CANAL 111 (C-111) BASIN
SOUTH DADE COUNTY, FLORIDA

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

EXPANSION OF THE C-111 DETENTION AREA AND ASSOCIATED FEATURES

US Army Corps of Engineers **May 2012**
Jacksonville District

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JUN 0 8 2012

Expansion of the C-111 Detention Area and Associated Features
Environmental Assessment

South Dade County, Florida

FINDING OF NO SIGNIFICANT IMPACT

Based on the information analyzed and presented in the Environmental Assessment (EA) attached hereto, dated May 2012, reflecting pertinent information obtained from agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will not significantly impact the quality of the human environment and does not require an Environmental Impact Statement. Reasons for this conclusion are, in summary:

a. The project will not adversely affect existing fish and wildlife habitat.

b. Adverse impacts to protected species are not anticipated. Special measures will be incorporated during project construction to avoid or minimize adverse effects to any listed endangered, threatened, or species of special concern that may be present (see Environmental Compliance and Commitments in Section 5). Consultation began January 27, 2012, on the Cape Sable seaside sparrow, Florida panther, West Indian manatee, American crocodile, eastern indigo snake, wood stork, Garber's spurge, and Okeechobee gourd. No incidental take of protected species is anticipated.

c. The proposed project will have no effect on any sites of cultural or historical significance and is in compliance with the National Historic Preservation Act.

d. The project is in compliance with the Clean Water Act. A Water Quality Certificate for this project will be acquired from Florida Department of Environmental Protection. All State water quality requirements will be followed.

e. The U.S. Army Corps of Engineers (Corps) is coordinating a consistency determination under the guidelines of the Coastal Zone Management Act (CZMA) through the circulation of this Environmental Assessment. The Corps has determined that the proposed action is consistent with the State of Florida CZMA programs. The Florida CZMA Evaluation can be referenced in Appendix D of this report.

f. The project will benefit wetlands, along with fish and wildlife habitat, in Everglades National Park, including Taylor Slough and Shark River Slough. Wetlands in Northeast Shark River Slough, the Rocky Glades, and the western marl prairies will benefit from the restoration of more natural hydroperiods resulting in a more historic coverage of vegetation.

g. This finding is being coordinated with the public and agencies in accordance with 40 CFR 1501.4(e) and Engineer Regulation ER 200-2-2. The point of contact is Stacie Auvenshine at 904-232-3694 or Stacie.J.Auvenshine@usace.army.mil.

In view of the above, and after consideration of public and agency comments received on the project, I have concluded that the proposed action for the expansion of the C-111 Detention Area and associated features will not result in a significant adverse effect on the human environment. This finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment attached hereto.

ALFRED A. PANTANO, JR.
Colonel, Corps of Engineers
Commanding

4/6/12
Date

ENVIRONMENTAL ASSESSMENT
EXPANSION OF THE C-111 DETENTION AREA AND ASSOCIATED FEATURES
MIAMI DADE COUNTY, FLORIDA

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ENVIRONMENTAL ASSESSMENT FOR EXPANSION OF CANAL 111 (C-111) DETENTION AREA AND ASSOCIATED FEATURES SOUTH DADE COUNTY, FLORIDA

1.0 PROJECT PURPOSE AND NEED

The purpose of this Environmental Assessment (EA) is to update the National Environmental Policy Act (NEPA) document of the Central and Southern Florida (C&SF) Project Final Integrated General Reevaluation Report and Environmental Impact Statement Canal-111 (C-111) South Dade County, Florida (1994 GRR/EIS). This updated EA includes the evaluation of design refinements to the original 1994 GRR/EIS, including the expansion of the existing S-332B Northern Detention Area (NDA) and associated features.

1.1 PROJECT AUTHORITY

The C-111 Project was constructed as part of the Everglades National Park (ENP)–South Dade Conveyance Canals Project authorized by the Flood Control Act (FCA) of 1968 (Public Law (PL) 90-483). This Act authorized modifications to the existing Central and Southern Florida (C&SF) Project as previously authorized by the FCAs of 1948 (PL 80-858) and 1962 (PL 87-874). Further modifications to the C-111 were authorized as an addition to the C&SF project in the Water Resources Development Act (WRDA) of 1996 (PL 104-303). The 1994 GRR/EIS describes a conceptual plan for five pump stations and levee-bounded retention areas to be built west of the L-31N Canal between the 8.5 Square Mile Area and the Frog Pond to control seepage out of ENP while providing flood protection to agricultural lands east of C-111. The original and existing configuration of these structural features are described in detail in the Interim Operations Plan (IOP) Alternative 7R within the IOP for the Cape Sable Seaside Sparrow Final Supplemental EIS completed in 2007 (2007 IOP FSEIS).

1.2 PROJECT LOCATION

The project is located in southern Miami-Dade County, which is in southeastern Florida (Figure 1). It is situated within the C-111 basin, consisting primarily of abandoned agricultural lands in the Homestead/Florida City area. The project adjoins ENP to the west and discharges water to the eastern panhandle of ENP, Florida Bay, Manatee Bay, and Barnes Sound.

Figure 1: Project Location Map

1.3 HISTORY OF THE PROJECT SINCE THE 1994 GRR/EIS

The U.S. Army Corps of Engineers (Corps) completed the 1994 GRR/EIS as a result of the continued project design and reformulation efforts to reconcile the desires of the non-Federal sponsor, stakeholders, and the legislative directive from the Everglades National Park Protection and Expansion Act of 1989 to "take all measures which are feasible and consistent with the purposes of the (C-111) project to protect natural values associated with the ENP". The 1994 GRR/EIS project features are described in the GRR/EIS and located at the following website:
http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/DOCS/OnLine/Dade/c-111all.pdf.

In February 1999, the U.S. Fish and Wildlife Service (USFWS) determined that operations of the system were likely to cause "jeopardy" to the Cape Sable seaside sparrow (CSSS). The USFWS issued a Final Biological Opinion (BO) under provisions of the Endangered Species Act (ESA) that presented a Reasonable and Prudent Alternative (RPA) to avoid jeopardizing the CSSS during the interim period leading up to the completion of the Modified Water Deliveries (MWD) project. The USFWS RPA recommended that certain hydrologic conditions be maintained in the CSSS's breeding habitat to avoid jeopardizing the continued existence of the species.

The USFWS BO ended the Experimental Program of Water Deliveries to ENP and brought about the Interim Structural and Operational Plan (ISOP) (USACE 2000). The ISOP was designed to meet the conditions of the USFWS RPA included in the USFWS BO beginning in March 2000 until implementation of the Interim Operational Plan (IOP) for the Protection of the CSSS in 2002. The Record of Decision (ROD) for IOP was signed in July 2002, and IOP was implemented to continue USFWS RPA protective measures for the CSSS. Components within IOP included a 226 acre Northern Detention Area (S-332B NDA). By an order issued in March 2006 by the U.S. District Court for the Southeastern District of Florida Miami Division, resolving a lawsuit by the Miccosukee Tribe regarding National Environmental Policy Act (NEPA) compliance and other matters related to IOP, the Corps was required to issue a supplement to its 2002 Final EIS, which resulted in a new, November 2006, BO which was incorporated into the December 2006 Final Supplemental EIS (FSEIS) for IOP for the Protection of the CSSS. A ROD for the December 2006 FEIS was signed in May of 2007. The IOP will remain in place to operate the system until the Everglades Restoration Transition Plan (ERTP) or another operating plan is authorized.

1.4 CURRENT STUDIES

1.4.1 Comprehensive Everglades Restoration Plan

The Comprehensive Everglades Restoration Plan (CERP) provides a framework and guide to restore, protect and preserve the water resources of central and southern Florida, including the Everglades. It covers 16 counties over an 18,000-square-mile area and centers on an update of the C&SF Project. The goal of CERP is to restore the Everglades through capturing fresh water that currently flows unused to the ocean and the gulf and redirect it to areas that need it the most. The majority of the water will be devoted to environmental restoration, reviving a degenerating ecosystem. The remaining water will benefit cities and farmers. CERP was authorized in the Water Resources Development Act (WRDA) of 2000.

It includes more than 60 elements, will take more than 30 years to construct and will cost an estimated $9.9 billion (October 2004)[1]. There are several elements in CERP that are inter-related with some of the features of the C-111 Project modifications to the C&SF Project, especially the C-111 Spreader Canal. See http:///www.evergladesplan.org for more information on CERP.

1.4.2 Everglades Restoration Transition Plan

The purpose of the ERTP is to establish water management operating criteria for the C&SF project features, the currently constructed features of the Modified Water Deliveries, and C-111 South Dade projects until the expiration of the ERTP Biological Opinion in 2016 or until another operating plan is approved.

The objective of ERTP is to improve conditions in Water Conservation Area (WCA) 3A for the endangered Everglade snail kite, wood stork and wading bird species including their habitat, while maintaining protection for the endangered CSSS and congressionally authorized purposes of the C&SF project.

1.5 PROJECT NEED

The Corps seeks to improve current undesirable resource conditions in Taylor Slough, the eastern panhandle of ENP, Manatee Bay, and Barnes Sound, while maintaining flood protection within the C-111 basin as described in the Corps' 1994 Final Integrated GRR/EIS, Canal 111, South Dade County, Florida. The purpose of this EA is to evaluate the environmental effects of modifications to the C-111 NDA and associated features.

1.6 PROJECT GOAL OR OBJECTIVE

The C-111 project is designed to maintain levels of flood protection for areas east of L-31N and C-111 and to restore natural hydrological conditions within the C-111 basin and throughout ENP. This objective remains the same as the 1994 GRR/EIS:

> *"the purpose of this General Reevaluation Report (GRR) is restoration of the Ecosystem in Taylor Slough and the eastern panhandle of ENP that were affected by construction of the flood control project in the C-111 basin. The study also focuses on preserving the current level of flood protection for the agricultural activities in the C111 basin…..to provide restoration of the ecological integrity of Taylor Slough and the eastern panhandle of the ENP and flood protection for the agricultural interests adjacent to the C-111."*

1.7 RELATED ENVIRONMENTAL DOCUMENTS

The Corps has documented a number of actions relevant to the proposed action:

- *1994 C-111 General Reevaluation Report and Environmental Impact Statement* – An integrated planning and NEPA document that concluded with the selection of Alternative 6A as the approach that provided the greatest potential for habitat improvement while maintaining flood protection. A ROD was signed in November 1994.

[1] This is an updated cost estimate from the 1999 figure of $7.8 billion.

- *1999 Central and Southern Florida Project Comprehensive Review Study (Restudy)* - A feasibility report that was submitted to Congress on 1 July 1999 and was approved in December of 2000. The Restudy was thereafter renamed the Comprehensive Everglades Restoration Project (CERP).
- *2000 Final Environmental Assessment, 2000 Emergency Actions to Protect the Cape Sable Seaside Sparrow* (*ISOP)* – A NEPA document prepared to address structural and operational modifications to the C-111 project to meet the conditions of the USFWS RPA included in their 1999 BO on the CSSS.
- *2000 8*.5 *Square Mile Area General Reevaluation Report and Final Supplemental Environmental Impact Statement* – A combined planning and NEPA document issued to address alternatives to mitigate potential flooding within the 8.5 Square Mile Area (SMA) resulting from increased stages associated with the Modified Water Deliveries to Everglades National Park Project.
- *2002 Interim Operating Plan for the Protection of the Cape Sable Seaside Sparrow Final Supplemental EIS* – A NEPA document exploring alternative operational approaches for C&SF features in the C-111 study area and beyond. Alternative 7R was recommended in the 2002 report. This alternative dictates current operations of C&SF Project features in the C-111 study area. A ROD was signed in January 2002.
- *2006 Interim Operating Plan for the Protection of the Cape Sable Seaside Sparrow Final Supplemental Environmental Impact Statement* – A NEPA document issued in response to a March 2006 court order resolving a lawsuit by the Miccosukee Tribe regarding NEPA compliance and other matters related to IOP. This FSEIS discusses IOP Alternative 7R model output and structural features as well as actual operations since IOP began in 2002. A ROD was signed in May 2007.
- *2010 8.5 Square Mile Area Interim Operations Criteria* – A NEPA document was signed to change the operations of the 8.5 SMA.

1.8 DECISION TO BE MADE

The Corps is considering whether to modify the design of elements of the authorized project contained in the 1994 GRR/EIS in a manner consistent with the original intent of the project. The structural changes evaluated in this EA include expanding the existing S-332B Northern Detention Area (S-332B NDA) from its current status and extending existing levees.

2.0 ALTERNATIVES

An interdisciplinary team comprised of the U.S. Environmental Protection Agency (EPA), Everglades National Park (ENP), United States Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), Florida Department of Environmental Protection (FDEP), and the South Florida Water Management District (SFWMD) collaborated in the preparation of the 1994 alternatives evaluation and final report. Several features of the authorized plan in the C-111 1994 General Reevaluation Report/Environmental Impact Statement (1994 GRR/EIS) have been adjusted in the years since completion of the 1994 GRR/EIS. The resulting modifications have been constructed and implemented through previous documentation in the Corps' 2007 Final Supplemental Environmental Impact Statement – Interim Operational Plan (IOP) for the Cape Sable Seaside Sparrow (2007 IOP FEIS).

This EA will consider structural changes to the 1994 GRR/EIS through an evaluation of the alternatives for restoring the natural values of ENP while maintaining flood protection within the C-111 basin east of L-31N and C-111.

2.1 DESCRIPTION OF ALTERNATIVES

2.1.1 Alternative 1 – No Action Alternative

Evaluation of the No Action Alternative, also known as the future without project condition, is a requirement of the National Environmental Policy Act (NEPA). The No Action Alternative includes all features of the C-111 project that are currently constructed including features of the 2007 IOP FEIS (Figure 2). This alternative would omit changes to the current S-332B Northern Detention Area (NDA), improvements to the South Detention Area (SDA), and modifications to the existing emergency overflow weirs. The No Action Alternative would provide the same ability to maintain target canal stages within L-31N and C-111, which would maintain current levels of service for flood control. The current potential for hydrologic restoration would also remain the same as discussed in the 2007 IOP FEIS.

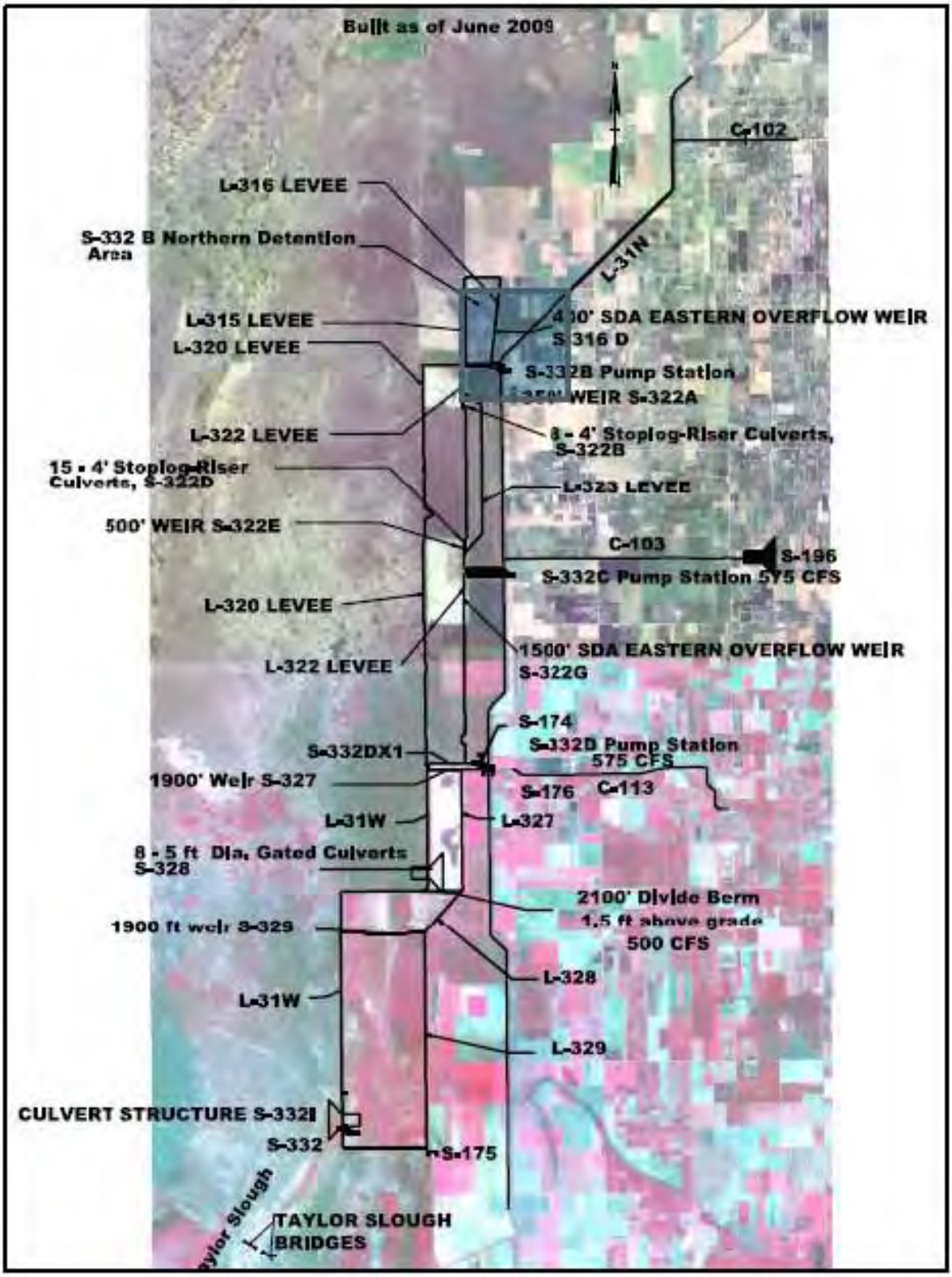

Figure 2. Existing conditions

2.1.2 Alternative 2 – Construct features of GRR/FEIS 1994 Project

Alternative 2 is a combination of features contained within the 1994 GRR/EIS and what has been constructed under the Interim Structural and Operational Plan (ISOP) and IOP. Not all of the features within the 1994 GRR/EIS have been constructed to date (see Figure 2 above for all current features). The 1994 GRR/EIS placed the S-332D tieback levee north of the existing S-332B NDA (Figure 3) constructed under IOP. The levee allowed for direct flow of water from S-332A into ENP (with no retention of the water prior to release). The S-332D levee would be three feet above grade; excavation of a small ditch between the levee walls would provide the material for construction. This alternative includes 24 36-inch diameter culverts to discharge through the L-31W tieback levee (now called L-320) directly into ENP. Under IOP, a 226-acre detention cell was constructed north of the S-332B pump station with two of the S-332B 125 cubic feet per second pumps discharging into the cell. The S-332B NDA levees (L-315 and L-316) were constructed to an elevation of 11.4 feet 1988 North American Vertical Datum (NAVD) using rock plowed material from the project area (Figure 3). This alternative includes removing the northern levee of the existing S-332B NDA, extending L-316, and installing the culverts in L-320 (that allow free flowing water to ENP).

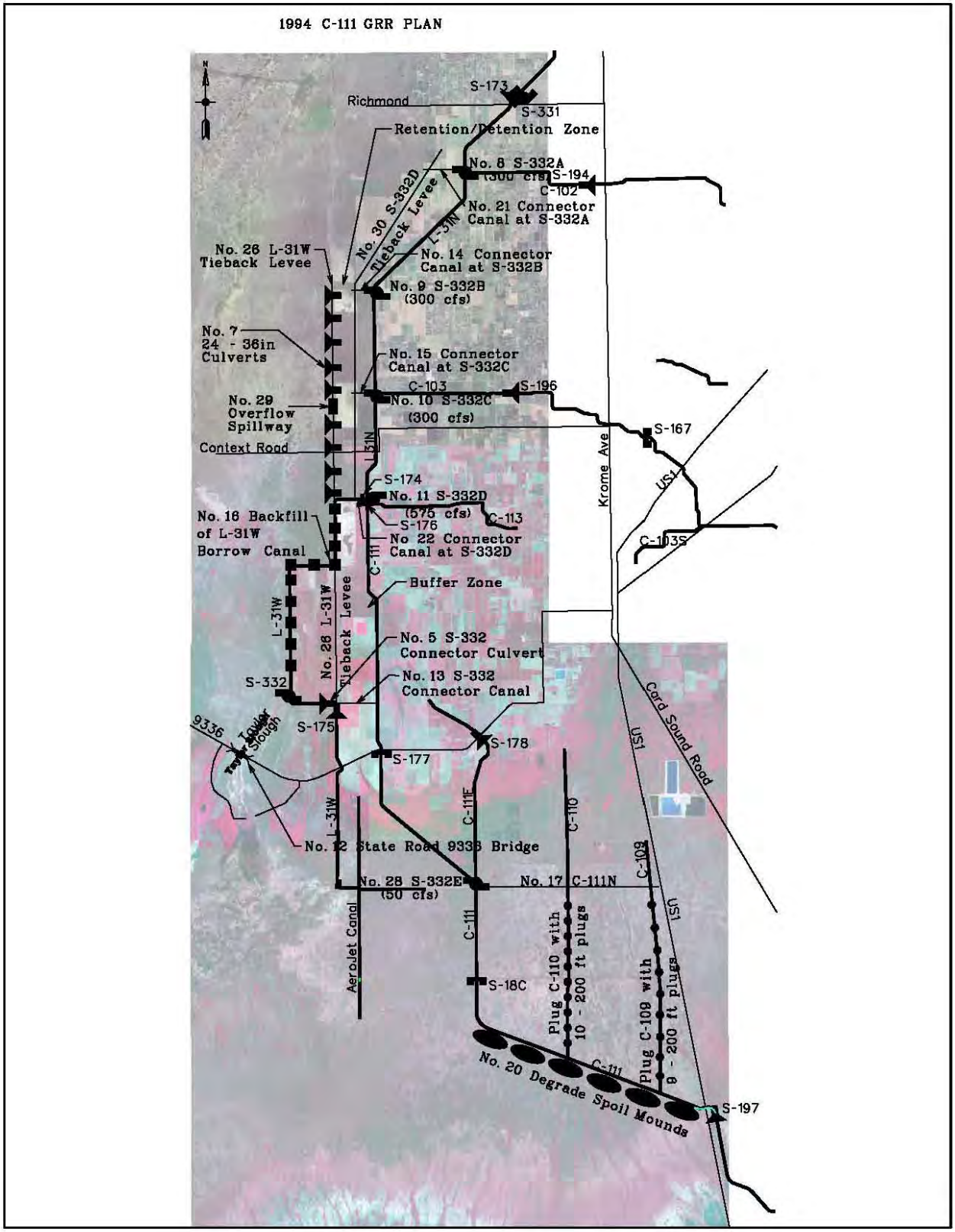

Figure 3: 1994 GRR Plan

2.1.3 Alternative 3 – Expansion of S-332B Northern Detention Area and Other Features (Preferred Alternative)

Alternative 3 includes the expansion of the S-332B NDA and the expansion of other features in the C-111 detention areas (Figure 4). The current proposal would expand the S-332B NDA north to the 8.5 Square Mile Area (SMA) detention area, then west towards the ENP. The proposed expanded C-111 S-332B NDA would be created by extending the L-315 north and realigning the L-316; both levees will tie into the 8.5 SMA detention area and are discussed in more detail below. The design modification in this alternative would increase the size of the NDA to approximately 1,440 acres and cover former agricultural lands now owned by the SFWMD, the non-Federal sponsor for the C-111 Project. The interior of the detention area would be scraped to the underlying rock layer and the excavated material would be used to construct L-315 and L-316. In addition to this, an earthen flowway berm (L-318) will be constructed with the intention of creating a hydrologic ridge that is 500 feet west of L-316. Upon project completion, two pump stations would supply water to the NDA, the S-357 (MWD project component) from the 8.5 SMA in the north, and the S-332B in the south. The NDA would be divided into two areas: the flowway area (260 acres) and the main detention area (1180 acres); the flowway berm separates the flowway area from the rest of the detention area. The IOP will remain in place to operate the system until the Everglades Restoration Transition Plan (ERTP) or another operating plan is authorized.

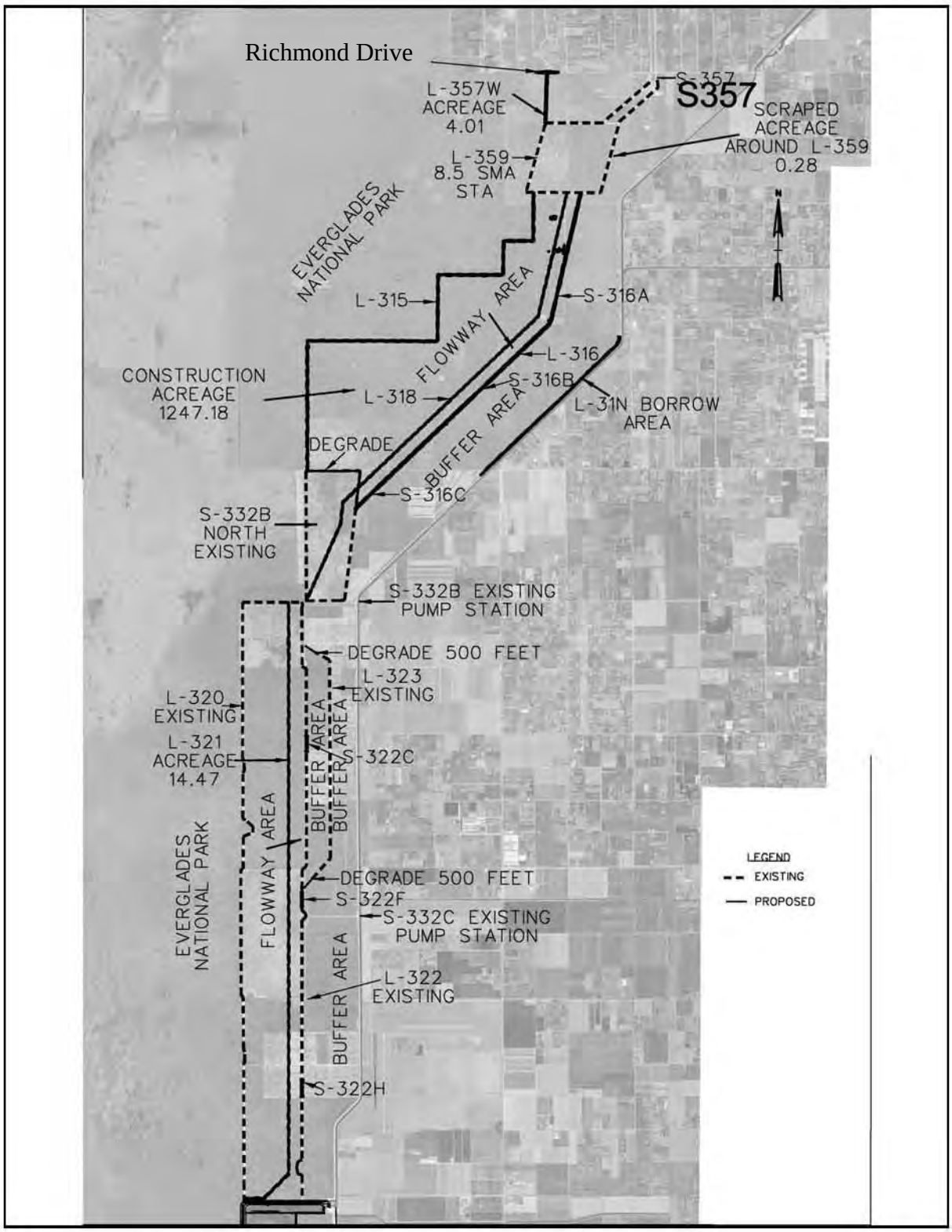

Figure 4: Expanded S-332B NDA and Associated Features

The levees (L-315 and L-316) surrounding the NDA would have a crest elevation of 11.4 feet NAVD 88 (about 6 feet above ground); a 14 foot crest width, side slopes (1 foot vertical:4

feet horizontal), and incorporate other standards set by the Corps for levee design. The levees would be constructed of rockplowed material scraped from the project area and capped with 1 foot of limerock. The proposed levees in the NDA (L-318) and in the SDA (L-321) would function as flowway berms intended to maintain a hydraulic ridge within the flowway when detention areas are below one foot (i.e. little water availability such as in drought conditions) and to enforce uniform sheetflow conditions. The crest elevations will be 6.5 feet and 6 feet NAVD 88, for L-318 and L-321 respectively. The flowway berms would be constructed of processed limerock material sourced from the L-31N spoil mound. This alternative would have six adjustable (one-time) emergency overflow weirs: three in L-316 (S-316A, B, and C) and three in L-322 (S-322C, F, and H). Portions of L-323 would be degraded to allow one of the weirs to flow into the buffer area in emergency situations.

The Preferred Alternative project features are listed below and depicted in Figure 4, above. The project consists of levee construction and realignment, expansion of the existing S-332B NDA to 1440 acres, addition of weirs, a roadway crossing, and degrading existing levees.

The features to be constructed are:

- L-315 from the west side of existing S-332B NDA to the L-359
- L-357W from northwest corner of L-359 to Richmond Drive
- Scrape land to underlying rock layer in between the proposed L-315 and L-316
- Three 500 foot over flow weirs on L-316 (S-316A, S-316B, and S-316C)
- NDA earthen flowway berm (L-318) 500 feet west of L-316
- L-316 from east side of existing S-332B NDA to L-359
- Three 500 foot over flow weirs on L-322 (S-322C, S-322F, and S-322H)
- South Retention/Detention Area earthen flowway berm (L-321) 500 feet west of L-322
- Road Crossing on 168th over L-357W (includes asphalt and guardrail)

The existing levees to be degraded are:

- A 500-foot area of L-323 on the North Diagonal
- A 500-foot area of L-323 on the South Diagonal
- The northern portion and part of the western portion of the existing S-332B NDA

The reconfigured S-332B NDA would extend the hydraulic ridge created by the C-111 project north to the 8.5 SMA thereby enhancing benefits to ENP by reducing seepage out of the Park in this area. The expanded S-332B NDA could also improve water quality in ENP by preventing discharge of nutrient-rich surface water from former agricultural lands into ENP.

2.2 ISSUES AND BASIS FOR CHOICE

The proposed design refinements for the existing C-111 project are expected to maintain existing levels of flood control within the C-111 basin east of L-31N and C-111 and to move toward more natural hydroperiods within ENP. The No Action Alternative does not provide the needed capacity for water storage because pump station S-357 cannot operate without a larger detention area. Alternative 2 proposes to discharge water directly into ENP, which would not meet water quality standards due to the nutrient rich nature of the surface water.

2.3 ALTERNATIVES ELIMINATED FROM DETAILED EVALUATION

Alternative 2 (1994 GRR/EIS) is not further evaluated within this document. The purpose of restoration combined with flood protection is not supported by this alternative due to the direct discharge of surface water into ENP. The original 1994 GRR/EIS plans are not considered sufficient and/or efficient to produce the same quality of restoration as the Preferred Alternative (Alternative 3). The Corps will only proceed to evaluate the No Action Alternative and the Preferred Alternative throughout the rest of this document.

3.0 AFFECTED ENVIRONMENT

The affected environment for the C-111 basin was most recently described in the Final EIS for the IOP for the Protection of the CSSS signed in May 2007 (2007 IOP FEIS). The information in the 2007 IOP FEIS provides a description of the existing conditions at the time the proposed project was evaluated and still serves as the basis for comparison of alternatives. The 2007 IOP FEIS is available at the following link: http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/Projects_Sparrow.htm.

