

# **EXECUTIVE SUMMARY**

## **DRAFT ENVIRONMENTAL IMPACT STATEMENT**

### **EVERGLADES AGRICULTURAL AREA A-1 SHALLOW FLOW EQUALIZATION BASIN IN PALM BEACH COUNTY, FLORIDA**

#### **A. BACKGROUND**

The South Florida Water Management District (SFWMD) is requesting regulatory authorization from the United States Army Corps of Engineers (USACE), in the form of a Department of the Army (DA) permit pursuant to Section 404 of the Clean Water Act, to construct a shallow Flow Equalization Basin (FEB) on the A-1 project site in the Everglades Agricultural Area (EAA). The A-1 project site is approximately 16,152 acres and bordered to the east by US Highway 27, to the south by Stormwater Treatment Area (STA) 3/4, to the west by an area known as the Holey Land Wildlife Management Area and to the north by agricultural lands.

The Shallow FEB is designed to improve the phosphorus treatment performance in STAs 2 and 3/4 by retaining and then delivering water to the STAs with improved flow and timing, which is expected to increase the effectiveness of phosphorus treatment in the STAs prior to discharge in the Everglades Protection Area (EPA). Since the A-1 Site was purchased with Farm Bill Funds, the SFWMD will request approval for a land use change from the United States Department of the Interior (DOI)/U.S. Fish and Wildlife Service (USFWS).

#### **B. NEED FOR PROPOSED ACTION**

The SFWMD is required to meet a numeric discharge limit, referred to as the Water Quality Based Effluent Limit (WQBEL), that is contained in the National Pollutant Discharge Elimination System (NPDES) permit for discharges from the STAs into the EPA. The WQBEL was developed to assure that such discharges do not cause or contribute to exceedances of the 10 parts per billion (ppb) total phosphorus (TP) criterion (expressed as a long-term geometric mean [LTGM]) established under 62-302.540, Florida Administrative Code (F.A.C.) (SFWMD – Final Technical Support Document for the WQBEL 2012). The TP criterion is measured at a network of stations across the EPA marsh and is intended to prevent imbalances of aquatic flora and fauna. The WQBEL is measured at the discharge points from each STA and requires that the total phosphorus concentration in STA discharges shall not exceed: 1) 13 ppb as an annual flow-weighted mean in more than three out of five water years on a rolling basis; and 2) 19 ppb as an annual flow-weighted mean in any water year. Excess phosphorus discharged into the EPA has caused ecological impacts within the Everglades.

Although phosphorus levels in the discharges from STA 2 and STA 3/4 have been reduced during the years that these STAs have been operating, these STA discharges have not achieved the WQBEL. As a result of technical discussions in early 2010, the SFWMD, Florida Department of Environmental Protection (FDEP), and the U.S. Environmental Protection Agency (USEPA) developed a plan to ensure that discharges into the EPA do not cause or contribute to exceedances of the State of Florida's 10 ppb TP numeric phosphorus criterion entering into the EPA. The above agencies identified a suite of water quality projects that would work in conjunction with the existing Everglades STAs to meet the WQBEL at the discharge points from the STAs. As a result of these technical discussions, on September 10, 2012, FDEP issued NPDES and Everglades Forever Act (EFA) permits and consent orders establishing the WQBEL and the suite of water quality improvement projects to be constructed. The Shallow FEB at the A-1 project site is the project proposed by the SFWMD to achieve the WQBEL within the Central Flowpath of the EAA.

The SFWMD is proposing to meet the WQBEL in flows from STA 2 and STA 3/4 by using a shallow FEB at the A-1 project site to temporarily store excess water from within the central EAA, collected by the North New River and Miami Canals. This water is then delivered from the Shallow FEB to STA 2 (including Compartment B) and STA 3/4 at an improved rate. By managing basin runoff in the Central Flowpath in a more advantageous manner, the impacts of storm driven events would be reduced for STA 2 and STA 3/4. The proposed projects will also improve operations of the STAs in the dry season by providing water during the periods of drought and low water conditions. Attenuating and managing excess water flows in the Central Flowpath is intended to enhance operations and improve phosphorus treatment performance in STA 2 and STA 3/4 so that these STA discharges meet the WQBEL.

