, recorded every XX minutes)	Temperature, PH, Conductivity, Dissolved Oxygen
All inflows and outflows	Grab	Water	Quarterly	THg, MeHg, sulfate

In addition, flow will be monitored at the inflow and outflow to allow for load estimation to and from the project.

This data set will be assessed to determine if outflow concentrations exceed WQS, and whether annual outflow loads of analytes are significantly greater than inflow loads, including atmospheric loading; load estimates will include confidence intervals that describe uncertainty in measures of flow and concentration (e.g., field and analytical precision) and resulting from interpolation (note: assessment protocol to be negotiated with permitting authority). Failure to satisfy these assessment measures would trigger Tier 2 Expanded Monitoring and Risk Assessment (see below).

Because of differences in the anticipated time frames under which sedimentary release are thought to occur (i.e., relative to MeHg that may have time lag associated with changes in biogeochemistry and microbial methylation driven by water quality, especially in sandy soils), monitoring for other toxicants would cease after one year if action levels are not exceeded within that time.

F.3.3.3.1.2 Cyano-bacteria Monitoring

Surface water quality collection for cyano-bacteria will be performed seasonally at all inflows and outflows of the EAA Reservoir. This monitoring will be performed to determine whether toxins are present and quantify any existing concentrations. The data will be used to evaluate if visible blooms and/or toxin concentrations can be correlated with particular environmental conditions that may exist within the reservoir.

The District shall collect samples every month during the months of May through October (typically peak bloom season) and quarterly during November through April (off-peak season).

TABLE F-6: CYANO-BACTERIA MONITORING- PARAMETERS AND FREQUENCY

Location	Collection Method	Matrix	Frequency	Parameter
All inflows and outflows	Grab	Water	Monthly during May –October Quarterly during Nov to April	Microcystin, cylindrospermopsin, and anatoxin-s
All inflows and outflows	In situ	Water		Temperature, PH, Conductivity, Dissolved Oxygen; secchi depth

Algal sample collection protocols are described below:

- Samples shall be collected from upstream of the structures.
- Care shall be taken not to disturb sediments in the immediate area of sample collection.
- Sample collection equipment (sampling bucket) shall be pre-cleaned and rinsed with sample water prior to collection.
- Amber glass sample bottles shall be pre-cleaned and properly labeled.
- Samples shall be collected by lowering the sampling bucket into the water perpendicular to the surface and filling the bucket with the top 1- to 20 cm of surface water.
- Sample containers shall be filled and placed into a cooler containing wet ice.

The cyano-bacteria monitoring data will be used to detect and minimize any adverse effects as early as possible and provide a basis for identifying adaptive management options, if deemed necessary. The results of this monitoring will be assessed based on the criteria and time table described under Phase 2- Tier 1 in CGM042. Cyano-bacteria monitoring will conclude after one year if levels are deemed to be within acceptable levels.

The cyano-bacteria monitoring does not have an approved EPA analytical method for collection and/or analysis.

F.3.3.3.1.3 Fish Tissues

Samples of fish from multiple trophic levels will be collected from each cell of the reservoir and from a single downstream site in the receiving water of the project. Specifically, mosquitofish collections will made in a similar fashion and continue on a quarterly basis from all sites that were sampled prior to discharge (see above; for rationale for the selection of this and other species listed below, see CGM 042). On an annual basis, bluegill (n should be greater than or equal to 5) should be collected and individually analyzed as whole-fish. Because this site contains habitat that is expected to support largemouth bass and because recreational harvesting is likely in the future, bass will also be collected (n should be greater than or equal to 5) and a fillet from each individual analyzed. For the reasons discussed in CGM042, collections should target bluegill ranging in size from 102 to 178 mm (i.e., 4 to 7 inches) and largemouth bass ranging in size from 280 to 330 mm (i.e., 11 to 13 inches); however, other lepomids (first priority being given to spotted sunfish) or sizes are to be collected if efforts fail to locate targeted fish. These samples will be analyzed for THg and other toxicants listed in Table F-3 under tissues.

If after one year of monitoring, sufficient data are collected to demonstrate that conditions within cell of the reservoir), collection of large-bodied fish can be reduced to one cell and one downstream site. Alternatively, if cells are shown to differ in terms of average concentration in mosquitofish, project managers may elect to sample large-bodied fish from the cell with the highest observed concentration and assess results as “worst case”. However, in either case, mosquitofish collections would continue from all cells.

This data will then be used to evaluate the following assessment measures: 1) Hg in any (quarterly) mosquitofish composite should not exceed the 90% upper confidence level of the basin-wide average or, if basin-specific data are lacking, exceed the 75th percentile concentration for the period of record for all basins; 2) annual average THg levels in fishes should not increase progressively over time or become elevated to the point of exceeding the 90% upper confidence level of the annual basin-wide average, or if basin-specific data are lacking, exceeding the 75th percentile concentration for the period of record for all basins. Exceedance of any of these action levels would trigger Phase 2 - Tier 2 Expanded Monitoring and Risk Assessment.

Tissue levels of other toxicants should not increase significantly over time or become elevated to the point of exceeding: 1) the critical tissue benchmark used to establish SQAGs or developed during site-specific risk assessments; 2) the 90% upper confidence level of the annual basin-wide average, or if not available,

exceeding the 75th percentile concentration for all basins. Exceedance of these action levels would trigger Phase 2 - Tier 2 Expanded Monitoring and Risk Assessment.

F.3.3.3.2 Tier 2: Expanded Monitoring and Risk Assessment

Phase 2 - Tier 2 is triggered if one of the following action levels is exceeded:

- If a WQS (in Chapter 62-302, F.A.C.) is exceeded; or
- If annual outflow loads of THg or MeHg are determined to be significantly greater than inflow loads (i.e., based on an uncertainty analysis of loading estimates, e.g., precision in measuring analytes and flow, interpolation over quarter); or
- If Hg in any (quarterly) mosquitofish composite exceeds the 90% upper confidence level of the basin-wide average or, if basin-specific data are lacking, exceeds the 75th percentile concentration for the period of record for all basins; or
- If annual average Hg levels in a given fish species become elevated to the point of exceeding the 90% upper confidence level of the basin-wide average, or if basin-specific data are lacking, exceeding the 75th percentile concentration for the period of record for all basins; or
- If annual average levels of a residue in a given fish species increase progressively over time (i.e., two or more years) ($p < 0.1$); or
- If residue levels of other toxicants in fish become elevated to the point of exceeding the critical tissue benchmark used to establish SQAGs or developed in risk assessments.

