APPENDIX B

SECTION 404(b) CLEAN WATER ACT EVALUATION

C-111 SOUTH DADE S-332B AND S-332C PUMP STATION REPLACEMENT

SOUTH DADE, FLORIDA

This page intentionally left blank

SECTION 404(b) CLEAN WATER ACT EVALUATION

CANALL 111 (C-111) SOUTH DADE PROJECT
GENERAL RE-EVALUATION REPORT AND ENVIRONMENTAL ASSESSMENT
REPLACEMENT OF INTERIM PUMP STATIONS
S-332B AND S-332 C

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 Environmental Assessment (EA) for the project location.

b. General Description

Authority and Purpose. In accordance with the 29 April 2014 memorandum issued by the Assistant Secretary of the Army for Civil Works (ASA (CW)), USACE was directed to develop a post authorization change report (PACR) to examine replacing the two pump stations, possible alternative measures, cost sharing, depreciation payments, work-in-kind, and the overall schedule. On 14 August 2014, USACE and SFWMD executed an amendment to the 1995 Project Cooperation Agreement (PCA).

The C-111 SD Project is part of the larger Central and Southern Florida (C&SF) Project. The purpose of the C&SF Project, first authorized in 1948, includes flood control, agricultural water supply, municipal and industrial water supply, preservation of fish and wildlife, water supply to Everglades National Park (ENP), preservation of ENP, prevention of saltwater intrusion, drainage and water control, groundwater recharge, recreation, and navigation.

Modifications to the C&SF Project in southern Dade County were authorized by the Flood Control Act of 1962 (Public Law 87-874). Congress recognized "the need to improve the supply, distribution and conservation of water resources in Central and Southern Florida to meet growing urban and agricultural needs and to provide sufficient flow to preserve Everglades National Park". This authorization was further modified by the Flood Control Act of 1968 (Public Law 90-483) as the ENP-South Dade Conveyance System (SDCS) Project. The Act authorized modifications to the existing C&SF Flood Control Projects in the interest of improved conservation and distribution of available water and extended flood protection.

The 1989 ENP Protection and Expansion Act added 109,000 acres of wetlands and former agricultural lands to the Park and expanded ENP's former eastern boundaries from approximately the location of the L-67 extension canal eastward to the current ENP boundary. When Congress authorized expansion of ENP lands, the C-111 Canal needed modifications so that it would no longer draw groundwater out of the new addition to ENP.

USACE and SFWMD developed the 1994 Final Integrated General Reevaluation Report and Environmental Impact Statement (GRR/EIS), C-111, South Dade County, Florida. The 1994 GRR/EIS addressed restoration of the ecosystem in Taylor Slough and the eastern panhandle of

ENP which were affected by the C&SF flood control project in the C-111 Basin. The 1994 GRR/EIS also focused on maintaining flood protection for the agricultural activities on adjacent lands. The 1994 GRR/EIS described a conceptual plan for five pump stations and levee-bounded water retention areas to be built west of the L-31N Borrow Canal between the 8.5 Square Mile Area (SMA) and the Frog Pond Detention Area to its south. These features were designed to reduce seepage out of ENP by operating the inflow pump stations to maintain target L-31N Canal stages in order to maintain the authorized flood protection (40% removal of Standard Project Flood flows) to agricultural lands east of the L-31N Canal. The 1994 GRR/EIS plan provided the operational capability and flexibility to assist in restoring the ecological integrity of Taylor Slough and the eastern panhandle area of the Everglades and flood protection to the agricultural interests adjacent to the C-111 Canal.

In order to provide a timely solution to address environmental problems in Taylor Slough and Florida Bay, the features described in the 1994 C-111 SD GRR/EIS would be implemented in two stages: (1) the facilities planning stage; and (2) the operation planning stage. The facilities planning stage included identifying locations and capacities of pumps, canals, levees and required appurtenances as described in the 1994 GRR/EIS. The C-111 SD operations planning stage was intended to be combined with the development of the operational plan for the Modified Water Deliveries to ENP (MWD) Project. This strategy would optimize environmental benefits of the recommended plans identified for both projects.