3.1 CURRENT CONSTRUCTION STATUS OF THE C-111 PROJECT

The following is a description of the features that have been constructed on the C-111 project to date. This includes constructed features authorized under the 1994 GRR/EIS and modifications to the project authorized under the Interim Structural and Operational Plan (ISOP) and the Interim Operational Plan (IOP). Collectively, these changes represent the existing C-111 South Dade project conditions (Figure 2 and Appendix A).

The S-332D pump station was completed in December 1997. During the design phase, the pump station capacity was increased from 300 cubic feet per second to 575 cubic feet per second to match the discharge capability of S-174. Originally the discharge canal from the pump station tied into the L-31W borrow canal. During the 2002 IOP emergency contract, the S-332D discharge canal was retrofitted and diverted to provide inflow directly into the Frog Pond Detention Area (FDA).

The removal of the C-111 spoil mound in the southern part of the project was completed in 1997. The spoil mounds were located on the south bank and were removed to provide better sheet flow into the panhandle of ENP. The material was relocated and stockpiled north of L-31W and south east of L-329 for future use on another C-111 South Dade Contract. The Taylor Slough Bridge was constructed in 1999 to establish historic sheet flow patterns in Taylor Slough. Pump stations S-332B and S-332C have also been constructed to date, as well as the South Detention Area (Retention/Detention Area), and C-109.

3.1 CLIMATE

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

Seasonal rainfall patterns in south Florida resemble the wet and dry season patterns of the humid tropics more than the winter and summer patterns of temperate latitudes. Of the 53 inches of rain that south Florida receives on average annually, 75 percent falls during the wet season months of May through October. During the wet season, thunderstorms that result from easterly tradewinds and land-sea convection patterns occur almost daily. Wet season rainfall follows a bimodal pattern with peaks during May through June and September through October. Tropical storms and hurricanes also provide major contributions to wet season rainfall with a high level of interannual variability and low level of predictability.

During the dry season (November through April), rainfall is governed by large-scale winter weather fronts that pass through the region approximately weekly. However, due to the variability of climate patterns (La Niña and El Niño), dry periods may occur during the wet season and wet periods may occur during the dry season. High evapotranspiration rates in south Florida roughly equal annual precipitation. Recorded annual rainfall in south Florida has varied from 37 to 106 inches, and interannual extremes in rainfall result in frequent years of flood and drought.

3.2 GEOLOGY AND SOILS

Reference the 2007 IOP FEIS for a description of surrounding soils in the area. The hydrology of these former Everglades soils have been impacted by prior agricultural practices (e.g. ditching, rock plowing, etc.) and regional water management. The majority of the proposed NDA could be best described as prior converted cropland no longer in agricultural production.

3.3 HYDROLOGY

The major characteristics that influence the movement of water within South Florida are local rainfall, evapotranspiration, canals and water control structures, flat topography, and the highly permeable surficial aquifer. Surface water that is not removed from the land surface by evapotranspiration and seepage to the aquifer is drained to coastal water bodies via sheetflow from wetlands or project canals. Groundwater in the study area flows from west to east. The direction of groundwater flow can be altered on a local scale due to influences of rainfall, canals, or other project features.

Levees and canals constructed under the Central and Southern Florida (C&SF) Project have divided the former Everglades into areas designated for development and areas for fish and wildlife benefits, natural system preservation, and water storage. C-111 is located within south Miami-Dade County (adjacent to ENP) and is operated as part of the South Dade Conveyance System (SDCS) which was authorized for the purpose of improving the supply and distribution of water to ENP, flood control, and for meeting the expanding urban and agricultural water supply needs. Eastern portions of the ENP are influenced by the canals and structures that provide flood control and water supply for agricultural and developed areas. Optimum and design water levels in the project canals are established on the basis of desirable water control conditions in each area, such as optimum groundwater levels, intake and/or discharge structure elevations and removal rates for flood control. Water discharged from the C-111 basin is comprised of water from some or all of the following sources: deliveries from the Water Conservation Areas (WCAs), seepage from ENP, and local runoff/seepage from the South Dade Agricultural Area that is adjacent to C-111. Occasional freshwater discharges from C-111 are due to excessive rainfall, which negatively impact the salinity in Manatee Bay/Barnes Sound.

3.4 WATER QUALITY

The Corps has determined that the surface water from the L-31N canal that would be impounded within this portion of the detention system would not present a problem in terms of phosphorus concentration. This is based on the last 5 years of Settlement Agreement calculations showing compliance with the Taylor Slough/Coastal basin target of a flow

weighted mean of 11 parts per billion (ppb) (has been in the 5-6 ppb range) total phosphorus. Also the water impounded within the NDA would not present a bioaccumulation problem for any animals foraging in this area. This position is based on guidance from the USFWS Ecosystem Risk Analysis Group which indicates that if former agricultural soils are removed from a detention area down to the consolidated cap rock, bioaccumulation of undesirable constituents from benthic organisms is essentially eliminated. Corps Periphyton Stormwater Treatment Area (PSTA) studies indicate conditions within this impoundment area (limestone substrate and wetting/drying cycles) sequester water column phosphorus and this will occur even at very low inflow concentrations based on recent data. Pesticides levels in this canal system (surface water and sediment) are routinely checked by the SFWMD and there is no indication of a pesticide problem in the surface water or the ground water in this project area. Trace levels of endosulfan are occasionally found in the canal surface water but this pesticide is ubiquitous at trace levels throughout Florida. The extensive ground water sampling conducted for the C-111 project area has not indicated any ground water problem in the project area either before the C-111 project features were built or after construction and operation. The Department of Environmental Resource Management (DERM) conducts a routine and very thorough sampling program of the ground water and the surface water in this area and this program also indicates that the project ground water and surface water is generally of very good quality.

3.5 FLOOD CONTROL

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

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

The East Coast Canals are flood control and outlet works that extend from St. Lucie County southward through Martin, Palm Beach and Broward counties to Dade County. The East Coast Canal watersheds encompass the primary canals and water control structures located along the lower east coast of Florida and their hydrologic basins. The main design functions of the project canals and structures in the East Coast Canal area are to protect the adjacent coastal areas against flooding; store water in conservation areas west of the levees; control water elevations in adjacent areas; prevent salt-water intrusion and over-drainage; provide freshwater to Biscayne Bay and provide for water conservation and public consumption.

There are 40 independently operated canals, one levee, and 50 operating structures, consisting of 35 spillways, 14 culverts, and one pump station. The project works to prevent major flood damage; however, due to urbanization, the existing surface water management system now has to handle greater peak flows than in the past.

The ENP provides a way to deliver water to areas of south Dade County. This canal system was overlain on top of the existing flood control system. Many of these canals are used to remove water from interior areas to tidewater in times of excess water.

3.6 WETLANDS

The lands within the C-111 project area were historically part of the Everglades wetland system. The hydrology of these wetlands has been historically manipulated to suit agricultural interests. The majority of the proposed NDA is classified as abandoned agricultural lands. The South Detention Area (SDA) has higher quality wetlands within the detention area that have not been previously converted to agriculture. However, the detention area has previously been impacted by water management operations. An interagency wetland assessment of the proposed project area was completed March 22, 2012 for the NDA and April 10, 2012 for the SDA.

3.7 VEGETATION

Vegetation within the proposed project area is described in the 2007 IOP FEIS.

3.8 THREATENED AND ENDANGERED SPECIES

Many threatened or endangered species are known to occur within Miami-Dade (South Dade) County such as: the Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*), the snail kite (*Rostrhamus sociabilis plumbeus*), wood stork (*Mycteria americana*), American alligator (*Alligator mississippiensis*), American crocodile (*Crocodylus acutus*), eastern indigo snake (*Drymarchon couperi*), Florida panther (*Puma concolor coryi*), the West Indian manatee (*Trichechus manatus*), roseate spoonbill *(Platalea ajaja),* limpkin *(Aramus guarauna,* little blue heron *(Egretta caerulea),* snowy egret *(Egretta thula),* tricolored heron *(Egretta tricolor),* white ibis *(Eudocimus albus),* Audubon's crested caracara *(Polyborus plancus audubonii),* and Everglades mink *(Neovison vison evergladensis).* The land in the area of the C-111 basin originally consisted of relatively natural Everglades' features including sloughs, tree islands, marshes, and coastal mangrove fringe.

Threatened and endangered species that are known to occur in Miami-Dade County are presented in Table 1. Federally listed species expected to occur in the project area are discussed below.

Table 1. Federal and State listed species known to occur in Miami-Dade County, Florida.

Scientific Name	Common Name	Federal Status	State Status
Reptiles			
Alligator mississippiensis	American alligator	SAT*	SSC**
Caretta caretta	Loggerhead sea turtle	Threatened	Threatened

Scientific Name	Common Name	Federal Status	State Status
Chelonia mydas	Green sea turtle	Endangered	Endangered
Crocodylus acutus	American crocodile	Threatened	Endangered
Drymarchon couperi	Eastern indigo snake	Threatened	Threatened
Gopherus polyphemus	Gopher tortoise	Not listed	Threatened
Birds			
Ammodramus maritimus mirabilis	Cape Sable seaside sparrow	Endangered	Endangered
Aphelocoma coerulescens	Florida scrub jay	Threatened	Threatened
Charadrius melodus	Piping plover	Threatened	Threatened
Polyborus plancus audubonii	Audubon's crested caracara	Threatened	Not listed
Mycteria americana	Wood stork	Endangered	Endangered
Egretta caerulea	Little blue heron	Not listed	SSC**
Polyborus plancus audubonii	Audubon's crested caracara	Threatened	Not listed
Egretta tricolor	Tricolored heron	Not listed	SSC**
Egretta thula	Snowy egret	Not listed	SSC**
Rostrhamus sociabilis plumbeus	Snail kite	Endangered	Endangered
Eudocimus albus	White ibis	Not listed	SSC**
Calidris canautus	Red Knot	Candidate	Not listed
Aramus guarauna	Limpkin	Not listed	SSC**
Picoides borealis	Red-cockaded woodpecker	Endangered	Endangered
Platalea ajaja	Roseate spoonbill	Not listed	Endangered
Sterna antillarum	Least tern	Threatened	Threatened
Invertebrates			
Anaea troglodyte floridalis	Florida's leafwing butterfly	Candidate (historical)	Not listed
Strymon acis bartrami	Bartram's hairstreak butterfly	Candidate (1974)	Not listed
Heraclides aristodemus ponceanus	Schaus swallowtail butterfly	Endangered	Not listed
Mammals			
Puma concolor coryi	Florida panther	Endangered	Endangered
Neovison vison evergladensis	Everglades mink	Not listed	Threatened
Puma concolor	Puma	Threatened/ SAT	Endangered
Trichechus manatus	Manatee	Endangered	Endangered
Plants and Lichens			
Amorpha crenulata	Crenulate lead-plant	Endangered	Endangered
Cladonia perforata	Perforate reindeer lichen	Endangered	Endangered
Chamaesyce garberi	Garber's spurge	Endangered	Endangered
Curcubita okeechobeensis	Okeechobee gourd	Endangered	Endangered
Polygala smallii	Tiny polygala	Endangered	Endangered
Critical Habitat			
Ammodramus maritimus mirabilis	Cape Sable seaside sparrow	Endangered	Endangered

*The American alligator is currently federally designated as *Similarity of Appearance to a Threatened Taxon (SAT).*
** Species of Special Concern (SSC) is a species, subspecies, or isolated population that is facing a moderate risk of extinction in the future.

3.8.1 Everglade Snail Kite

Snail kites, listed as federally-endangered in 1967, require long hydroperiod wetlands that remain inundated throughout the year. Suitable habitat for the kite includes freshwater marsh and shallow vegetated lake margins where prey (apple snails) can be found. Critical habitat for the snail kite was designated in 1977 and includes Water Conservation Areas (WCA) 1, 2, and 3A, and portions of ENP, as well as Lake Okeechobee shorelines and portions of the St. Johns River marsh. Preferred nesting habitat includes small trees and shrubs such as willow, bald cypress, pond cypress, sweet bay, dahoon holly, southern bayberry, and elderberry. When suitable shrubs and trees experience dry conditions and are unavailable, herbaceous vegetation is utilized for nesting (Sykes *et al.*, 1995). The herbaceous species include sawgrass, cattail, bulrush, and common reed which are used for nest sites. The snail kite's breeding season can vary from year to year depending on rainfall and water levels. Ninety-eight percent of nesting attempts occur between December and July while 89 percent are initiated between January and June.

3.8.2 Wood Stork

The wood stork was listed as federally-endangered in 1984 due to loss of foraging habitat and colony nesting failures (USFWS, 1999b). Preferring freshwater wetlands for nesting, roosting, and foraging, wood storks can be found throughout central and southern Florida. Nests are typically constructed in tree stands within swamps or stands surrounded by large areas of open water. Due to its tactile feeding methods, storks feed most effectively in shallow water settings where prey items are concentrated. During the winter and spring dry seasons when water levels naturally recede, prey items are often further concentrated, providing foraging areas with abundant food supplies. Drainage in southern Florida may be responsible for delayed nesting by the stork, moving from an early nesting start in November to February or March. Initiation of nesting this late is believed to contribute to nest failures and colony abandonment due to the dispersal of prey items associated with the onset of the wet season (May-June).

3.8.3 Cape Sable seaside sparrow

The endangered Cape Sable seaside sparrow (CSSS) has sub populations (generally referred to as B, C, D, E, and F) near the C-111 project. In 1999, the USFWS issued a "jeopardy" Biological Opinion (BO) that required changes in C-111 operations. Modeling showed that installing a temporary pump station, S-332B with a detention area to the west, would provide a more favorable hydroperiod for the CSSS. The emergency solution became known as the Interim Structural and Operational Plan (ISOP). It included a 575-cubic feet per second S-332B temporary pump station, five corrugated metal discharge pipes to the S-332B West Detention Area, and a 150 Acre S-332B West Detention Area. The S-332B West Detention Area levee contains 5,180 feet of the L-320and 2,580 feet of the L-332. These features were constructed in 2000.

Presently, the known distribution of the CSSS is restricted to two areas of marl prairies east and west of Shark River Slough in the Everglades region (within ENP and Big Cypress National Preserve) and the edge of Taylor Slough in the Southern Glades Wildlife and Environmental Area in Miami-Dade County. Units 5 and 2 (Subpopulations F and C) are the closest subpopulations to the project area. Unit 5 is immediately west of the C-111 detention

ponds and Unit 2 is immediately west of the Frog Pond area. Integrated operation of the completed components of the MWD Project and existing components of the C&SF Project are governed by the 2007 IOP FEIS. Because of the continued dry habitat to the east of the project, the IOP was formulated to protect the CSSS while operating the Central and Southern Florida (C&SF) system.

Critical habitat was designated for the Cape Sable seaside sparrow on August 11, 1977 (42 FR 40685) and was corrected on September 22, 1977 (42 FR 47840). The 1977 critical habitat designation for Cape Sable seaside sparrow encompasses approximately 197,260 acres. The USFWS has proposed a revision in sparrow critical habitat that will reduce the total acreage of critical habitat to approximately 156,350 acres (October 31, 2006, 71 FR 63980).

3.8.4 Eastern Indigo Snake

It is possible that federally-endangered Eastern indigo snakes occur within the C-111 basin. Eastern indigo snakes could find necessary resources in and around the higher elevations in the eastern portion of the area. Susceptible to drying out, the indigo snake is often found utilizing gopher tortoise burrows as a refuge. There are no reported occurrences of the Eastern indigo snake within the C-111 project area.

3.8.5 Florida Panther

The C-111 project is located adjacent to the 8.5 SMA. Panthers have been recorded to occasionally utilize the 8.5 SMA. A deceased panther was found in the ENP just south of 168th Street in January 2000 (USFWS, 2000). Records for a 15-month old male panther and a four-year old female panther indicate that they have been sited near, but not within, the 8.5 SMA. Therefore, it is likely that the endangered Florida panther could be found in the project area.

3.8.6 Okeechobee Gourd

The Okeechobee gourd is a vigorous annual vine, with a listed status of both federally and state endangered. It is likely that the Okeechobee gourd could be found within the project area.

3.9 AIR QUALITY

EPA's AirData database contains measurements of air pollutant concentrations for the entire United States. The measurements include both criteria air pollutants and hazardous air pollutants and are compared against the National Ambient Air Quality Standards (NAAQS) specified by the EPA. The ambient air monitoring network in Florida reflects the state's population growth, new air monitoring technologies, and concern for health. The monitoring equipment has improved and become easier to operate, while analysis methods have become more precise and reliable. The monitoring effort has concentrated on the six criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide and particle pollution. In 2010, there were 218 ambient monitors in the statewide air monitoring network. In 2007, EPA designated Florida attainment for all criteria pollutants, based on data collected in the previous three years. A survey of the 2010 criteria ambient monitoring results shows that the project area is currently in attainment (FDEP Air Monitoring Report 2010).

3.10 NOISE

Within the major natural areas of south Florida, external sources of noise are limited and of low occurrence. Rural areas typically have noise levels in the range of 34 to 70 decibels, and urban areas may attain noise levels of 90 decibels or greater. Noise levels within ENP are associated predominately with the natural undeveloped landscape, with recreational traffic and occasional air traffic contributing intermittent higher levels.

Noise levels are associated with surrounding land use. There are no significant noise generating land users within the project area for the WCAs; however, there is periodic boat and airboat activity in the WCAs. An un-muffled airboat, frequently powered by a V-8 car engine, registers between 115 to 130 decibels at 50 feet, according to University of Florida researchers. Fishing boats have lower noise levels. For the roads adjacent to and cutting through the project area, sound levels typical for automobile, motorcycle and truck traffic could be as high as 90 decibels but typically are lower, in the range of 75 decibels at 50 feet.

3.11 AESTHETICS

The visual characteristics of south Florida can be described according to the three dominant land use categories (natural areas, agricultural lands, and urban areas). The natural areas consist of a variety of upland and wetland ecosystems, including lakes, ponds, vast expanses of marsh and wet prairie, with varying vegetative components. Tree islands may be found within the project area as well.

3.12 LAND USE

Land use of the project area is depicted in Figure 5 with a Florida Land Use Cover Classification System (FLUCCS) map. The proposed project area consists predominantly of agricultural lands and herbaceous dry uplands, and a small area of freshwater marsh according to the FLUCCS map from 1999.

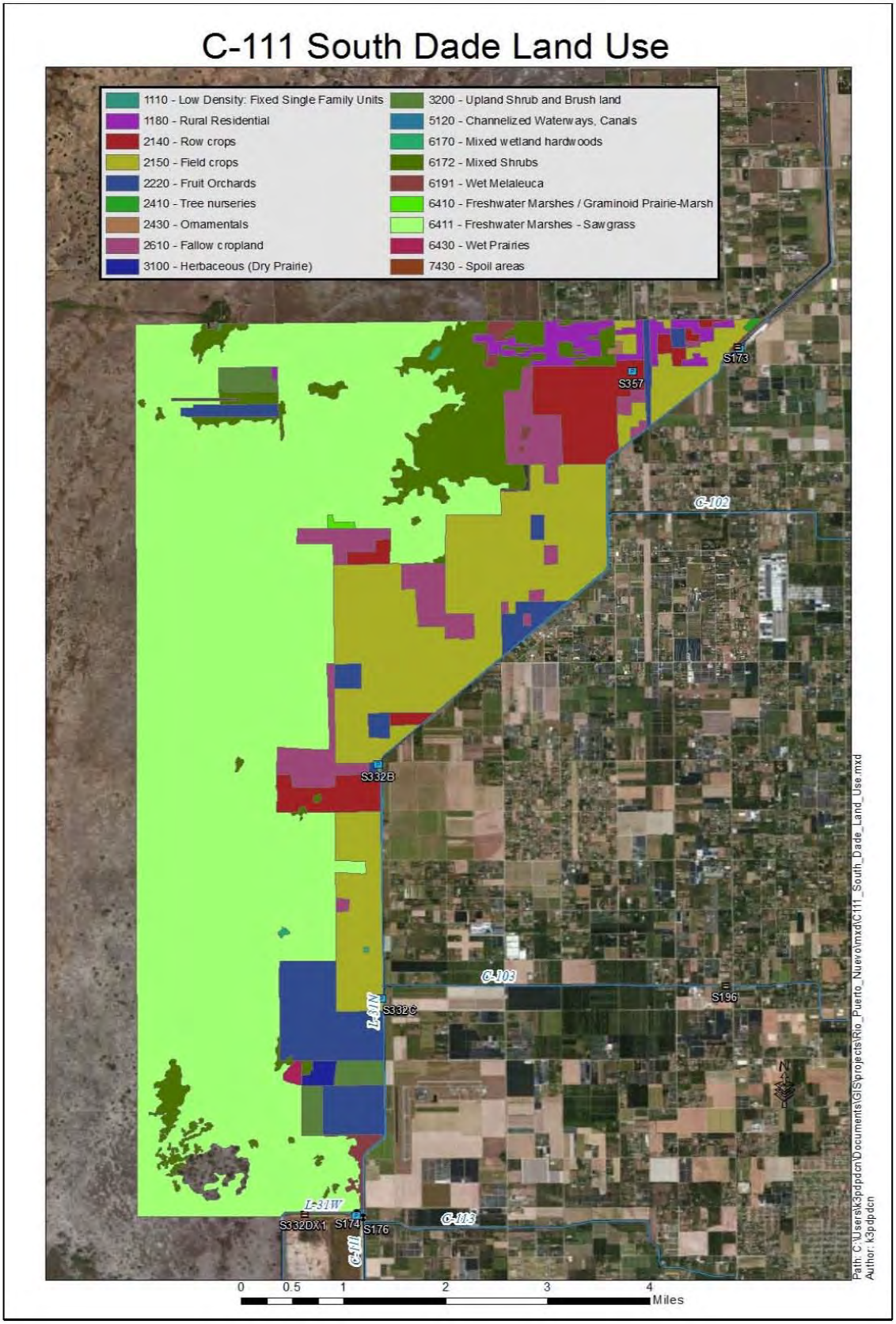

Figure 5. FLUCCS map of Project Area

3.13 SOCIOECONOMICS

Florida's economy is characterized by strong wholesale and retail trade, government, and service sectors. The economy of south Florida is based on services, agriculture, and tourism. Florida's warm weather and extensive coastline attract vacationers and other visitors and help make the state a significant retirement destination. The three counties that comprise the LEC (Palm Beach, Broward, and Dade) are heavily populated, and it is estimated that over 6.9 million people will reside in this region by the year 2050.

A complete socioeconomic description of the C&SF Project area was completed in the Comprehensive Review Study (1999). In addition, the 1994 GRR/EIS describes socioeconomic conditions specific to the C-111 Project area.

3.14 AGRICULTURE

The current lands are classified as agriculture; however, the lands have not been used for agricultural practices in recent years. Agriculture exists on the eastern border of the project area. A variety of fruits, vegetables, and ornamentals are grown within this region and include many tropical and subtropical crops which are grown year-round.

3.15 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

Hazardous, toxic, and radioactive waste (HTRW) surveys have been conducted as part of EAs and EISs prepared as part of the prior C-111 basin restoration efforts and indicated no problems or occurrence of HTRW levels of contaminants. There is a low potential of occurrence of HTRW within the proposed project area based on the current and past activity in this area. The SFWMD conducted a phase 1 HTRW assessment that was completed in 2007. This assessment indicated no presence of contaminants at HTRW levels. The SFWMD also completed a soils sampling survey in 2008 of the project area construction footprint to address the potential for ecosystem risk (potential negative impacts to sensitive endangered species via bioaccumulation of agricultural amendments). Only trace amounts of agricultural amendments were found throughout the project area. The SFWMD is in the process of obtaining formal concurrence from the USFWS EcoRisk Section that this area is acceptable to use as an impoundment area.

3.16 CULTURAL RESOURCES

In 2006, the Corps contracted a cultural resource survey and site evaluation study for the proposed "C-111 Phase II and III" project area (Smith et al. 2006). In this study, areas identified as having a high probability for containing cultural resources were systematically investigated. This study identified four prehistoric sites in the project area (8DA3210, 8DA3218, 8DA6514, and 8DA6515). All four sites were determined eligible for listing on the National Register of Historic Places. All of these archeological sites are located on intact tree hammocks. Since not all of the existing tree hammocks were investigated in 2006 there is a potential for additional prehistoric sites to be within the SDA. There is little to no potential for intact cultural resources to be in the proposed NDA. Construction of the SDA was designed to exclude all of the recorded prehistoric sites except 8DA6514. Cultural material recovered from this site includes: prehistoric ceramics, shell, and faunal (animal bone, including: fish, alligator, snake, turtle, bird, frog and small mammals) remains, a flotation sample was processed no prehistoric plant remains were recovered. This site is

located in the southern end of the SDA and is subject to periodic inundation that typically does not overtop the site. This site is within the proposed SDA internal flow way. The site will be subject to fluctuating water levels with a normal max pool depth of two feet, during emergency flood events pool depth may reach four feet.

4.0 ENVIRONMENTAL EFFECTS

Only those environmental effects resulting from new modifications that have not been addressed in previous NEPA documents (i.e. 1994 GRR/EIS, 2000 ISOP EA, 2002 IOP EIS, and 2007 IOP FEIS) will be addressed here.

4.1 GEOLOGY AND SOILS

4.1.1 No Action Alternative

The No Action Alternative would not cause any additional effects to the geology and soils of the area. Impacts would be as described in the 1994 GRR/EIS and 2007 IOP FEIS.

4.1.2 Preferred Alternative

The Preferred Alternative would remove the soil over approximately 1,400 acres to the rock layer. The soil would be used for construction of the levees required for the Preferred Alternative and then capped. Appropriate erosion and sedimentation control measures would be incorporated and applied to construction efforts.

4.2 HYDROLOGY

4.2.1 No Action Alternative

The No Action Alternative would provide continued hydrologic functions as is currently in place and described within the 1994 GRR/EIS and the 2007 IOP FEIS.

4.2.2 Preferred Alternative

In order to maximize benefits and prevent surface water discharges into ENP, the Preferred Alternative extends the hydraulic ridge principle to the north by expanding the S-332B Northern Detention Area (NDA). Upon completion of the proposed modifications, the NDA would receive water from two sources. One source would be the S-332B pump station; planned future modifications to the C-111 project include allowing overflow from the 8.5 SMA detention area (a component of the MWD Project) to the NDA. The other water source would be from the S-357 pump station; water within the 8.5 SMA detention area is removed from the C-357 in the 8.5 SMA via the S-357 pump station. The extension of the hydraulic ridge via expansion of the S-332B NDA would benefit the area by minimizing the loss of seepage water from Everglades National Park (ENP) north of the S-332B pump station and south of the 8.5 SMA detention area. The hydraulic ridge formed by the NDA allows for the creation of a more natural hydroperiod within ENP by inhibiting seepage while the additional detention area storage would maintain flood control capacity within the C-111 basin.

The eastern portion of the S-332B NDA and SDA will be compartmentalized by the L-316 and L-322 levees and a one-foot high (or above natural ground) berm (flowway berm) located 500 feet west of these levees. The flowway area is designed to create the hydraulic ridge on the eastern side of the detention areas first. Once stages in this area increase over one-foot, then the entire detention area may be utilized. The detention area flowway design allows the hydraulic ridge to be maintained in times of low flow on the eastern side of the detention area which slows the seepage loss from ENP. Without the inclusion of the flowway berms, the ability to maintain a continuous hydraulic ridge in times of low flow would be difficult and seepage loss from ENP would not be inhibited. The IOP will remain

in place to operate the system until the Everglades Restoration Transition Plan (ERTP) or another operating plan is authorized.

4.3 WATER QUALITY

4.3.1 No Action Alternative

The water quality in the C-111 basin will remain as indicated in the 1994 GRR/EIS under the No Action Alternative. No additional effects to groundwater or surface water are expected with this alternative.

4.3.2 Preferred Alternative

The impoundment area that would be created with the expansion of the S-332B NDA and addition of other features will complete the hydraulic ridge, running generally north/south, for the C-111 project. The hydraulic ridge is expected to allow higher stage levels in the ENP while not increasing negative impacts to agricultural or residential use to the east. Higher stage levels in the ENP are necessary to help move the ENP hydrology in the direction towards restoration.

The water impounded within the NDA would not present a bioaccumulation problem for any animals foraging in this area. This position is based on guidance from the USFWS Ecosystem Risk Analysis Group which indicates that if former agricultural soils are removed from a detention area down to the consolidated cap rock, bioaccumulation of undesirable constituents from benthic organisms is essentially eliminated. The land between the proposed L-315 and L-316 would be scraped to the caprock and then used to construct the project levees. These levees would be capped with soils from the L-31 borrow canal and consist of suitable mechanical properties to ensure good drivability/roadway surface and to also provide a suitable levee surface that will facilitate mowing. The SFWMD completed an HTRW assessment and screening level ecosystem risk analysis (SLERA, a soil sampling and analysis program conducted in a method coordinated with USFWS) of this project area in 2008. There was no evidence of HTRW levels of contaminants and only trace levels were found of residual agricultural amendments. The SFWMD is working to get the written concurrence of the USFWS Ecosystem Risk Analysis group that this impoundment will not create a problem from sensitive receptors (snail kite).

The surface water discharged into the detention area would be subjected to a greater intensity of ultraviolet penetration, higher oxygen content and higher temperatures than the L-31 Canal water or ground water in that area due to the shallower depths and greater surface area per unit volume of water. All of those factors would act to improve the water quality by the reduction of any undesirable pathogens and will enhance the uptake/sequestration of nutrients. The short hydroperiods that would exist within this detention feature would favor the type of periphyton that better sequesters phosphorus.

In summary, the surface water that would be impounded within this portion of the C-111 detention system would not present a problem to the ENP from surface water discharges or present a bioaccumulation problem.

There is some concern (expressed by one of the ENP water quality consultants) that surface water from the C-111 detention system could enter into the ENP ground water system. The Corps position on this matter is presented below (based upon previous studies – 1994 GRR/EIS and 2007 IOP FEIS).

The direction of ground water flow in the area is predominantly from the west to the east (towards the L-31N canal). The prevailing gradient prevents water that may seep from the detention area into the ground water from being driven any significant distance into the ENP ground water system as the higher stages to the west tend to drive the ground water towards the east. The concern is that L-31N canal water is potentially unsuitable, and any introduction of that water into the ENP is not desired. Water quality is not presently a concern in the L-31N canal system with regards to phosphorus (based on the past few years of Settlement Agreement calculations). It should be noted that there is presently not a phosphorus criterion/constraint for ground water; only surface water is presently regulated for phosphorus content. Even if the ground water from the detention area moves into the ENP ground water system, it would not reintroduce into the surface water system, as it would tend to flow back toward the L-31N canal. The introduction of groundwater from the C-111 detention system is a limited concern at this time based on the current canal water quality data (meets Settlement Agreement requirements), the predominant ground water flow direction (west to east which drives the ground water away from the ENP towards the L-31W canal), and the ability of the shallow detention area's ability to help treat any potential water quality problems.

4.4 FLOOD CONTROL

4.4.1 No Action Alternative

Levels of flood control are expected to remain the same with no action.