The following steps will be taken if any action level in Phase 2 - Tier 2 is triggered:

Step 1: Notify permitting authority;

Step 2: Resample media (e.g., water or fish) that triggered Tier 2;

If results of Step 2 (i.e., re-sampling of media that triggered Tier 2) demonstrate that the anomalous condition was an isolated event, the permitting authority will be notified that the project will revert back and continue with Phase 2 – Tier 1 monitoring. Alternatively, if results of Step 2 reveal the anomalous condition was not an isolated event, proceed to Step 3.

Step 3: Expanding monitoring program as follows:

- Increase frequency of mosquitofish collection from quarterly to monthly.

- If Tier 2 was triggered by excessive loading or exceedance of a WQS at common outflow, then begin sampling discharges at outflows of each OU or independent treatment train to better define spatial extent of problem. If necessary (i.e., if loading uncertainty is high), increase frequency of surface water collection to monthly (reducing temporal interpolation), or as appropriate for hydraulic retention time (HRT).
- To further define spatial extent of problem, collect multiple mosquitofish composites from within the OU or treatment train exhibiting anomalous conditions.
- If Tier 2 was triggered by tissue levels in large-bodied fish, increase sample size of large-bodied fish to n = 20, i.e., 20 each of sunfish (collect various species and sizes) and/or bass (collect various sizes and extract otolith from bass for age determination).
- To evaluate possible trends in methylation rates in sediments (i.e., to determine if problem is improving or worsening), replicate sediment cores (0-4 cm) can be collected from the suspected methylation "hot spot" and reference locations within the component (for THg, MeHg, moisture content, TOC, TS, and TFe) over a given period of time (i.e., 2 to 4 months). At these same locations and times, collect pore water samples and analyze for THg, MeHg, and sulfides, or if no acceptable pore water protocol has been developed, acid-volatile sulfide (AVS) on solids.

Projects shown to have (spatially) large or multiple MeHg "hotspots" should consider use of the E-MCM or comparable model as an assessment tool (i.e., to synthesize results of expanded monitoring).

Step 3 will also include the notification of the permitting authority that anomalous conditions are continuing. The permitting authority and the SFWMD may then develop an adaptive management plan using the data generated from the expanded monitoring program. This plan will evaluate the potential risks from continued operation under existing conditions (i.e., through a risk assessment for appropriate ecological receptors). If risk under existing operational conditions is deemed acceptable, then project monitoring would continue under a modified Tier 2 scheme to monitor exposure. On the other hand, if risk under existing operational conditions is deemed unacceptable, then the adaptive management plan would then proceed to determine potential remedial actions to (1) reduce exposure and risk (e.g., signage for human health concerns, reduce fish populations, reduce forage habitat suitability); if risk of acute toxicity - immediate drawdown of cells and reevaluation of ESA [Note that assessment of potential human health impacts and corrective actions (i.e., signage) will require the involvement of the Florida Department of Health]; and (2) affect mercury biogeochemistry to reduce net methylation (e.g., modify hydroperiod or stage, water quality).

In developing this adaptive management plan, the permitting authority may conduct a publicly noticed workshop to solicit comments from the SFWMD, the USACE, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the National Park Service, the Florida Fish and Wildlife Conservation Commission, and other interested persons.

The next step would then be to carry out such remedial or corrective action. If the remedial or corrective action is demonstrated to be successful, then the project would revert back to Phase 2 - Tier 1 monitoring. Alternatively, if monitoring data indicate that the remedial action was unsuccessful in reducing fish tissue concentrations or downstream loading, the permitting authority and the SFWMD would then initiate a peer-reviewed, scientific assessment of the benefits and risks of the project.

F.3.3.3.3 Tier 2: Expanded Monitoring and Risk Assessment

Phase 3-Tier 2 is triggered if one of the following action levels is exceeded during operation:

- If annual average THg levels in mosquitofish progressively increased over time (i.e., two or more years) or any (semi-annual) mosquitofish composite exceeds the 90% upper confidence level of the basin-wide annual average or, if basin-specific data are lacking, exceeds the 75th percentile concentration for the period of record for all basins; or
- If triennial monitoring of large-bodied fish (i.e., in years 6 and 9) reveals tissue Hg levels in fishes have statistically increased progressively over time (i.e., two or more years) or have become elevated to the point of exceeding the 90% upper confidence level of the basin-wide annual average or, if basin-specific data are lacking, exceeded the 75th percentile concentration for the period of record for all basins.

F.3.3.4 Routine Operational Monitoring After Year 9

On the other hand, if fishes collected under Phase 3 Operational Monitoring have not exceeded action levels by year 9, project-specific monitoring would be discontinued; future assessments would be based on regional monitoring under RECOVER.

F.3.3.5 Reporting Requirements

In addition to the reporting requirements prior to discharge and if anomalous conditions are identified based on Tier 2 criteria, the District shall submit an annual report to the permitting authority that summarizes the most recent data and compares them with the cumulative results from previous years.

F.4 INSTRUMENTATION

Autosamplers will be installed at the inflow and outflow sites of the cells and will be programmed to collect samples on a flow proportional basis. Results from flow proportional sampling of parameters of interest will be used to calculate loading rates to receiving waters. Stage level instrumentation will be required in the detention are to maintain appropriate water levels in the impoundment.

F.5 MONITORING PARAMETERS, DETECTION LIMITS, AND COMPLETENESS TARGETS

For each project, monitoring parameters and frequencies will be registered in DBHYDRO. Completeness targets, meaning the number of samples successfully collected and analyzed, are set at 95% annually for this project.

Samples are collected in accordance with the FDEP Quality Assurance Rule, 62-160.200 and 62-160.320, F.A.C., the Field Sampling Quality Manual (FSQM), and Quality Assurance Systems Requirements (QASR). Applicable sections of the manual to this monitoring plan include autosampler water collection, surface water grab, sediment and fish collection methods, decontamination, field test methods and quality control procedures. Sample collection methods and procedures are not discussed in this document. Individuals or groups participating in sample collection for this project must be familiar with procedures and requirements specified in Chapter 3 of the QASR.

F.5.1 Surface Water

Samples should be representative of the site as a whole, requiring the collector to make some use of professional judgment. For the purposes of sampling, the collection site should be contiguous with the rest of the water body. In general, a water depth of less than 10 cm is not considered to be sufficient to sample. Collection from alligator holes, ruts, or other isolated depression is not suggested.

F.5.1.1 Grab Samples

In general, samples will be collected at a depth of 0.5m at canal sites. Samples collected at marsh sites will be collected at half the depth of water with no sample being collected if water depth is less than 10 cm.