The goals and objectives are to assist STA 2 and 3/4 in achieving the WQBEL at the STA discharge points in three ways:

1. Attenuate peak water flows and temporarily store runoff from the central EAA, thereby minimizing the discharge of untreated water into the EPA,
2. Improve inflow delivery rates to STA 2 and STA 3/4, thereby providing enhanced operation and phosphorus treatment performance, and
3. Assist in maintaining minimum water levels and reducing the frequency of dryout conditions within STA 2 and STA 3/4, which will sustain phosphorus treatment performance.

The overall project purpose, as defined by the USACE, is to achieve the WQBEL at the STA 2 and STA 3/4 discharge points into the Central Flowpath of the Everglades Protection Area. The

project construction completion milestone is July 2016 as established in the Consent Order (OGC #12-1148).

### **C. SCOPE OF ANALYSIS**

The USACE determined that the scope of this Draft Environmental Impact Statement (EIS) includes the A-1 project site, the STAs that the proposed project would assist (STAs 2 and 3/4), and the Everglades Water Conservation Areas that receive the STAs discharges (WCA 2A and 3A). The A-1 project site was originally purchased using Department of the Interior's (DOI) Farm Bill funds for the Central Everglades Restoration Plan EAA A-1 Storage Reservoir project and is subject to land use restrictions; therefore, the land use of the site is a major component of the scope of analysis. The EAA was historically Everglades wetlands, which has now been ditched and drained. Much of the EAA canal system, including the extensive network of ditches and canals along the perimeter of the site, is considered to be "navigable waters of the United States" under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbor Act. The lands within the A-1 project site have been previously farmed. However, the lands were taken out of agricultural use and the wetland hydrology, hydric plants, and hydric soils have returned. Therefore, the USACE's regulatory jurisdiction under Section 404 of the Clean Water Act includes the project site as well as wetlands and aquatic resources that will be affected as a result of the project. A number of federally listed species utilize the project site as well as other natural areas that will be affected by the project. Taking these factors into consideration, the proposed project is subject to substantial federal control and responsibility and the scope of analysis is extended over the entire site.

### **D. ALTERNATIVES CONSIDERED**

This Draft EIS evaluates construction of the applicant's (SFWMD) preferred alternative, which is a shallow FEB on the A-1 project site. The USACE will analyze a range of alternatives to determine if the applicant's preferred alternative is the least environmentally damaging practicable alternative, and if the applicant's preferred alternative is not contrary to the public's interest. The range of alternatives considered in this EIS include the No Action Alternative, the Applicant's Preferred Alternative (Shallow FEB), a Deep FEB, and an STA. The potential effects of the Alternatives would largely be a function of the manner in, and degree to which, the Alternative features are used in the context of other regional water management infrastructure and system operations made possible by the presence of the enhanced water management options and phosphorus treatment performance. The No Action Alternative and Alternatives 2 (Shallow FEB), 3 (Deep FEB), and 4 (STA) are presented to compare the differences in regional water management infrastructure to effectively meet the project purpose.

## **E. DESCRIPTION OF ACTION ALTERNATIVES**

### **Alternative 2 (Shallow FEB)**

Alternative 2 is a 15,000-acre shallow FEB, with a maximum operating depth of approximately 4 feet, and is SFWMD's Preferred Alternative to be evaluated in this EIS. The shallow FEB was assumed to include the following components, at a minimum:

- Perimeter Levees around the FEB (> 20 miles; 8-10 feet levee heights for 4 feet maximum operating depth)
- Interior levees to convey inflows to the north end of the FEB (8.7+/- miles)
- Internal collection canal to assist in conveying water out of the FEB
- Operable water control structures to control FEB water levels and flows into and out of the FEB
- Seepage canal and pump station(s) to collect FEB seepage and return to FEB/STA-3/4
- Degradation of portions of major agriculture roads
- Demolition of the existing test cells
- Demolition of the existing Talisman and Cabassa pump stations

The majority of the shallow FEB outflows (approximately 80%) will be directed to STA 3/4 for treatment while the remaining flows (approximately 20%) will be conveyed to STA 2 (including Compartment B) via the G-434 and G-435 pump stations.