4.4.2 Preferred Alternative

Negative impacts to flood control are not likely due to the maintenance of existing canal target stages upon implementation of the Preferred Alternative. The detention storage capacity of the C-111 system will increase under the Preferred Alternative although the total pump station capacity remains unchanged. In general, it will be possible to remove greater volumes of water out of the C-111 canal and into the detention areas (because the detention areas have expanded), but the rate (i.e., pumping) at which the water is moved out of the C-111 canal and into the detention areas will remain unchanged.

4.5 WETLANDS

4.5.1 No Action Alternative

No wetland impact is expected with the No Action Alternative. Wetland impacts that resulted from the implementation of the C-111 Project and IOP have been discussed in previous NEPA documents (1994 GRR/EIS and 2007 IOP FEIS).

4.5.2 Preferred Alternative

Land identified for expansion of the S-332B NDA is former agricultural land that is currently overgrown with non-native invasive species; therefore no adverse wetland impacts are expected as a result of this project. Expansion of the S-332B NDA is not expected to

degrade any wetlands. A wetland assessment completed March 22, 2012 verified that no wetlands are present in the NDA. Due to construction of the L-321 flowway berm, approximately 20 acres of wetlands will be impacted within the already existing SDA. The berm will be 25 feet wide with 10 feet of construction access on each side, and is 25,215 linear feet. The 10 foot construction buffer will not be replanted, but is expected to naturally revegetate to a condition similar to its current one. A wetland assessment was performed April 10, 2012 within the SDA. Since the wetlands are located within the existing detention area, they have been subject to and will continue to be subject to water management operations. Due to the hydrologic benefits associated with wetlands within ENP, no mitigation is anticipated.

Once complete, the C-111 Project is expected to provide benefit to 1,155 square miles of wetlands in ENP, including 128 square miles in Taylor Slough and 1,027 square miles in Shark River Slough (USACE 1994). Wetlands in ENP are expected to benefit from the restoration of more natural hydroperiods. Restoration of the natural hydroperiods and burning patterns would result in more historic vegetation within these wetlands.

4.6 VEGETATION

4.6.1 No Action Alternative

Vegetation would not be altered due to the No Action Alternative beyond what was discussed in the 1994 GRR/EIS and 2007 IOP FEIS. Exotic/nuisance vegetation has invaded the NDA and is managed by the SFWMD.

4.6.2 Preferred Alternative

Vegetation within the immediate footprint would be removed. This vegetation includes many exotic and nuisance plants such as *Pennisetum purpureum* (elephant grass) and *Ceratopteris thalictroides* (water sprite). The proposed project footprint would be scraped down to bedrock and the existing soil and vegetation removed. Native wetland vegetation is expected to increase in areas adjacent to the project due to the hydraulic ridge that is expected from project implementation.

4.7 THREATENED AND ENDANGERED SPECIES

4.7.1 No Action Alternative

The No Action Alternative would not impact any threatened and endangered species due to no change within the project area.

4.7.2 Preferred Alternative

The Corps has determined that the Preferred Alternative is not likely to adversely affect any of the federally listed species known to occur within the project area. All monitoring and survey of endangered species onsite will be conducted in accordance with survey protocol from the USFWS South Florida Ecological Services Office.

In May of 2006, the USFWS concurred with the Corps' determination that IOP would have "no affect" on the Okeechobee gourd, Everglade snail kite, and the red cockaded woodpecker. The USFWS also concurred with the Corps' determination of "may affect, not likely to adversely affect" the West Indian manatee and its critical habitat, the Florida

panther, the bald eagle, the American crocodile and its critical habitat, the eastern indigo snake, the wood stork, the Cape Sable Seaside Sparrow, and the Garber's spurge (USFWS 2006). The Corps began informal consultation in January of 2012 with the USFWS on the proposed Preferred Alternative to achieve concurrence with the same species from the May 2006 concurrence (Appendix B).

The following special measures would be incorporated during project construction to minimize effects to any listed species that may be present:
a) Standard construction protection measures for the eastern indigo snake
b) Standard protection measures for the West Indian manatee
c) Management Guidelines for the Bald Eagle in the Southeast Region and Bald Eagle Standard Local Operating Procedures for Endangered Species
d) Habitat Guidelines for the Wood Stork in the Southeast Region

Consultation under Section 7 of the Endangered Species Act with the USFWS will continue throughout the project duration.

4.8 AIR QUALITY

4.8.1 No Action Alternative

Impacts to air quality under the No Action Alternative would be as described in the 1994 GRR/EIS and the 2007 IOP FEIS. Not implementing project will not impact air quality. The pump stations will continue to discharge the same quantity of diesel exhaust products into the project area with or without this project.

4.8.2 Preferred Alternative

Construction activities associated with implementing the project would temporarily increase dust within the project area. Best management practices to control dust would be implemented during construction. It is not expected that implementing the project would permanently affect air quality.

4.9 NOISE

4.9.1 No Action Alternative

Impacts due to noise under the No Action Alternative would be as described in the 1994 GRR/EIS and the 2007 IOP FEIS. The noise producing features of this project, the S332B pump station, will produce the same levels and durations of sound impacts with or without this project.

4.9.2 Preferred Alternative

Noise impacts associated with implementation of the project would not permanently increase over what presently exists within the project area. Temporary increases in noise levels would be expected during construction activities; however, this would be limited to the immediate area of construction.

4.10 AESTHETICS

4.10.1 No Action Alternative

Selection of the No Action Alternative would not affect aesthetics as construction of features described in the 1994 GRR/EIS and 2007 IOP FEIS has been completed. Normal operations of pump stations would continue under the No Action Alternative.

4.10.2 Preferred Alternative

Construction of this project will have some temporary impacts such as access restrictions, noise and smoke associated with construction sites, but these are not expected to last for a sustained period of time. Access restrictions, noise and smoke associated with construction sites will interfere to an extent with enjoyment of the area and may disturb wildlife in the immediate area of work. Once work is completed, wildlife will once again inhabit the area around the construction sites and restrictions on access will be lifted. Vegetation will quickly become established on disturbed soil areas and within a year will cover any remaining signs of construction activities.

4.11 LAND USE

4.11.1 No Action Alternative

The No Action Alternative is not expected to provide any changes to current land use.

4.11.2 Preferred Alternative

The Preferred Alternative would alter approximately 1400 acres of existing land use in the NDA. The land is currently former agriculture that the South Florida Water Management District (SFWMD) owns. The SDA includes land consisting of agriculture, rangeland, nonforested wetlands, and hardwood forested wetlands.

4.12 SOCIOECONOMICS

4.12.1 No Action Alternative

The No Action Alternative would not have any changes to socioeconomics in the area.

4.12.2 Preferred Alternative

The Preferred Alternative is not expected to change any socioeconomic impacts. The SFWMD currently owns the project lands and the project benefits to the Everglades could increase recreational opportunities, therefore encouraging more tourism for the area.

4.13 AGRICULTURE

4.13.1 No Action

Agricultural practices are not expected to change due to the No Action Alternative.

4.13.2 Preferred Alternative

The Preferred Alternative is not expected to negatively affect agriculture in the area. The hydraulic ridge would reduce seepage from the Everglades, but is not expected to change water flow to the east where the majority of agriculture is located. The Florida Department of Agriculture and Consumer Services (FDAC) has been a part of the planning process and does not oppose the Preferred Alternative as a plan.

4.14 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

4.14.1 No Action Alternative

Selection of the No Action alternative would not have any HTRW consequences for this project area.

4.14.2 Preferred Alternative

The SFWMD has conducted phase 1 HTRW assessments for this project area. The assessments, conducted approximately 5-10 years ago, indicated no presence of contaminants at active levels. This area was primarily used for agriculture with some limited residential use. This type of use is normally considered to be relatively low risk for HTRW problems as compared to what could be expected at industrial, residential, or former military sites. The SFWMD completed an HTRW assessment and screening level ecosystem risk analysis (SLERA, a soil sampling and analysis program conducted in a method coordinated with USFWS) of this project area in 2008. There was no evidence of HTRW levels of contaminants and only trace levels were found of residual agricultural amendments. The loose soils will be removed down to the caprock/consolidated soils (limestone matrix) for the impoundment area and capped with clean limestone, removing any potential concern with bioaccumulation of these trace levels of agricultural amendments. The SFWMD is working to get the written concurrence of the USFWS Ecosystem Risk Analysis group that this impoundment will not create a problem from sensitive receptors (snail kite). The soils from scraping down the project area are suitable for the base lifts of the main levees being constructed but due to their geotechnical properties will require a layer of processed vegetation free limestone in order to provide a surface suitable for mowing and transit of maintenance vehicles

4.15 CULTURAL RESOURCES

4.15.1 No Action Alternative

Selection of the No Action alternative would have no adverse effect on cultural resources. The previous NEPA documents covered the SDA and the current S-332B NDA with a determination of no adverse effect on cultural resources.

4.15.2 Preferred Alternative

Potential impacts to cultural resources would be from construction activities and inundation. Some of the smaller tree islands may contain unidentified cultural resources that are within the proposed SDA flowway berm. The flowway berms would avoid all existing tree islands. Inundation has the potential to adversely affect archeological sites (Ware 1989, EWES 1990). In 2006, the Jacksonville Corps, based on site 8DA6514's elevation and its content, determined that the periodic inundation would have "no adverse effect". The Florida State Historic Preservation Officer concurred with this determination (DHR Project File No. 2006-06722, August 16, 2006). The proposed internal flowway would not result in any higher water levels; it is designed to increase the time that the site is surrounded by water. The increased duration of saturation is not expected to result in a significant alteration of the cultural materials in the site. Since the site is located in a flowway there is a potential for increased erosion on the northern side of the tree island. However, the archeological site is located in the southern portion of the tree island and would not be subject to any direct erosion. To insure that site 8DA6514 is not impacted due to or degradation from erosion or

inundation caused slumping, the condition of the tree island will be monitored thought the lifetime of the project. The specifics of this monitoring will be developed in the National Historic Preservation Act (NHPA) Section 106 consultation that is in process. If it is determined that the tree island is being impacted NHPA consultation would be reopened.

4.16 CUMULATIVE IMPACTS

The project area has been subject to Federal involvement for many years. The need for flood control, water supply, recreation, and fish and wildlife enhancement has provided a difficult task of balancing various, and sometimes-conflicting needs for the region. In the early years of the C&SF Project, flood control was the overriding goal, and eventually the need for additional water supplies for south Florida required additional modification to the project. The Everglades National Park Protection and Expansion Act of 1989 directed the Corps:

> *"to construct modifications to the Central and Southern Florida Project to improve water deliveries into the park and shall, to the extent practicable, take steps to restore the natural hydrological conditions within the park."*

Since that time, a number of Federal actions have been authorized and implemented that have attempted to improve the flow of water to the ENP without compromising the other needs of the region (i.e., flood control, water supply). The cumulative effects of these actions have been mostly positive. However, some adverse effects have occurred. The CERP (USACE 1999a) has already addressed cumulative effects of lost agricultural land use with the expansion of publicly owned lands in the region.

Cumulative impacts in terms of hydrology, water quality, and natural resources have occurred with the many Federal projects implemented over the years. However, this proposed action, coupled with other recent and future projects, should eventually restore the hydrology of the ENP to a more historic natural condition.

4.17 IRRETRIEVABLE OR IRREVERSIBLE COMMITMENT OF RESOURCES

Irretrievable and irreversible commitment of resources would occur with the conversion of wetlands with the construction of the L-321 flowway berm. The L-321 would be constructed within the SDA that has been operated for many years. Resources committed would also include State and Federal funds to purchase lands, labor, energy, and project materials to build, operate, and maintain the project.

4.18 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

4.18.1 Land Use

Approximately 1,400 acres of existing pasture and other former agricultural lands would be permanently altered to construct the levees, canals, and detention areas within the proposed expanded S-332B NDA. This land is now owned by the SFWMD and has been taken out of agricultural production. NCRS consultation determined that 1,372.5 acres of prime or unique farmland is included within the project area.

4.18.2 Wetlands

The C-111 project area was historically part of the Everglades wetland system. Approximately 20 acres of wetlands within the current SDA will be impacted by the proposed flowway berm. The benefits to wetland function and value provided to ENP as a result of the project are expected to offset the functional losses within the project footprint.

4.18.3 Water Quality

Surface runoff will be controlled during project constructions and no impacts are expected to occur in the local canals or drainage ditches. Precautions to limit turbidity will be employed. A water quality certificate is currently being applied for and will be required prior to construction.

4.18.4 Air Quality

Fugitive dust from vehicular traffic and earth moving during construction will be unavoidable but insignificant overall. Dust control measures will be employed throughout the construction process.

4.18.5 Soils

The disruption of soils is expected to result from construction activities. Organic soils onsite would be used in the construction of the levees.

4.18.6 Wildlife

Localized short-term disturbances to fish and wildlife are expected from construction activities.

4.18.7 Threatened and Endangered Species

Short-term disturbances to fish and wildlife are expected from construction activities. Precautionary measures and construction conditions to limit impacts to threatened and endangered species would be implemented. Please refer to Section 4.7 in the EA.

4.19 COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES

The Corps has partnered with the SFWMD on this project. The proposed action is consistent with the overall goals and objectives of the C-111 Project. It is expected that the proposed action will be consistent with Federal, State and local plans and objectives.

4.20 ENVIRONMENTAL COMMITMENTS

The Corps, the non-federal sponsor (SFWMD), and contractors commit to avoiding, minimizing, or mitigating for adverse effects during construction activities by taking the following actions:

1. Employ best management practices with regard to erosion and turbidity control. Prior to construction, the construction team should 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.

2. 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. The contractor will be required to prepare a spill prevention plan.

3. Demolition debris would be transported to a landfill or otherwise disposed of in accordance with Federal, State, and local requirements. Concrete or paving materials would be disposed of in accordance with Federal, State, and local requirements.

4. 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.

5. Incorporate any commitments required by the appropriate regulatory agencies identified during the NEPA and ESA process.

6. The contractor will prepare an environmental protection plan for listed species onsite.

7. Construction activities will avoid impacting existing tree islands.

4.21 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

4.21.1 National Environmental Policy Act Error! Bookmark not defined. of 1969

Environmental information on the project has been compiled and this EA has been prepared in compliance with NEPA. Full compliance with the Act has been achieved with the coordination of this EA.

4.21.2 Endangered Species Act of 1973, Section 7

The Corps has consulted with the USFWS with "May affect, not likely to adversely affect" determinations for listed species. Provided that standard conditions for census of CSSS and protection of indigo snakes are followed, the project is in full compliance with this law.

4.21.3 Fish and Wildlife Coordination Act of 1958

The C-111 Project has been extensively coordinated with the USFWS. Fish and Wildlife Coordination Act (FWCA) reports were submitted by the USFWS for the 1994 GRR, 2002 IOP EIS, and the 2007 IOP FEIS. This project is in compliance with the Act.

4.21.4 National Historic Preservation Act of 1966 (Inter Alia), (PL 89-665, the Archeology and Historic Preservation Act (PL 93-291), and Executive Order (EO) 11593)

A large scale cultural resource survey and site evaluation was conducted for the previous construction activities. Consultation on the changes from the previous design is in process and will be completed prior to construction in compliance with the Acts.

4.21.5 Clean Water Act of 1972

A 404(b)(1) Evaluation has been prepared (Appendix C) and will be coordinated along with this EA. Full compliance with this Act will be achieved upon the issuance of a Section 401

Water Quality Certification (WQC) and National Pollutant Discharge Elimination System permits by the State of Florida.

4.21.6 Clean Air Act of 1972

Full compliance of this Act will be achieved through the coordination and review of this EA with the Environmental Protection Agency and the issuance of any required permits. No air permit will be required for the construction of these new detention areas. Though not anticipated, if the contractor has to perform any onsite burning activity associated with the clearing and grubbing activity, any required permits will be acquired by the contractor.

4.21.7 Coastal Zone Management Act of 1972

A Federal consistency determination in accordance with 15 CFR 930 Subpart C is included in this EA as Appendix D. The State's consistency review for this project was performed during the coordination of this EA. Full compliance will occur with the issuance of the Water Quality Certificate (WQC) by the State of Florida.

4.21.8 Farmland Protection Policy Act of 1981

The Corps consulted with the Natural Resource Conservation Service (NRCS) to determine whether prime or unique farmland would be impacted by implementation of this project. This project is in compliance with the Act.

4.21.9 Wild and Scenic River Act of 1968

No designated Wild and Scenic river reaches would be affected by project related activities. This Act is not applicable.

4.21.10 Marine Mammal Protection Act of 1972

The West Indian manatee may occur adjacent to the project area. Incorporation of the safeguards used to protect threatened and endangered species during construction would protect any marine mammals in the area. Coordination with USFWS will continue as construction and operational guidelines are incorporated to avoid impacts to this species. No work is being completed in the canals. The project is in full compliance of this Act upon review of this EA by the USFWS.

4.21.11 Estuary Protection Act of 1968

No designated estuary would be affected by project construction activities however; operations of the project may benefit Florida Bay. The project is in full compliance of this Act upon review of this EA by the NMFS.

4.21.12 Federal Water Project Recreation Act

The principles of the Federal Water Project Recreation Act, (PL 89-72) as amended, have been fulfilled by complying with the recreation cost sharing criteria as outlined in Section 2 (a), paragraph (2).

4.21.13 Fishery Conservation and Management Act of 1976

The project is in full compliance of this Act upon review of this EA by the NMFS.

4.21.14 Submerged Lands Act of 1953
The project would not occur on submerged lands of the State of Florida. This Act does not apply.

4.21.15 Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990
There are no designated coastal barrier resources in the project area that would be affected by this project. These Acts are not applicable.

4.21.16 Rivers and Harbors Act of 1899
The proposed work would not obstruct navigable waters of the United States. The project is in full compliance.

4.21.17 Anadromous Fish Conservation Act
Anadromous fish species would not be affected by this project. This Act is not applicable.

4.21.18 Gold and Bald Eagle Protection Act
During Section 7 consultation with the USFWS for the IOP, the USFWS concurred with the Corps' determination that construction and operation of the project was not likely to adversely affect the Bald Eagle. This will be recoordinated through the USFWS for the expanded S-332B NDA. This fulfils the Corps' commitments under the Bald Eagle protection Act. The project is in compliance with the Act.

4.21.19 Migratory Bird Treaty Act and Migratory Bird Conservation Act
No migratory birds would be adversely affected by project activities. The project is in compliance with these Acts upon review of this EA by the USFWS.

4.21.20 Magnuson-Stevens Fishery Conservation and Management Act
This project is inland and not expected to adversely affect Essential Fish Habitat. Essential fish habitat in Florida Bay is comprised of seagrasses, estuarine mangroves, intertidal flats, the estuarine water column, live/hard bottoms, and coral reefs. Project construction activities should have no effect on the nearshore communities or essential fish habitat downstream of the project area. However, this project is expected to have a beneficial indirect effect by increasing overland flow into Florida Bay through Taylor Slough. The increased flow is anticipated to stabilize the water quality and salinities required to improve and sustain nearshore biological communities. The project is in full compliance of this Act upon review of this EA by the NMFS.

4.21.21 Marine Protection, Research and Sanctuaries Act (MPRSA)
The term "dumping" as defined in the Act (3[33 USC. 1402] (f)) does not apply to this project. Therefore, the MPRSA does not apply.

4.21.22 Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response Compensation and Liability Act (CERLA), Toxic Substances Control Act of 1976
A preliminary Phase I HTRW assessment was conducted in August 1998 to address the potential for the occurrence of HTRW on lands within the full scope of the C&SF project in

the study area. No specific sites were identified within the footprint of the structures. Lands related to the C-111 project were also surveyed for HTRW by SFWMD prior to that agency's transfer and certification of lands to the Federal Government. The project is in compliance with these Acts.

4.21.23 E.O. 11988, Flood Plain Management

The areas to be used for the C-111 project are part of the floodplain. The purpose of the E.O. is to discourage federally induced development in floodplains. Commitment of lands to the C-111 project will preclude such development. This project is in compliance with the intent of this E.O.

4.21.24 E.O. 11990, Protection of Wetlands

This E.O. directs Federal agencies to avoid developing or siting projects in wetlands. The nature of this project is that it involves work in wetlands, and no practicable alternative to working in wetlands exists. The project would reduce seepage of groundwater away from wetlands along the eastern boundary of the ENP. The project is in compliance with the intent of this E.O.

4.21.25 E.O. 12898, Environmental Justice

This E.O. directs Federal agencies to provide for full participation of minorities and low-income populations in the Federal decision-making process and further directs agencies to fully disclose any adverse effects of plans and proposals on minority and low-income populations. This was fully coordinated during the IOP NEPA process. Since the design modifications addressed in this EA will be operated under IOP the results of that coordination are still valid. The operations of the structures would benefit all population groups of southern Miami-Dade County by providing flood damage reduction, drinking water supply protection, and restoration of wetlands and other natural resources inside and outside of the ENP. The project would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. The project is in compliance with this E.O.

4.21.26E.O. 13045, Protection of Children

Executive Order 13045, requires each Federal agency to "identify and assess environmental risks and safety risks [that] may disproportionately affect children" and ensure that its "policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." This project has no environmental or safety risks that may disproportionately affect children. The project is in compliance.

4.21.27 E.O. 13089, Coral Reef Protection

No coral reefs will be impacted by this project due to the location of many coral reefs in relation to this project. This E.O. does not apply.

4.21.28 E.O. 13112, Invasive Species

The project will help reduce the abundance and variety of invasive plant species in the project area. Best management practices will be implemented during the construction phase

to preclude the introduction of additional invasive species. The project is in compliance with this E.O.

4.21.29 E.O. 13186 Responsibilities of Federal Agencies to Protect Migratory Birds

The project has been coordinated with the USFWS concerning migratory birds. The project is expected to benefit migratory birds by improved habitat and increased availability of forage species (amphibians, fish, aquatic invertebrates) for wading birds. The project is in compliance with this E.O.

5.0 LIST OF PREPARERS

5.1 PREPARERS & REVIEWERS

The following individuals listed were responsible for contributing to the preparation, review and technical editing of the EA and proposed Finding of No Significant Impact (FONSI):

Name	Role
Ms. Stacie Auvenshine	Biologist, NEPA Coordination
Mr. Grady Caulk	Cultural Resources
Mr. Jim Riley	Water Quality and HTRW
Ms. Gwen Nelson	Engineering Design
Ms. Jessica Files	Hydrology
Ms. Angie Dunn	Document Review
Mr. Stephen Baisden	Project Management

6.0 PUBLIC INVOLVEMENT

C-111 project features have been extensively coordinated with the public. A GRR/EIS was completed in 1994. Project features described in the 1994 GRR/EIS were modified as a result of the IOP. The IOP Supplemental Final EIS was completed in 2002 and another IOP Supplemental Final EIS was completed in 2007. Finally, this EA and FONSI were circulated for a minimum 30-day review to concerned agencies, organizations, and the interested public. Table 2 addresses the comments received during the review period for agencies and public.

Table 2. Public comment matrix

Agency Commenter	Comment	Corps Response
Florida Department of Agriculture and Consumer Services	No comment at this time. Thank you!	Thank you for your review.
Florida Fish and Wildlife Commission (FWC) – 1	The FWC views the expansion of the S-332B North Detention Area as a positive step towards restoration of the Northeast Shark River Slough (NESRS).	Thank you for your comment.
FWC – 2	As noted in previous reviews of MWD and C-111 project documents, staff is hopeful that this proposal will expedite the process for removing the G-3273 stage constraint in NESRS.	Thank you for your comment.
FWC – 3	FWC does not believe that substantial ecological benefits would be realized in WCA-3A by reducing its high water levels nor in ENP by providing increased flows to NESRS without first removing or relaxing the G-3273 trigger well constraint.	The Corps plans to conduct a G-3273 constraint relaxation field test, which will include use of the S-356 pump station. A National Environmental Policy Act assessment would be prepared to assess potential environmental benefits and impacts associated with this field test. The Corps development efforts for the field test have been delayed, pending guidance regarding water quality concerns raised by the South Florida Water Management District (SFWMD) and Florida Department of Environmental Protection (FDEP). The field test will be conducted independently of the development of any future operations plan. The goals for the field test relaxation of G-3273 include increased water deliveries from WCA-3A to ENP through NESRS for the benefit of natural resources. Incremental benefits to WCA-3A and ENP may be achieved under this field test, which

Agency Commenter	Comment	Corps Response
		otherwise would not be achievable until later implementation of the future operations plan. The results from the field are expected to reduce uncertainties regarding seepage, flood protection, mitigation, and water quality, and would be used during evaluation of alternatives and development of the implementation strategy for the future operations plan.
FWC – 4	Staff supports the proposal to develop a hydrological field test to evaluate the effects of raising the G-3273 trigger well criterion.	Thank you for your comment.
FWC – 5	If potentially impacted by construction, staff recommends compliance with all applicable federal and state regulations and recommendations concerning individual species.	The Corps will follow all regulations and continue to coordinate with the USFWS and FWC throughout the construction process. Conservation and protection measures (as outlined in Section 4.20) will be included in the plans and specifications for construction.
FWC – 6	*Removal ofG-3273 constraint:* The FWC views the expansion of the S-332B North Detention Area on the eastern boundary of Everglades National Park as a positive step towards the restoration of Northeast Shark River Slough (NESRS). We are hopeful that the addition of this last piece to the hydrologic ridge system between ENP and the developed landscape to the east will expedite the process for removing the G-3273 stage constraint in NESRS, as it will no longer be necessary [please see our letters to Ms. Lauren Milligan dated Dec. 10,2008 and July 6, 2011 (attached)].	Thank you for your comment.
FWC – 7	Although the U.S. Army Corps of Engineers	The Corps plans to operate under the existing Interim Operating Plan

Agency Commenter	Comment	Corps Response
	(COE) states that more natural hydroperiods will be restored to ENP upon completion of the expanded S-332B North Detention Area, no details of an operational strategy are provided. We do not believe that substantial ecological benefits would be realized in WCA-3A by reducing its high water levels nor in ENP by providing increased flows to NESRS without first removing or relaxing the G-3273 trigger well constraint. However, we are encouraged to hear that the COE is in the process of developing a hydrological field test to evaluate the effects of raising the G-3273 trigger well criterion.	(IOP, USACE 2006) or Everglades Transition Plan (ERTP) operating criteria pending execution of the ERTP Record of Decision anticipated June 2012. The Corps plans to conduct a G-3273 constraint relaxation field test, which will include use of the S-356 pump station. Please refer to response to FWC-3.
FWC – 8	The expansion of the S-332B North Detention Area by 1,440 acres has the potential to provide additional recreational opportunity in Miami Dade County where there is high stakeholder demand. The FWC currently operates the Rocky Glades Public Small Game Hunting Area, located immediately to the south of the proposed NDA, in coordination with the South Florida Water Management District. We are hopeful that these additional lands will likewise be made available for compatible public use following completion of the project. Recreational opportunities for birders, hunters, and other users should be given serious consideration, pursuant to	Thank you for your comment. Upon project completion, the SFWMD will be the point of contact to consider recreation within the detention areas.

Agency Commenter	Comment	Corps Response
	Florida Statute 373.139 (1).	
FWC – 9	Also, FWC notes that additional state-listed species occur within the project area. *State listed species:* We note that the following additional species from the state list of endangered and threatened species potentially occur within the project area and/or could be impacted by the project: roseate spoonbill *(Platalea ajaja),* limpkin *(Aramus guarauna,* little blue heron *(Egretta caerulea),* snowy egret *(Egretta thula),* tricolored heron *(Egretta tricolor),* white ibis *(Eudocimus al!ms),* Audubon's crested caracara *(Polyborus plancus audubonii)* and Everglades mink *(Neovison vison evergladensis).* In cases where state-listed species may be impacted by construction, we recommend compliance with all federal and state regulations and recommendations concerning each individual species. Specifically, adherence to USFWS-approved construction protection measures for the eastern indigo snake and compliance with the Migratory Bird Treaty Act concerning nesting are recommended.	Section 3.8 of the EA has been revised to make note of these additional state listed species. Protection measures for the eastern indigo snake, as well as other protected species potentially found within the project area, will be included in the construction specifications as well as the contractor's environmental protection plan. The project will be in full compliance with the Migratory Bird Treaty Act, Endangered Species Act, and other applicable laws, acts, and executive orders.
FWC – 10	*Editorial comments:* We note that the COE describes the Everglades and Francis S.	Thank you for your comment, the EA has been revised accordingly.

Agency Commenter	Comment	Corps Response
	Taylor Wildlife Management Area (EWMA), referred to as the WCAs in the Flood Control section of the Draft Environmental Assessment on page 16, as "mixed quality habitat for fish and wildlife". The EWMA has some of the best remaining examples of Everglades ridge and slough habitat in South Florida and supports the majority of wading bird nesting efforts in the region, indicative of high quality habitat instead.	
FWC – 11	We find the project consistent with the rules and regulations of the FWC as listed under the Florida Coastal Management Program. The FWC supports the expansion of the S-3328 North Detention Area, but believes that the anticipated ecological benefits of doing so would be minimal unless the G-3273 stage constraint in NESRS is also removed. We appreciate the opportunity to provide comments on this project. If you or your staff would like to coordinate further on the recommendations contained in this letter, please contact me at (561) 625-5122 or email me at chuck.collins@myfwc.com, and I will be glad to help make the necessary arrangements. If you or your staff has any specific questions regarding our comments, I encourage them to contact Mr. Tim Towles	Thank you for your comments.

Agency Commenter	Comment	Corps Response
	in our Vero Beach Field Office at (772) 469-4253 or at tim.towles@myfwc.com.	
Florida Department of Environmental Protection (FDEP) - 1	The Florida Department of Environmental Protection ([F]DEP) is supportive of moving forward with construction of the C-111 Modifications and requests that the U.S. Army Corps of Engineers (USACE) continue to consult with the DEP's Program Coordination and Regulation Section and the South Florida Water Management District (SFWMD) to provide the detailed information necessary to review the current Comprehensive Everglades Restoration Plan Regulation Act permit application and any future phases of this project.	The Corps appreciates the support of FDEP. We will continue to consult with FDEP and SFWMD upon any changes to the CERP Regulation Act permit and future phases of this project.
FDEP – 2	The EA should provide further details regarding the proposed wetland impacts of the preferred alternative and verify that they will be adequately offset.	The wetland impacts are updated throughout the EA, and the wetland report from the wetland assessment/UMAM performed on March 22 and April 10, 2012 (the wetland report for March 22 is available in Appendix E).
FDEP – 3	Every effort should be made to avoid and minimize impacts to wetlands and listed species during the detention area operation and Frog Pond restoration.	The construction specifications and environmental protection plan (provided by the contractor) will be followed to protect listed species and minimize impacts to wetlands to the maximum extent practicable.
FDEP – 4	In addition, the EA does not address the operational aspects of the proposed features. The operational intent should be better described in the EA to ensure that the proposed features will meet the anticipated operational requirements.	Page 3 of the EA states that "*The IOP will remain in place to operate the system until the Everglades Restoration Transition Plan (ERTP) or another operating plan is authorized.*" ERTP is expected to be authorized in June 2012.