F.5.1.2 Autosamplers

Autosamplers will be set to collect composite samples at a frequency based on flow. Samples will be collected at 0.5m below the water's surface. Set flow volumes will trigger the autosampler to fill up to 24 discrete bottles per week. On a weekly basis, aliquots from these bottles will be composited into one

sample. Trigger volumes will be determined in accordance with the District's autosampler set up protocols.

F.5.1.3 In situ physical measurements

In-situ physical parameters for surface water are measured with a multi-parameter measurement instrument following methods specified in the QASR and DEP SOP's. All in-situ field measurement data will be read directly from the instruments or stored and uploaded directly into the District's LIMS. Deployed sonde data will be logged and uploaded to the PC before being loaded into DCVP. The parameters required to be measured during this project include those listed in Table F-7. The data for pH, specific conductance, and dissolved oxygen are automatically temperature-compensated. The cell constant for specific conductance is determined by the manufacturer. The field technician does not perform any calculations on the field data. Refer to Table F-7 for a detailed list of physical parameters.

TABLE F-7: PHYSICAL PARAMETERS

Parameter	Method	Acceptance Criteria	Units
Temperature Water (insitu)	SM2550B	+/- 0.5°C	°C
Dissolved Oxygen (insitu)	SM4500-O G	±0.3mg/L	mg/L
Specific Conductance Field (insitu)	SM2510B	± 5% of True Value	µmhos
pH (insitu)	SM4500HP+ PB	± 0.2 Units	STD UNIT
Turbidity, NTU (lab)	SM 2130B	90-110% Accuracy; 10% RSD/RPD	NTU
Color (lab)	SM 2120B	90-110% Accuracy; 10% RSD/RPD	PCU
Total Suspended Solids (lab)	SM 2540D	< 10% RPD	mg/L

F.6 QUALITY CONTROL AND CUSTODY

F.6.1 Ethics and Data Integrity Responsibilities

Every individual participant performing field sampling must commit to ethical and data integrity responsibilities. Field and laboratory personnel are expected to be trained on ethical practices and how to maintain data integrity, prior to performing any CERP monitoring work and annually, thereafter. The lead agency (i.e., SFWMD) or designated party is responsible for verifying this during project audits.

F.6.2 Quality Control Samples

Appropriate Quality Control (QC) samples will be collected during each sample event adhering to the SFWMD QM Chapter 7 and the QASR Chapter 3.37.

F.6.3 Documentation

Field documentation shall be sufficient and clear to allow history tracking for any sample collected or any measurement performed. Accuracy, consistency and legibility are key factors that will enhance the utilization of the field data. For all documents the following standards should apply:

- Print text, do not use cursive,
- Dates must be recorded as MM/DD/YYYY,
- Time must be recorded in 24 hour format using local time,
- Logs and notes should be recorded on site and at the time of collection, entries are to be made electronically or in waterproof ink. Corrections must be done using a single strike through the incorrect entry, initialing and dating the corrections and writing the correct information next to the previous entry.

For more details refer to District FSQM Chapter 8 and the QASR Chapter 10.

F.6.3.1 Header Sheet

The header sheet (also known as pre-login summary report, chemistry field data log, or contract laboratory chain of custody form) shall be used to document sample receipt and shall accompany all samples submitted to SFWMD or external laboratories. This sheet must be legible, accurate and complete. The header sheet is the primary source for tracking data required to uniquely identify samples for the analytical laboratory and database. This document shall be signed by the collector before it is relinquished to the laboratory.

F.6.3.2 Field Notes

Relevant field observations, as required by FDEP SOP's, shall be noted in a waterproof notebook that is project specific. Please refer to the SFWMD FSQM for more detail. Field service contractors shall provide copies of all field notes to the SFWMD field project manager within one week of sample collection.

F.6.3.3 Calibration Sheet

Field multi-parameter probe calibrations shall be recorded as required on a supplemental page of the header sheet (or equivalent). The QASR Manual Sections 3.36 through 3.44 shall be used as minimum requirements. The field instruments used in conjunction with grab sample collection must be calibrated

daily. The continuing calibration verification (CCV) standard must be read at the end of the sampling event or every 24 hours whichever less is.

F.6.3.4 Field Data Validation and Responsibilities

Data verification is the process of evaluating the completeness, correctness, and conformance/compliance of a specific data set against the method, procedural, or contractual requirements. The goal is to ensure and document the data are what they purport to be (i.e., the reported results reflect what was actually done). Data verification involves the process of reviewing entries in field notebooks, header sheet, etc. All staff associated with the project are responsible for ensuring the accuracy and completeness of field data and information. The following sections provide a list of responsible party (or the following discusses key responsibilities).

F.6.3.4.1 Sampling Team

The sample team will review and validate the sampling data collected during the course of the sampling event. This includes header sheets, field notes, and calibration sheets. Signature by the samplers indicates the data has been reviewed and validated.

F.6.3.4.2 Laboratory

In the process of entering field data into the database, the laboratory will review the data for completeness and accuracy. Incomplete or inaccurate data may result in the inability to enter data, or may flag the data as suspect.

F.6.3.4.3 Field Project Manager

It is the field project manager's responsibility to review header sheets, field notes, and calibration sheets as well as the entry of these items into the database. The field project manager is required to approve the electronic version of the data. The field project manager is responsible for scanning the field notes and according to protocol, filing them in an assigned file server.

F.6.3.4.4 Quality Assurance

The SFWMD's QA staff is responsible for overseeing the overall QA/QC program for this project. This is done by ensuring that there are sufficient data quality elements in the project plan, and conducting audits of the different processes, including field and laboratory activities. Data are validated by SFWMD's data validators.

F.6.3.5 Corrections

Corrections may be required if errors are detected at any stage of the project. Changes on hard copy records are made by single striking through the error, writing the correction, initialing and dating the change. Additions are treated as a correction and must be initialed and dated. Corrective actions shall include: a detailed explanation of the error and may include data flagging, system audits or reworking or recollection of samples. Correction to the database are reviewed and approved only by authorized personnel, and are applied only by the designated data steward or database analyst.

F.6.4 Sample Submission

Samples are transported on wet ice at 4 degrees Celsius to the laboratory within the required holding times for analysis. Samples shall be submitted as described in the QASR Manual Chapter 3 Section 3.132 through 3.137. Laboratory staff "time stamp" the sample header (Chain of Custody) sheet and verify that all samples arrive with the required preservation (e.g. cooling and acidification) and signatures.