### **Alternative 3 (Deep FEB)**

Alternative 3 is a 15,000-acre deep FEB, with a maximum operating depth of approximately 12.5 feet. Alternative 3 was assumed to include the following components, at a minimum:

- Perimeter Levees around the FEB (> 20 miles; 20-30 feet levee heights for a maximum operating depth of 12.5 feet)
- Inflow Pump Station to direct North New River Canal flows into the FEB to the maximum operating depth of 12.5 feet
- Internal collection canal to assist in conveying water out of the FEB
- Operable water control structures to control FEB water levels and flows into and out of the FEB
- A cutoff wall to minimize or eliminate seepage impacts to adjacent areas
- Seepage canal and pump station(s) to collect FEB seepage and return to FEB/STA 3/4
- Degradation of portions of major agriculture roads
- Demolition of the existing test cells
- Demolition of the existing Talisman and Cabassa pump stations

The majority of the deep FEB outflows (approximately 60%) will be directed to STA 3/4 for treatment while the remaining flows (approximately 40%) will be conveyed to STA 2 (including Compartment B) via the G-434 and G-435 pump stations.

#### **Alternative 4 (STA)**

Alternative 4 is a 15,000-acre STA, with a maximum operating depth of approximately 4 feet. The proposed STA would have a normal operating depth of approximately 1.25 – 1.5 feet and a maximum operating depth of approximately 4 feet. Alternative 4 would operate in parallel with STA 2 and STA 3/4. Alternative 4 was assumed to include the following components, at a minimum:

- Perimeter Levees around the STA (> 20 miles; 8-10 feet levee height for 4 feet maximum operating depth)
- Interior levees dividing the STA into cells
- Inflow canals to direct inflows from the North New River and Miami Canals to the STA
- Discharge canal to direct outflows from the STA to the L-5 Canal
- Internal distribution canals to facilitate sheetflow through the cells
- Internal collection canals to assist in conveying water out of the cells
- Seepage canal and pump station(s) to collect STA seepage and return to STA
- Operable water control structures to control water levels and flows into and out of all STA cells

In order to operate the new STA, construction of conveyance features in addition to construction of the STA itself will be required. Specifically, a discharge canal would need to be constructed within the Holey Land Wildlife Management Area to connect the STA discharge canal to the L-5 Canal. This would enable the delivery of discharges with low phosphorus from the proposed STA to WCA 2A and/or WCA 3A via existing infrastructure, without interfering with the existing operations of STA 2, STA 3/4 and the North New River and Miami Canals.

## **F. SUMMARY OF SOCIOECONOMIC AND ENVIRONMENTAL EFFECTS**

The effects of the alternatives on the environment were evaluated. Many of the environmental effects were similar between Alternatives 2, 3, and 4. However, changes to the affected environment are seen in land use, soils/total phosphorus removal, surface water, water quality, and wetland impacts as a result of the Alternatives and discussed further in Chapter 4.

**Table ES-1.** Summary of Socioeconomic and Environmental Effects

	No Action		Shallow FEB		Deep FEB		STA
<b>Land Use on A-1 project site</b>	<b>Project would not involve environmental restoration – land use change must be evaluated.</b>	+	<b>Environmental Restoration – land use change</b>	+	<b>Environmental Restoration – requires land use change</b>	+	<b>Environmental Restoration – requires land use change</b>
Geology		-	Some removal of cap rock	-	Some removal of cap rock	-	blasting cap rock
Topography		0	10 foot levees	0	25 foot levees	0	10 foot levees
<b>Soils on A-1 project site</b>		+	<b>Soils remain hydric in shallow water depths</b>	-	<b>Deep water depths result in less organic debris and nutrients</b>	+	<b>Soils remain hydric in shallow water depths on</b>
TP removal	- no reduction in TP concentrations in soil	+	Benefit soils in WCAs 2A and 3A by reducing TP concentration in soils	+	Benefit soils in WCAs 2A and 3A by reducing TP concentration in soils	+	Benefit soils in WCAs 2A and 3A by reducing TP concentration in soils
Water management		0	No changes	0	No changes	0	New inflow
<b>Surface Water</b>		0	<b>WCA 2A 17 days per year longer hydroperiod; in 600 acres (0.6% of total area) WCA 3A 14-30 days per year shorter hydroperiod in 11,000 acres (2.2% of total area)</b>	0	<b>WCA 2A 15-18 days per year longer hydroperiod in 3,000 acres (3.1% of the area); WCA 3A 14-30 days shorter hydroperiod in 1,000 acres (0.2% of the area)</b>	0	<b>WCA 2A 50,000 ac/ft less flow with no change in ponding and hydroperiod; WCA 3A No change</b>
Ground water	0	0	No changes	0	No changes	0	No changes
<b>Water Quality</b>	<b>- does not meet WQBEL</b>	+	<b>Meets WQBEL</b>	+	<b>Meets WQBEL</b>	+	<b>Meets WQBEL</b>
Vegetation		+	EAV	0	FAV	+	SAV and EAV