Agency Commenter	Comment	Corps Response
FDEP – 5	For further detailed comments and suggestions, please refer to the enclosed DEP memorandum and contact Ms. Dianne K. Hughes at (561) 682-2662.	Thank you for the contact information.
FDEP – 6	The recommended plan, Alternative 3, involves modifications to an existing surface water management system and includes dredging and filling in wetlands and other surface waters. These activities are regulated by the Florida Department of Environmental Protection under Chapters 373 and 403, Florida Statutes, and will require either an Environmental Resource Permit or a Comprehensive Everglades Restoration Plan Regulation Act (CERPRA) permit prior to construction and operation.	The Corps is in the process of applying for the appropriate FDEP permit for these features. FDEP staff guidance was to use the CERPRA application form.
FDEP - 7	A permit application was submitted to the Department by the Corps for the C-111 South Dade Project Modifications, Contract 8 Features (C-111 Modifications) Project on February 20, 2012. The Corps and Department held pre-application meetings on September 30th, October 14th, and November 18, 2011, to facilitate the application process and discuss information that needed to be included in the submitted application. However, the application lacked a significant amount of information that the Department requires for processing the application and, as a result, the Department	The Corps received the RAI and will be responding to each request.

Agency Commenter	Comment	Corps Response
	issued a request for additional information (RAI) on March 16, 2012.	
FDEP – 8	The Department is supportive of moving forward with the construction of the C-111 Modifications and asks that the Corps continue to coordinate with the Department's Program Coordination and Regulation Section and the South Florida Water Management District in providing information necessary for the authorization and any future phases of this project.	The Corps will continue coordinating with SFWMD and FDEP on all phases of this project.
FDEP – 9	The EA report concludes that the project will not adversely affect existing fish and wildlife habitat. Section 4.5.2 states that the preferred alternative is expected to degrade approximately 1,400 acres of wetlands, which is significant. The EA's proposed alternative does not provide specific information about environmental impacts. Therefore, the Department will require additional information to verify that the proposed wetland impacts have been adequately offset. Section 3.6 needs to be expanded to clearly define the wetland impacts proposed. A Uniform Mitigation Assessment Method (UMAM) survey should be used to assess the impacts to wetlands. We suggest that every effort be made to avoid and minimize impacts to wetlands and listed species during the	A UMAM was completed March 22 for the Northern Detention Area (NDA) and April 10, 2012 for the Southern Detention Area (SDA). The NDA UMAM concluded that no wetlands were present. The SDA concluded that 20 acres of wetlands would be impacted. The Corps has worked to minimize impacts to existing wetlands, while also providing restoration efforts to the adjacent Everglades ecosystem. Please see Appendix E for documentation of the results of the March 22 UMAM assessment.

Agency Commenter	Comment	Corps Response
	detention area operation and Frog Pond restoration.	
FDEP – 10	The EA does not address the operational aspects of the proposed features. The operational intent should be better described in the EA to ensure that the proposed features will meet the anticipated operational requirements. The EA does not describe how the benefits claimed can be achieved without implementing operations of the proposed features.	The Corps plans to operate under the existing IOP or ERTP operating criteria. Page 3 of the EA states that "*The IOP will remain in place to operate the system until the Everglades Restoration Transition Plan (ERTP) or another operating plan is authorized.*" ERTP is expected to be authorized in June 2012. The SDA is anticipated to hold at least one foot of water within the flowway area (Figure 4 in EA), therefore creating a hydrologic ridge to help prevent seepage as well as maintain flood control.
FDEP – 11	Section 2.1.3. The Alternative 3 paragraph makes reference to the North Detention Area (NDA) being divided into two areas: the flow way and the main detention area. Figure 4 does not show these areas and should be updated to clearly depict their location.	Figure 4 has been updated to reflect this change.

Agency Commenter	Comment	Corps Response
FDEP – 12	Page 12, Second sentence. Reference is made to capping using 1 ft. of lime rock when 2 ft. of clean soil is required for capping. Please revise this language.	The soils in this project footprint have levels of soil amendments that are typically found in Florida agricultural areas for this region. The soil management plan is being finalized and coordinated with the FDEP South East (SE) Waste cleanup section and the USFWS EcoRisk group by the SFWMD. The preliminary soil chemistry results indicate that one foot of cover material will be sufficient to address all requirements. There are expected to be no or minimal exceedances (typically copper) of the soils above residential standards based on past history. The concern for typical agricultural soils at the levels normally found is not a human health issue but is an ecological risk issue. Ecological concerns are addressed by placing 6 inches of clean fill as a top layer for the levees in areas that will inundated routinely. If soils are found that require 2 feet of cover material, those soils will not be allowed for use in the construction of this project. The primary purpose of the cover material (clean, crushed and graded limestone) is to provide the proper geotechnical/mechanical properties on the top surface of the levees in order to provide a uniform mechanically stable surface suitable to withstand routine heavy maintenance vehicle traffic as well as providing a smooth surface that will not damage the mowing equipment. The SFWMD will be obtaining the concurrence of the FDEP SE Waste Cleanup section and the USFWS EcoRisk group on the soil management plan before construction can start on this project. The depth of the clean limestone capping material will be approved by both of those sections and is not anticipated to change from the current 1 foot. Please check with Paul Wyerziecki or Bill Rueckert of the FDEP South East waste cleanup section if further confirmation is needed.
FDEP – 13	Section 2.1.3. A list of features to be constructed is provided, including three 500-	Please see the Contract 8 DDR which is located on the planning website under Dade County:

Agency Commenter	Comment	Corps Response
	ft overflow weirs. Please provide a paragraph discussion on how these features were designed, the overflow elevations, discharge rates and resulting peak stages.	http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/DocsNotices_OnLine.htm.
FDEP – 14	Section 3.15. Please note that any potential soil contamination issues are reviewed by the USFWS EcoRisk section and FDEP. Specifically, the environmental assessments and any proposed remedial measures and/or soil management plan should be coordinated with the Department's Waste Cleanup Section staff in the Southeast District Office located in West Palm Beach.	The SFWMD is coordinating the land clearance issues with the FDEP SE District Waste Cleanup Section. The SFWMD staff has indicated that the final clearances from both the FDEP Waste Cleanup Section and the USFWS EcoRisk section should be available in the June-July 2012 timeframe.
FDEP – 15	An interagency (USACE, FDEP, and SFWMD) field wetland delineation was completed on March 22, 2012, to quantify and verify the location of wetlands within the North Detention Area (NDA) of the C-111 South Dade, Contract 8 footprint. Please revise the acreage of wetlands in the following sections of the EA to reflect the findings of the field verification and reports: a. Section 3.6 (p. 19): We recommend making specific reference to the wetland assessment (referenced above). b. Section 4.5.2 (p. 27): Please revise the acreage of wetlands in the NDA and the total amount of wetlands within the project footprint. c. Section 4.18.2 (p. 33): Please revise the acreage of wetlands to be impacted within	Changes to wetland acreages of impact were made in the appropriate sections of the EA.

Agency Commenter	Comment	Corps Response
	the NDA.	
FDEP – 16	In section 4.5.2 under the Preferred Alternative there are conflicting statements regarding adverse impacts and benefits to wetlands from this project. Please explain what is meant by …"wetlands within the proposed extended S-332B NDA would also be adversely impacted by impounding water." In this regard, please describe the planned operations for this project and how it will impact and/or benefit the wetlands located within the NDA.	Upon completion of the UMAM March 22, 2012, no wetlands are present in the NDA. Please see Appendix E for documentation of the results of the UMAM.
Florida Department of the State	The DOS' review of the Florida Master Site File indicates that because of the nature of the project, it is unlikely that significant archaeological or historical resources will be affected.	Thank you for your comment.
South Florida Water Management District (SFWMD) – 1	Please provide a clear description of the eastern expansion in Section 2.1.3.	Section 2.1.3 has been revised to provide a better description of the eastern expansion.
SFWMD – 2	Describe the solid line along the L-31 Canal located near the same latitude as the Northern Detention Area (NDA) in Figure 4.	The solid line is the location of the disposal material that will come from the NDA. The line is now labeled on Figure 4.
SFWMD – 3	Indicate where and/or how the 8.5 Square Mile Area (SMA) will be modified in order	The 8.5 SMA detention area is not being modified as part of this contract; changes to the 8.5 SMA detention area to allow discharge to

Agency Commenter	Comment	Corps Response
	to discharge into the NDA.	the NDA will be pursued in the future and will be coordinated with all parties at that time.
SFWMD – 4	Provide detail in Section 2.2 on how the project is intended to abate flooding resulting from future implementation of MODWATERS. Also, provide an explanation of the needed capacity for water storage for pump S-357.	The C-111 South Dade project includes the completion of the L-357 W levee from Richmond Drive to the 8.5 SMA detention area. This will prevent any increased NESRS surface water flows from flooding 8.5 SMA privately owned property. Water storage for the S-357 pump station is not part of this project under the current operations; however, it is envisioned that in future operational plans that the 8.5 SMA detention area will discharge into the C-111 project in order to maintain the required levels of flood mitigation in the 8.5 SMA. Additional design and construction will be required prior to connecting the existing 8.5 SMA detention area to the C-111 project; similarly, the current operations plan will have to be revised in the future to account for combined operations of the two projects.
SFWMD – 5	In Section 3.2, consider using the following language: "the hydrology of these former Everglades have been impacted by prior agricultural practices (e.g. ditching, rock plowing, etc.) and regional water management. The majority of the proposed NDA could be best described as prior converted cropland no longer in agricultural production."	Thank you for your comment, the suggested text has been added in section 3.2
SFWMD – 6	Revise Section 4.2.2 to clearly indicate how water will be transferred from the 8.5 SMA and/or S-357 into the expanded NDA. Also, detail the possibility of water from the detention area emerging as surface water in or near Everglades National Park.	Water from the 8.5 SMA detention area will not be conveyed to the C-111 NDA until additional design, construction, and an appropriate operational plan are completed that allow this action.
SFWMD – 7	Include the following in Section 4.5.2: 1) the	Section 4.5.2 now states that a UMAM was performed and that no

Agency Commenter	Comment	Corps Response
	determination concerning these lands as Prior Converted Croplands; 2) whether or not the area is considered jurisdictional; and 3) information regarding exotics infestation and the increased functional value and increased hydrogeology once the project is completed.	wetlands are within the NDA. Please see Appendix E for documentation of the results of the UMAM.
SFWMD – 8	In Section 4.6.1, include the anticipated changes in vegetation and a discussion of nuisance and exotic species in the area.	Section 4.6.1 has been updated to indicate that the NDA is predominantly exotic/nuisance vegetation that is currently being managed by the SFWMD.
SFWMD – 9	Revise Section 4.10.2 to include language similar to: "Construction of this project will have some temporary impacts such as access restrictions, noise and smoke associated with construction sites."	Thank you for your comment, the language in section 4.10.2 has been revised.
SFWMD – 10	Amend Section 4.11.2 to make the land use referred to in the text, former agriculture, consistent with that shown on the included land use map and describe any changes.	Section 4.11.2 has been revised.
SFWMD – 11	Clarify the discussion concerning irretrievable loss to wetlands in Section 4.17, since the document varies between the terms "wetlands" and "former agriculture."	The lands within the C-111 project area were originally part of the Everglades, and therefore wetlands. The lands were then drained and converted to agriculture. The project area has not been used as agriculture for many years now, which is why it is considered former agricultural lands. Section 4.17 was revised to clarify the current status of former wetlands in the project area.
SFWMD – 12	Revise Appendix D to indicate that the Florida Department of Environmental Protection is the lead in implementing this chapter for those projects which	Appendix D was updated accordingly in the second sentence under Enforceable Policy.

Agency Commenter	Comment	Corps Response
	SFWMD is the local sponsor.	
SFWMD – 13	Please detail methods for minimizing impacts to wetlands in the project area. Include a plan for minimizing the potential for additional disturbances.	The SDA contains approximately 20 acres of wetland impacts. Approximately 8.6 of the 20 acres will be scraped down for the construction period, but will not be mowed or manually maintained after that. Approximately, 10.74 acres of wetlands will be scraped with the flowway berm (L-321) built on top of the existing wetlands. The only roads that are available for construction access will be existing roads; contractors are not to build or use any other areas for access. Detailed minimization measures will be developed during final designs.
SFWMD – 14	Describe how access will be established for future maintenance and exotic vegetation control.	The access to the site currently will be the access road for future maintenance and exotic vegetation control. There are several access roads and both the portion of the NDA and all of the SDA are maintained.
Florida State Historic Preservation Officer	Our office received and reviewed the referenced project application in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1992, etc. Our review of the Florida Master Site File indicates that because of the nature of the project it is unlikely that no significant archaeological or historical resources will be affected.	Thank you for your review and comment.

6.1 LIST OF RECIPIENTS

The following agencies, groups, and individuals were sent copies of this EA and proposed FONSI:

Native American Tribes
Miccosukee Tribe of Indians of Florida
Seminole Tribe of Florida

Federal Agencies
Federal Emergency Management Agency
US Environmental Protection Agency
US Department of Agriculture
Forestry Service
Natural Resources Conservation Service
US Department of Commerce
National Oceanic and Atmospheric Administration
Florida Keys National Marine Sanctuary
National Marine Fisheries Service
US Department of Housing and Urban Development
US Department of the Interior
Bureau of Indian Affairs
US Fish and Wildlife Service
US Geological Survey
National Park Service
Office of Environmental Policy and Compliance
US Coast Guard
US Department of Transportation
Federal Highway Administration
US Public Health Service

State Agencies
Florida Department of Agriculture and Consumer Services
Florida Department of Community Affairs
Florida Department of Environmental Protection
Florida State Clearinghouse
Florida Fish and Wildlife Conservation Commission
Florida Department of Transportation
Florida Division of Historical Resources - SHPO
South Florida Water Management District

Regional Governments
South Florida Regional Planning Council

County Governments

Miami-Dade County

Municipalities
Miami, Florida
Florida City
Homestead, Florida

Groups
Audubon Society of the Everglades
Biodiversity Legal Foundation
Miami-Dade County Farm Bureau
Dairy Farmers, Inc.
Defenders of Wildlife
Environmental Coalition of Broward County
Environmental Defense Fund
Everglades Coordinating Council
Everglades Foundation
Florida Audubon Society
Florida Biodiversity Project
Florida Defenders of the Environment
Florida League of Anglers, Inc.
Florida Power and Light Company
Florida Sportsman Conservation Association
Florida Wetlands
Florida Wildlife Federation
Friends of Florida
Friends of the Everglades
Izaak Walton League of America, Inc.
Lake Worth Drainage District
League of Women Voters
National Audubon Society
National Parks and Conservation Association
National Park Trust
National Resources Defense Council
National Sierra Club
National Parks Conservation Association
National Wildlife Federation
Save the Manatee Club
Sierra Club, Florida Chapter
South Florida Agricultural Council
South Florida Anglers for Everglades Restoration, Inc.
The Environmental Coalition
The Nature Conservancy
The Wilderness Society
Tropical Audubon Society
Trust for Public Lands

World Wildlife Fund

Individuals
A complete list of individuals who received the EA and FONSI is on file in the Jacksonville District of the Corps.

7.0 REFERENCES

EWES- US Army Engineer Waterways Experiment Station. 1990 “Archeological Inundation Studies” in Archeological Sites Protection and Preservation Notebook, Technical Notes ASPPN XI-2.

Smith, Greg C, Mason W. Sheffield, Leslie Raymer, Steve Koski, and Jennifer B. Langdale 2006 Cultural Resources Survey, C-111 Phase II and III, Dade County, Florida. Prepared for US Army Corps of Engineers, Jacksonville District by New South Associates, Stone Mt. GA.

Sykes, P .W., J. A. Rodgers, and R. E. Bennetts. 1995. Snail Kite (*Rostrhamus sociabilis*). *In* The Birds of North America, No. 306, A. Poole and F. Gill (Eds.). Academy of Natural Sciences, Philadelphia, Pennsylvania and American Ornithologists' Union, Washington, D.C., USA.

USACE. 1994. Canal-111, Central and Southern Florida Project for Flood Control and Other Purposes, Final General Reevaluation Report and Environmental Impact Statement, Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE. 1999. Central and Southern Florida Project Comprehensive Review Study: Final Integrated Feasibility Report and Programmatic Environmental Impact Statement. Jacksonville District, Jacksonville, Florida.

USACE. 2000. Final Environmental Assessment, Central and Southern Florida Project for Flood Control and Other Purposes, Interim Structural and Operational Plan, Emergency Deviation from Test 7 of the Experimental Program of Water Deliveries to Everglades National Park for Protection of the Cape Sable Seaside Sparrow, Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE. 2002. Interim Operational Plan for Protection of the Cape Sable Seaside Sparrow, Central and Southern Florida Project for Flood Control and Other Purposes, Final Environmental Impact Statement, Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE. 2002. Canal-111, Central and Southern Florida Project for Flood Control and Other Purposes, Final Supplemental Integrated General Reevaluation Report and Environmental Assessment, Miami-Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE. 2006. Interim Operational Plan for Protection of the Cape Sable Seaside Sparrow, Central and Southern Florida Project for Flood Control and Other Purposes, Final Supplemental Environmental Impact Statement, Miami-Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE. In preparation. Combined Structural and Operational Plan for Modified Water Deliveries to Everglades National Park and Canal-111 Projects, Draft Integrated General Reevaluation Report and Environmental Impact Statement, scheduled to be released during the third quarter of calendar year 2007.

U.S. Fish and Wildlife Service. 1999. Biological Opinion, Interim Operational Plan for the Protection of the Cape Sable Seaside Sparrow (November 19, 1999).

U.S. Fish and Wildlife Service. 1999b. South Florida Multi-Species Recovery Plan. Southeast Region, Atlanta, Georgia, USA.

U.S. Fish and Wildlife Service. 2002. Final Amended Biological Opinion, Interim Operational Plan for the Protection of the Cape Sable Seaside Sparrow (March 28, 2002).

U.S. Fish and Wildlife Service. 2006. Biological Opinion, Interim Operational Plan for the Protection of the Cape Sable Seaside Sparrow (November 17, 2006).

Ware, John A. 1989 Archeological Inundation Studies: Manual for Reservoir Managers, Contract Report EL-89-4, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

APPENDIX A

HISTORIC DESIGN MODIFICATIONS OF THE C-111 BASIN TO DATE

EXPANSION OF THE C-111 DETENTION AREA AND ASSOCIATED FEATURES PROJECT

SOUTH DADE, FLORIDA

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Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	*Authorized in 1994 GRR*	*Purpose of Authorized Feature*	*Modification*	*Purpose of Modification*	*Constructed*
Three 84" Corrugated Metal Pipe w/flap gates	Structure would consist of 3 corrugated metal pipes with flap gate controls.	Culvert connector would allow the delivery of water to the L-31W Borrow Canal (BC) to deliver water to S-332 and S-175. When stages were higher in the L-31W BC than in the C-111 canal flap gates would close to prevent draining water from L-31W BC.	Eliminated.	With the incorporation of the Frogpond Detention Area (FDA) S-332 is no longer needed to provide flows to Taylor Slough.	No
Twenty-four 36 inch culverts with risers	The culverts would have an invert of 3.5 feet (2.5-3 ft below grade) and the risers would have 48 inch length.	Structures would be located on the west side of the retention/detention in the L-31W Tieback Levee discharging west into ENP.	Eliminated	In order to protect ENP from surface water discharges, this feature was removed.	No
S-332A	A 300 cfs diesel driven pump station with 4 pumps (75 cfs each).	This pump station was located the furthest north and would pump from the L-31N BC to west of the S-332D Tieback levee directly into ENP utilizing a 0.5-mile long concrete lined canal (see below). This pump station would provide flows to the Taylor Slough Headwaters in the northern part of the rocky Glades and aid the other pump stations in providing the level of flood protection in the C-111 Basin.	Eliminated	It was more practicable and cost-effective to eliminate S-332A and increase the capacity at S-332B and S-332C. In addition the re-design of 8.5 SMA places S-357 pump outlet in the same general area.	No

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	***Authorized in 1994 GRR***	***Purpose of Authorized Feature***	***Modification***	***Purpose of Modification***	***Constructed***
S-332B	A 300 cfs diesel driven pump station with 4 pumps (75 cfs each).	Located approx. halfway between C-102 and C-103 on the L-31N BC this pump station would discharge into the northern part of the C-111 retention/detention area via a ½ mile concrete lined channel (see below). The retention/detention area is formed by parts of the L-31W Tieback and S-332D Tieback Levees.	The capacity of the pump station was increased to 575 cfs-four 125 pumps with diesel engines and one 75 cfs pump with an electric motor would deliver water to the Northern and Southern Detention Area (NDA and SDA respectively).	Pump station capacity increased to provide additional capacity in conjunction with the elimination of S-332A. In addition the increased capacity offsets seepage losses from the flowway.	YES
S-332C	A 300 cfs diesel driven pump station with 4 pumps (75 cfs each).	Located approx. near the confluence of the C-103 canal and the L-31N BC this pump station would discharge into the central part of the C-111 retention/detention area via a ½ mile concrete lined channel (see below). The retention/detention area is formed by parts of the L-31W Tieback and S-332D Tieback Levees.	The capacity of the pump station was increased to 575 cfs-four 125 pumps with diesel engines and one 75 cfs pump with an electric motor would deliver water to the Southern Detention Area (SDA) .	Pump station capacity increased to provide additional capacity in conjunction with the elimination of S-332A. In addition the increased capacity offsets seepage losses from the floway.	YES
S-332D	A 300 cfs diesel driven pump station with 4 pumps (75 cfs each).	Located adjacent to S-174 this pump station discharges into the southern part of the C-111 retention/detention area via the L-31W which would be lined with concrete. The retention/detention area is formed by parts of the L-31W Tieback and S-332D Tieback Levees.	In 1996 during detailed design, S-332D capacity increased to 575 cfs based on updated estimates of return seepage. Structural mediations made during the 2002 CSSS Emergency contract replaced the concrete lined canal with part of L-327 and S-327, which flow into cells which weren't in the original plan. This area is	No Change	YES

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	*Authorized in 1994 GRR*	*Purpose of Authorized Feature*	*Modification*	*Purpose of Modification*	*Constructed*
			known as the Frog Pond Detention Area(FDA).		
State Road 9336 (Bridge)	Replace existing Bridge	To establish historic sheet flow patterns in Taylor Slough, the existing bridge was replaced by two bridges. As documented on Part V, Supplement 59 Canal 111 (C-111), Section 1 Taylor Slough Bridges, the existing bridge (100 ft) was replaced with a 375 ft bridge, add another 250 ft bridge and a 4x8 box culvert.	No change.	No change.	YES
Connector Canal from C-111	The connector canal would have a 10-foot bottom width, 1 to 1 side slopes, and an invert of -12 ft, NGVD1929.	The canal would connect C-111 with the L-31W BC canal just north of S-175. The new canal would provide water to the west (S-332) and south (S-175). A culvert would be installed on the western end (see above) to prevent backflow back to C-111.	Eliminated.	With the incorporation of the Frogpond Detention Area (FDA) S-332 is no longer needed to provide flows to Taylor Slough.	NO
Connector Canal at S-332B	Approximately ½ mile concrete lined canal with a 10-foot bottom width, 1 to 1 side	Purpose is to discharge water taken from the L-31N borrow canal and convey the water ½ mile west across the C-111 Buffer Lands to the retention / detention area. The purpose of the concrete lining is to inhibit seepage and reduce pumping of return flow by increasing the seepage	This EDR will modify the design to two pipes capable of discharging 125 CFS each into the North Detention Area. Two pipes capable of discharging 125 CFS and one pipe capable of discharging 75 CFS into the South	The pipe discharge inhibits seepage and reduces pumping of return seepage, which was cheaper than the concrete lined channel.	YES

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	***Authorized in 1994 GRR***	***Purpose of Authorized Feature***	***Modification***	***Purpose of Modification***	***Constructed***
	slopes, and an invert of 3.2 ft, NGVD1929.	flow path back to the L-31N borrow canal.	Detention Area.		
Connector Canal at S-332C	Approximately ½ mile concrete lined canal with a 10-foot bottom width, 1 to 1 side slopes, and an invert of 3.2 ft, NGVD1929.	Purpose is to discharge water taken from the L-31N borrow canal and convey the water ½ mile west across the C-111 Buffer Lands to the retention / detention area. The purpose of the concrete lining is to inhibit seepage and reduce pumping of return flow by increasing the seepage flow path back to the L-31N BC.	This EDR will modify the design to 5 pipes, 4 pipes capable of discharging 125 CFS each and one pipe capable of discharging 75 CFS in the South Detention Area.	The pipe discharge inhibits seepage and reduces pumping of return seepage, which was cheaper than the concrete lined channel.	YES
Fill-in L-31W from S-332	Approx. 25,500 feet of the L-31W borrow canal would be backfilled by pushing in the adjacent levee.	This would restore the western part of the Frogpond to the Taylor Slough System.	Proposes Plugs instead of backfill. The reduced scope addresses non-Federal Sponsor and Stakeholder concerns. Plugs will provide restoration benefits at a reduced cost, and allow the performance of the plugs to be analyzed. A dermination can be maded based on the analysis whether or not additional plugs or filling is beneficial. There will be two 1000 foot plug at Station	Levee is not being degraded because it acts as the western levee to the Frogpond Detention Area (FDA) and there are environmental concerns with restoring agricultural lands back into the natural environment. Backfilling the L-31W BC will aid in the prevention of seepage losses from ENP. Partial backfill is also being done to reduce seepage losses	NO

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	*Authorized in 1994 GRR*	*Purpose of Authorized Feature*	*Modification*	*Purpose of Modification*	*Constructed*
			90+00 to 100+00 and 190+00 to 200+00. There will be four 500 foot plugs at the following stations: 310+00 to 315+00, 425+00 to 430+00, 465+00 to 470+00, and 525+00 to 530+00.	south of S-175 but allow for the continued recreational use in this area.	
C-111 North	A canal would be constructed from the confluence of the C-111 and C-111E canals extending eastward toward US Highway 1.	This new canal would be supplied water from the S-332E pump station and would initiate sheetflow southward towards the panhandle of ENP through the Southern Glades.	No change, This item will be reevaluated at a later date..	No change.	No, deferred to the C-111 Spreader Canal
Canal C-109	Nine canal plugs would be placed in the C-109 canal. Fill material would come from the spoil mound removal	Plugs would be constructed to help promote sheet flow from north to south within the Southern Glades lands between the C-109 and C-110 canal.	This EDR no action required.	This work has been completed by the Florida Department of Transportation (FDOT) as part of mitigating for the widening of US Highway 1. FDOT completely backfilled the entire canal instead of plugs as part of their mitigation.	YES, by FDOT

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	***Authorized in 1994 GRR***	***Purpose of Authorized Feature***	***Modification***	***Purpose of Modification***	***Constructed***
	along the south side of the C-111 canal.				
Canal C-110	Ten canal plugs would be placed in the C-110 canal. Fill material would come from the spoil mound removal along the south side of the C-111 canal.	Plugs would be constructed to help promote sheet flow from north to south within the Southern Glades lands between the C-109 and C-110 canal.	No Change.	No change.	No, deferred to the C-111 Spreader Canal Western Project.
Canal C-111	Degrade the disposal banks on the southern side of the canal along the east-west run of C-111 upstream	When the canal was excavated gaps were left in the spoil mounds to allow flow southward into the panhandle area of ENP. The removal of the spoil mounds would allow a broader expanse of flow into the panhandle of ENP allowing the natural sheetflow that characterizes the Glades. As documented in *Part V, Supplement 60 Canal 111 (C-111), C-111 Spoil Mound Removal*, this work has been completed. The spoil material was	No change, feature has been constructed.	No change.	YES

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	***Authorized in 1994 GRR***	***Purpose of Authorized Feature***	***Modification***	***Purpose of Modification***	***Constructed***
	S-197.	stockpiled for later use.			
Connector Canal from S-332A	Approximately ½ mile concrete lined canal with a 10-foot bottom width, 1 to 1 side slopes, and an invert of 3.2 ft, NGVD 1929.	Purpose is to discharge water taken from the L-31N BC and convey the water ½ mile west across the C-111 Buffer Lands to the west side of the S-332D tieback levee. Water would be allowed to flow from the canal directly into ENP based on the natural topography of the area. The purpose of the concrete lining is to inhibit seepage and reduce pumping of return flow by increasing the seepage flow path back to the L-31N BC.	Eliminated	It was more practicable and cost-effective to eliminate S-332A and increase the capacity at S-332B and S-332C. In addition the re-design of 8.5 SMA places S-357 pump outlet in the same general area.	NO
Exist L-31W Borrow Cl/S332D	Requires lining approximately a ½ mile of the existing L-31W borrow canal downstream of S-174 to the west	Purpose is to discharge water taken from the L-31N BC and convey the water ½ mile west across the C-111 Buffer Lands to the retention /detention area. The purpose of the concrete lining is to inhibit seepage and reduce pumping of return flow by increasing the seepage flow path back to the L-31N BC.	Changes the discharge plugged the L-31W canal and conveyance the discharge to a high head cell that feeds water to the Frogpond Detention Area (FDA). This feature was constructed in 2002 as part of the Cape Sable Seaside Sparrow Emergency Construction work.	With the incorporation of the Frogpond Detention Area the S-332D pump station pumps into a high head cell that takes the place of lining the L-31W BC.	YES

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	*Authorized in 1994 GRR*	*Purpose of Authorized Feature*	*Modification*	*Purpose of Modification*	*Constructed*
	side of the S-332D tieback levee.				
L-31W Tieback Levee	This new levee would be constructed roughly parallel to the existing L-31N would start near S-175 on the L-31W levee and proceed due north for 9.25 miles tying into high ground in the Rocky Glades to form a hydraulic ridge.	The L-31W tieback levee allowed the removal of parts of the L-31W levee, which restores part of the Frogpond area back to the natural system of Taylor Slough.	Because of the changes in the detention areas, this levee was renamed into several levees. They are L-329, L-328, L-327. L-320, and L 315. The levee length is now is 14.5 miles. It is not just due North, but forms the side of the three detention areas (NDA, SDA, and FDA).	This will allow the extension and expansion of the retention/detention area (hydraulic ridge), minimizing seepage losses from ENP and preventing the direct discharge of surface water into ENP. Levee heights were increased to increase storage volume to prevent overflow and maximize the use of project lands.	YES and NO
S-332E	A 50 cfs diesel driven pump.	Located at the junction of C-111 and C-111E, this pump station would discharge water into the new C-111 North canal to promote sheet flow	No change, this item will be reevaluated at a later date.	No change.	NO, deferred to CERP.