F.6.5 Field Audits

Audits are an essential part of the quality assurance program and are conducted to measure compliance with mandatory performance standards. An example of a field audit checklist may be found in the QASR and SFWMD FSQM.

F.6.5.1 Frequency of Audits

At a minimum field audits will be performed annually by the designated auditor for the project. Field audits may be done with or without notice, or on a more frequent basis, depending on perceived need. In addition, audits will be performed by the designated project laboratory auditor to evaluate adherence to project QASR QA/QC and procedural requirements for laboratory activities and this monitoring plan.

F.6.5.2 Audit Reports, Corrective Actions, and Responses

Findings of an audit and corresponding corrective actions shall be summarized in a formal audit report and sent to the specific field project manager, staff supervisor and/or external contractors. The SFWMD QA Administrator is responsible for evaluating the accuracy of the audit finding and the field project manager and staff supervisor are responsible for responding to the audit and discussing deficiencies and corrective actions with specific staff. A written response is submitted to the auditor within one month of the audit report.

F.7 DATA AND RECORDS MANAGEMENT

After the data validation process, all data are archived in DBHYDRO and maintained so that end users can retrieve and review all information relative to a sampling event. Please refer to the QASR for the required format of electronic data deliverables. Field notes are maintained on an internal server either by scanning actual field note pages (PDF) or by uploading narratives from field computers (CSV or comma-delineated). All analytical data and field conditions are sent to a database designated by the sponsors for long-term storage and retrieval.

The sampling agency or contractor maintains records of field notes and copies of all records relative to the chain of custody and analytical data. It is the responsibility of each agency or contractor to maintain both current and historical method and operating procedures so that at any given time the conditions that were applied to a sampling event can be evaluated. Original documents are to be provided to the District by the project completion date. Original laboratory reports and original field records are retained by SFWMD for a minimum of five years past the ending date of the project.

F.8 PROJECT REPORTING

Project reporting requirements will depend upon language in permits which are issued for the project. Reports may be required monthly, quarterly, or annually, or some combination of these frequencies, depending upon the requirements of the permit. In addition to permit-required reports, analyses may include comparison with historical data from the area, statistical analyses, and data interpretation for use in sections of the PIR.

F.9 PROJECT CONTACTS AND RESPONSIBILITIES

F.9.1 Program Manager

[Insert text regarding program manager and responsibilities include

Name

Email

Telephone

Address]

F.9.2 Field Project Manager

The field project manager will be determined by the Water Quality Monitoring Division prior to project start-up. The field project manager is responsible for

maintaining this document and making sure that any changes are well documented and communicated to the field staff and other parties as necessary.

[Name

Email

Telephone

Address]

F.9.3 Field Lead

[The field lead is the direct supervisor of the staff doing the actual collection].

F.9.4 Analytical Lead/Contract Manager

[The analytical lead/contract manager is a SFWMD employee who either supervises the lab or manages the outsourced contract].

F.9.5 Quality Assurance Lead

[The Quality Assurance lead is the SFWMD employee assigned for quality assurance].

F.9.6 Reporting Lead

[The Reporting lead is the SFWMD employee assigned to the reporting on this project's data analysis and reporting, or, assigned to review reports submitted by contractors].

F.9.7 Laboratory Service Providers

Name

e-mail

Telephone

FDOH-ELCP Certification Number

F.10 REVISIONS AND MODIFICATIONS

[This section is left for future changes as they are made and should be referenced throughout the document as revisions occur. Sections should be added chronologically. As revisions are made a note should be made in the corresponding section of the plan.]

F.11 MONITORING COSTS

The monitoring costs associated with this Monitoring Plan have been estimated at costs of $959,777 for the initial year and $670,830 for each subsequent operational year. A detailed cost analysis of the Project Monitoring Plan follows:

F.11.1 Monitoring Costs

TABLE F-8: MONITORING COSTS

Monitoring Type:	Monitoring Costs For Initial Year	Monitoring Costs For Operational Yr
Labor Costs[1]:		
Baseline Monitoring - One Time Hg/OrgCl Pest Sediment Collection	$1,772	
Start Up Monitoring - One Time Pest/Priorty Poll Collection	$3,543	
Start Up Monitoring - Mosquitofish Collection	$8,858	
Start Up Monitoring - Interior Cell Collection	$7,086	
Start Up Monitoring - STA Collection	$36,849	
Operational Monitoring - Hg/Pest Grab Surface Water Coll.		$7,086
Operational Monitoring - Weekly/Grab/Autosampler Coll. (includes cyanobacteria monitoring)		$92,123
Operational Monitoring - Fish Collection (performed w/shocking below)		$8,858
Emergency Monitoring		$7,086
Contractor project review, scheduling, etc. (est. 10% of tech.hours)[2]	$2,472	$20,085
SFWMD project review - Staff Environmental Scientist (0.25 FTE)3	$10,662	$10,662
SFWMD Spec. Sci. Assoc. for fish collection and processing of samples (0.1 FTE)3	$4,062	$4,062
Subtotal	$75,304	$149,963
Vehicle/Equipment usage4		
Baseline Monitoring - Hg/OrgCl Pest Sediment Collection	$35	
Start Up Monitoring - One Time Pest Collection	$35	
Start Up Monitoring- Autosampler locations (inflows/outflows)	$1,810	
Start Up Monitoring - Mosquito Fish	$174	
Start Up Monitoring - Airboat (Mosquitofish Collection)	$2,000	
Start Up Monitoring - Airboat (Interior Cell Collection)	$2,000	
Operational fish collection		$348
Operational Monitoring - Fish Shocking5		$4,000
Operational Monitoring - Airboat (Quarterly/Annual Fish Collection)6		$3,200
Operational monitoring weekly A/S and biweekly grabs		$1,810
Operational monitoring(qtr) Hg/Pest		$278

Emergency monitoring (4 days)		$139
Supplies (gloves, syringes, filters, multi-param probes, etc.)	$8,000	$8,000
Subtotal	$14,053	$17,775
Capital Costs:		
Eleven (11) Autosamplers (inflow, outflows) @ $3,500 each	$38,500	
Install 11 walkway/platforms @ $6,000 each	$66,000	
Costs of Other Monitoring Equipment Installed By SIMD for 11sites7	$330,000	
Subtotal	$434,500	
Analytical costs		
Analytical costs, QA, reporting, etc	$348,667	$274,369
Total	$872,525	$609,845
Total + 10% Contingency	$959,777	$670,830
Key:		
[1]rate of $96.82/hr for a Staff Engineer and $80.34/hr. for an Engineer		
[2]rate of $154.50/hr for Lead Engineer/Project Manager		
3rate of $25.63/hr for District Staff Environmental Scientist; rate of $24.41/hr		
for a Specialist Scientific Associate		
4rate of $0.29/mile and est. 120 mile round trip from WPB		
5rate of $2,000/site		
6rate of $400/day		
7 includes Moscad ($22,500), wiring ($3,500), telemetry ($4,000) per site		

TABLE F-9: QASR TABLE 3.17 FIELD QUALITY CONTROL SAMPLE CRITERIA AND CORRECTIVE ACTION.