While a preliminary operational plan for the then-proposed C-111 SD project was included in the 1994 GRR/EIS, it further identified the need for a refined operation plan to be developed in coordination with ENP, the U.S. Fish and Wildlife Service (USFWS), the SFWMD and other agencies prior to completion of project construction. For operational planning, the purposes of the MWD and C-111 SD projects are complementary. The purpose of the MWD project was to improve water deliveries into ENP, and to the extent practicable, restore the natural hydrological conditions within ENP. The purposes of the C-111 SD project included ecosystem restoration in Taylor Slough and the eastern panhandle of ENP, while preserving the authorized level of flood protection for agricultural areas in the C-111 Basin. Combined with the MWD project, the North Detention Area (NDA), South Detention Area (SDA), and the S-332D Detention Area features of the C-111 SD Project currently form a hydraulic ridge that extends from the 8.5 SMA to Taylor Slough for the combined purposes of reducing groundwater seepage losses from ENP while maintaining flood protection for adjacent agricultural lands. The Combined Operational Plan (COP) study, which is currently ongoing and scheduled for completion in August 2020, will result in a comprehensive integrated water control plan for the operation of the water management infrastructure associated with the MWD and C-111 SD Projects.

A 2016 Limited Reevaluation Report (LRR) served as the PACR that documented prior design refinements to the 1994 GRR/EIS plan that were incorporated into the project construction (Contracts 1 through 8) as well as features proposed for future construction (Contract 9), as coordinated with the USACE South Atlantic Division (SAD). C-111 SD features already constructed were addressed in previous National Environmental Policy Act (NEPA) documents. The "2016 C-111 SD Modifications to the North and South Detention Area and Associated Features EA" evaluated features proposed in the 2016 LRR – options for connecting the MWD Project 8.5 SMA to the C-111 SD Project, and flow ways through the 8.5 SMA Detention Cell and

the NDA and SDA of the C-111 Project, to better maintain a continuous hydrologic ridge along the eastern boundary of ENP that extends from the 8.5 SMA to Taylor Slough. As of July 2019, construction of the C-111 SD project is functionally complete.

In 1999, as the C-111 SD project was beginning to be implemented, the U.S. Fish and Wildlife Service issued a Jeopardy Biological Opinion (BO) on the Experimental Program, MWD and C-111 SD Projects for the benefit of the endangered Cape Sable Seaside Sparrow (CSSS). In response to this BO, construction was expedited on the S-332B interim pump station in 2000. The S-332C interim pump station was constructed in 2003, also in response to the 1999 Jeopardy BO and subsequent development of the 2002 Interim Operational Plan (IOP) for Protection of the CSSS. The pump station capacities were increased, compared to the 1994 C-111 SD GRR/EIS, primarily to provide additional capacity in conjunction with the elimination of the S-332A pump station following the MWD 8.5 SMA modifications approved in the 2000 8.5 SMA GRR and to create more favorable hydroperiods in sparrow habitat in ENP as part of the IOP. The 2016 LRR approved the increase in capacity and codified all the design modifications subsequent to the 1994 GRR/EIS. The two aging interim pump stations are currently showing signs of stress, require extensive repairs and have reliability concerns. The interim pump stations are poorly protected from storm damages and are at a high risk of sustaining catastrophic damages. Permanent pump stations were envisioned in the original authorization.

General Description of Fill Material and Impacted Areas

(1) General Characteristics of Material:

The NDA and the 8.5 Square Mile Area (SMA) detention cell are both prior converted agricultural land sites, which have previously been scraped down to the caprock/consolidated soils (Miami/oolitic limestone). Within the SDA footprint there is a mix of prior converted cropland (created by rockplowing) and former ENP wetlands. 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 existing former agricultural surface soils were created by rockplowing the limestone surface to create a soil matrix for agricultural use. The former ENP lands were never rockplowed but their functional wetland values were negatively impacted (i.e., significantly reduced hydroperiods) by draining prior to construction of the SDA.