<b>Wetland impacts</b>		<b>+</b>	<b>537 acres of impacts</b>	<b>-</b>	<b>626 acres of impacts</b>	<b>-</b>	<b>1,055 acres of impacts</b>
Fish and Wildlife/overall Federally listed T&E		0	Requires BO for eastern indigo snake	0	Requires BO For eastern indigo snake	0	Requires BO for eastern indigo snake
State listed T&E		0	No adverse effects	0	No adverse effects	0	No adverse effects
Migratory Birds		0	Requires Avian Protection Plan	0	Requires Avian protection plan	0	Requires Avian Protection Plan
Cultural Historic and archeological resources	No impacts	0	No impacts	0	No impacts	0	No impacts
Tribal rights		0	No change in water supply	0	No change in water supply	0	No change in water supply
Recreational Resources	No resources on project site	0	Recreational plan would be developed on project site	0	Recreational plan would be developed on the project site	0	Recreational plan would be developed on project site
Aesthetics		0	Negligible change from existing conditions	0	Negligible change from existing conditions	0	Negligible change from existing conditions
Flood protection		0	No adverse impacts. Is able to meet flood protection	+	No adverse impacts. Deep FEB is able to retain more flood waters	0	No adverse impacts. Is able to meet flood protection
Hazardous and toxic waste		0	No impact	0	No impact	0	No impact
Climate	No impact	0	No impact	0	No impact	0	No impact
<b>Cost</b>		<b>+</b>	<b>\$60,000,000 cost the least of the action alternatives</b>	<b>-</b>	<b>\$493,000,000 (costs the most of the action alternatives)</b>	<b>-</b>	<b>\$288,000,000</b>
Environmental Justice	No impacts	0	No impacts	0	No impacts	0	No impacts
Natural or Depletable resources	Increased agricultural or mining	+	No mining or agriculture	+	No agriculture or mining	+	No agriculture or mining

The evaluation of environmental impacts indicates that among the alternatives that are projected to meet the WQBEL at both STAs, the SFWMD's Preferred Alternative (the shallow FEB) is the least expensive and also has the lowest wetland impact. The changes in hydroperiod in the downstream Everglades (WCA 2A and WCA 3A) in each of the Action Alternatives is negligible.

#### **G. AREAS OF POTENTIAL CONTROVERSY**

This project is being developed with input and consensus from federal and state agencies, local agencies and the public. There is currently ongoing coordination with the Seminole Tribe of Florida, Miccosukee Tribe of Indians of Florida, USFWS, DOI, USEPA, Florida Fish and Wildlife Conservation Commission (FFWCC), and Florida Department of Environmental Protection (FDEP) to address concerns regarding impacts such as wetlands, water quality, flood protection, wildlife and habitat, and threatened and endangered species. Numerous meetings have occurred with the various agencies and the public in the context of identifying areas of potential controversy and resolving or mitigating for those concerns. At this time, an area of potential controversy that has been identified is mitigation for wetland impacts.

#### **H. LIST OF OTHER GOVERNMENT ACTIONS REQUIRED**

The SFWMD shall be responsible for obtaining federal, state and local permits, licenses and meet other consultation requirements for the proposed project, as described in this section and Chapter 8 of the main report.