QC	Requirement	Acceptance Limit	Corrective Action
Field Blank (FB)	1 per sampling trip if no other blank is collected or if environmental contamination is suspected (e.g. rain, dust, ash)	>MDL	Qualify associated samples up to 5 times the blank value. Investigate environmental conditions, sample bottles, analyte-free water and container, preservatives, shipping, etc.
Pre-cleaned Equipment Blank (EB)	1 per sampling trip if no equipment is cleaned in the field, and 1 per quarter per project (For Autosampler, collect 1 EB each time intake tubing is replaced)	>MDL	Qualify associated samples up to 5 times the blank value. Investigate equipment cleaning, analyte-free water and container, sample bottles, environmental conditions, preservatives, shipping, etc.
Field Cleaned Equipment Blank (FCEB)	At least 1 per sampling day, if equipment is cleaned in the field	>MDL	Qualify associated samples up to 5 times the blank value. Investigate equipment cleaning, cleaning reagents, analyte-free water and container, sample bottles, environmental conditions, preservatives, shipping, etc.
Field Duplicates or Replicate Samples (FD) or (RS)	Varies per project: at least one per quarter recommended	< 20 % RPD or RSD*	Qualify affected samples. Investigate collection procedure, sample bottles, equipment cleaning, etc.
Trip Blank (TB)	1 set per transport container for VOCs, (not to be opened)	>MDL	Quality affected samples. Investigate shipping, transport containers, laboratory analyte-free water and containers, etc.
Split Samples (SS)	Varies per project: as needed	<20 % RPD or RSD*	Qualify affected samples. Investigate laboratory analyses. Then, evaluate splitting techniques.

TABLE F-10: QASR TABLE 4.1 QUALITY CONTROL CHECKS AND CORRECTIVE ACTIONS FOR THE LABORATORY

QC Activity	Acceptance Criteria	Recommended Corrective Action
Instrument Calibration for linear curves	Correlation coefficient > 0.995	Re-analyze standards. If same response is obtained, re-optimize instrument and re-start analysis. If same response is obtained, prepare new standards and re-start analysis.
Calibration standards concentration for non-linear curves	85 -115 % recovery of the known concentration, calculated from the curve	Same as above
Continuing calibration standards for linear curves	Within 5 % of the initial instrument response	Recalibrate and re-analyze the affected portion of the analysis. Accepted portions of the analysis must be bracketed by acceptable QC checks.
Analytical sensitivity evaluation (check sample at PQL concentration level)	70 – 130 % recovery of the known value	Re-analyze check standard. If same response is obtained, prepare new primary/calibration standards. If that check fails, check against an alternate check sample source. If that check fails, find and eliminate problem. Re-analyze all samples in the batch once problem is resolved.
Continuing calibration verification samples	85 – 115 % recovery at a frequency of every 20 samples, and 5%	Recalibrate and re-analyze the affected portion of the analysis. Accepted portions of the analysis must be bracketed by acceptable QC checks.
Quality control or Check standards	Accuracy within laboratory established limits or per the method	Re-analyze QC or check standard. If same response is obtained, prepare new primary/calibration standards. If that check fails, check against an alternate check sample or QC sample source. If that check fails, find and eliminate problem. Re-analyze all samples in the batch once problem is resolved.
Lab blanks (method, reagent, digestion, instrument)	< MDL response and value, at a frequency of 5%	Prepare new blank and re-start analysis. If same response is obtained, determine cause of contamination (regents, calibration standards, environment, equipment failure, etc.) and minimize or eliminate. If different response is obtained, re-analyze samples if possibility of being affected by the initial contamination problem exists. Flag associated data if the concentration of a targeted analyte in the blank is at or above the reporting limit and is greater than 1/10th of the amount measured in any sample; or affects sample results per the test method requirements or project DQO.
QC Activity	Acceptance Criteria	Recommended Corrective Action
Matrix spikes	80 – 120 % recovery at a rate of 5% and every 20 samples, selected at random Spike level 2-5 times the measured background level and the total concentration within analytical range	Re-make spike and re-analyze. If acceptable, re-analyze affected portions of the analysis. If not acceptable, check for matrix interference. Also check other samples in the sampling group for matrix interference. Qualify samples as necessary.
Lab fortified blanks (LFB)	85 – 115 % recovery at the same spiking level as the matrix spike	Re-make LFB and re-analyze. If acceptable, re-analyze affected portions of the analysis. If not acceptable, check for spiking solution degradation or contamination, dispenser/pipette calibration, or instrument calibration problems.
Lab duplicates/ Matrix spike duplicates	Precision <20 RPD if concentration over the PQL	Determine and eliminate cause of problem (baseline drift, carryover, etc.). Re-analyze all affected samples.
Field blanks/ Equipment blanks	<MDL	Re-analyze blanks, if same response, re-digest (if applicable) and re-analyze. If same response, qualify blanks. If different response, re-analyze/ re-digest all samples in the analytical batch.
Field duplicates/ Field replicates, if known to the laboratory	Precision <20% RPD if concentration over the PQL	Re-analyze duplicates, if same response, re-digest (if applicable) and re-analyze. If same response qualify samples. If different response, re-digest/re-analyze all samples in the analytical batch.