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	*Authorized in 1994 GRR*	*Purpose of Authorized Feature*	*Modification*	*Purpose of Modification*	*Constructed*
		south towards the panhandle of ENP.			
300 ft Spillway (Weir)	A 300 foot trapezoidal spillway constructed in the L-31W Tieback Levee.	Crest length was sized to pass 50% of the maximum pump capacity of the three pump stations S-332B, S-332C, and S-332D from the retention/detention area and discharge west into ENP. The culvert risers would pass the balance of the pump capacity.	With the elimination of the original 24culvert structures that discharged to ENP and the increase in detention area, three additional weirs will be added for a total of four. Each of the weirs (S-315N, S-315S, S-317, S-318, S-320, and S-321)will be 500 ft long capable of passing approx. 500 cfs with 1 ft of head.	Spillways will serve as emergency overflow structures discharging to the east.	NO
S-332D Tieback Levee	Levee would run parallel and about ½ mile west of L-31N, bisecting the lands between the existing L-31N and	Levee serves two purposes. In the south it forms the eastern part of the retention/detention (hydraulic ridge) area and in the north it forms a buffer zone between the L-31N and new levee to prevent discharges from S-332A from flowing back towards the L-31N levee.	Because of changes in the retention area this levee has been renamed into several levees. These are L-322, L-323, and L-316.	Forms the eastern levee for the Southern and Northern Detentions Areas (SDA and NDA respectively).	YES and NO

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	*Authorized in 1994 GRR*	*Purpose of Authorized Feature*	*Modification*	*Purpose of Modification*	*Constructed*
	the proposed L-31 W tieback. The levee would start at the S-332D pump station go due west for approximately ½ mile and proceed north paralleling L-31N, tying into high ground in the Rocky Glades.				
500 ft Flowway	No	Was not part of the original 1994 GRR.	This is the addition of L-321 and L-318, which creates a 500 ft Flowway to the NDA and SDA.	This component will contain the hydraulic ridge to the eastern 500 feet of the NDA and SDA during low flow periods. An approximate 1.0 ft berm will be constructed to keep the flow to the eastern side.	NO

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	***Authorized in 1994 GRR***	***Purpose of Authorized Feature***	***Modification***	***Purpose of Modification***	***Constructed***
L-323	No.	Was not in the original 1994 GRR.	This feature was incorporated during the 2002 IOP Emergency Contract to connect the S-332B West and S-332C Detention areas due to the lack of available lands (ENP lands, Land Swap). The complete partial connector was also unable to be constructed due to two small privately owned parcels.	The purpose of this structure is to create the continuous hydraulic ridge between the S-332B West and S-332C detention areas. A portion of this levee shall be removed under Contract 8 to provide flow for the new overflow weirs.	Yes and No
S-316 400' Overflow Weir	NO	To provide emergency overflow for the S-332B North Detention Area, which will become the NDA.	400' Emergency Overflow Weir.	The 1994 GRR did not have closed detention areas. The idea was to just flow water into ENP. With closed Detention areas there was a need of an emergency overflow weir to prevent the over topping of the levee system. The weir location was chosen to the East, with the intent that future overflow weir capacity would be to the west as the retention areas were completed.	YES

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	***Authorized in 1994 GRR***	***Purpose of Authorized Feature***	***Modification***	***Purpose of Modification***	***Constructed***
S-322S 8-4' Diameter Stoplog Riser Culverts	NO	This is to flow water into the connector levee area between S-332B and S-332 C.	This is a stoplog riser, which is a weir system where the logs are removable to change the water elevation flowing into the area. Weirs are adjusted from 2' below grade to 4' above grade.	The purpose was to provide additional overflow capacity for the S-332C and S-332B West Detention areas. These areas have been incorporated into the South Detention Area. This area is now part of the overflow area for the South Detention if the extra storage is needed.	Yes
S-323N 15- 4' Diameter Stoplog Riser Culverts	NO	Was not part of the original 1994 GRR.	This is to flow water into the connector levee area between S-332B and S-332 C.	The purpose was to provide additional overflow capacity for the S-332C and S-332B West Detention areas. These areas have been incorporated into the South Detention Area. This area is now part of the overflow area for the South Detention if the extra storage is needed.	YES
S-322N 350' Overflow Weir	NO	Was not part of the original 1994 GRR.	This is to flow water into the connector levee area between S-332B and S-332 C.	The purpose was to provide additional overflow capacity for the S-332C and S-332B West Detention areas.	YES

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	*Authorized in 1994 GRR*	*Purpose of Authorized Feature*	*Modification*	*Purpose of Modification*	*Constructed*
				These areas have been incorporated into the South Detention Area. This area is now part of the overflow area for the South Detention if the extra storage is needed.	
S-323S 500' Overflow Weir	NO	Was not part of the original 1994 GRR.	This is to flow water into the connector levee area between S-332B and S-332 C.	The purpose was to provide additional overflow capacity for the S-332C and S-332B West Detention areas. These areas have been incorporated into the South Detention Area. This area is now part of the overflow area for the South Detention if the extra storage is needed.	YES
S-325 1500' Overflow Weir	NO	Was not part of the original 1994 GRR.	To provide emergency overflow for the S-332C Detention Area, which became the SDA.	The 1994 GRR did not have closed detention areas. The idea was to just flow water into ENP. With closed Detention areas there was a need of an emergency overflow weir to prevent the over topping of the levee system. The weir	YES

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	*Authorized in 1994 GRR*	*Purpose of Authorized Feature*	*Modification*	*Purpose of Modification*	*Constructed*
				location was chosen to the East, with the intent that future overflow weir capacity would be to the west as the retention areas were completed.	
1900' weir S-327	NO	Was not part of the original 1994 GRR.	This weir is the overflow weir for the high head cell that is made up by levee L-31W and L-327. S-332D originally flowed into L-31W canal.	To provide a hydraulic ridge and water quality control, a set of Detention Cells were created. The high head cell is the first one of these cells.	YES
S-328 8-60" slide gated culverts.	NO	Was not part of the original 1994 GRR.	This feature is one of two out flows to from Cell 1 for the Frog Pond Detention Area. The other out flow is a low berm, which is part of L-327 which flows into Cell 2 (L-31W and L-328). This feature is a manually controlled weir system that can provide for flows from Cell1 at 6.5 feet of head water and 6 feet tail water.	It was expected that water deliveries to Taylor Slough might be difficult based on assumed infiltration rates so this structure was built to short circuit the remainder of the system for water supply to Taylor Slough.	YES
S-329 1900' weir	NO	Was not part of the original 1994 GRR.	This weir provides overflow into Cell3(L-31W and L-329) from Cell 2.	This weir is to maintain a depth of 1 foot in Cell 2.	YES
2000' foot	NO	Was not part of the original 1994	2000' foot gap in L-31W	To allow flow out of the	YES

Historic Authorized C-111 Project Features and Modifications to Give Perspective of Changes from 1994-2011:

Feature	***Authorized in 1994 GRR***	***Purpose of Authorized Feature***	***Modification***	***Purpose of Modification***	***Constructed***
gap		GRR.		Frog Pond Detention Area.	

APPENDIX B

CORRESPONDENCE

EXPANSION OF THE C-111 DETENTION AREA AND ASSOCIATED FEATURES PROJECT

SOUTH DADE, FLORIDA

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division

MAR 02 2012

Honorable Colley Billie
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021, Tamiami Station
Miami, Florida 33144

Dear Chairman Billie:

Pursuant to the National Environmental Policy Act (NEPA) and the U.S. Army Corps of Engineers (Corps) Regulation, this letter constitutes the Notice of Availability of the Environmental Assessment (EA) for the Expansion of the C-111 Detention Area and Associated Features Project. The project is located in Miami-Dade County in southern Florida.

The Expansion of the C-111 Detention Area and Associated Features Project is designed to maintain levels of flood protection for areas east of L-31N and C-111 and to restore natural hydrological conditions within the C-111 basin and throughout Everglades National Park (ENP).

We look forward to discussing the design changes to the C-111 project with you. Please contact the Corps Project Manager, Mr. Stephen Baisden at 904-232-1794 if you have any questions or concerns. Any comments you may have must be submitted in writing to the letterhead address within 30 days of the date of this letter. Comments on this EA should be submitted to Ms. Stacie Auvenshine at the letterhead address or by email at Stacie.J.Auvenshine@usace.army.mil. Ms. Auvenshine may also be reached by telephone at 904-232-3694.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
03/01/12

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division

MAR 0 2 2012

Honorable James Billie
Chairman, Seminole Tribe of Florida
6300 Stirling Road
Hollywood, Florida 33024

Dear Chairman Billie:

Pursuant to the National Environmental Policy Act (NEPA) and the U.S. Army Corps of Engineers (Corps) Regulation, this letter constitutes the Notice of Availability of the Proposed Finding of No Significant Impact (FONSI) and Environmental Assessment (EA) for the Expansion of the C-111 Detention Area and Associated Features Project. The project is located in Miami-Dade County in southern Florida.

The Expansion of the C-111 Detention Area and Associated Features Project is designed to maintain levels of flood protection for areas east of L-31N and C-111 and to restore natural hydrological conditions within the C-111 basin and throughout Everglades National Park (ENP).

We look forward to discussing the design changes to the C-111 project with you. Please contact the Corps Project Manager, Mr. Stephen Baisden at 904-232-1794 if you have any questions or concerns. Any comments you may have must be submitted in writing to the letterhead address within 30 days of the date of this letter. Comments on this EA should be submitted to Ms. Stacie Auvenshine at the letterhead address or by email at Stacie.J.Auvenshine@usace.army.mil. Ms. Auvenshine may also be reached by telephone at 904-232-3694.

Sincerely,

Alfred A. Pantano, Jr.
Colonel, U.S. Army
District Commander
03/14/12

Copy Furnished:

Craig D. Tepper, Seminole Tribe of Florida Director, Water Resources Management, 6300 Stirling Road, Hollywood, Florida 33024
Willard S. Steele, Seminole Tribe of Florida Tribal Historic Preservation Officer, 30290 Josie Billie Highway, Clewiston, Florida 33440

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

FEB 29 2012

Mr. Larry Williams
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960

Dear Mr. Williams:

In accordance with provisions of Section 7 of the Endangered Species Act, as amended, the U.S. Army Corps of Engineers, Jacksonville District (Corps) is hereby initiating consultation with the U.S. Fish and Wildlife Service (FWS) concerning the C-111 South Dade Project. The Corps is preparing an Environmental Assessment (EA) for the Expansion of the C-111 Detention Area and Associated Features Project. This project is located in south Florida, in South (Miami) Dade County.

The Corps previously consulted on the C-111 South Dade Project in 2007. In the attached EA, the Corps' determination for this project is "may affect, not likely to adversely affect" the following species: Florida panther (*Puma concolor coryi*), Eastern indigo snake (*Drymarchon corais couperi*), wood stork (*Mycteria americana*), Everglade snail kite (*Rosthrhamus sociabilis plumbeus*), West Indian manatee (*Trichechus manatus*), and the Okeechobee gourd (*Curbita okeechobeensis*). The Corps will continue to implement the protective measures agreed upon for construction activities to avoid adverse effects to these species.

We request your concurrence with our determinations pursuant to the Endangered Species Act. If you have any questions regarding this EA or need additional information, please contact Ms. Stacie Auvenshine at 904-232-3694 (Stacie.J.Auvenshine@usace.army.mil). Thank you for your continued attention and support to this matter.

Sincerely,

Kenneth R Dugger
for Eric P. Summa
Planning and Policy Division
Chief, Environmental Branch

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
Florida State Office
2614 NW 43rd Street
Gainesville, FL 32606

PH 352-338-9500
FX 352-338-9574
www.fl.nrcs.usda.gov

March 16, 2012

Stacie Auvenshine
US Army Corps of Engineers
Environmental Planning - South Florida Division

RE: Prime and Unique Farmland Assessment for C-11 Detention Project

This letter is in response to your request on the Prime and Unique Farmland assessment of the C-111 Detention Area Project in Miami-Dade County, Florida. Enclosed is the Important Farmlands map, and the AD-1006 Farmland Conversion Impact Rating for the Project.

Briefly, the USDA-NRCS is responsible for monitoring the conversion of Prime and Unique Farmlands to urban uses. We have determined that there are acres of Farmlands of Unique Importance within the project area.

Additional information can be obtained at the USDA-NRCS Web Soil Survey website: http://websoilsurvey.nrcs.usda.gov/app/

Regards,

Rick

Rick Robbins
USDA-NRCS
Soil Scientist
Gainesville, Florida
Phone: 352.338.9536

w/ attachments

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 3/16/12
Name Of Project C-111 Detention Areas and Other Features Project	Federal Agency Involved USACE
Proposed Land Use Detention Areas	County And State Miami-Dade, Florida
PART II *(To be completed by NRCS)*	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? Yes ☑ No ☐ *(If no, the FPPA does not apply -- do not complete additional parts of this form).*		Acres Irrigated 38,954	Average Farm Size 27
Major Crop(s) Vegetables, citrus	Farmable Land In Govt. Jurisdiction Acres: 92,770 % 7.45	Amount Of Farmland As Defined in FPPA Acres: 52,725 % 4.2	
Name Of Land Evaluation System Used Soil Productivity Index	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS 3/16/12	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	1,372.5			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	1,372.5	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	1,351.4			
B. Total Acres Statewide And Local Important Farmland	0.0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.00200			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	10.7			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	4.7	0.0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	4.7	0.0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	5	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

This form was electronically produced by National Production Services Staff

Clear Form

Form AD-1006 (10-83)

FLORIDA DEPARTMENT OF STATE
Sue M. Cobb
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. David W. Pugh
PD-ES/US Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

August 16, 2006

Re: DHR Project File No.: 2006-06722 / Date Received: July 17, 2006
Final Report: *Cultural Resources Survey, C-111 Phase II and III*, New South Associates
Dade County

Dear Mr. Pugh:

Our office received the above referenced final report in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties;* Chapter 267, *Florida Statutes;* and 1A-46, *Florida Administrative Code*, Archaeological and Historic Report Standards. We reviewed the project report to assess possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the *National Register of Historic Places* (NRHP), or otherwise of historical, architectural or archaeological value.

In January and February 2006, New South Associates (NSA) conducted an archaeological and historical survey of the C-111 project area on behalf of the U.S. Army Corps of Engineers. NSA identified two new sites (8DA6514 and 8DA6515) and two previously recorded sites (8DA3210 and 8DA3218) all of which were determined to be potentially eligible for listing in the *NRHP*. The U.S. Army Corps of Engineers has concurred with avoidance for three of the sites (8DA3210, 8DA3218, and 8DA6515).

It is not possible to completely avoid the site 8DA6514 and it will be subjected to a temporary flooding that the Corps of Engineers feels will have no adverse effect on the primarily faunal site. Therefore it is the opinion of the U.S. Army Corps of Engineers that the proposed project will have no adverse effect on cultural resources listed or eligible for listing in the *NRHP*.

Based on the information provided, our office concurs with these determinations, and finds the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code*.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • http://www.flheritage.com

☐ Director's Office (850) 245-6300 • FAX: 245-6436
☐ Archaeological Research (850) 245-6444 • FAX: 245-6452
■ Historic Preservation (850) 245-6333 • FAX: 245-6437
☐ Historical Museums (850) 245-6400 • FAX: 245-6433

☐ Southeast Regional Office (954) 467-4990 • FAX: 467-4991
☐ Northeast Regional Office (904) 825-5045 • FAX: 825-5044
☐ Central Florida Regional Office (813) 272-3843 • FAX: 272-2340

If you have any questions concerning our comments, please contact Scott Sorset, Historic Sites Specialist, by phone at (850) 245-6333, or by electronic mail at srsorset@dos.sate.fl.us. Your continued interest in protecting Florida's historic properties is appreciated.

Sincerely,

Frederick P. Gaske

Frederick P. Gaske, Director, and
State Historic Preservation Officer

Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

April 17, 2012

Ms. Stacie Auvenshine
Planning Division, Jacksonville District
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Assessment, Expansion of the Canal 111 (C-111) Detention Area and Associated Features – Miami-Dade County, Florida. SAI # FL201203026152C

Dear Ms. Auvenshine:

The Florida State Clearinghouse has coordinated a review of the Draft Environmental Assessment (EA) under the following authorities: Presidential Executive Order 12372; § 403.061(42), *Florida Statutes*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Department of Environmental Protection (DEP) is supportive of moving forward with construction of the C-111 Modifications and requests that the U.S. Army Corps of Engineers (USACE) continue to consult with the DEP's Program Coordination and Regulation Section and the South Florida Water Management District (SFWMD) to provide the detailed information necessary to review the current Comprehensive Everglades Restoration Plan Regulation Act permit application and any future phases of this project. The EA should provide further details regarding the proposed wetland impacts of the preferred alternative and verify that they will be adequately offset. Every effort should be made to avoid and minimize impacts to wetlands and listed species during the detention area operation and Frog Pond restoration. In addition, the EA does not address the operational aspects of the proposed features. The operational intent should be better described in the EA to ensure that the proposed features will meet the anticipated operational requirements. For further detailed comments and suggestions, please refer to the enclosed DEP memorandum and contact Ms. Dianne K. Hughes at (561) 682-2662.

The Florida Fish and Wildlife Conservation Commission (FWC) views the expansion of the S-332B North Detention Area as a positive step towards restoration of the Northeast Shark River Slough (NESRS). As noted in previous reviews of Everglades Modified Waters Deliveries and C-111 project documents, staff is hopeful that this proposal will expedite the

process for removing the G-3273 stage constraint in NESRS. FWC does not believe that substantial ecological benefits would be realized in WCA-3A by reducing its high water levels or in Everglades National Park by providing increased flows to NESRS without first removing or relaxing the G-3273 trigger well constraint. Staff supports the proposal to develop a hydrological field test to evaluate the effects of raising the G-3273 trigger well criterion. Also, FWC notes that additional state-listed species occur within the project area. If potentially impacted by construction, staff recommends compliance with all applicable federal and state regulations and recommendations concerning individual species. Please see the enclosed FWC letter for additional information.

The SFWMD has also reviewed the Draft EA and requests additional clarification and revisions to a number of items in the document. Please refer to the enclosed SFWMD memorandum and contact Mr. John Shaffer, Lead Environmental Analyst, at (561) 682-6308 or jshaffe@sfwmd.gov for further details.

Based on the information contained Draft EA and enclosed agency comments, the state has determined that, at this stage, the proposed activities are consistent with the Florida Coastal Management Program (FCMP). To ensure the project's continued consistency with the FCMP, the concerns identified by our reviewing agencies must be addressed prior to project implementation. The state's continued concurrence will be based on the activities' compliance with FCMP authorities, including federal and state monitoring of the activities to ensure their continued conformance, and the adequate resolution of issues identified during this and subsequent regulatory reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting process under Section 373.428, *Florida Statutes*.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Mr. Chris J. Stahl at (850) 245-2169.

Yours sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/cjs
Enclosures

cc: Ernie Marks, DEP, OEP PCRS
Dianne Hughes, DEP, OEP Southeast District
Deborah Oblaczynski, SFWMD
Scott Sanders, FWC

Project Information	
Project:	FL201203026152C
Comments Due:	04/05/2012
Letter Due:	04/16/2012
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - DRAFT ENVIRONMENTAL ASSESSMENT, EXPANSION OF THE CANAL 111 (C-111) DETENTION AREA AND ASSOCIATED FEATURES - MIAMI-DADE COUNTY, FLORIDA.
Keywords:	ACOE - EXPANSION OF C-111 DETENTION AREA & ASSOCIATED FEATURES - MIAMI-DADE CO.
CFDA #:	12.106

Agency Comments:

AGRICULTURE - FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

No comment at this time. Thank you!

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

The FWC views the expansion of the S-332B North Detention Area as a positive step towards restoration of the Northeast Shark River Slough (NESRS). As noted in previous reviews of MWD and C-111 project documents, staff is hopeful that this proposal will expedite the process for removing the G-3273 stage constraint in NESRS. FWC does not believe that substantial ecological benefits would be realized in WCA-3A by reducing its high water levels nor in ENP by providing increased flows to NESRS without first removing or relaxing the G-3273 trigger well constraint. Staff supports the proposal to develop a hydrological field test to evaluate the effects of raising the G-3273 trigger well criterion. Also, FWC notes that additional state-listed species occur within the project area. If potentially impacted by construction, staff recommends compliance with all applicable federal and state regulations and recommendations concerning individual species.

TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION

No Comments Received

SOUTH FL RPC - SOUTH FLORIDA REGIONAL PLANNING COUNCIL

No Comments Received

MIAMI-DADE -

No Comments

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The DEP is supportive of moving forward with construction of the C-111 Modifications and requests that the USACE continue to consult with the DEP's Program Coordination and Regulation Section and the SFWMD to provide the detailed information necessary to review the current Comprehensive Everglades Restoration Plan Regulation Act permit application and any future phases of this project. The EA should provide further details regarding the proposed wetland impacts of the preferred alternative and verify that they will be adequately offset. Every effort should be made to avoid and minimize impacts to wetlands and listed species during the detention area operation and Frog Pond restoration. In addition, the EA does not address the operational aspects of the proposed features. The operational intent should be better described in the EA to ensure that the proposed features will meet the anticipated operational requirements. For further detailed comments and suggestions, please refer to the enclosed DEP memorandum and contact Ms. Dianne K. Hughes at (561) 682-2662.

STATE - FLORIDA DEPARTMENT OF STATE

The DOS' review of the Florida Master Site File indicates that because of the nature of the project, it is unlikely that significant archaeological or historical resources will be affected.

SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT

The SFWMD has reviewed the Draft EA and requests additional clarification and revisions to a number of items in the document. Please refer to the attached memorandum and contact Mr. John Shaffer, Lead Environmental Analyst, at (561) 682-6308 or jshaffe@sfwmd.gov for further details.

Memorandum

TO: Florida State Clearinghouse

THROUGH: Greg Knecht, Director
Office of Ecosystem Projects

FROM: Inger Hansen, Jerilyn Ashworth, William C. Kennedy, and Dianne Hughes

DATE: April 4, 2012

SUBJECT: U.S. Army Corps of Engineers, Jacksonville District – Draft Environmental Assessment, Expansion of the Canal 111 (C-111) Detention Area and Associated Features – Miami-Dade County, Florida.

Background:

The Department of the Army, Jacksonville District Corps of Engineers (Corps) is considering whether to modify the design of elements of the Authorized C-111, General Reevaluation Report (GRR) and has prepared a Draft Environmental Assessment (EA) for the Canal 111 (C-111) Basin project. The structural changes evaluated in this C-111 EA include expanding the existing S-332B Northern Detention Area (S-332B NDA) from its current status and extending the existing levees. The proposed modifications are consistent with the original intent to enhance water deliveries to Everglades National Park (ENP) while maintaining flood damage reduction within the C-111 basin east of the L-31 North and C-111 Canals.

The recommended plan, Alternative 3 allows for expansion of the S-332B NDA by approximately 1,440 acres extending the L-315 north and realigning the L-316 to tie into the 8.5 Square Mile Area (SMA) detention area. Upon completion, two pump stations will discharge into the NDA; the S357 from the 8.5 SMA in the north, and the S-332B in the south. The NDA would be divided into a 260 acre flow way area to the east, and a 1180 acre main detention area to the west. The original project design included a pump station S-332A that would discharge through the NDA lands into Everglades National Park (ENP). The 1994 GRR/EIS recommendations for S-332A were eliminated from further considerations because the direct discharge into ENP would not meet water quality standards.

Comments:

The recommended plan, Alternative 3, involves modifications to an existing surface water management system and includes dredging and filling in wetlands and other surface waters. These activities are regulated by the Florida Department of Environmental

Protection under Chapters 373 and 403, Florida Statutes, and will require either an Environmental Resource Permit or a Comprehensive Everglades Restoration Plan Regulation Act (CERPRA) permit prior to construction and operation.

A permit application was submitted to the Department by the Corps for the C-111 South Dade Project Modifications, Contract 8 Features (C-111 Modifications) Project on February 20, 2012. The Corps and Department held pre-application meetings on September 30th, October 14th, and November 18, 2011, to facilitate the application process and discuss information that needed to be included in the submitted application. However, the application lacked a significant amount of information that the Department requires for processing the application and, as a result, the Department issued a request for additional information (RAI) on March 16, 2012.

The Department is supportive of moving forward with the construction of the C-111 Modifications and asks that the Corps continue to coordinate with the Department's Program Coordination and Regulation Section and the South Florida Water Management District in providing information necessary for the authorization and any future phases of this project.

The EA report concludes that the project will not adversely affect existing fish and wildlife habitat. Section 4.5.2 states that the preferred alternative is expected to degrade approximately 1,400 acres of wetlands, which is significant. The EA's proposed alternative does not provide specific information about environmental impacts. Therefore, the Department will require additional information to verify that the proposed wetland impacts have been adequately offset. Section 3.6 needs to be expanded to clearly define the wetland impacts proposed. A Uniform Mitigation Assessment Method (UMAM) survey should be used to assess the impacts to wetlands. We suggest that every effort be made to avoid and minimize impacts to wetlands and listed species during the detention area operation and Frog Pond restoration.

The EA does not address the operational aspects of the proposed features. The operational intent should be better described in the EA to ensure that the proposed features will meet the anticipated operational requirements. The EA does not describe how the benefits claimed can be achieved without implementing operations of the proposed features.

Specific comments:

Section 2.1.3. The Alternative 3 paragraph makes reference to the North Detention Area (NDA) being divided into two areas: the flow way and the main detention area. Figure 4 does not show these areas and should be updated to clearly depict their location.

Page 12, Second sentence. Reference is made to capping using 1 ft. of lime rock when 2 ft. of clean soil is required for capping. Please revise this language.

Section 2.1.3. A list of features to be constructed is provided, including three 500-ft overflow weirs. Please provide a paragraph discussion on how these features were designed, the overflow elevations, discharge rates and resulting peak stages.

Section 3.15. Please note that any potential soil contamination issues are reviewed by the USFWS EcoRisk section and FDEP. Specifically, the environmental assessments and any proposed remedial measures and/or soil management plan should be coordinated with the Department's Waste Cleanup Section staff in the Southeast District Office located in West Palm Beach.

An interagency (USACE, FDEP, and SFWMD) field wetland delineation was completed on March 22, 2012, to quantify and verify the location of wetlands within the North Detention Area (NDA) of the C-111 South Dade, Contract 8 footprint. Please revise the acreage of wetlands in the following sections of the EA to reflect the findings of the field verification and reports:

a. Section 3.6 (p. 19): We recommend making specific reference to the wetland assessment (referenced above).
b. Section 4.5.2 (p. 27): Please revise the acreage of wetlands in the NDA and the total amount of wetlands within the project footprint.
c. Section 4.18.2 (p. 33): Please revise the acreage of wetlands to be impacted within the NDA.

In section 4.5.2 under the Preferred Alternative there are conflicting statements regarding adverse impacts and benefits to wetlands from this project. Please explain what is meant by …"wetlands within the proposed extended S-332B NDA would also be adversely impacted by impounding water." In this regard, please describe the planned operations for this project and how it will impact and/or benefit the wetlands located within the NDA.

Copies to:

Greg Knecht
Chad Kennedy
Ernie Marks
Inger Hansen
Jerilyn Ashworth
Dianne Hughes
Deinna Nicholson

Memorandum **South Florida Water Management District**

TO: Florida State Clearinghouse

FROM: Deborah Oblaczynski, Policy and Planning Analyst
Intergovernmental Coordination

DATE: April 12, 2012

SUBJECT: Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Assessment, Expansion of the Canal 111 (C-111) Detention Area and Associated Features – Miami-Dade County, Florida. SAI # FL201203026152C

South Florida Water Management District (SFWMD) staff has reviewed the Draft Environmental Assessment for the subject project and provides the following comments:

- Please provide a clear description of the eastern expansion in Section 2.1.3.
- Describe the solid line along the L-31 Canal located near the same latitude as the Northern Detention Area (NDA) in Figure 4.
- Indicate where and/or how the 8.5 Square Mile Area (SMA) will be modified in order to discharge into the NDA.
- Provide detail in Section 2.2 on how the project is intended to abate flooding resulting from future implementation of MODWATERS. Also, provide an explanation of the needed capacity for water storage for pump S-357.
- In Section 3.2, consider using the following language: “the hydrology of these former Everglades have been impacted by prior agricultural practices (e.g. ditching, rock plowing, etc.) and regional water management. The majority of the proposed NDA could be best described as prior converted cropland no longer in agricultural production.”
- Revise Section 4.2.2 to clearly indicate how water will be transferred from the 8.5 SMA and/or S-357 into the expanded NDA. Also, detail the possibility of water from the detention area emerging as surface water in or near Everglades National Park.
- Include the following in Section 4.5.2: 1) the determination concerning these lands as Prior Converted Croplands; 2) whether or not the area is considered jurisdictional; and 3) information regarding exotics infestation and the increased functional value and increased hydrogeology once the project is completed.
- In Section 4.6.1, include the anticipated changes in vegetation and a discussion of nuisance and exotic species in the area.

- Revise Section 4.10.2 to include language similar to: “Construction of this project will have some temporary impacts such as access restrictions, noise and smoke associated with construction sites.”
- Amend Section 4.11.2 to make the land use referred to in the text, former agriculture, consistent with that shown on the included land use map and describe any changes.
- Clarify the discussion concerning irretrievable loss to wetlands in Section 4.17, since the document varies between the terms “wetlands” and “former agriculture.”
- Revise Appendix D to indicate that the Florida Department of Environmental Protection is the lead in implementing this chapter for those projects which SFWMD is the local sponsor.
- Please detail methods for minimizing impacts to wetlands in the project area. Include a plan for minimizing the potential for additional disturbances.
- Describe how access will be established for future maintenance and exotic vegetation control.

For any project-specific questions, please contact John Shaffer, Lead Environmental Analyst, at (561) 682-6308 or jshaffe@sfwmd.gov. If you have any comments or questions regarding this memo, please contact Deborah Oblaczynski, Policy and Planning Analyst Specialist, at (561) 682-2544 or doblaczy@sfwmd.gov.

Florida Fish and Wildlife Conservation Commission

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March 30, 2012

Ms. Lauren P. Milligan
State Clearinghouse
Florida Department of Environmental Protection
Program Coordination and Regulation Section
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, FL 32399-3000

Re: SAI #FL201203026152C, Draft Environmental Assessment, Expansion of the Canal 111 (C-111) Detention Area and Associated Features - Miami-Dade County

Dear Ms. Milligan:

The Kissimmee-Okeechobee-Everglades-Big Cypress Coordination Team of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated our agency's review of the above-referenced project, and provides the following comments in accordance with the Coastal Zone Management Act/Florida Coastal Management Program, the Fish and Wildlife Coordination Act, and the National Environmental Policy Act.

Project Description

The purpose of this Environmental Assessment is to evaluate the environmental effects of modifications to the C-111 North Detention Area (NDA) and associated features. The current preferred alternative would expand the existing S-332B North Detention Area (NDA) northward to the 8.5 Square-Mile-Area (SMA) detention area. The proposed expanded NDA would be created by completing the construction of two levees, L-315 and L-316, that would tie into the 8.5 SMA detention area levees (L-359). This modification would increase the size of the NDA to approximately 1,441 acres and covers former agricultural lands now owned by the South Florida Water Management District. Two pump stations would supply water to the area, the S-357 [a Modified Water Deliveries to Everglades National Park (MWD) project component] from the 8.5 SMA in the north, and the S-332B in the south (the S357 will not discharge into this new detention area until separate approval is coordinated with FDEP). The NDA would be divided into two areas, the flow way area (261 acres), and the main detention area (1180 acres). The flow way will be created by constructing an earthen berm (approximately 1 ft high), 500 ft to the west of and parallel to the easternmost levees of the NDA and the South Detention Area. This internal cell will allow better control of the hydrology when water supplies are limited by allowing the hydrologic ridge to be maintained with a smaller volume of water. The impoundment area that will be created when the 8.5 SMA detention area is connected to the existing S-332B North Detention Area will complete the hydrologic ridge, running generally north to south, for the C-111 project. The hydrologic ridge is expected to maintain higher stage levels in ENP by reducing the hydraulic gradient towards L-31N and thus preventing seepage losses from the park, while not increasing negative impacts to agricultural or residential use to the east. Higher stage levels in the ENP are necessary to help move the ENP hydrology towards restoration.