All berms have a 1:4 slope and are 6 feet above grade.

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

Feature	Description of Component	Volume of Material (CY)
Demolition of S-332B and Channel	Removal of embankment	15,537
Demolition of S-332C and Channel	Removal of embankment	14,374
New Channel from S-332B	Embankment construction for channel sides	35,200
	Concrete channel lining	4,222

Feature	Description of Component	Volume of Material (CY)
	Degrade existing embankment crossings	2,376
New Channel for S-332C	Embankment construction for channel sides	33,440
	Concrete channel lining	4,011
	Degrade existing embankment crossings	2,376
Lateral Culvert	Culvert soil cover and embankment	597
New Outfall Parallel Weir (S-332B)	Concrete trapezoidal broad crested weir	203
	Embankment construction for channel-weir transition sides	4,471
	Degrade existing embankment crossings	1,100
New Outfall Parallel Weir (S-332C)	Concrete trapezoidal broad crested weir	203
	Embankment construction for channel-weir transition sides	4,471
	Degrade existing embankment crossings	1,100
New Levee along NDA	Embankment construction	18,707
Degrade Levees along NDA	Removal of embankment	15,620
Levee Modification	Raising of embankment	5,537
	Degrade existing embankment crossings	5,702
NDA Expansion	Valve culvert connection	0

Table B-1: Description of construction features and volume of fill material per feature.

Wetland Impacts

According to the jurisdictional determination in the 2019 S332 B and C Pumps Site Biological Conditions Report prepared by SFWMD, the wetland habitat in the project area was concluded to be non-forested freshwater marl prairie wetlands, seasonally inundated to a depth of 20-25 centimeters. The NDA and C-111 buffer lands contain previously scraped cropland that has been recolonized by weedy species. These wetland areas are not high quality or pristine, and would benefit from rehydration. The construction of the new channels, parallel weirs, and pump stations is expected to permanently impact approximately 15.8 acres of non-forested, disturbed wetland habitat, 2.5 acres of which sits within the SDA footprint. Construction area, levee degradation and interim pump station removal will result in approximately 10.1 aces of temporary wetlands impacts during the construction phase. The concrete lined channels will likely cause permanent wetland effects within the C-111 buffer zone, but the improved hydrology provided by pump operations will benefit the surrounding wetland area. Removal of existing culverts and travel road at S-332B will incorporate material into the relocated levees as part of the NDA expansion. Expansion of the NDA by 7.1 acres in addition to 4.7 acres of current NDA area that will no longer be used directly

for project purposes uses will allow for the enhancement of 11.8 acres of wetland habitat. The interior of the NDA will be cleared and grubbed, repurposing useable material into levee modification.

All acreages will be updated and confirmed prior to construction through the Department of Environmental Protection (DEP) permitting process to obtain water quality certification under Section 401 of the Clean Water Act, and upon completion of a wetland assessment report. **Table B-2** shows the total impacted acreages of all alternatives, including the Preferred Alternative (Alternative 3).

Impact Level	Alternative 1- No Action	Alternative 2- Extended Concrete Channel	Alternative 3- Short Concrete Channel
Permanent	0	21.8	15.8
Temporary	0	10.1	10.1
Enhancement	0	11.8	11.8

Table B-2. Acreages of Wetland Impact Levels by Alternative.

Source of Material

The material used to construct the new flow channels will be material from the removed and degraded levees.

Description of the Project Site

(1) Location (**Figure B-1**). Placement of the new pump stations will be in close proximity to the existing S-332B and S-332C interim structures located along the L-31N Canal, approximately 300 feet downstream (south) and 300 feet further west from their respective current locations. The NDA to the north of the C-111 buffer zone will be extended by 7.1 acres to the south to allow rehydration of potential wetland habitat.