TABLE F-11: QASR TABLE 3.13 FIELD EQUIPMENT CALIBRATION REQUIREMENTS

Parameter	Initial Calibration (IC)	Initial Calibration Verification (ICV)	Continuing Calibration Verification (CCV)
pH	Use at least 2 standards: pH 7 and then 4 or 10 2nd standard choice based on expected sample pH and at least 3 units from pH 7 Daily prior to use or if CCV fails Standards must read ± 0.2 Standard pH units of calibration buffer true value Check theoretical slope weekly if possible, must be >90%.		Read at end of sampling trip, no later than 24 hours after initial calibration Read before next calibration One standard Must be ±0.2 Standard pH units of calibration buffer expected value
Specific Conductance	Daily, prior to use or if CCV fails Calibrate zero (dry cell) if using Hydrolab series4 sonde. Use 1 KCl standard above the upper end of expected sample range Standards must read ± 5% of TV	Read standard below expected range Standard must read ± 5% of TV	Check at the end of sampling trip, no later than 24 hours after initial calibration Read before next calibration 1 standard Must be ± 5% of TV If sample readings are outside the initially verified range, read the appropriate standard(s) to bracket all sample readings for the sampling event.
Temperature	Check monthly against NIST traceable thermometer at room temperature Check at multiple temperatures quarterly. Use 2 or more temperatures that bracket the expected sample range Apply correction if deviation is linear Acceptance criterion ±0.5 oC of NIST-traceable value (with correction factors)	Must read within ±0.5°C of the corrected reading of the NIST traceable thermometer.	Check the field measurement device against the standard NIST traceable thermometer.
Dissolved Oxygen	Daily (saturated air reading), prior to use or if CCV fails Use appropriate solubility table Calibrate DO meter in the shade Accuracy of ±0.3mg mg/L	Not applicable	Check at the end of the sampling trip, no later than 24 hours after initial calibration Must be ± 0.3 mg mg/L of saturation value

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ANNEX G
DRAFT ACCELER8 PERMIT TEMPLATE

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DRAFT
Acceler8 PERMIT TEMPLATE

The USACE has prepared this template to flesh out the details of the Acceler8 mitigation plan. This is a Draft template as of 29 March 2006. This template is NOT in any way an expression that the USACE has decided to issue permits or, if issued, the permits would have these conditions: by regulation that decision can only be made after obtaining public comments and reviewing those comments. Changes will occur as we consider concerns raised in the public comments. This in intended to provide a starting point for discussion with the applicant during the permit review process.

Preamble: The goal of the Acceler8 program is to assist in the restoration, preservation, and protection of the South Florida ecosystem while providing for other water related needs of the region. This program of projects will be designed to provide the quantity, quality, timing, and distribution of water necessary to achieve and sustain those essential hydrological and biological characteristics that define the restored South Florida ecosystem. The construction and operation of Acceler8 will be required to remain consistent with the Federal Central & South Florida Project as modified by law and its project goals and purposes.

Given that the Acceler8 projects are intended to be constructed by the State and are a subset of planned federal projects within the Comprehensive Everglades Restoration Plan (CERP), the SFWMD has agreed with the Federal government to design, construct, and operate the Acceler8 projects consistent with the requirements of the Water Resources Development Act (WRDA) of 2000, applicable federal and state law, and the Central and Southern Florida Project purposes as a whole. The State acknowledges that it will be in full compliance with the Programmatic Regulations, President/Governor Agreement, and Section 601 of WRDA 2000 prior to execution of a Project Cooperation Agreement in order for the Acceler8 project to become a federal project. Until such time, the Acceler8 projects are a state program and programmatic regulations are not directly applicable.

Each Acceler8 project is being evaluated based both on its individual local impacts and on the system-wide environmental benefits provided by the Acceler8 program as a whole. In order for the U.S. Army Corps of Engineers (USACE) to consider applying these system-wide benefits to offset individual project

impacts, the permittee agrees to comply with specific permit conditions as well as the commitments stated herein.

Permittee:

Permit No:

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

The work described above is to be completed in accordance with the drawings affixed at the end of this permit instrument.

Project Location:

Directions to site:

Latitude & Longitude:

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on *. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General

Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions: The terms used in these permits will have the same definition as those terms in 33 CFR Part 385.3, unless otherwise defined.

1. All submittals and reports required under this permit and all subsequent modifications shall be provided in a single Consolidated Annual Report, i.e., the South Florida Environmental Report on March 1, and should be provided to the following addresses:

U.S. Army Corps of Engineers
South Florida Restoration Program Office
1400 Centrepark, Suite 750
West Palm Beach, Florida 33401
Re: Project No: SAJ-*(IP-TKW)

U.S. Army Corps of Engineers

Enforcement Section (CESAJ-RD-PE)
P.O. Box 4970
Jacksonville, Florida 32232-0019
Re: Project No: SAJ-*(IP-TKW)

2. The permittee shall conduct a pre-construction meeting a minimum of 10 days prior to commencement of construction in order to notify contractors of the requirements of the permit. The permittee shall provide a minimum of 7-day advance notification of the pre-construction meeting to the USACE, South Florida Restoration Program Office.

3. The permittee shall notify the USACE, South Florida Restoration Program Office, in writing at least 48 hours prior to commencement of the work authorized by this permit.

4. The permittee shall provide as-built drawings of the authorized work and a completed As-Built Certification Form. The drawings and Certification Form are to be submitted within 90 days of completion of the authorized work or a response indicating that the authorized work has not been accomplished shall be submitted prior to the expiration of the construction authorization of the permit. The drawings and Certification Form must be signed and sealed by a professional engineer registered in the State of Florida and where appropriate, a professional land surveyor registered in the State of Florida. In the event that the completed work deviates from the approved permit drawings and special conditions, the permittee shall describe, on the Certification Form, the deviation(s) between the project authorized by the permit and the project constructed. A blank Certification Form is attached at the end of this permit.

5. Conditions for projects the permittee plans to construct in furtherance of the CERP, but which are being constructed in advance of final authorization/approval of the associated CERP Project Implementation Report (PIR) and/or execution of a Project Cooperation Agreement:

a. The USACE' analysis of this permit application pursuant to applicable regulations and the National Environmental Policy Act (NEPA) may need to be supplemented to meet requirements for modifications of the permit.

b. The USACE' decision that this project has independent utility is made solely for the purpose of permitting and does not mean that it is or is not a separable project under CERP.

c. Issuing this permit does not constitute approval of any engineering or design for any future consideration of the project under CERP.

d. Future action on related portions of this project or other projects being implemented under CERP may require additional NEPA compliance analysis and documentation or other related analysis under the USACE' Civil Works Planning Process.

e. The issuance of this permit does not constitute a recommendation by the Chief of Engineers for congressional authorization of this project for construction or implementation as a feature or component of an authorized CERP project.

f. The issuance of this permit does not constitute approval of this project as being necessary, integral, and cost effective for consideration of cost sharing for the planning, design, engineering, construction or implementation of a feature of CERP.

g. Any work under an authorized federal project cannot be considered for any mitigation that may be required by issuance of this permit

h. The permittee is required to design, construct, and operate the project consistent with the Central and Southern Florida Project as modified.

i. The permit specific conditions will be reevaluated if a PCA is executed on an authorized CERP project, which includes the Acceler8 project feature, in order to relieve the permittee of specific conditions that are no longer applicable.