Concerns and Recommendations

Removal of G-3273 constraint: The FWC views the expansion of the S-332B North Detention Area on the eastern boundary of Everglades National Park as a positive step towards the restoration of Northeast Shark River Slough (NESRS). We are hopeful that the addition of this last piece to the hydrologic ridge system between ENP and the developed landscape to the east will expedite the process for removing the G-3273 stage constraint in NESRS, as it will no longer be necessary [please see our letters to Ms. Lauren Milligan dated Dec. 10, 2008 and July 6, 2011 (attached)]. Although the U.S. Army Corps of Engineers (COE) states that more natural hydroperiods will be restored to ENP upon completion of the expanded S-332B North Detention Area, no details of an operational strategy are provided. We do not believe that substantial ecological benefits would be realized in WCA-3A by reducing its high water levels nor in ENP by providing increased flows to NESRS without first removing or relaxing the G-3273 trigger well constraint. However, we are encouraged to hear that the COE is in the process of developing a hydrological field test to evaluate the effects of raising the G-3273 trigger well criterion.

Recreational opportunities: The expansion of the S-332B North Detention Area by 1,440 acres has the potential to provide additional recreational opportunity in Miami-Dade County where there is high stakeholder demand. The FWC currently operates the Rocky Glades Public Small Game Hunting Area, located immediately to the south of the proposed NDA, in coordination with the South Florida Water Management District. We are hopeful that these additional lands will likewise be made available for compatible public use following completion of the project. Recreational opportunities for birders, hunters, and other users should be given serious consideration, pursuant to Florida Statute 373.139 (1).

State listed species: We note that the following additional species from the state list of endangered and threatened species potentially occur within the project area and/or could be impacted by the project: roseate spoonbill *(Platalea ajaja),* limpkin *(Aramus guarauna),* little blue heron *(Egretta caerulea),* snowy egret *(Egretta thula),* tricolored heron *(Egretta tricolor),* white ibis *(Eudocimus albus),* Audubon's crested caracara (*Polyborus plancus audubonii*) and Everglades mink (*Neovison vison evergladensis*). In cases where state-listed species may be impacted by construction, we recommend compliance with all federal and state regulations and recommendations concerning each individual species. Specifically, adherence to USFWS-approved construction protection measures for the eastern indigo snake and compliance with the Migratory Bird Treaty Act concerning nesting are recommended.

Editorial comments: We note that the COE describes the Everglades and Francis S. Taylor Wildlife Management Area (EWMA), referred to as the WCAs in the Flood Control section of the Draft Environmental Assessment on page 16, as "mixed quality habitat for fish and wildlife". The EWMA has some of the best remaining examples of Everglades ridge and slough habitat in South Florida and supports the majority of wading bird nesting efforts in the region, indicative of high quality habitat instead.

Summary

We find the project consistent with the rules and regulations of the FWC as listed under the Florida Coastal Management Program. The FWC supports the expansion of the S-332B North Detention Area, but believes that the anticipated ecological benefits of doing so would be minimal unless the G-3273 stage constraint in NESRS is also removed.

We appreciate the opportunity to provide comments on this project. If you or your staff would like to coordinate further on the recommendations contained in this letter, please contact me at (561) 625-5122 or email me at chuck.collins@myfwc.com, and I will be glad to help make the necessary arrangements. If you or your staff has any specific questions regarding our comments, I encourage them to contact Mr. Tim Towles in our Vero Beach Field Office at (772) 469-4253 or at tim.towles@myfwc.com.

Sincerely,

Chuck Collins

Chuck Collins
Regional Director

cc/tt
ENV 1-3-2
C-111 Detention Area and Associated Features_15990_033012
Enclosures
cc: Stacie Auvenshine, COE, Stacie.J.Auvenshine@usace.army.mil
Marsha Ward, FWC, Marsha.Ward@myfwc.dom
Inger Hansen, DEP, Inger.Hansen@dep.state.fl.us

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July 6, 2011

Ms. Lauren Milligan
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, FL 32399-3000

Re: Dade Co., SAI #FL201105255796, Scoping Notice for Combined Operational Plan (COP) for constructed features of the Modified Water Deliveries to Everglades National Park (MWD) and Canal 111 (C-111) South Dade projects – Miami-Dade County

Dear Ms. Milligan:

The Kissimmee-Okeechobee-Everglades-Big Cypress Coordination Team of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated our agency's review of the referenced document. The FWC provides the following comments pursuant to the Coastal Zone Management Act/Florida Coastal Management Program and the National Environmental Policy Act. The FWC has previously provided input on various aspects of the Modified Water Deliveries (MWD) to Everglades National Park Project via responses to scoping requests, through comments under the Fish and Wildlife Coordination Act, and through prior comments to the Clearinghouse. While not an exhaustive list, examples of such letters would include our letters of April 2, 2004, and June 13, 2000, to James C. Duck of the U.S. Army Corps of Engineers (COE) Planning Division, and our most recent letter of December 23, 2008, to Ms. Lauren Milligan at the Florida State Clearinghouse (enclosed).

Project Description

The COP would replace the as-yet to be approved Everglades Restoration Transition Plan (ERTP) as the operational plan for the southern portion of the Central and Southern Florida (C&SF) Project features in south Miami-Dade County, Florida. The COP is part of the MWD Project authorized by the 1992 General Design Memorandum and Environmental Impact Statement entitled, "*Central and Southern Florida Project for Flood Control and Other Purposes Modified Water Deliveries to Everglades National Park*" and as part of the C-111 South Dade County Project authorized by the 1994 General Reevaluation Report and Environmental Impact Statement. As depicted on the scoping diagram supplied by the COE, a noteworthy change from all prior MWD project planning efforts is the absence of any S-345 water control structures on the L-67A and L-67C levees and canals to allow water to flow from Water Conservation Area (WCA)-3A through WCA-3B to Northeast Shark River Slough (NESRS). An additional structural component depicted on the COE diagram as a potential future feature is the C-111 North Detention Area. Although not clear from the figure provided with the scoping notice, our staff has learned from attending the scoping workshop that there would be two other pump stations, the S-200 and the S-199, added to the C-111 design. It is our understanding that the S-200 pump would be located south of the existing S-176 and would serve to move excess water from the C-111 Canal into the northern portion of the

Frog Pond Detention Area. The S-199 pump would be located near the existing S-177 structure and would be designed to move excess water from the C-111 Canal into the Aerojet Canal Detention Area. The purpose of these pump stations is to help maintain a hydrologic ridge between Taylor Slough and the C-111 basin. Because this concept is still in the scoping phase, we have little other information on the operational details. Consequently, many of the potential issues that we raise here are based on our prior participation in Mod Waters project development teams and various interagency discussions.

Potential Issues and Recommendations

The FWC manages WCA-3 as part of the Everglades and Francis S. Taylor Wildlife Management Area and also manages the state-owned wetlands in the C-111 Basin as the Southern Glades Wildlife and Environmental Area. These areas are valued resources and are managed for their natural vegetative communities, wildlife and aquatic species, and recreational access. These areas are popular with hunters, anglers, wildlife watchers, airboaters, and other outdoor enthusiasts. Consequently, we ask that the COE address those potential issues and recommendations included in our previous letter to Ms. Lauren Milligan dated December 23, 2008, that remain relevant, such as tree island protection, L-29 canal stages, the G-3273 stage constraint trigger, protection of state-listed fish and wildlife species, and recreational access in addition to the following potential issues.

Removal of S-345 Conveyance Structures from the MWD Scope of Work and the Potential for Increased Usage of the S-151 Structure: The restoration of the historic headwaters of Shark River Slough, located in what is now WCA-3B, has long been considered a key piece of the MWD restoration puzzle. The removal of the S-345 gated culvert conveyance structures at this point in the MWD planning process will need to be carefully analyzed given the major structural components that have already been built, or are in the process of being built, to accommodate additional flow volumes along this pathway. These structural features include the S-356 pump station designed to capture excess seepage from the L-30 and L-31N canals and return it to NESRS via the L-29 canal, the S-355 A and B structures designed to move flows from WCA-3B to NESRS, and the one-mile bridge currently under construction on the Tamiami Trail and designed to better distribute flows along an historic flowpath from WCA-3B to NESRS. The FWC has long supported the routing of water from WCA-3A through the previously planned S-345 gated culvert structures on the L-67A through WCA-3B, and the use of the S-355 structures and any additional L-29 outflow culverts, provided the following conditions are met: the G-3273 trigger well constraint is lifted, WCA-3B inflows are matched to outflows (especially when the 71 gauge is greater than 8.5 feet National Geodetic Vertical Datum [NGVD]), appropriate precautions are taken to minimize water quality impacts, the L-29 canal stage constraint is raised to a minimum of 8.5 feet NGVD, recreational access to the L-67 canals is not impacted, and a wildlife-based regulation schedule is adopted for WCA-3B.

A lack of conveyance structures on the L-67A Levee as depicted in the COE scoping notice implies that the S-333 will be the primary conduit for supplying increased flow volumes to meet the restoration needs of NESRS within Everglades National Park. In addition, there is the potential for greater use of the S-151 structure to move additional

flows into WCA-3B above those authorized by the Interim Operational Plan (IOP) or the future ERTP since this is the only means currently available to move water from WCA-3A to WCA-3B. Water delivered to WCA-3B via the S-151 structure is made directly from the high-nutrient Miami Canal through a series of cuts in the bank of the canal that permit overflow into the northern portion of WCA-3B. These cuts have already been impacted by years of sediment build-up, which has severely restricted flow and has led to the replacement of native wet prairie vegetative communities by monoculture stands of woody vegetation in marsh areas adjacent to the cuts and by cattails farther south. Such changes have adversely affected the foraging habitat of the federally endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*) and wood stork (*Mycteria americana*), as well as state-listed species of wading birds such as the little blue heron (*Egretta caerulea)*, snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*), and roseate spoonbill (*Ajaia ajaja)*. Consequently, if this routing becomes part of one of the potential alternatives, we ask that the COE evaluate the potential effects of introducing greater volumes of lower quality water at the S-151 on native plant and animal communities in northern WCA-3B. Furthermore, we do not view increased use of the S-151 structure to be an effective option for conveying substantial volumes of flow from WCA-3A through WCA-3B to NESRS, as much of this water would likely be lost through seepage into the L-30 canal. We believe that the construction of the authorized S-345 gated culvert structures on the L-67A Levee would be a much more effective means for conveying appropriate amounts of flow from WCA-3A through WCA-3B and would better achieve the MWD objectives of restoring flows along the historic flowpath and of improving hydropatterns in NESRS.

Lack of a Regulation Schedule for WCA-3B: Currently there is no regulation schedule or water management strategy for WCA-3B. The development of a regulation schedule for WCA-3B should precede the construction of any project or the adoption of any operational plan that would increase flows into WCA-3B, so as to be prepared for concurrent increased outflows via the S-355A and S-355B structures and any additional L-29 outflow culverts that may be constructed.

Construction of C-111 North Detention Area: It is our understanding that the proposed C-111 North Detention Area is an essential component for capturing overflows from the 8.5 Square-Mile-Area Storm Water Detention Area as well as for completing the hydrologic ridge barrier between Everglades National Park to the west and the developed landscape to the east. The removal of the G-3273 stage constraint in NESRS is contingent, at least in part, on the completion of the C-111 North Detention Area. Consequently, we view this potential future structural feature as critical to the overall success of the MWD project.

Protection of Manatees during Project Construction: Manatees potentially have access to the L-67A, L-29, and C-111 canals within the project area. To address the direct impacts associated with in-water work, we recommend that the Standard Manatee Construction Conditions for In-Water Work, revised 2011 (copy enclosed) be followed. Depending upon other type of work proposed in the future, such as new or revised structures, culverts, or changes in fresh or warm water flows, additional manatee conservation measures may be needed. As more specific details become available, the Imperiled Species Management Section would like the opportunity to review the proposed work.

Summary

In their development of alternatives for the COP, we ask that the COE consider the potential issues and recommendations contained herein, as well as those conveyed in our previous letter to Ms. Lauren Milligan, dated December 23, 2008. As mentioned above, the FWC has long supported the routing of water from WCA-3A through S-345 culvert structures on the L-67A through WCA-3B and the use of the S-355 structures and any additional L-29 outflow structures to increase flows to NESRS, provided the following conditions are met: the G-3273 trigger well constraint is lifted, WCA-3B inflows are matched to outflows (especially when the 71 gauge is greater than 8.5 feet NGVD), the L-29 canal stage constraint is raised to a minimum of 8.5 feet NGVD, recreational access to the L-67 canals is not impacted, and a wildlife-based regulation schedule is adopted for WCA-3B. Alternatively, if such routing and conditions cannot be met, the FWC concurs with the COE and Everglades National Park that a viable interim solution would be routing MWD flows to NESRS through the S-333 structure, bypassing WCA-3B until such time that the above conditions can be met.

If you or your staff would like to coordinate further on the recommendations contained in this report, please contact me at (561) 625-5122 or email me at chuck.collins@myfwc.com, and I will be glad to help make the necessary arrangements. If your staff has any specific questions regarding our comments, I encourage them to contact Tim Towles at (772) 778-6354 or by email at tim.towles@MyFWC.com.

Sincerely,

Chuck Collins

Chuck Collins, Director
South Regional Operations

cc/dtt
Everglades National Park MWD COP_3435_070511
ENV 1-3-2
Enclosures
cc: Michael Anderson, FWC, West Palm Beach
Barron Moody, FWC, West Palm Beach
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December 23, 2008

RECEIVED
DEC 30 2008
DEP Office of Intergovt'l Programs

Ms. Lauren Milligan
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, Florida 32399-3000

Re: SAI#: FL200811104488C, Refer to FL200403185631C
Scoping Notice for Modified Water Deliveries Conveyance and Seepage Control Features (CSCF) to Everglades National Park–Miami-Dade County

Dear Ms. Milligan:

The Division of Freshwater Fisheries Management of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated agency review of the referenced document. The FWC provides the following comments pursuant to the Coastal Zone Management Act/Florida Coastal Management Program. The FWC has previously provided input on various aspects of the Modified Water Deliveries (MWD) to Everglades National Park Project via responses to scoping letters, a Fish and Wildlife Coordination Act Report, and comments to the Clearinghouse. While not an exhaustive list, examples of such letters would include our letters of April 2, 2004, and June 13, 2000, to James C. Duck of the U.S. Army Corps of Engineers' (COE's) Planning Division.

Project Description

The Conveyance and Seepage Control Features Project is part of the MWD Project and is authorized by the 1992 General Design Memorandum and Environmental Impact Statement titled, "*Central and Southern Florida Project for Flood Control and Other Purposes Modified Water Deliveries to Everglades National Park.*" The project will address potential features of the L-67A and L-67C levees, the L-67A Canal, and L-29 Levee. The purpose of this project is to improve conveyance through the L-67A and L-67C levees to allow water to flow from Water Conservation Area (WCA)-3A to WCA-3B. The COE proposes to add conveyance structures to the L-67A Levee, as well as plugs with a boat channel through the middle of each plug to the L-67A Canal. The proposed modifications for the L-67C Levee include gaps through the levee. As a result of increased conveyance through the L-67A and L-67C Levees, the L-29 Levee may have to be modified to allow the additional water to flow into Northeast Shark River Slough (NESRS) in Everglades National Park.

Issues and Recommendations

The FWC manages WCA-3 as part of the Everglades and Francis S. Taylor Wildlife Management Area. This area is a valued resource and is managed for

natural vegetative communities, wildlife and aquatic species, and recreational access. It is popular with hunters, anglers, wildlife watchers, airboaters, and other outdoor enthusiasts. To this end, we suggest the COE address the following issues and recommendations:

Project sequencing: Projects dealing with seepage management east of WCA-3B and NESRS, flows restrictions at the L-29 Levee and Tamiami Trail, and relaxing the G-3273 constraint trigger need to be completed prior to construction of this project. Specifically, the Tamiami Trail portion of MWD is critical to this project; the two must be appropriately sequenced and coordinated.

Develop regulation schedule for WCA-3B: Currently there is no regulation schedule for WCA-3B. The development of a regulation schedule for WCA-3B should precede the construction of any project that would increase flows into WCA-3B, so as to be prepared for concurrent increased outflows via the S-355A and S-355B structures and any additional L-29 culverts.

Coordination with interrelated projects: There should be greater coordination between this project and the Decompartmentalization Physical Model (DPM). Value engineering benefits can be achieved by having the two projects coupled and sharing resources and structures.

Tree island protection: More than half of the tree islands in WCA-3 have been lost or degraded due to prolonged flooding and peat fires. Tree islands in WCA-3B have been largely spared from the severe deleterious effects of high and low water that have impacted tree islands in WCA-2 and WCA-3A. As a result, hammocks in WCA-3B contain some of the largest trees remaining on Everglades tree islands, as indicated by basal area measurements, which are higher than hammocks in Shark River and NESRS (Ross et al. 2005). Tree islands in WCA-3B had the highest canopy cover of all the zones examined by Heisler et al. (2002) in WCA-3. Likewise, the large willow strand in northern WCA-3B, which supports the Mud Canal wading bird colony, has been spared from the high water impacts that have diminished willow strands in WCA-3A. Of particular concern to the FWC is that damaging effects of high water levels and/or ponding not be transferred from WCA-3A to WCA-3B. Prolonged high water levels in WCA-3B as suggested by prior modeling results for the Combined Structural and Operational Plan would result in adverse impacts to tree islands and other natural vegetative communities.

L-29 Canal stages: For successful restoration of NESRS and to facilitate flows through WCA-3B, the maximum allowable stage level in the L-29 Canal must be raised and the Tamiami Trail (U.S. Highway 41) and L-29 Levee must be effectively removed as barriers to flow. We encourage the COE to actively pursue a permanent solution that would allow the stage of the L-29 canal to be raised to a minimum of 8.5 feet National Geodetic Vertical Datum (NGVD). This

solution would likely include the elimination or relaxation of the G-3273 constraint trigger if any benefits are to be realized. This higher canal stage would provide greater relief for WCA-3 during high water events, and improve the distribution of flows to NESRS, benefiting Everglades flora and fauna in both areas.

Effects of flow on the Everglades ecosystem: There are a number of scientific studies and reports that have demonstrated the importance of appropriate water depths, durations, and timing on a multitude of Everglades biota including wading birds, snail kites, Cape Sable seaside sparrows, marsh fishes, and various Everglades plant communities (e.g. Loveless 1959, Bennetts and Kitchens 1997). Conversely, practically nothing is known about the effects of flow on these organisms. Consequently, we should proceed with caution and rely on these known hydrologic parameters and their proven effects on wildlife populations and plant community structure.

Potential flooding impacts to the Pocket: If no breaches to the L-67C levee south of the S-345C (southern-most culvert to be placed in the L-67A levee) are incorporated, then potential ponding impacts and ecological damage to tree island and other vegetative communities in the "pocket" of WCA-3B may be expected based on the results of the L-67A Pilot Test.

State-listed species known to occur in the project area: We note that the following species from the state list of endangered species (E), threatened species (T), and species of special concern (SSC) potentially occur within the project footprint and/or could be impacted by the project: *Alligator mississippiensis* (American alligator, SSC), *Drymarchon corais couperi* (eastern indigo snake, T), *Ajaia ajaja* (roseate spoonbill, SSC), *Aramus guarauna* (limpkin, SSC), *Egretta caerulea* (little blue heron, SSC), *Egretta thula* (snowy egret, SSC), *Egretta tricolor* (tricolored heron, SSC), *Eudocimus albus* (white ibis, SSC), *Haliaeetus leucocephalus* (bald eagle, T), *Mycteria americana* (wood stork, E), *Rostrhamus sociabilis plumbeus* (snail kite, E), *Ammodramus maritimus mirabilis* (Cape Sable seaside sparrow, E), *Trichechus manatus latirostris* (Florida manatee, E), *Puma concolor coryi* (Florida panther, E), and *Mustela vison evergladensis (Everglades mink, T).*

We note that two colonial wading bird colonies are located within WCA-3B: the Heron Alley colony and the 3B Mud East colony. The 3B Mud East colony supported nests of great egret (*Ardea alba*), white ibis, snowy egret, and wood storks in 2006 (Cook and Call 2006). The L-67 colony, a traditional wading bird rookery, is about 1 mile from the L-67 canal that would not be that far away from the northern S-349 structure, based on the original MWD locations. There are also two rookery sites, Tamiami East and Tamiami West, that support state-listed wading birds immediately south of the Tamiami Trail.

Recreational impacts: FWC supports backfilling canals that provide high-quality, recreational opportunities only if doing so is necessary for hydrologic restoration. Impacts to existing recreational opportunities and access should be assessed and minimized during the planning process. The FWC maintains five boat ramps in the project area and other boat ramps exist in the greater area of interest depicted. These five include: two airboat ramps into WCA-3B (near S-333 and S-31, respectively), and ramps into the L-67A Canal (near S-333), L-67C Canal (near S-333), and L-29 Canal (between S-333 and S-334). These recreational amenities should be taken into account.

Summary

The FWC supports the routing of water through WCA-3B and the use of the S-355 structures and any additional L-29 culverts, provided the following conditions are met: the G-3273 trigger well constraint is lifted, WCA-3B inflows are matched to outflows (especially when the 71 gauge is greater than 8.5 feet NGVD), the L-29 Canal stage constraint is raised to a minimum of 8.5 feet NGVD, and a rainfall based operations and regulation schedule is developed. Alternatively, if such routing and conditions cannot be met, the FWC concurs with Everglades National Park that a viable interim solution would be routing MWD flows to NESRS through the S-333 structure.

If you or your staff would like to coordinate further on the recommendations contained in this report, please contact me at (850) 410-5272 or email me at maryann.poole@MyFWC.com, and I will be glad to help make the necessary arrangements. If your staff has any specific questions regarding our comments, I encourage them to contact Barron Moody at (561) 625-5122 or by email at barron.moody@MyFWC.com.

Sincerely,

Mary Ann Poole

Mary Ann Poole, Director
Office of Policy and Stakeholder Coordination

map/
Mod Water L67A and C_1821
ENV 1-3-2

References Cited

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Vegetation and Water Management in the Central Everglades. In: Sklar, F. and van der Valk, A. eds. Tree Islands of the Everglades. Boston, MA: Kluwer Academic Publishers, Amsterdam.

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cc: Michael Anderson, FWC, West Palm Beach
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Rebecca Griffith, COE
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Tim Towles, FWC, Vero Beach
John Leslie, SFWMD, West Palm Beach
Dewey Worth, SFWMD, West Palm Beach

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee:

Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC

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December 10, 2008

Ms. Lauren Milligan
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399-3000

Re: SAI #FL200811074486C, U.S. Army Corps of Engineers (COE), Draft Environmental Assessment, Proposed Interim Operating Criteria for 8.5 Square Mile Area (SMA) Project, Modified Water Deliveries to Everglades National Park, Miami-Dade County

Dear Ms. Milligan:

The Division of Habitat and Species Conservation, Habitat Conservation Scientific Services Section, of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated agency review of the referenced National Environmental Policy Act document. Our comments and concerns on the Draft Environmental Assessment for the proposed Interim Operating Criteria for the 8.5 SMA are included in the following letter, which is being submitted under the authority of the National Environmental Policy Act of 1969. We ask that the COE consider our comments and concerns, including those submitted previously in a letter (enclosed) to Ms. Marie Burns dated February 28, 2008, prior to the release of the Final Environmental Assessment.

Background

This document represents the development of interim operating criteria for the 8.5 SMA, including the S-357 pump station. The S-357 pump station is a feature of the final recommended plan Alternative 6D for the Modified Water Deliveries (MWD) to Everglades National Park (ENP) Project, 8.5 Square Mile Area (8.5 SMA) General Reevaluation Report and Supplemental Environmental Impact Statement completed in July 2000. In addition, the Canal 111 (C-111) Project has been modified since the May 1994 Final Integrated General Reevaluation Report (GRR) and Environmental Impact Statement, as documented in the June 2007 Environmental Assessment and Engineering Documentation Report. Portions of these two projects are being constructed simultaneously and will eventually work in conjunction with each other. The Combined Structural and Operational Plan (CSOP) will integrate the operations of these two projects.

These Interim Operating Criteria for the 8.5 SMA and Pump Station S-357 will be incorporated into the December 2006 Interim Operational Plan (IOP) for Protection of the Cape Sable seaside sparrow and will therefore become the interim operations that will be used until the CSOP plan is authorized and fully operational. This project is one of four components that have arisen from the original 1992 MWD General Design Memorandum. The other highly interrelated components include modifications to the Tamiami Trail to permit increased flows beneath the roadway; conveyance of water between Water Conservation Area (WCA)-3A, WCA-3B, and North East Shark River Slough (NESRS); and an overall operational plan for the newly constructed water control structures.

Project Description

Alternative 6D of the 8.5 SMA GRR consists of an exterior and interior levee as well as a seepage canal. The levees and seepage collection canal are designed to mitigate for increased flood risk as a result of projected increased water levels in NESRS and other portions of ENP due to the implementation of the MWD Project. The S-357 pump station would maintain water stages within the interior seepage canal to provide for flood damage reduction (flood mitigation) in the 8.5 SMA and to preserve hydroperiods within the Everglades. The new pumping structure (S-357), located at the southern terminus of the 3.5-mile seepage canal, would discharge seepage water into a flow-way and subsequently into the 183-acre 8.5 SMA Stormwater Treatment Area (STA). There would be no discharge out of the STA until the C-111 Northern Detention Area (NDA) is constructed. Correspondingly, the STA discharge weirs, located along the south side of the STA, would be constructed at heights of 3.5 and 4.0 feet (east and west respectively) above average-ground surface. Once the C-111 Canal project's NDA is constructed, the eastern discharge weir will be lowered to allow flow from the STA into the NDA.

The S-357 pump station is designed for a capacity of 575 cubic feet per second (cfs), and consists of four diesel pumps (125 cfs each) and one electric pump (75 cfs). The pump station would discharge into a settling pond with a concrete apron at elevation 1.0 feet. From the settling pond the flow would transition back to natural grade, where the water would flow via an approximately 320-feet-wide, above-ground flow-way to the STA. After the C-111 NDA is constructed, the STA would discharge water into the NDA.

Five alternatives are presented in the current Draft EA for the Proposed Interim Operating Criteria for the 8.5 SMA Project, including Alternative A, the No Action Plan. Alternative B would maintain the current G-3273 stage constraint of 6.8 feet National Geodetic Vertical Datum (NGVD), use the Las Palmas gage in the C-357 Canal along with Angel's Well criterion to dictate S-357 pump operations, limit pumping to 500 acre-feet per day, and maintain operational flexibility for S-331. Alternative B is the COE's preferred alternative. Alternative C would maintain the current G-3273 stage constraint, use the Las Palmas gage to dictate S-357 pump operations, and have no limit on pumping capacity. Alternative D would raise the G-3273 constraint from 6.8 feet to 7.3 feet NGVD, modify the L-29 borrow canal constraint from 9.0 feet to match the current Florida Department of Transportation's (FDOT's) constraint of 7.5 feet NGVD, change the S-331 trigger gage to the Las Palmas gage, have no limit on pumping capacity, and include S-356 operations. Alternative E would allow operations of the S-357 pump station with no limitation on detention cell overflow.

A key provision in the prior draft of the water control plan for the 8.5 SMA released in January 2008 was the removal of the G-3273 trigger as an operational criterion for controlling flows from WCA-3 into NESRS. Instead, the L-29 borrow canal as measured at the S-355B tailwater was to be used as the controlling criterion for discharging flows into NESRS; however, none of the five alternatives considered by the COE in the current EA remove the G-3273 trigger gage as an operational criterion. For a detailed description of potentially affected resources and the potential effects of a set of interim operational criteria similar to Alternative D, with an additional lowering of the L-29 borrow canal constraint from 9.0 feet in IOP to 8.0 feet NGVD, see our previous

comments to in the enclosed letter, dated February 28, 2008, to Ms. Marie Burns. Please note, however, that none of the ecological benefits described in that letter would be expected to occur if the COE, instead, selects alternative B as the preferred set of interim operational criteria for the 8.5 SMA.

Issues and Recommendations

In addition to the concerns and recommendations we submitted previously in that letters, we offer the following issues and recommendations concerning the new preferred alternative plan for the Proposed Interim Operating Criteria for the 8.5 SMA and S-357 pump station, which has changed substantially from the prior draft operational plan released for public review in January 2008.

1. We applaud the COE for brokering a temporary agreement with FDOT during the current "high water emergency" situation whereby the 7.5-foot stage constraint in the L-29 canal has been allowed to rise to 8.0 feet NGVD for a limited time period, and encourage the COE to actively pursue a more permanent solution that would allow the stage of the L-29 canal to be raised to a minimum of 8.0 feet NGVD for sustainable periods on a regular basis. We also request that such operations be incorporated into the current set of operational criteria for the 8.5 SMA. This higher L-29 canal stage would provide greater relief for WCA-3 during high water events by increasing deliveries from S-333 to NESRS, and improve the distribution of flows to NESRS, benefiting Everglades' flora and fauna in both areas.
2. In the previous draft water control plan for the 8.5 SMA, we viewed the removal of the G-3273 constraint trigger that curtails flows into NESRS as an important step towards the restoration of the greater Everglades. We are perplexed and dismayed that this trigger has been reinstated in the COE's current preferred alternative plan (B). We would have preferred to work proactively with the COE since our February 2008 letter, but there appeared to have been little opportunity for us to do so. If we had, we may have better understood the reasons for the preferred alternative.
3. If the COE is unable to remove the G-3273 constraint entirely in this plan, then we ask that the COE at least give serious consideration to relaxing the constraint by 0.5 feet, as described in Alternative D. Elevating the trigger gage to a stage constraint of 7.3 feet should lead to measurable benefits to NESRS, as well as provide some much needed incremental benefits to WCA-3A while IOP restrictions on the S-12 structures are in place. We believe that all of the structures that were constructed to handle seepage for the MWD project should be incorporated into the 8.5 SMA operational plan (S-356, all of the S-332 structures, etc.), so that real benefits can be realized for the greater Everglades sooner, rather than later. To do otherwise would incur risk of further damage to the greater Everglades ecosystem, delay restoration benefits, and continue the depletion of our important wildlife resources (including endangered species such as the snail kite and Cape Sable sparrow) and degradation of their habitats.
4. The new operational criteria for the C-357 Canal appear to differ from those established for the 8.5 SMA under the 2000 GRR, in that the S-357 pump would be turned on when the canal stage at the Las Palmas gage reaches 5.2

feet and turned off at a stage of 4.9 feet. This is a full foot lower than what was described in the 2000 GRR (6.0 feet), and would likely result in excess drainage of wetlands within the canal's influence. The proposed operating criteria should insure that existing high quality wetlands outside of the seepage canal are maintained or enhanced as a result of the plan's implementation. Maintaining the integrity of these wetlands will benefit native wildlife and help curtail the spread of invasive exotic plants such as Brazilian pepper (*Schinus terebinthefolius*) and Australian pine (*Casuarina equisetifolia*).

Summary

We are concerned that the current set of operational criteria set forth in Alternative B for the 8.5 SMA and S-357 pump station only addresses flood mitigation concerns and do nothing to improve hydrological conditions for fish and wildlife resources in NESRS, or to help relieve the extreme high water conditions that we are currently experiencing in WCA-3A. For these reasons, of the alternatives presented, we could only support a variation of Alternative D for the interim plan, in which the G-3273 trigger gage constraint is relaxed by 0.5 feet to a stage of 7.3 feet, and the L-29 canal stage is allowed to rise to a level of at least 8.0 feet NGVD for sustained periods. However, we would prefer that the COE remove the G-3273 stage constraint entirely as was presented in their earlier draft of the water control plan for the S-357 pump station. This operational change coupled with an L-29 canal stage of at least 8.0 feet NGVD should result in measurable ecological benefits to NESRS, as well as provide some much needed incremental relief to WCA-3A while IOP restrictions are in place. If you or your staff has any questions about the content of this review, please contact Tim Towles at our office in Vero Beach (772-778-6354; email tim.towles@MyFWC.com).