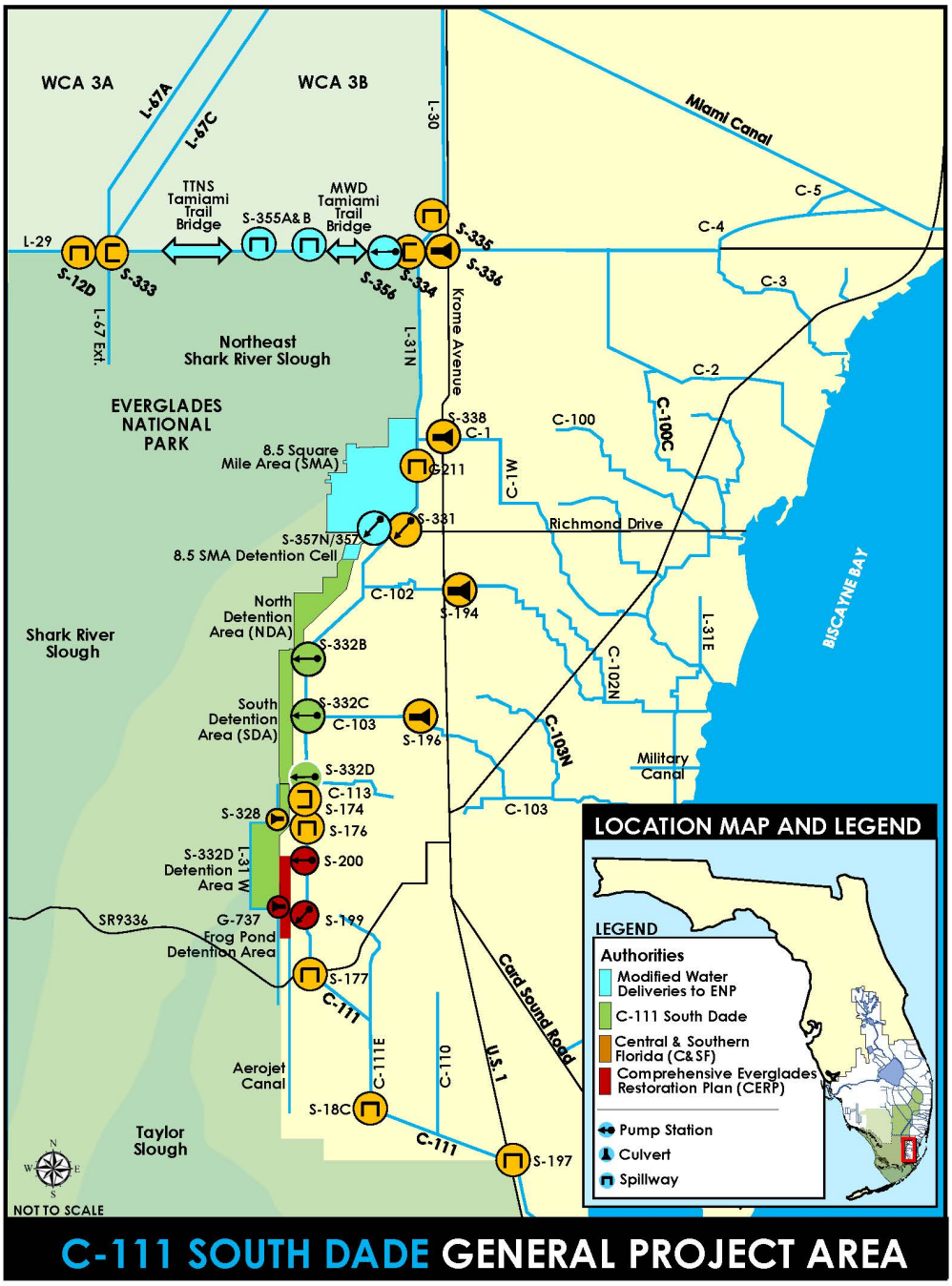

Figure B-1: Project Location

(2) Size (acres). The overall construction footprint of the pump stations for Alternative 3 will be approximately 34 acres with approximately 16.6 acres of irreversible wetlands impacts as a direct result of feature construction. There is a proposed vertical lift slide gate culvert connection that allows flows from the SDA, the standard operating procedure, to the NDA, as required to allow flows northward. To facilitate the connection to the NDA, the NDA will be extended southward, increasing the NDA by approximately 7.1 acres of potential revegetated wetland habitat. In addition, S-332B includes demolition of existing discharge culverts and has been

replaced with approximately 100 feet of bypass discharge culvert at the southern end of the NDA expansion. A slide gate will be installed to control the flow from the concrete channel to the NDA reservoir. Based on the preliminary hydraulic design, the discharge culvert to the NDA will be a gated box culvert with 2 barrels, with a 5.8 feet span by 6-feet rise.

(3) Type of Site (confined, unconfined, open water). The NDA area is unconfined, previously farmed 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 a yearly basis), there may be standing surface water in these areas under flood protection for brief intervals (hours to a few days). The SDA and 8.5 SMA are within confined detention areas (since ~2007) with depths that have reached a maximum of approximately 2 ft during the wet season due to pumping and rainfall. The duration of standing water in these confined areas has lasted from a few days to several weeks continuously. Lands within the SDA and 8.5 SMA are former agricultural lands except for approximately 40 acres of wetland that was scraped to caprock within the SDA to allow placement of clean limestone to create a 2-3 ft elevation (above grade) flowway berm. The discharge outlets will be built on this revegetated wetland.

(4) Type(s) of Habitat. The habitat in the NDA, the SDA, and the 8.5 SMA detention cell is rocky glades/marl prairie converted to agriculture by rockplowing and drainage (flood protection project area). Some of the SDA berm footprint area and all of the 8.5 SMA construction will occur in formerly rockplowed areas previously scraped to caprock. These scraped areas have been revegetated and rehydrated and are now classified as freshwater marsh wetlands. 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.