6. CESAJ Master Specifications: The permittee shall adhere to all applicable CESAJ Environmental Specifications from Section 01355 and the CESAJ Turbidity Specifications from Section 01411 of the plans and specifications for the project, which are incorporated herein by reference.

7. Environmental Commitments:

a. The permittee shall monitor water quality in accordance with the project Water Quality Monitoring Plan (See Annex F of this Final EIS) and shall remain in compliance with State Water Quality Certification for the life of the project.

b. To employ best management practices with regard to erosion and turbidity control as described in the Section 01411

Turbidity Specifications". Prior to construction, the permittee shall examine all areas of proposed erosion/turbidity control in the field, and make adjustments to the plan specified in the plan control device as warranted by actual field conditions at the time of construction.

c. The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor adopt safe and sanitary measures for the disposal of solid wastes in accordance with federal, state, and local requirements. A spill prevention plan will be prepared.

d. Demolition debris will be transported to a landfill or otherwise disposed of in accordance with federal, state, and local requirements. Concrete or paving materials will be disposed of in accordance with federal, state, and local requirements and submitted concurrent with the notice of the pre-construction meeting referenced in special condition number 2 above.

8. Wildlife/Listed Species Conditions:

a. This Department of the Army permit does not authorize you to take a(n) threatened or endangered species. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA section 10 permit, or a Biological Opinion (BO) under ESA section 7, with "incidental take" provisions with which you must comply). The enclosed United States Fish and Wildlife Service BO contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take or the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, would constitute non-compliance with your USACE permit. The Service is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA. For further clarification on this point, you should contact the South Florida Ecological Services, Vero Beach Office, 1339 20th Street, Vero Beach, Florida 32961.

b. Prior to construction, bald eagle, wood stork, and burrowing owl surveys will be performed. If owls are observed within the Acceler8 EAA Storage Reservoir construction footprint, the Florida Fish and Wildlife Commission (FWC), 255 154th Avenue, Vero Beach, Florida 32968-9041, telephone number 772-778-5094 (FWC) will be consulted for management measures. More information on FWC permit requirements and applications can be found on the web at http://wld.fwc.state.fl.us/permits/permits.html. If bald eagle nests are encountered on the project footprint, the USFWS' *Habitat Management Guidelines for the Bald Eagle in the Southeast Region* will be implemented during construction of the EAA project. Both the FWC and USFWS will be consulted in the event that colonial or solitary wading bird nests are observed within the construction footprint. The USFWS will be notified upon locating a dead, injured, or sick wood stork or bald eagle before, during, and after construction of the reservoir.

c. The permittee shall inform contractor personnel of the potential presence of threatened and endangered species in the project area, the need for precautionary measures and the ESA prohibition on taking listed species. Construction contractors will be trained and briefed on how to identify the wood storks and bald eagles in the area. The USFWS will be notified upon observation of any stork or eagle nesting activity.

d. The following special measures will be incorporated during project construction to minimize effects to any listed species that may be present: a) *Standard Protection Measures for the Eastern Indigo Snake*; b) *Management Guidelines for the Bald Eagle in the Southeast Region and Bald Eagle Standard Local Operating Procedures for Endangered Species*; and c) *Habitat Guidelines for the Wood Stork in the Southeast Region*.

e. If new electrical lines are constructed near open water to service new pumps, the publication Suggested Practices for Raptor Protection on Powerlines: The State of the Art in 1996 shall be consulted for recommended measures to protect bald eagles from electrocution.

9. Historic Properties:

a. No work is authorized by this permit on properties listed or eligible for listing in the National Register of Historic Places.

b. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native

American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving the subsurface disturbance in the immediate vicinity of such discoveries. The permittee, or other designee, should contact the Florida Department of State, Division of Historical Resources, Review and Compliance Section at 850-245-6333 or 800-847-7278. Project activities should not resume without verbal and/or written authorization from the permitting agency.

c. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance within Section 872.05, Florida Statutes.

10. Project Benefits:

11. The decision on this permit included consideration of system-wide environmental benefits expected to result from the interrelationships of the design, construction, and operation of the work authorized herein and other works to be constructed under Acceler8. These system-wide environmental benefits are projected to offset the adverse effects of such works, as identified in the mitigation ledger attached to this permit.

The permittee has demonstrated that or the goal of the Acceler8 projects is to improve the environment of the south Florida ecosystem while providing for other water related needs of the region. The permittee agrees that in order to achieve system-wide environmental benefits, the Acceler8 projects will be designed, constructed, and operated individually and as a whole consistent with the goals of the C&SF project as modified. The permittee's commitments along with the mitigation and monitoring conditions as set out below are the basis for determining that the system-wide operation of the Acceler8 projects will provide system-wide environmental benefits which serve to offset the individual Acceler8 project impacts.

The following conditions shall apply until a PCA for a CERP project that includes all or a portion of the Acceler8 project is executed and the USACE determines that these mitigation and monitoring conditions are superseded by PCA execution, in whole or in part.

a. This permit acknowledges that the project results in a loss of functional units based on the Unified Mitigation Assessment Method. This loss is anticipated be offset by construction of the project and other Acceler8 projects. As

shown on the Mitigation ledger attached to this permit, the Acceler8 projects are anticipated to provide enough functional units by the year 2020 sufficient to offset the adverse effects of this project. If it is determined that the functional units anticipated to be lost as a result of this project are not fully offset through implementation of the identified Acceler8 projects by March 1, 2020, the USACE will re-evaluate the project's adverse effects in light of all of the circumstances prevailing at that time, to determine if an alternate and/or supplemental compensatory mitigation plan is needed. Although the full environmental benefits as projected on the ledger are not expected until 2020, the USACE will require annual monitoring to ensure the Acceler8 projects are trending toward success, achievement of the restoration targets, and the functional lift projected in the mitigation ledger (See special condition number 11.d below).

As a condition of this permit, the permittee agrees to fully satisfy, implement, and pay for any alternative and/or supplemental mitigation requirements that the USACE may determine to be necessary to address the loss of functional units cited above. As a contingency for addressing this situation if it should occur, based on best available information the permittee has identified up-front potential alternative mitigation actions for this project.

b. In order to provide the system-wide benefits of this project, the permittee shall operate the project in accordance with an approved operation plan developed consistent with current USACE Engineering Regulations and the requirements of the C&SF Federal Project as modified. The operation plan will be consistent with the operational guidelines identified in the NEPA evaluation for the project. The operational plan will be reviewed and approved by the USACE prior to operation of the project. The permittee shall request approval of a draft operations plan at least six months prior to the projected operation of the project.