Sincerely,

Mary Ann Poole

Mary Ann Poole, Director
Office of Policy and Stakeholder Coordination

map/dtt/cc
ENV 1-3-2
8.5 SMA Mod_1835
Enclosure
CC: Mr. Paul Sousa, USFWS, Vero Beach
Mr. Dan Kimball, ENP, Homestead
Ms. Susan Conner, COE, Jacksonville
Mr. Tim Brown, COE, Jacksonville
Ms. Inger Hansen, DEP, West Palm Beach
Mr. Chuck Collins, FWC, West Palm Beach
Mr. Michael Anderson, FWC, West Palm Beach
Ms. Marsha Ward, FWC, Sunrise
Ms. Maura Merkel, SFWMD, West Palm Beach

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February 28, 2008

Ms. Marie Burns
Acting Chief, Planning Division
Environmental Branch
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Re: Interim Water Control Plan for Pumping Station S-357, Modified Water Deliveries to Everglades National Park, Miami-Dade County

Dear Ms. Burns: Marie

The Habitat Conservation Scientific Services Section of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated agency review of the referenced National Environmental Policy Act document. Our comments and concerns on the Interim Water Control Plan for Pumping Station S-357 are included in the following letter, which is being submitted under the authority of the National Environmental Policy Act of 1969.

Background

This document represents the development of operating criteria for the S-357 pump station. The S-357 pump station is a feature of the final recommended plan Alternative 6D for the Modified Water Deliveries (MWD) to Everglades National Park (ENP) Project, 8.5 Square Mile Area (8.5 SMA) General Reevaluation Report and Supplemental Environmental Impact Statement completed in July 2000. In addition, the Canal 111 (C-111) Project has been modified since the May 1994 Final Integrated General Reevaluation Report (GRR) and Environmental Impact Statement (EIS), as documented in the June 2007 Environmental Assessment and Engineering Documentation Report. Portions of theses two projects are being constructed simultaneously and will eventually work in conjunction with each other. The operational integration of these two projects is to be accomplished by the Combined Structural and Operational Plan (CSOP).

This Interim Water Control Plan for Pump Station S-357 will be incorporated into the December 2006 Interim Operational Plan (IOP) for Protection of the Cape Sable Seaside Sparrow and will therefore become the interim operations that will be utilized until the CSOP plan is authorized and fully operational. This project is one of four components that have arisen from the original 1992 MWD General Design Memorandum. The other highly interrelated components include modifications to the Tamiami Trail to permit increased flows beneath the roadway; conveyance of water between Water Conservation Area (WCA)-3A, WCA-3B, and North East Shark River Slough (NESRS); and an overall operational plan for the newly constructed water control structures.

Project Description

Alternative 6D consists of an exterior and interior levee as well as a seepage canal. The levees and seepage collection canal are designed to mitigate for increased flood risk as a result of projected increased water levels in NESRS and other portions of ENP due to the implementation of the MWD Project. The S-357 pump station will maintain water stages

within the interior seepage canal to provide for flood damage reduction (flood mitigation) in the 8.5 SMA and to preserve hydroperiods within the Everglades. The new pumping structure (S-357), located at the southern terminus of the 3.5-mile seepage canal, will discharge seepage water into a flow-way and subsequently into the 183-acre 8.5 SMA Stormwater Treatment Area (STA). There will be no discharge out of the STA until the C-111 Northern Detention Area (NDA) is constructed. Correspondingly, the STA discharge weirs, located along the south side of the STA, will be constructed at heights of 3.5 and 4.0 feet (east and west respectively) above average ground surface. Once the C-111 Canal project's NDA is constructed, the eastern discharge weir will be lowered to allow flow from the STA into the NDA.

The S-357 pump station is designed for a capacity of 575 cubic feet per second (cfs), and consists of four diesel pumps (125 cfs each) and one electric pump (75 cfs). The pump station will discharge into a settling pond with a concrete apron at elevation 1.0 feet. From the settling pond the flow will transition back to natural grade, where the water will flow via an approximately 320 feet wide above ground flow-way to the STA. After the C-111 NDA is constructed, the STA will discharge water into the NDA.

A key provision of this water control plan is the removal of the G-3273 trigger as an operational criterion for controlling flows from WCA-3 into NESRS. Instead, the L-29 borrow canal as measured at the S-355B tail water would be used as the controlling criterion for discharging flows into NESRS. Based on concerns from the Florida Department of Transportation (FDOT) for the integrity of Tamiami Trail between S-333 and S-334, the L-29 canal stage constraint of 9.0 feet from IOP would be lowered to elevation 8.0 feet National Geodetic Vertical Datum (NGVD). Coordination with the FDOT will occur before the transition of the canal stages above elevation 7.5 feet. At a minimum, concurrence with the stage increase above elevation 7.5 feet will be sought from the FDOT each time the canal level is planned to exceed this level due to operations of the system, including an agreement of the time duration that stages will be allowed to stay above elevation 7.5 feet. The FDOT considers that the current Design High Water for Tamiami Trail between S-333 and S-334 to be elevation 7.5 feet; a design high-water stage of 9.7 feet has been contemplated under CSOP planning. Review of historical data does indicate, however, that stages have occasionally risen above elevation 7.5 feet due to direct rainfall and seepage from the area to the north (WCA-3B), independent of current operational schedules. If the L-29 canal stage is too high, then flow will be reduced first by reducing or eliminating S-333 discharges, second by reducing or eliminating the S-355A and S-355B discharges, and finally, by reducing or eliminating S-356 discharges.

Potentially Affected Resources

WCA-3 encompasses approximately 550,000 acres of graminoid wetlands interspersed with various types of tree islands. WCA-3A and WCA-3B are managed by the FWC as part of the Everglades and Francis S. Taylor Wildlife Management Area (EWMA). The EWMA contains about two-thirds of the remaining freshwater Everglades and its wet prairie, slough, and willow strand plant communities provide critical foraging and nesting habitat for snail kites (*Rostrhamus sociabilis plumbeus*), wading birds, and a myriad of other native wetland wildlife. The objectives of MWD address the protection of the natural values of WCA-3A, WCA-3B, and ENP, including the integrity of crucial tree island habitats. Although tree islands occupy a small portion (~1.5%) (Patterson and

Finck 1999) of the Everglades ridge and slough landscape, they are sites of high plant species diversity, provide habitat and wet-season refuges for upland species, and are essential nesting habitat for a variety of wetland reptiles and birds (Heisler et al. 2002). There are several different types of tree islands in the ridge and slough landscape, including (elevated) tropical hardwood hammocks, bay head swamp forests, and willow heads.

We have supporting evidence from the current Everglades system that extreme high water depths of relatively long duration lead to a deterioration of ridge and slough landscape features and to declines in their associated wildlife populations. Southern WCA-3A has experienced severe degradation of its ridge components (sawgrass ridges and tree islands) due to excessive depths and durations during the past 40 years (Heisler et al. 2002, McPherson 1973, Patterson and Finck 1999). Heisler et al. (2002) found that marsh water levels exceeding 2.0 feet led to tree island flooding impacts that were demonstrated by a statistically significant ($P < 0.0001$) reduction in tree and shrub species richness. Fortunately, the central portion of WCA-3A has experienced fewer and less severe episodes of both high water and drought, and harbors some of the best remaining ridge and slough landscape patterns in today's Everglades.

The redistribution of flows across the full breadth of Shark River Slough is important since it is a primary overarching objective of the MWD project. Although hydrological conditions in NESRS have improved under the IOP, this area still possesses lower water depths and shorter hydroperiods than historically occurred here. Consequently, populations of turtles, amphibians, fish, apple snails, and other aquatic invertebrates have remained suppressed, limiting the utilization of NESRS by higher trophic level animals such as alligators (*Alligator mississippiensis*), wading birds, and snail kites.

There are two traditional wading bird rookery sites, the Tamiami East and Tamiami West rookeries located in NESRS immediately south of the Tamiami Trail. Several listed species of wading birds, including the white ibis (*Eudocimus albus*), tricolored heron (*Egretta tricolor*), little blue heron (*Egretta caerulea*), and snowy egret (*Egretta thula*) (all state-listed as species of special concern), and the wood stork (*Mycteria americana*) (state- and federally listed as endangered) are known to nest in one or both of these colonies (Gawlik, 2002). The Everglades mink (*Mustela vison evergladensis*) is listed as threatened by the FWC, and approaches the eastern limits of its distribution in NESRS. Most documented records of Everglades mink have been associated with levees, canals, and fill pads near the Tamiami Trail, with fewer observations from tree islands in this area (Smith 1980).

Based on annual surveys from 1970 to 1998, WCA-3A has been the largest and most consistently utilized of the designated critical habitats for the snail kite (Kitchens et al. 2002). One of the stated objectives of MWD is to maintain suitable marsh vegetation structure that would provide successful foraging habitat for the endangered snail kite both in WCA-3 and ENP. Optimal snail kite foraging habitat is characterized as shallow wet prairie dominated by emergent plant species such as *Panicum hemitomon* and *Eleocharis* spp. (Bennetts and Kitchens 1997, Kitchens et al. 2002). The snail kite feeds almost exclusively on the apple snail (*Pomacea paludosa*), which is more abundant in wet prairies than in adjacent sloughs that are characterized by sparse, floating and submerged

vegetation such as *Nymphaea odorata* and *Utricularia* spp. (Darby 2003). Shallow wet prairies are maintained where water levels fall below ground surface with a return frequency of dry-down conditions occurring 1 in every 3-5 years, with average flood durations being between 156 and 260 weeks (Kitchens et al. 2002).

Potential Effects of the Draft Interim Water Control Plan

Since this water control plan is part of a restoration plan designed to provide a more natural distribution and timing of flows to NESRS, our comments focus on the ecological benefits to be derived from its implementation. We believe that the removal of the G-3273 constraint as a trigger for curtailing flows into NESRS is an important step towards restoration of this area. However, the new constraint then becomes the stage level of the L-29 canal at the S-355B tail water, which is proposed to be operated at 8.0 feet NGVD (with several caveats) in the water control plan. If the L-29 canal is actually allowed to attain this higher stage (current effective limit is 7.5 feet), then it would be possible to deliver slightly greater volumes of flow to NESRS. These increased flows would lead to an increase in secondary productivity, which in turn should enhance the foraging success of wading birds and snail kites, as well as benefit other wetland dependent wildlife, including the Everglades mink (state-listed as threatened), using NESRS. The additional flows into NESRS, along with the use of the S-357 pump station and water retention areas to help maintain a hydrologic ridge on the eastern boundary of ENP, should also create slightly wetter conditions in the overly dry marl prairie habitat inhabited by Cape Sable seaside sparrow's (*Ammodramas maritimus mirabilis*) subpopulations E and F. An enhanced ability to increase the conveyance of flows from the L-29 canal to the south, and to augment the capacity of the L-29 canal to receive flows from WCA-3, would benefit tree island, snail kite, and wading bird habitat both in southern WCA-3 and in NESRS. However, the realization of these incremental benefits are contingent on the U.S. Army Corps of Engineers' (COE's) success in brokering an agreement with FDOT that permits the COE to regularly raise stage levels in the L-29 canal to 8.0 feet. Absent such an agreement, we believe that this plan is unlikely to result in a significant increase in flows and concomitant increase in ecological benefits to NESRS and WCA-3 that otherwise would be possible.

Lacking any detailed hydrologic modeling of the proposed S-357 pump operations, it is unclear how such operations would affect existing wetlands outside of the seepage canal. The proposed operational plan should insure that existing wetlands outside of the seepage canal are maintained or enhanced as a result of the plan's implementation. Maintaining the integrity of these wetlands will benefit native wildlife and help reduce the spread of invasive exotic plants such as Brazilian pepper (*Schinus terebinthefolius*), melaleuca (*Melaleuca quinquenervia*), and Australian pine (*Casuarina equisetifolia*). Monitoring wells in key areas such as the Federal Aviation Administration property may be needed to ensure that the interim operational plan is performing according to the criteria set forth in Alternative 6D.

Discussions with staff of the South Florida Water Management District suggest that the operation of the S-357 pump station would likely result in very shallow water depths in the 183-acre STA during wet periods. Such shallow water depths would likely attract shorebirds, particularly when standing water occurs during migration. Since south Miami-Dade County is commonly frequented by birders, hunters, and other wildlife

enthusiasts, we would like the COE to consider supporting public use of this facility, which we understand will be transferred to the SFWMD once construction is complete.

Concerns and Recommendations

In summary, we offer the following concerns and recommendations concerning the draft Interim Water Control Plan for the S-357 Pumping Station.

1. We encourage the COE to seek a more solid agreement with FDOT concerning the 7.5-foot stage constraint in the L-29 canal, and to actively pursue a permanent solution that would allow the stage of the L-29 canal to be raised to a minimum of 8.0 feet NGVD for sustainable periods. This higher stage would provide greater relief for WCA-3 during high water events, and improve the distribution of flows to NESRS, benefiting Everglades' flora and fauna in both areas.
2. We are uncertain as to the effects that the proposed water control plan will have on existing wetlands located outside of the seepage canal, and ask that the COE continue to collect hydrological data from appropriate existing monitoring wells (Angel's well, etc.), as well as evaluate the need to add additional wells, if deemed necessary. If the hydrological data indicate additional drying of these wetlands is occurring, then the COE should revise the water control plan to alleviate the adverse effects.
3. The proposed operations for the S-357 pump station are likely to create suitable habitat for shorebirds and other wildlife in the 8.5 SMA STA. Recreational opportunities for bird watchers, hunters, and anglers should be given serious consideration, pursuant to Florida Statute 373.1391(1). These recreational opportunities are compatible with project purposes and there is a high stakeholder demand for additional recreational opportunities in this area of southern Florida. As such, any additional opportunities would be greatly appreciated by stakeholders and would reflect favorably on the COE for supporting them.

Summary

If you or your staff has any questions about the content of this review, please contact Tim Towles at our office in Vero Beach (772-778-6354; email tim.towles@MyFWC.com). If you would like to coordinate further on the process of our involvement in this and related projects, please feel free to contact me at 850-410-5272 or email me at maryann.poole@MyFWC.com.

Sincerely,

Mary Ann Poole

Mary Ann Poole, Director
Office of Policy and Stakeholder Coordination

map/dtt/cc
ENV 1-3-2

Pump Station S 357_1254

CC: Paul Sousa, USFWS, Vero Beach
Dan Kimball, ENP, Homestead
Trent Ferguson, COE, Jacksonville
Christopher Spaur, COE, Jacksonville
Inger Hansen, DEP, West Palm Beach
Chuck Collins, FWC, West Palm Beach
Marsha Ward, FWC, Sunrise
Paul Linton, SFWMD, West Palm Beach

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FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Laura Milligan
Florida Department of Environmental Protection
Florida State Clearinghouse
3900 Commonwealth Boulevard, MS 24
Tallahassee, Florida 32399-3000

March 9, 2012

RECEIVED
MAR 15 2012
DEP Office of
Intergovt'l Programs

Re: DHR No.: 2012-00905/ Received by DHR: March 2, 2012
Project: C-111 South Dade Project Modifications
Counties: Dade

Dear Ms. Milligan,

Our office received and reviewed the referenced project application in accordance with Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665), as amended in 1992; 36 C.F.R., Part 800: Protection of Historic Properties for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the National Register of Historic Places.

Our review of the Florida Master Site File indicates that because of the nature of the project it is unlikely that no significant archaeological or historical resources will be affected.

For any questions concerning our comments, please contact Michael Hart, Historic Sites Specialist, by electronic mail at Michael.Hart@dos.myflorida.com, or by phone at 850.245.6333. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,

Laura A. Kammerer

Laura A. Kammerer
Historic Preservationist Supervisor
Compliance Review Section
Bureau of Historic Preservation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

May 25, 2012

Colonel Al Pantano
District Commander
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service Consultation Code: 41420-2007-F-0935
Date Received: March 02, 2012
Formal Consultation Initiation Date: June 5, 2007
Project: Canal-111 South Dade

Dear Colonel Pantano:

The U.S. Fish and Wildlife Service (Service) has reviewed your letter and accompanying Environmental Assessment received by this office on March 2, 2012, regarding the completion of the Canal-111 South Dade (C-111 SD) Project. This document transmits the Service's second amendment to the 2007 Biological Opinion for the C-111 Project and its potential effects on threatened and endangered species and their designated critical habitat within the project area, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The project site is located within the C-111 basin just east of Everglades National Park (ENP) in southern Miami-Dade County, Florida (Figure 1).

This project has been intermittently active since the late 1990s when the original components of the C-111 SD were constructed. These included the detention areas 332-B North and West, 332-C and 332-D. Several other components have been constructed since that timeframe including the L-320 and L-322 levees which form the east and west boundary of the C-111 SD buffer area from S-332 D north to S-332 C and the L-323 levee which complete the S-333B-C connector and forms a secondary buffer area east of the C-111 SD (U.S. Army Corps of Engineers 2006). The remaining features to be constructed in this final phase of the project are predominantly the expansion of the Northern Detention Area (NDA) and associated features described as follows (U.S. Army Corps of Engineers 2012):

> **2.1.3 Alternative 3 – Expansion of S-332B Northern Detention Area and Other Features (Preferred Alternative)**
> Alternative 3 includes the expansion of the S-332B NDA and the expansion of other features in the C-111 detention areas (Figure 2). The current proposal would expand the S-332B NDA north to the 8.5 Square-Mile Area (SMA) detention area, then east towards the ENP. The proposed expanded C-111 S-332B NDA would be created by extending the L-315 north and

realigning the L-316; both levees will tie into the 8.5 SMA detention area and are discussed in more detail below. The design modification in this alternative would increase the size of the NDA to approximately 1,440 acres and cover former agricultural lands now owned by the SFWMD, the non-Federal sponsor for the C-111 Project. The interior of the detention area would be scraped to the underlying rock layer and the excavated material would be used to construct L-315 and L-316. Upon project completion, two pump stations would supply water to the NDA, the S-357 (MWD project component) from the 8.5 SMA in the north, and the S-332B in the south. The NDA would be divided into two areas: the flowway area (260 acres) and the main detention area (1180 acres). The IOP will remain in place to operate the system until the Everglades Restoration Transition Plan (ERTP) or another operating plan is authorized.

The Service previously consulted on this project and provided a Biological Opinion (U.S. Fish and Wildlife Service 2007) which analyzed the potential effects (construction only) of the proposed action on the Cape Sable seaside sparrow (CSSS) (*Ammodramus maritimus mirabilis*) and designated CSSS critical habitat. Specifically, the Service wanted to conduct a more detailed analysis into the potential impacts to CSSS that may have resulted from the removal of the L-31W canal. Based on the above analysis the Service concluded, in its Biological Opinion, that the action, as proposed, would not likely jeopardize the continued existence of the CSSS. Additionally, the Service found that although potential for adverse effects to CSSS, due to higher water levels in adjacent marshes, was present, the level to which increased water depths and durations increased would not result in additional incidental take above that anticipated under the Biological Opinion for the Interim Operational Plan (IOP) (U.S. Fish and Wildlife Service 2006). The Service has recently determined that the Everglades Restoration Transition Plan (U.S. Fish and Wildlife Service 2010) when implemented will also not have adverse effects to sparrows in this area.

Critical habitat for CSSS was also located within the project area during the 2007 consultation and the Service concluded that construction of the C-111 features would result in adverse effects to 480 acres of designated critical habitat, but that it was not expected to result in the destruction or adverse modification of the sparrow's critical habitat. The habitat that would be affected is composed of active agricultural land that has not been suitable sparrow habitat for decades. Additionally, the percentage of critical habitat that would be impacted is relatively small compared to the remaining suitable sparrow habitat. The Service concurred with the other species affect determinations in the Environment Impact Statement and concluded consultation on the construction effects of the action. The operations of the project would be consulted on at a later date.

In 2010 the U.S. Army Corps of Engineers (Corps) requested an update to the 2007 Biological Opinion based on revisions to critical habitat for the CSSS and minor changes to the plan. The Service provided an amendment to the 2007 Biological Opinion on January 13, 2010, which described the adopted changes to CSSS critical habitat and explained that the project area no longer contained sparrow critical habitat. The main reason for the reduction in the aerial extent of critical habitat is that many areas designated in the original 1977 were never sparrow habitat,

such as forested areas of Long Pine Key in ENP, dwarf cypress forests, deep-water slough communities, and agricultural areas (for more detail on the final rule regarding the revised designation of critical habitat for CSSS see [72 FR 62736]). The 2010 amended Biological Opinion also reviewed minor changes to the Engineering Design Report (U.S. Army Corps of Engineers 2007) that mainly dealt with the transfer of some project features to other projects and engineering details regarding levee construction. The amendment concluded that these minor changes to the C-111 Project were not expected to result in modification to the performance of the project or increase impacts on listed species as assessed in the 2007 Biological Opinion.

In reviewing the Corps' Environmental Assessment of February 29, 2012, regarding the current proposal to complete the C-111 SD Project, it appears that little has changed since the last time it was reviewed. The Corps' species affect determinations remain the same as in previous consultations: the proposed project will have "no effect" on the endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*) or its critical habitat, endangered red-cockaded woodpecker (*Picoides borealis*), and endangered Okeechobee gourd (*Cucurbita okeechobeensis* ssp. *okeechobeensis*). The Corps has also determined that the proposed project "may affect, but is not likely to adversely affect" the bald eagle (*Haliaeetus leucocephalus*), endangered Florida panther (*Puma* [=*Felis*] *concolor coryi*), endangered West Indian manatee (*Trichechus manatus*) or its designated critical habitat, threatened American crocodile (*Crocodylus acutus*) or its critical habitat, threatened eastern indigo snake (*Drymarchon corais couperi*), endangered wood stork (*Mycteria americana*), endangered CSSS or its designated critical habitat, and the threatened Garber's spurge (*Chamaesyce garberi*). The bald eagle is no longer a federally threatened species under the Act (71 FR 8238). Therefore, there is no requirement under the Act to consult on potential impacts to the bald eagle. Since nothing new has been learned with regards to project changes or threatened and endangered species in the action area the Service concurs with the Corps' determinations pursuant to the Act. The Corps will continue to implement the protective measures agreed upon for construction activities to avoid adverse effects to these species.

Thank you for your cooperation and effort in protecting fish and wildlife resources. The Service looks forward to seeing this critical project completed and operational in the near future. If you have any questions regarding this project, please contact Kevin Palmer at 772-469-4280.

Sincerely yours,

Donald R Progulske

for Larry Williams
Field Supervisor
South Florida Ecological Services Office

cc: electronic copy only
Corps, Jacksonville, Florida (Stacie Auvenshine, Gina Ralph, Eric Summa)
District, West Palm Beach, Florida (Melissa Meeker, Lisa Cannon)
DEP, Tallahassee, Florida (Greg Knecht)
DOI, Fort Lauderdale, Florida (Shannon Estenoz)
FWC, Tallahassee, Florida (Mary Ann Poole)
ENP, Homestead, Florida (Dan Kimball)
Service, Atlanta, Georgia (Dave Horning)
Service, Jacksonville, Florida (Miles Meyer)
Office of the Solicitor, Atlanta, Georgia (Mike Stevens)

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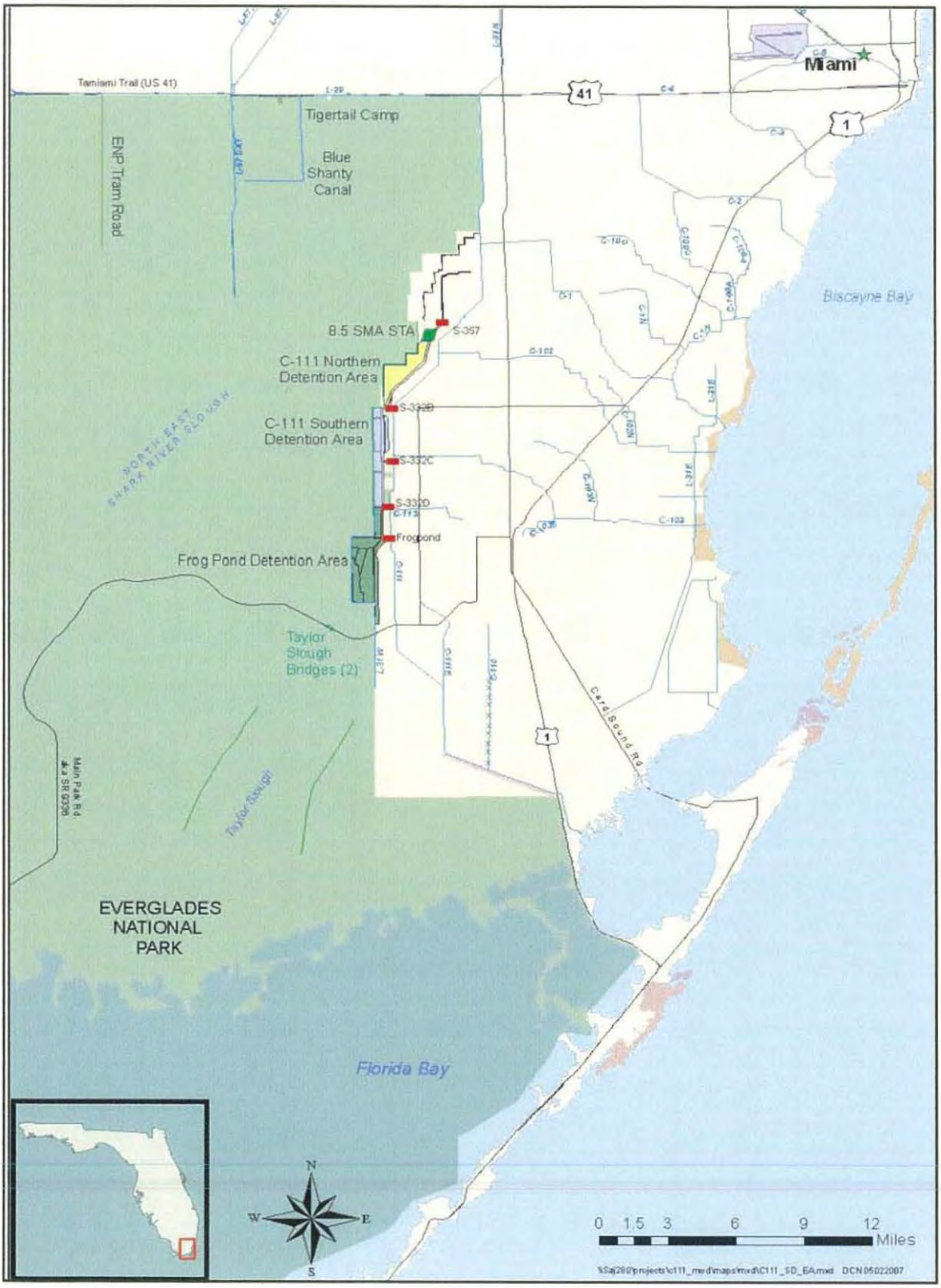

Figure 1. General project location map.

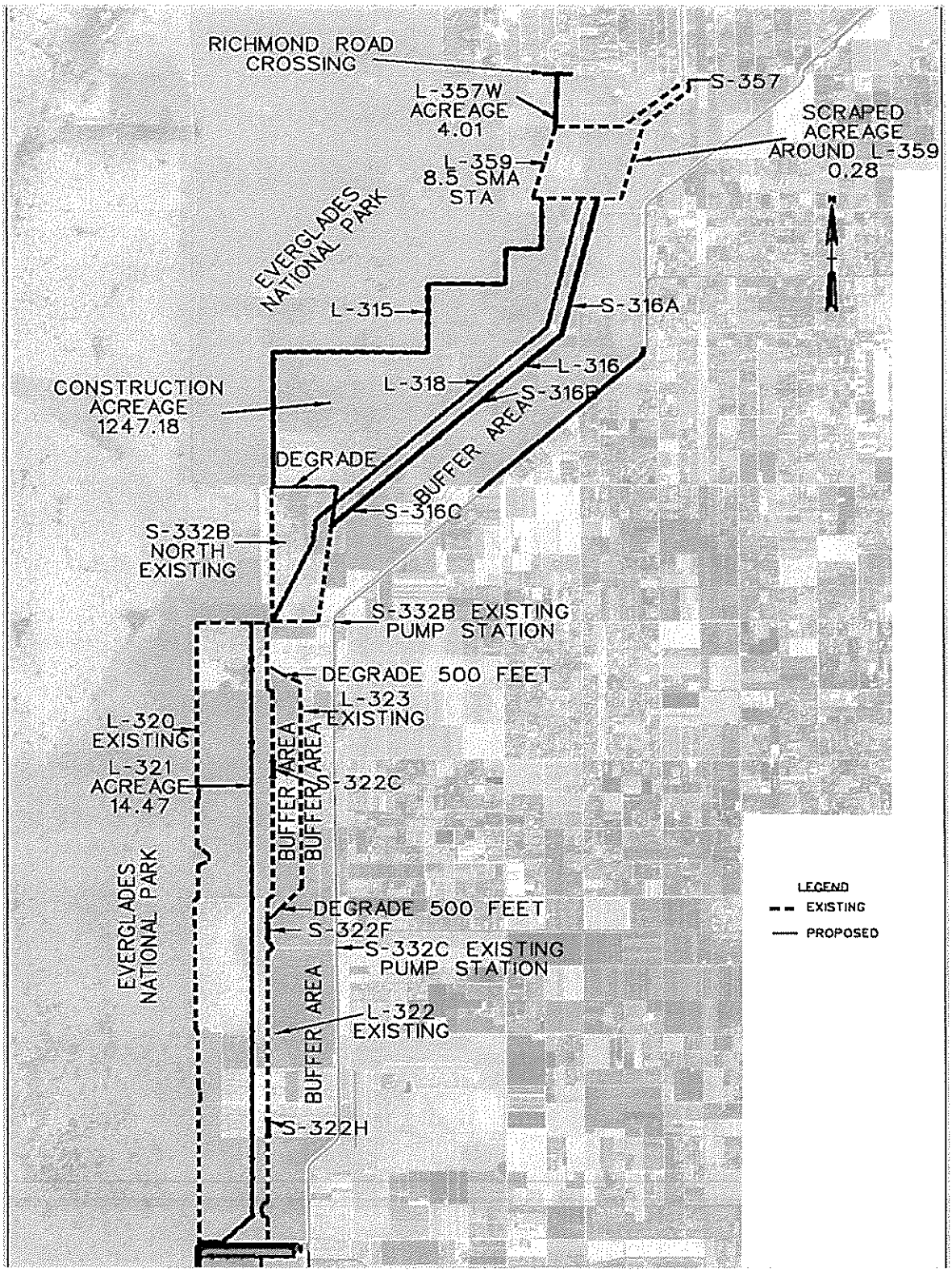

Figure 2. Expanded S-332 B Northern Detention Area and associated features (U.S. Army Corps of Engineers 2012).