The USACE's permitting decision is required to comply with many federal requirements including the National Environmental Policy Act (NEPA), Clean Water Act (CWA), Endangered Species Act (ESA), Rivers and Harbors Act, Coastal Zone Management Act (CZMA), Fish and Wildlife Coordination Act of 1958, and the National Historic Preservation Act. The USACE will consider other relevant environmental laws as well as protection of wetlands, floodplain management, environmental justice, and invasive/exotic species.

State requirements that will need to be satisfied for this project include Comprehensive Everglades Restoration Plan Regulation Act (CERPRA) permit, a consumptive use evaluation during the CERPRA Permitting process, Florida Department of Transportation Access Permit, Clean Air (Title V) Permit, Petroleum Storage Tanks Permit, Hydrostatic Testing Permits, a Dam Safety Permit, and possibly a National Pollution Discharge Elimination System (NPDES) Permits.

Local permitting authority for the proposed EAA A-1 shallow FEB project resides with several county Departments and Divisions. Primary coordination of local permit review will be administered by Palm Beach County's Planning, Zoning and Building (PZB) Division.

The SFWMD will be required to obtain approval from the DOI/USFWS for a land use change on the A-1 project site.

The USACE made a determination that the SFWMD's proposed shallow FEB project may affect, but is not likely to adversely affect the Audubon's crested caracara, the Florida panther, the Everglade snail kite, and the wood stork; and may adversely affect the eastern indigo snake. Formal consultation will occur with the U.S. Fish and Wildlife Service (USFWS).

## **I. UNRESOLVED ISSUES**

The USACE has concerns with the SFWMD's proposed mitigation plan for the Deep FEB and the STA alternatives. The SFWMD proposes to obtain ecological lift within the boundary of either the Deep FEB or STA for hydrologic and vegetation benefits expected from the additional retained water. The STA would function for water quality purposes while the Deep FEB would operate at depths that would preclude rooted wetland vegetation from establishing. The USACE does agree that the Shallow FEB would provide wetland benefits and therefore, does not have concerns with recognizing the environmental benefits of the project to offset the loss of wetland function and value.

The USACE has concerns with utilizing potential excess functional credits for future impacts on other SFWMD's Restoration Strategy projects. The shallow FEB will accept water during storm events, and supply water to the STA during the dry season. This will leave the Shallow FEB more susceptible to changes in water elevations, including deeper high water events and longer dry-out conditions as the FEB is managed to attenuate flow to the STAs. The USACE does believe that the post-project conditions on the Shallow FEB site would be ecologically beneficial as compared to the existing site conditions and accepts utilizing those credits to offset the impacts associated with the construction of the Shallow FEB. However, this habitat may not provide appropriate mitigation (e.g. in kind) for potential future impacts on other SFWMD Restoration Strategy projects.

The FDEP, the USFWS and the USEPA have raised questions with the Unified Mitigation Assessment Methodology scores, the time lag, and risk associated with the Compensatory Mitigation Plan as described in Chapter 5. Further discussion with the agencies will occur prior to finalizing the UMAM scores.

## **J. COMPENSATORY MITIGATION TO OFFSET THE LOSS OF WETLAND FUNCTION AND VALUE**

The SFWMD's compensatory wetland mitigation plan for Alternatives 2, 3, and 4 includes hydrologic and vegetation benefits within the footprint of the project. By retaining additional

water on the site, it is anticipated that the hydrology and the vegetation community within the footprint of the project would improve from the current condition. In assessing the pre- and post-project conditions of the wetlands with Unified Mitigation Assessment Methodology (UMAM), the project results in an environmental benefit (or excess credits). The SFWMD is proposing to create a ledger system to utilize any excess credits generated as a result of this project for future SFWMD Restoration Strategies projects. The SFWMD's proposed surplus is approximately 2,670 credits.

## **K. COORDINATION**

Throughout the evolution of project design alternates, federal and state agencies, county officials, and the public have been kept informed through a scoping meeting, social media, news release, and public notices designed to inform, gather input, and respond to questions regarding the proposed project. The public, government agencies, federally-recognized Native American Tribes, and interested parties are afforded the opportunity to provide input regarding this project by reviewing and commenting on the draft and final EIS. Project information, schedules, documents, and presentations to the public are also kept updated and available on the USACE website: <http://www.saj.usace.army.mil/Missions/Regulatory/ItemsofInterest.aspx>.