(5) Timing and Duration of Discharge (during construction activity). Dewatering for construction of the pump station foundation may be required. During existing pump station demolitions, there may be local sediment disturbance but discharge is expected to be negligible. Discharges from dewatering activities will be managed such that turbidity in the adjacent canal does not exceed 29 NTUs above background. Produced groundwater may be directed to an upland containment area. The contractor will be required to minimize any discharges to the adjacent canal due to dewatering activities that may be required. Any dewatering activity must be approved by the FDEP/SFWMD as required and that approval will be obtained by the contractor. Project construction is expected to take 1-2 years, with some of the construction activity preferably conducted in the dry season. Once the new channels and pumps have been constructed, discharge will flow from each pump station down the concrete-lined channels to their respective weirs. Each pump station (2), has four 125 cfs diesel pumps and one 75 cfs electric pump for a total of 575 cfs. The maximum capacity would be limited to 575 cfs by the Water Control Plan. In addition to the maximum design capacity, a backup electric pump unit of 75 cfs is also recommended to address reliability concerns with the electric pump, provide further operational flexibility to manage the NDA and SDA stages by allowing for additional combinations of pump capacities. The additional 75 cfs electric unit will be considered as a backup unit to maintain operational flexibility during periods when one or more pump units are offline for maintenance or repairs.

c. Description of Disposal Method: Organic materials removed from the levee that are not reused in construction of the channels will be burned onsite using an air curtain burner and in accordance with FDEP and Florida Forest Service permit requirements unless the contractor decides on another method approved by COE/SFWMD. Offsite disposal of vegetation at local landfills is strongly discouraged due to limited landfill capacity and disposing of vegetation onsite will minimize opportunities for the spread of exotic plant species on SFWMD lands.