APPENDIX C

SECTION 404(b) CLEAN WATER ACT EVALUATION

EXPANSION OF THE C-111 DETENTION AREA AND ASSOCIATED FEATURES PROJECT

SOUTH DADE, FLORIDA

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SECTION 404(b) CLEAN WATER ACT EVALUATION

ENVIRONMENTAL ASSESSMENT
CANAL 111 (C-111) SOUTH DADE COUNTY, FLORIDA

I. Project Description

a. Location. The Canal 111 (C-111) Basin is located in southern Florida. The area of focus is located in southeastern Dade County. See Figure 1 in the EA for the project location.

b. General Description

Authority and Purpose. C-111 project was constructed as part of the ENP – South Dade Conveyance Canals Project Authorized by the FCA of 1968 (Public Law (PL) 90-483). This Act authorized modifications to the existing Central and Southern Florida (C&SF) Project as previously authorized by the FCAs of 1948 (PL 80-858) and 1962 (PL 87-874). Further modifications to the C-111 were authorized as an addition to the C&SF project in the Water Resources Development Act (WRDA) of 1996 (PL 104-303) to protect the natural values associated with the ENP, while maintaining the existing level of flood protection within the C-111 basin east of Levee 31N (L-31N) and C-111.

The U.S. Army Corps of Engineers (Corps) seeks to improve undesirable resource conditions in Taylor Slough, the eastern panhandle of ENP, Manatee Bay, and Barnes Sound, while maintaining flood protection within the C-111 basin as described in the Corps' 1994 Final Integrated General Reevaluation Report (GRR) and Environmental Impact Statement (EIS), Canal 111, South Dade County, Florida (C-111 GRR/EIS). Features of the authorized plan that resulted from the C-111 GRR/EIS have been adjusted in the years since completion of the C-111 GRR/EIS. Certain alterations were previously documented in the Corps' 2002 Final EIS and 2007 Final Supplemental EIS for the Interim Operational Plan for Protection of the Cape Sable Seaside Sparrow (IOP). The intent of the present report is to record and evaluate changes not previously recorded.

General Description of Dredged or Fill Material

(1) General Characteristics of Material.

The North Detention Area (NDA) will be scraped down to the caprock/consolidated soils (Miami/oolitic limestone). The existing surface soils were created by rockplowing the limestone surface to create a soil matrix for agricultural use. Rockplowing is a method in which heavy equipment rips the surface layer of limestone into fragments. The loose surface soils created by rockplowing contain fines, clays and limited vegetation, in addition to the limestone component. The scraped soils will be used to construct the levees in order to expand the NDA. The residual vegetation within the scraped soils will be separated from this fill material to the maximum extent practical. Due to the nature of the scraped soils that include fines, clays and residual vegetation, they are suitable for use in constructing the base of the levee but not suitable for the surface of the levees. In order to have a levee surface suitable for mowing equipment and to

provide a suitable uniform surface for other maintenance vehicle traffic, processed limestone from the L31N limestone stockpile will be used to cap the entire surface of the levees.

(2) Approximate Quantity of Material (cubic yards):

- L-315 (NDA expansion levee) – 290,100 cubic yards (CY)
- L-316 (NDA levee) - 148,700 CY
- L-318 (1 ft high berm within the NDA) – 38,000 CY
- L-321 (1 ft high berm within the South Detention Area) – total 47,000 CY, 27,900 CY in former ENP wetlands)
- L-357W (connecting S357 detention area to 8.5 SMA flood mitigation levee) - 24,000 CY
- Fill material to be scraped up from the project area footprint - 1,808,950 CY approximately 12,300 CY will be scraped up from the former ENP wetlands. The remainder of the soil scraping activity will take place within former agricultural lands that are primarily covered in exotic/invasive plant species.

- L-315 (NDA expansion levee) - 43 acres
- L-316 (NDA levee) - 33 acres
- L-318 (1 ft high berm within the NDA) - 12 acres
- L-321 (1 ft high berm within the South Detention Area (SDA)) - 14.5 acres total, 8.6 acres in former ENP wetlands)
- L-357W (connecting S357 detention area to 8.5 SMA flood mitigation levee) - 4 acres

(3) Source of Material.

The material to be used to construct the base of L315, L316 and the L357W levees will come from the loose surface soils scraped up from within the proposed expanded NDA. The L315, L316 and L357W will be capped with at least 12" of limestone material excavated from the L31N canal footprint. The berms will also be constructed from the limestone material excavated from the L31N canal footprint.

Description of the Proposed Discharge Site

(1) Location (map). The discharge will be used to build the levees within the project area.

(2) Size (acres). The extension of the L-315 and L-316 will expand the NDA by approximately 1,250 acres beyond than what was identified in the 2007 IOP EIS or the 1994 GRR/EIS. The net construction footprint will be approximately 1441 acres.

(3) Type of Site (confined unconfined, open water). The levee construction sites are unconfined, agricultural areas that were formerly open Everglades rocky prairie that has been under flood protection since the late 1960s. In extreme weather conditions, occurring infrequently (not on yearly basis), there may be surface water in these areas under flood protection for brief intervals (hours to a few days). All of the levee sites will be constructed within the previously rockplowed agricultural areas. All of the 1ft high berms will be constructed on former agricultural lands except for approximately nine acres of relatively

unimpacted (never farmed or rockplowed) wetland that will be scraped to caprock within the SDA to allow placement of clean limestone to create a one ft flowway berm. The storage sites for the excess fill will be within existing stockpile areas.

(4) Type(s) of Habitat. The habitat in the construction footprint (with exception of approx 9 acres) is rocky glades/marl prairie converted to agriculture by rockplowing and drainage (flood protection project area). Rockplowing removes all of the native vegetation and creates a soil matrix that can be used for commercial agriculture. Vegetation in the rocky glades is primarily comprised of thinly scattered sawgrass (*Cladium jamaicensis*), spikerush (*Eleocharis cellulosa*), and beakrushes (*Rhynchospora* spp.) on marl soils in association with muhly (*Muhlenbergia* sp.) prairies. However, because the main project footprint contains prior rockplowed agricultural lands, exotics now comprise the majority of the flora.

Approximately nine acres within the SDA flowway berm footprint have not yet been disturbed and still possess characteristics of marl prairie. The former agricultural lands in this area have been under flood protection since the 1960s and the water management activities have resulted in hydrology that supports agricultural and residential use. The hydrology that used to exist in this area that provided wetland habitat no longer exists.

(5) Timing and Duration of Discharge. The project is expected to take 2-3 years, with some of the construction activity preferably conducted in the dry season.

c. Description of Disposal Method: The scraped material from the rockplowed areas will have the vegetation removed to the maximum extent practical and then used in the base lifts for the main levees (6' high). The vegetation will either be burned onsite or transported to an approved landfill. The excess fill will be stored in existing project footprint stockpile areas. The existing stockpile areas are within the flood protection influence of the L31N canal and are located on former commercial agricultural use lands. Any trash (weed barrier material, irrigation piping etc) separated from the scraped soils will be transported by truck to an authorized landfill.

II. Factual Determinations (Section 230.11)

a. Physical Substrate Determinations

(1) Substrate Elevation and Slope. The elevation is between five and seven feet, NGVD, and there is almost no slope.

(2) Sediment Type. The substrate at the construction site is limestone rock overlain with marl soil.

(3) Dredged/Fill Material Movement. There will be no appreciable movement of material. It will rest on limestone rock.

(4) Physical Effects on Benthos. All benthos in the fill site will be covered.

(5) Other Effects. Upon completion of construction, the levees would effectively create areas of uplands. The levee surfaces will be mowed on a routine basis to prevent woody vegetation.

(6) Actions Taken to Minimize Impacts (Subpart H). Precautions to confine the fill to the desired roadway-levee alignment will be taken. Existing access roads would be used.

b. Water Circulation. Fluctuation and Salinity Determinations

(1) Water. Water would flow into the closed detention areas from the existing S-332B pump station (NDA) and from the S-332C (SDA).

(a) Salinity. The area is fresh water, and this condition would remain unchanged.

(b) Water Chemistry. No changes would occur.

(c) Clarity. During construction, turbidity would be generated in the very slowly-to nonmoving water. After construction completion, water clarity would be similar to prior conditions.

(d) Color. No changes would occur.

(e) Odor. No changes would occur.

(f) Taste. No changes would occur.

(g) Dissolved Gas Levels. The material is essentially clean soil; there would be moderate biochemical oxygen demand, and no change in dissolved gases.

(2) Current Patterns and Circulation.

(a) Current Patterns and Flow. The surface water now flows very slowly in a southeasterly direction in the area where the levees will be constructed, except when the S-332B pump is operating. More surface water is expected to be retained within Everglades National Park (ENP) due to the new levees and detention-retention area. The new features would also prevent surface water from flowing in a southeast direction, creating a hydraulic ridge to prevent seepage from ENP.

(b) Velocity. The velocity is essentially zero.

(c) Stratification. None.

(d) Hydrologic Regime. The area is characterized by a historic average hydroperiod of six to seven months, but the hydroperiod now is apparently shorter.

(3) Normal Water Level Fluctuations. Zero to a maximum of almost two ft depth in the existing S-332B NDA.

(4) Salinity Gradients. None.

(5) Actions That Will Be Taken to Minimize Impacts (Subpart H) Precautions to confine the fill to the desired berm-levee alignment will be taken. Existing access roads would be used.

c. Suspended Particulate/Turbidity Determinations

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site. Turbidity would be temporary and limited to the time of construction. The fill material has little organics, hence very low quantities of suspendable material. There will be no interaction with surface water as the L-31N canal is too remote to impacted by this activity. This construction activity will be either contained within existing levees or temporary barrier cloth emplacements.

(2) Effects on Chemical and Physical Properties of the Water Column. N/A

(a) Light Penetration. Temporary attenuation during construction. No restrictions are expected upon project completion.

(b) Dissolved Oxygen. No BOD and light attenuation effects would be short and negligible, therefore there would be no effect on Dissolved Oxygen.

(c) Toxic Metals and Organics. None.

(d) Pathogens. None.

(e) Aesthetics. Few observers frequent the area, therefore there would be no effect.

(f) Others as Appropriate. None.

(3) Effects on Biota.

(a) Primary Production, Photosynthesis. No effect because light attenuation from very briefly suspended particulates would be negligible.

(b) Suspension/Filter Feeders. Those confined to water in solution holes of the limestone or unable to move would be covered with the fill. Effects on the biological communities would be negligible.

(c) Sight Feeders. Same b.

(4) Actions taken to Minimize Impacts (Subpart H). Precautions to confine the fill to the desired berm-levee alignment will be taken. Existing access roads would be used.

d. Contaminant Determinations. None present.

e. Aquatic Ecosystem and Organism Determinations (Subpart G)

(1) Effects on Plankton. With the exception of plankton covered by fill, there would be no effect.

(2) Effects on Benthos. With the exception of benthos covered by the fill, there would be no effect.

(3) Effects on Nekton. None.

(4) Effects on Aquatic Food Web. None.

(5) Effects on Special Aquatic Sites. The construction area is adjacent to ENP. The intent of the project is to help create conditions closer to the historic environmental conditions than currently exist.

(a) Sanctuaries and Refuges. As stated above.

(b) Wetlands. Wetland functions and form would be restored to some degree as a result of the project.

(c) Mud Flats. None.

(d) Vegetated Shallows. These are the marl prairies described above. Historic, more natural conditions would be restored to the extent possible.

(e) Coral Reefs. None.

(f) Riffle and Pool Complexes. None.

(6) Threatened and Endangered Species. Consultation with the United States Fish and Wildlife Service is ongoing and will be completed prior to the signing of a FONSI.

(7) Other Wildlife. Wading birds would benefit from significant restoration efforts.

(8) Actions to Minimize Impacts. Precautions to confine the fill to the desired roadway-levee alignment will be taken. Existing access roads would be used.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination. No mixing zone as no surface water is available for this project.

(2) Determination of Compliance with Applicable Water Quality Standards (present the standards and rationale for compliance or non-compliance with each standard). All standards will be complied with, unless a variance should be required for unforeseen reasons. A Section 401 water quality certification will be sought from the State of Florida.

(3) Potential Effects on Human Use Characteristics. Non-consumptive uses, such as bird watching, would be enhanced within ENP.

(a) Municipal and Private Water Supply. No effect.

(b) Recreational and Commercial Fisheries. The project would contribute to long term improvement by increasing fresh water flows into Florida Bay.

(c) Water Related Recreation. Little to no effect.

(d) Aesthetics. Small direct effect, due to few observers.

(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. The project is intended to restore ecological values to the southeastern portion of ENP.

(f) Determination of Cumulative Effects on the Aquatic Ecosystem. To the extent that the project for Modified Water Deliveries (MWD) to ENP is implemented successfully, MWD should interact synergistically with this project to provide significant restoration of ecological integrity to the southeast Everglades.

(g) Determination of Secondary Effects on the Aquatic Ecosystem. All benefits to flora and fauna would be secondary, in that the direct effects would be hydrological, but the secondary effects would be ecological and beneficial.

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

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

b. The alternative that will be selected from an array of practicable alternatives will be that which best meets the study objectives. It is probable that no practicable alternative is possible that will not involve discharge of fill into waters of the United States.

c. The discharge of fill materials would not cause or contribute to, after consideration of disposal site dilution and dispersion, violation of any Florida water quality standards. The discharge operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

d. The placement of fill material would not jeopardize the continued existence of any species listed as threatened or endangered under the Endangered Species Act of 1973, as amended. Approximately 480 acres of land currently designated as Critical Habitat for the CSSS is adjacent to the project area and would potentially be adversely affected due to the proposed NDA because of the potential hydraulic ridge that would be created by this project. This ridge will potentially increase the water level within the ENP. However, this land has been previously converted to agriculture and although designated as Critical Habitat, the USFWS has no longer characterized it as suitable habitat for the CSSS (November 2007, 72 FR 62736; 2007 IOP EIS).

e. The placement of fill materials would not result in significant adverse effects on human health and welfare, municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, wetlands, 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, aesthetics, and economic values will not occur.

f. Appropriate steps to maximize positive impacts on aquatic systems will be included in plans for the recommended plan.

APPENDIX D

COASTAL ZONE MANAGEMENT ACT FEDERAL CONSISTENCY DETERMINATION

EXPANSION OF THE C-111 DETENTION AREA AND ASSOCIATED FEATURES PROJECT

SOUTH DADE, FLORIDA

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COASTAL ZONE MANAGEMENT ACT AND FLORIDA COASTAL MANAGEMENT PROGRAM FEDERAL CONSISTENCY DETERMINATION

Enforceable Policy. Florida State Statues considered "enforceable policy" under the Coastal Zone Management Act (www.dep.state.fl.us/cmp/federal/24_statutes.htm).

Applicability of the Coastal Zone Management Act.

The following summarizes the process and procedures under the Coastal Zone Management Act for Federal Actions and for non-Federal Applicants*.

Item	Non-Federal Applicant (15 CFR 930, subpart D)	Federal Action (15 CFR 930, subpart C)
Enforceable Policies	Reviewed and approved by NOAA (in FL www.dep.state.fl.us/cmp/federal/24_statutes.htm)	Same
Effects Test	Direct, Indirect (cumulative, secondary), adverse or beneficial	Same
Review Time	6 months from state receipt of Consistency Certification (30-days for completeness notice) Can be altered by written agreement between State and applicant	60 Days, extendable (or contractible) by mutual agreement
Consistency	Must be Fully Consistent	To Maximum Extent Practicable**
Procedure Initiation	Applicant provides Consistency Certification to State	Federal Agency provides "Consistency Statement" to State
Appealable	Yes, applicant can appeal to Secretary (NOAA)	No (NOAA can "mediate")
Activities	Listed activities with their geographic location (State can request additional listing within 30 days)	Listed or Unlisted Activities in State Program
Activities in Another State	Must have approval for interstate reviews from NOAA	Interstate review approval NOT required
Activities in Federal Waters	Yes, if activity affects state waters	Same

* There are separate requirements for activities on the Outer Continental Shelf (subpart E) and for "assistance to an applicant agency" (subpart F).

** Must be fully consistent except for items prohibited by applicable law (generally does not count lack of funding as prohibited by law, 15 CFR 930.32).

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 project is not located seaward of the mean high water line and would not affect shorelines or shoreline processes.

Chapters 186 and 187, State and Regional Planning. These chapters establish the State Comprehensive Plan which 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 orderly social, economic and physical growth.

Response: The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the environment. The proposed work will be coordinated with the State through review of this document.

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: The proposed project purpose is to retain current flood protection measures and enhance the hydrologic regime in south Florida. Therefore, this work would be consistent with the efforts of Division of Emergency Management.

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; 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 existing habitat within the project area consists of wetlands, former agricultural lands, upland vegetation, and borders Cape Sable Seaside Sparrow critical habitat. The Corps determination is that protected species are not likely to be adversely affected by, and no adverse modification to critical habitat will occur from, the project. Preconstruction surveys will be conducted to minimize any disturbance in compliance with the USFWS consultation. Wetlands within the project area are of low quality due to the use of the land as former drained agriculture. The Modwaters Deliveries projects are expected to restore many acres of wetlands through the betterment of the current hydrologic regime to a more natural one. See the Environmental Assessment for further discussion of wetlands and cultural resources (Sections 4.5 and 4.15).

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.

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 improve environmental conditions at state parks or aquatic preserves in the region. The project is consistent with this chapter.

Chapter 267, Historic Preservation. This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: Archival research, field work and consultation with the State Historic Preservation Officer (SHPO), have been conducted in accordance with the National Historic Preservation Act, as amended; the Archeological and Historic Preservation Act, as amended and EO 11593. Consultation between the SHPO and other concerned parties commenced on June 28, 2005 stating a Phase I Cultural Resources Survey was necessary. A letter dated August 16, 2005 was received from the SHPO concurring with the Corps determinations on four sites within the project area and that the project will not affect historic properties included in or eligible for inclusion in the National Register of Historic Places. The project will be consistent with the goals of this chapter. A new SHPO letter is being coordinated for the additional 1400 acres of land for the proposed project.

The project will not have an adverse effect on any historic properties included in or potentially eligible for inclusion in the National Register of Historic places. Conditions to protect undiscovered resources will be implemented as follows: Language will be included in construction contract specifications outlining the steps to be taken in the event that undiscovered historical properties are encountered. An informational training session, developed by a professional archaeologist, will be conducted for the contractor's personnel to explain what kinds of archaeological/cultural materials might be encountered during construction of the impoundment, and the steps to be taken in the event these materials are encountered. A professional archaeologist will conduct periodic monitoring of the project area during construction to determine if activities are impacting unanticipated cultural resources. The proposed action is consistent with these Acts. Historic preservation compliance will be completed to meet all responsibilities under Chapter 267.

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: Contribution of the project area to the State's tourism economy would not be compromised by project implementation. The project would be compatible with tourism for this area due to the potential increase in water levels within ENP. Therefore, the project would be consistent with the goals of this chapter.

Chapters 334 and 339, Transportation. This chapter authorizes the planning and development of a safe, balanced, and efficient transportation system.

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

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: This project is inland and not expected to adversely affect saltwater resources.

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 statue. Coordinated planning has been done with this agency to ensure compatibility with established policies. The project is consistent with the goals of this chapter.

Chapter 376, Pollutant Spill Prevention and Control. This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: This work does not involve the transportation or discharging of pollutants. Conditions will be placed in the contract to handle any inadvertent spill of pollutants. Therefore, the project would comply with this chapter.

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 work does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore does not apply.

Chapter 380, Environmental Land and Water Management. This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development. This chapter also deals with the Area of Critical State Concern program and the Coastal Infrastructure Policy.

Response: The work does not involve land development as described by this chapter; therefore, this chapter is not applicable.

Chapter 388 (Mosquito/Arthropod Control). Chapter 388 provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

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

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 Protection.

Response: An Environmental Assessment has been prepared and will be reviewed by the appropriate resource agencies including the Department of Environmental Protection.

Chapter 582, Soil and Water Conservation. This chapter establishes policy for the conservation of the 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 implementation will include appropriate erosion control plans and measures to ensure compliance.

APPENDIX E

WETLAND ASSESSMENT REPORT

EXPANSION OF THE C-111 DETENTION AREA AND ASSOCIATED FEATURES PROJECT

SOUTH DADE, FLORIDA

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C-111 North Detention Area (NDA), Wetland Verification

Date: March 22, 2012

Attendees: Jerilyn Ashworth, Marissa Krueger (FDEP)
Ingrid Sotelo, Stacie Auvenshine (USACE)
John Shaffer, Jorge Jaramillo, Bob Taylor, Jason Smith (SFWMD).

Narrative on Findings:

On March 22, 2012 staff from FDEP, USACE, and SFWMD conducted a wetland assessment for the proposed footprint of the C-111 North Detention Area (NDA). One isolated depressional area was observed within the project footprint. Staff delineated the area according to Chapter 62-340 Florida Administrative Code (F.A.C.) at Soil Plug 2. It was determined that the depressional area and surrounding project footprint did not qualify as a wetland as pursuant to Chapter 62-340. The attached photo report provides the field observations and investigations of the vegetation and soil plugs.

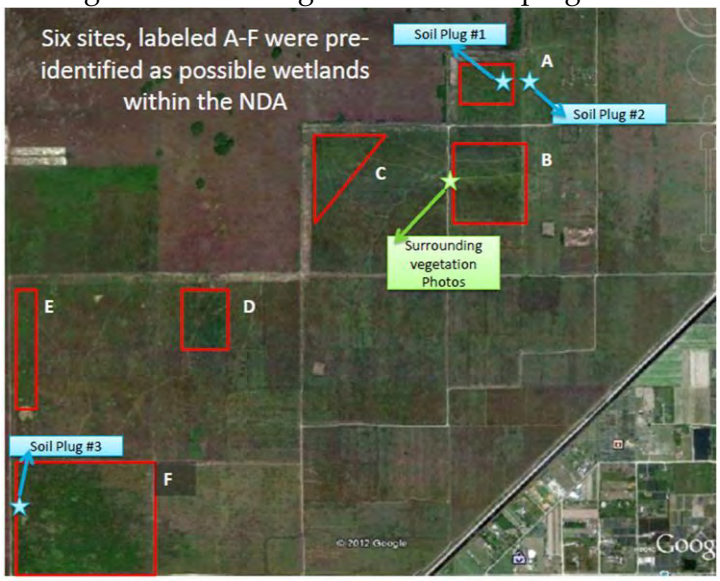

Figure 1 Location Map of the soil Plugs are the areas evaluated for the presence of wetlands

The 1st soil plug sampled within Area A, along the East Boundary showed upland sandy soils characteristics. The soil plug texture when moistened was friable and did not clump. Numerous (coarse) rocks were present in the soil. The surrounding vegetation included primarily facultative (FAC) vegetation. Broom sedge, *Andropogon virginicus* (FAC), occurred at <25% coverage and there was >80% coverage of *Pennisetum purpureum,* which is an exotic invasive.

The 2nd soil plug sampled was located east of the first. There was a distinctive decrease in elevation and vegetation change. Vegetation surrounding the plug included: 80% cover of *Hydrocotyle spp.*, dollar weed, obligate (OBL); <2%Marsh pink, *Sabatia calycina*, OBL; and >80% cover of the invasive exotic *Ceratopteris thalictroides* (water sprite) were observed within the immediate vicinity.

Soil Plug #2 consisted of one horizon. The 1st and only soil horizon consisted of homogenous rocky soil 4 inches thick to the cap rock. Numerous (coarse) rocks were present in the soil. When another sample of the soil was moistened it was molded into a ball and when pressed formed a 2" ribbon. The soil color had a Munsell 10YR value 4 and chroma 2. On the first rub grit and rocks were present and on the 2nd rub, the sediment in between the rocks was greasy. The sample was rubbed another 3 or 4 times and it was still greasy. Since the sample continued to be greasy after the 3rd and 4th rubs, organic soil is present.

The Natural Resources Conservation Service (NRCS) Guide for Field Indicators in the United States: Determining the Texture of Soil Materials High in Organic Carbon states: "*Material high in organic carbon could fall into three categories: organic, mucky mineral, and mineral. In lieu of laboratory data, the following estimation method can be used for soil material that is wet or*

nearly saturated with water. This method may be inconclusive with loamy or clayey mineral soils. Gently rub the wet soil material between forefinger and thumb. If upon the first or second rub the material feels gritty, it is mineral soil material. If after the second rub the material feels greasy, it is either mucky mineral or organic soil material. Gently rub the material two or three more times. If after these additional rubs it feels gritty or plastic, it is mucky mineral soil material; if it still feels greasy, it is organic soil material. If the material is organic soil material, a further division should be made. Organic soil materials are classified as sapric, hemic, or fibric. Differentiating criteria are based on the percentage of visible fibers observable with a hand lens in an undisturbed state and after rubbing between thumb and fingers 10 times. Sapric, hemic, and fibric correspond to the textures muck, mucky peat, and peat."

Additionally the soils for the area were researched using the USDA soils website. The Area of Interest (AOI) encases the project footprint, this is an approximation and it is represented with the blue polygon below. The soils identified within the project footprint are 73.6% Chekika Very Gravelly Loam, 24.4 % Biscayne Gravelly Marl, Drained, and 2% Biscayne Marl-Rock Outcrop (in the locations of the wetland verification). The Chekika soil is not a saline soil, it does not experience frequent flooding, and it not a depressional area (wetlands map unit requirements). Therefore it cannot be considered a hydric soil based on the mapping components as well. The Biscayne Gravelly Marl, Drained and Biscayne Marl Rock Outcrop Complex have concave characteristics that could support wetland habitat if the vegetation and soils were not disturbed. The soil characteristics found within the NDA are explained in more detail in Figure 3.

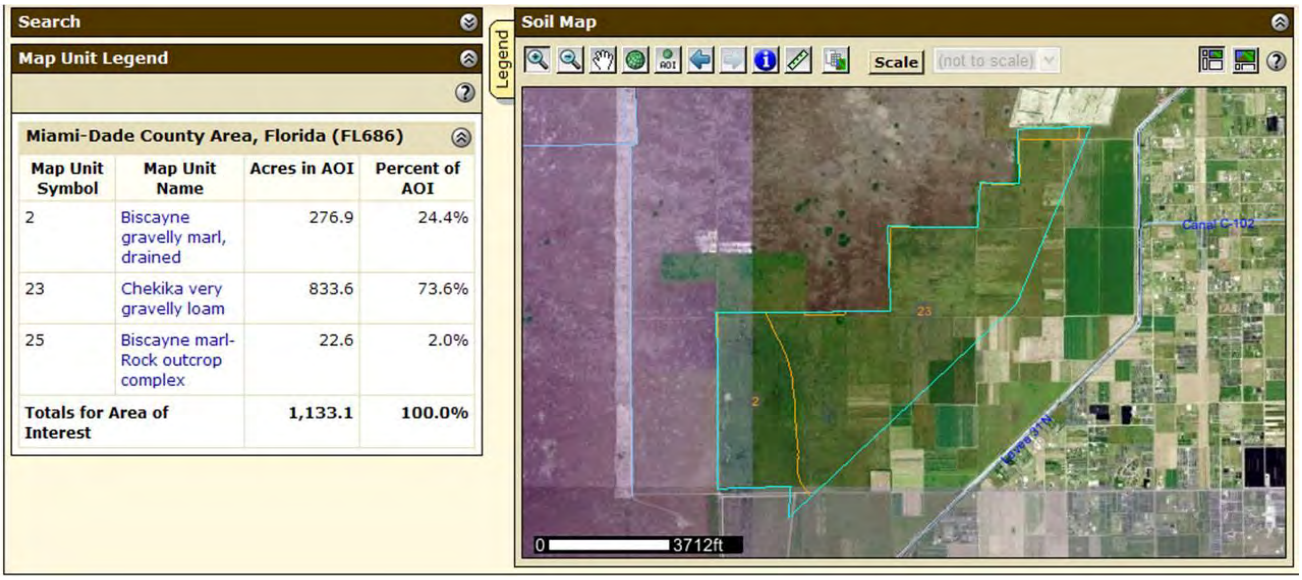

Figure 2. Soils located within the approximate project footprint. The majority of the soils are Chekika Very Gravelly Loam at 73.6%, and Biscayne gravelly marl drained, at 24.4%. Only a small portion (2.0%) just south of the STA is classified as Biscayne marlrock outcrop complex (USDA website).

The surrounding vegetation between Areas B and C closely resembled most of North Detention Area. The area appeared to be uplands with dominating plant vegetation, an invasive exotic, *Pennisetum purpureum.* The soils had rocky, sand like appearances. The only area that appeared to be possibly wet was Area F, located in the southwest corner of the NDA. The local land manager from the SFWMD indicated that this area is seasonally inundated. A soil plug was taken within the Area F. The soils within Area F, as indicated by the USDA website can be wetland soils. However, this area has been disturbed by farming for decades.

The vegetation surrounding the plug did not support that of a wetland. It included a sub canopy of 100% salt bush, *Baccharis halimifolia*, Facultative (FAC) and <40% ground cover of *Hydrocotle spp.,* OBL.

The soil plug within Area F only had one soil horizon. The 1st and only soil horizon consisted of homogenous rocky soil 4 inches thick to the cap rock. Numerous (coarse) rocks were present in the soil. When another sample of the soil was moistened it was molded into a ball and when pressed formed a 1" ribbon. The soil color had a Munsell 10YR value 4 and chroma 2. On the first rub grit and rocks were present and on the 2nd rub, the sediment in between the rocks was greasy. The sample was rubbed another 3 or 4 times and it was still greasy. Since the sample continued to be greasy after the 3rd and 4th rubs, organic soil is present. As stated above, organic soil does not qualify as hydric soil and cannot be used as a wetland soil.

In summary, the site vegetation and soils analysis concluded that the proposed project footprint for the C-111 North Detention Area did not contain wetlands as pursuant to Chapter 62-340, F.A.C.

Map Unit Composition

Chekika and similar soils: 88 percent
Minor components: 12 percent

Description of Chekika

Setting

Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Marly and loamy marine deposits over oolitic limestone

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 2 to 10 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 80 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Very low (about 0.5 inches)

Interpretive groups

Land capability (nonirrigated): 3w

Typical profile

0 to 5 inches: Very gravelly loam
5 to 9 inches: Unweathered bedrock

Miami-Dade County Area, Florida

2—Biscayne gravelly marl, drained

Map Unit Setting

Elevation: 0 to 10 feet
Mean annual precipitation: 62 to 70 inches
Mean annual air temperature: 73 to 81 degrees F
Frost-free period: 358 to 365 days

Map Unit Composition

Biscayne, drained, and similar soils: 90 percent
Minor components: 10 percent

Description of Biscayne, Drained

Setting

Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy marine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 1 to 20 inches to lithic bedrock
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 90 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Very low (about 1.1 inches)

Interpretive groups

Land capability (nonirrigated): 3w

Typical profile

0 to 7 inches: Gravelly marly silt loam
7 to 11 inches: Unweathered bedrock

iami-Dade County Area, Florida

25—Biscayne marl-Rock outcrop complex

Map Unit Setting

Elevation: 0 to 30 feet
Mean annual precipitation: 62 to 70 inches
Mean annual air temperature: 73 to 81 degrees F
Frost-free period: 358 to 365 days

Map Unit Composition

Biscayne and similar soils: 55 percent
Rock outcrop: 42 percent
Minor components: 3 percent

Description of Biscayne

Setting

Landform: Marshes on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy marine deposits

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 1 to 20 inches to lithic bedrock
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 90 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Very low (about 0.7 inches)

Interpretive groups

Land capability (nonirrigated): 7w

Typical profile

0 to 4 inches: Marly silt loam
4 to 8 inches: Unweathered bedrock

Figure 3. Explanations and characteristics of soils found within the project footprint taken from the USDA website.