The operations plan shall include but will not be limited to a water budget that estimates the appropriate volume and distribution of water necessary to achieve the anticipated system-wide environmental benefits as required to offset the project impacts and necessary to meet the goals of the project. This water will be protected under special condition number 11.e below. Any modification to the operating plan will require Department of the Army approval prior to modification.

c. The permittee shall conduct monitoring as identified in the project Mitigation Monitoring Plan.

d. It is the responsibility of the permittee to achieve the system-wide benefits to which this project contributes. If annual monitoring identifies areas where Acceler8 system-wide environmental benefits are not trending toward success at a reasonable rate of progress, the permittee and the USACE will review the operating plan to determine if adjustments can be made to achieve such benefits. The permittee shall be required to implement corrective actions necessary to achieve the required environmental lift. If it is determined that such system-wide environmental benefits can not be achieved through such actions prior to the permit expiration date, the permittee will be responsible for undertaking alternative compensatory mitigation as determined by the USACE to offset project impacts.

e. The permittee shall not allocate for consumptive use any water made available by the project until it demonstrated that the project can be operated consistent with the approved operations plan to achieve the project's anticipated environmental benefits as identified in the NEPA evaluation and on the mitigation ledger. At such time, the water made available for consumptive use will be identified and allocated consistent with the requirements of the NEPA evaluation.

f. The permittee shall provide sufficient financial assurances, determined to be necessary by the USACE, for the performance of all obligations, covenants, terms, conditions, and agreements required under this permit.

g. This permit acknowledges that the mitigation will be conducted consistent with the CERP Adaptive Management Plan which is incorporated herein by reference.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the USACE will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

_____ _____
(PERMITTEE) (DATE)

_____
(PERMITTEE NAME-PRINTED)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

_____ _____
(DISTRICT ENGINEER) (DATE)
Robert M. Carpenter
Colonel, U.S. Army

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

(TRANSFEREE-SIGNATURE) (DATE)

_____

(NAME-PRINTED)

_____

(ADDRESS)

_____

(CITY, STATE, AND ZIP CODE)

ANNEX H
MEMORANDUM OF AGREEMENT

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MEMORANDUM OF AGREEMENT REGARDING ACCELERATION OF THE COMPREHENSIVE EVERGLADES RESTORATION PLAN

WHEREAS, restoration of America's Everglades is the world's largest environmental project of its kind; and

WHEREAS, restoration of the River of Grass is reviving habitat for more than sixty threatened and endangered species, restoring the Everglades' natural water flows from Lake Okeechobee to Florida Bay, and establishing a reliable environmental, urban, and agricultural water supply while providing improved flood protection – a restoration benefit underscored by the impact of three recent hurricanes on South Florida's shores; and

WHEREAS, the 30-year, $8 billion Comprehensive Everglades Restoration Plan is being funded, managed and implemented through an unprecedented 50-50 partnership between the state and federal governments; and

WHEREAS, Governor Bush and the South Florida Water Management District, in conjunction with their federal partners, desire to accelerate funding, design and construction to complete several Comprehensive Everglades Restoration Plan projects over the next seven years; and

WHEREAS, completion of these critical restoration projects more than ten years ahead of schedule will save money and provide immediate environmental, social and economic benefits; and

WHEREAS, Governor Bush has always advocated fiscal restraint in issuing publicly supported debt but also recognizes that the unique opportunity to accelerate the restoration of Florida's Everglades warrants borrowing funds for the construction of Comprehensive Everglades Restoration Plan projects.

NOW, THEREFORE, IN CONSIDERATION OF THE FOREGOING, the Executive Office of the Governor and the South Florida Water Management District hereby agree to the following principles for accelerating the Comprehensive Everglades Restoration Plan:

1. The acceleration of Comprehensive Everglades Restoration Plan projects shall not result in an increase in State funding or millage rates levied by the South Florida Water Management District.

2. As part of the annual statutory water management district budget review or as needed, each project to be accelerated (and not previously approved) and the related funding (including debt issuance) shall be subject to review and approval by the Executive Office of the Governor. Additionally, the finance plan and sale of each series of Certificates of Participation shall be subject to review by the

Executive Office of the Governor.

3. The finance plan for accelerating the Comprehensive Everglades Restoration Plan shall be flexible so that the amount and timing of any borrowings can be adjusted as circumstances warrant. For example, the finance plan may require modification for changes in estimated project cost, assumptions for the growth in the tax base or construction schedules.

4. The borrowing for each accelerated Comprehensive Everglades Restoration Plan project shall be consistent with the District's debt management policies that are effective from time to time. The District's current debt management policies shall be amended to limit the debt service associated with long-term debt which includes the accelerated Comprehensive Everglades Restoration Plan projects to no more than 20% of the available ad valorem, related interest thereon, and permit fee revenues.

5. The debt management policies shall require that bond financing professionals be selected through a Request for Proposals process and that debt be sold by competitive sale unless a negotiated sale of bonds is supported by an analysis and recommendation that it would be more cost-effective.

6. Consideration shall be given but not limited to the level of interest rates, duration of the debt and prepayment penalties in order to minimize the interest cost for accelerating the Comprehensive Everglades Restoration Plan.

7. The State recognizes that funding Comprehensive Everglades Restoration Plan projects assumes a minimum annual funding commitment of $100 million in State funds in accordance with sections 215.619 and 373.470, Florida Statutes.

8. This Memorandum of Agreement for the acceleration of Comprehensive Everglades Restoration Plan projects through the issuance of Certificates of Participation shall be limited to fund the following projects:

    a. Water Preserve Areas, including Site 1 Impoundment; C-9 Impoundment; C-11 Impoundment; Water Conservation Area 3A – 3B Levee Seepage Management; and Acme Basin B
    b. Everglades Agricultural Area Stormwater Treatment Area Expansion (Compartments B and C)
    c. Everglades Agricultural Area Reservoir Phase I and Bolles and Cross Canals
    d. Southern Golden Gate Estates (Picayune Strand) Hydrologic Restoration
    e. Biscayne Bay Coastal Wetlands Phase I
    f. C-111 Spreader Canal
    g. C-43 (Caloosahatchee River) West Storage Reservoir
    h. C-44 (St. Lucie Canal) Reservoir /Stormwater Treatment Area

Issuance of Certificates of Participation for projects other than those enumerated in this Memorandum of Agreement is not addressed by this Agreement.

APPROVED AND ADOPTED THIS 14th DAY OF OCTOBER, 2004.

JEB BUSH
Governor

NICOLAS J. GUTIERREZ, JR.
Chair, SFWMD Governing Board