II. Factual Determinations (Section 230.11)

a. Physical Substrate Determinations

(1) Substrate Elevation and Slope. The ground 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 dredging or fill activity in the adjacent canal during the demolition of the existing pump stations. All of the remaining construction activities will be within former agricultural lands or within the existing detention area. The existing detention area is considered an ephemeral wetland. There will be no appreciable movement of material. It will rest on limestone rock.

(4) Physical Effects on Benthos. All potential benthos in the fill site within the existing detention area permanent construction footprint will be covered. The fill site within the detention area will typically be dry during an average year for at least 6 months. During a dry year, the fill site within the detention area may be dry during the entire water year.

(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 the S-332C pump station (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 standing surface water during periods of high rainfall. Turbidity within the L-31N canal will be temporarily elevated during demolition of the 2 pump stations but will be managed to not exceed 29 NTU above background during the demolition or construction activities. Any

dewatering activity will have the same constraints if there is a discharge to the L-31N canal of produced groundwater to support the pump station foundation work. 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. Gravity-driven surface water flow is from west to east, generally. The surface water currently flows very slowly in a southeasterly direction in the area where the berms will be constructed, except when the S-332B pump is operating. More surface and ground water is expected to be retained within ENP due to the new levees and concrete lined flow channels delivering water to the western internal detention cell. The new features would also prevent surface and ground water from flowing in a southeast direction, creating a more effective hydraulic ridge to reduce seepage from ENP. The majority of water flow in this area (excluding the L-31N canal) is subsurface.

(b) Velocity. The velocity is essentially zero when the pumps are off. Very slow velocities occur in the majority of the detention areas when the pumps are on except at the immediate vicinity of the pump discharge points. For the overflow weirs, during overflow conditions (internal berms discharging to the main internal cells) velocities are expected to be less than 1 ft/sec.

(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 S-8.5 SMA, NDA, and SDA.

(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 berms will be constructed using coarse materials (i.e., clean crushed limestone) and fill material with a low organic content that are not expected to cause long-term impacts to turbidity. There will be interactions with surface water in the L-31N canal during construction of the new pump station

and temporary increases in turbidly may occur. There will be also be temporary increases in turbidity within the L-31N canal during the pump station demolition. Turbidity will be managed using Best Management Practices (BMP's) to comply with state WQ standards.

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

(a) Light Penetration. Temporary attenuation during construction/demolition of the pump stations within the L-31N canal. Turbidity will not be allowed to exceed 29 NTU above background in the L-31N canal during the construction and demolition activities. No runoff from the upland construction areas will be allowed to enter the L-31N canal. No restrictions are expected upon project completion.

(b) Dissolved Oxygen. No BOD; 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. No aquatic biota is expected to change, as the lands both inside and outside the flowway berms will be dry during part of an average year.

(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 as 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. Only in areas where permanent wetlands occur would there be any effect on plankton. With the exception of plankton covered by fill, there would be no effect.

(2) Effects on Benthos. See above. No significant benthic organisms are expected to be present with the exception of benthos covered by the fill immediately under the berms, 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 those that 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 USFWS was completed on March 20, 2019. USFWS concurred with COE's determinations of "no effect" and "May Affect Not Likely to Adversely Affect" listed species reported from the project area.

(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. There is no mixing zone in the detention area because no surface water is available for this project. For the demolition and construction of the pump stations, it is expected that turbidity barriers will avoid the need for a mixing zone in the L-31N canal.

(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 Florida Department of Environmental Quality.

(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 not change flows downstream in C-111. Building the flowways will allow future Operational Plans more flexibility and provide some relief from adverse flooding in the southwest corner of the 8.5 SMA. However, this is a construction only project.

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

(d) Aesthetics. Small temporary 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 by creating a more effective hydraulic ridge to inhibit ground water seepage out of ENP. Human use is not expected to be impacted by this project.

(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. The hydraulic ridge is critically located on the west side of the Detention Areas

and could potentially increase the hydroperiod or water level within the ENP, improving sparrow habitat.

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.