PROJECT DEFINITION REPORT

RS – STA 1W EXPANSION #1 PROJECT

PS ID 100818

JANUARY 14, 2013

REVISION #0

sfwmd.gov

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Approvals

Temperince Morgan, State Policy Chief, Office of Everglades Policy and Coordination — Date: 1/16/13

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Project Location

This is the first phase of an expansion to the existing STA 1W. For the purpose of this design, the approximate 4,700 acres of land is located contiguous with the existing STA 1W footprint.

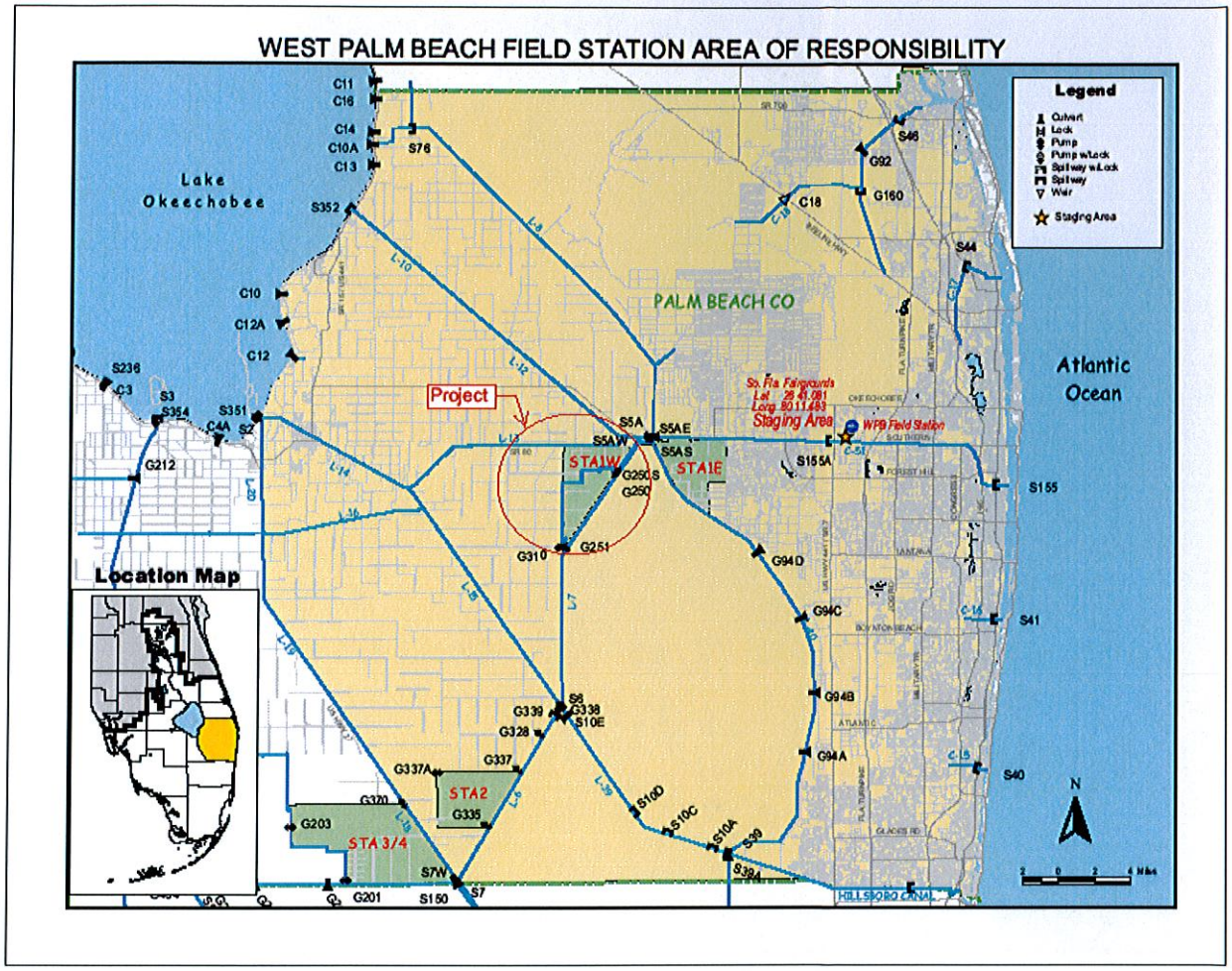


Figure 1 - General Location Map

Project Description

STA-1W Expansion (STA-1WEX) is a combination of the existing STA-1W footprint and the additional treatment area required (STA 1W Expansion no. 1 and 2). An approximate 6,500 acre STA expansion (5,900 acres of effective treatment area) is included as a new project for the Eastern Flow Path. At the current time, the final footprint of the expansion has not been established. However, a conceptual alternative for potentially available land is generally described below. Upon actual identification of the lands available for the project, multiple conceptual designs will be required to determine the most cost effective treatment layout to meet the requirements of the Water Quality Based Effluent Limitation (WQBEL).

The conceptual design described below in the project scope for the STA 1W Expansion #1 is one of many options that could be considered depending on hydraulics and available land. This may consist of modifications to the physical configuration or operational protocols of the existing STA-1W as well as the design of the new treatment areas. The final design will incorporate the best available information to ensure appropriate vegetation partitioning and water depths.

The conceptual design identification of the STA 1W Expansion #2 will be included in this project scope in order to minimize rework when incorporating it in a later date.

Project Scope

For the purpose of this conceptual design, it is assumed that 4,700 acres of land contiguous with the existing STA-1W footprint is available (**Figure 2**). Further, it is assumed that the 4,700 acres does not contain any major infrastructure that would need to be avoided or incorporated into the design of the STA expansion. In this conceptual design, it is assumed that the new cells would be operated in coordination with STA-1W and therefore would be designed in series with the existing cells. As stated above, upon final identification of the lands, further investigations will be required.

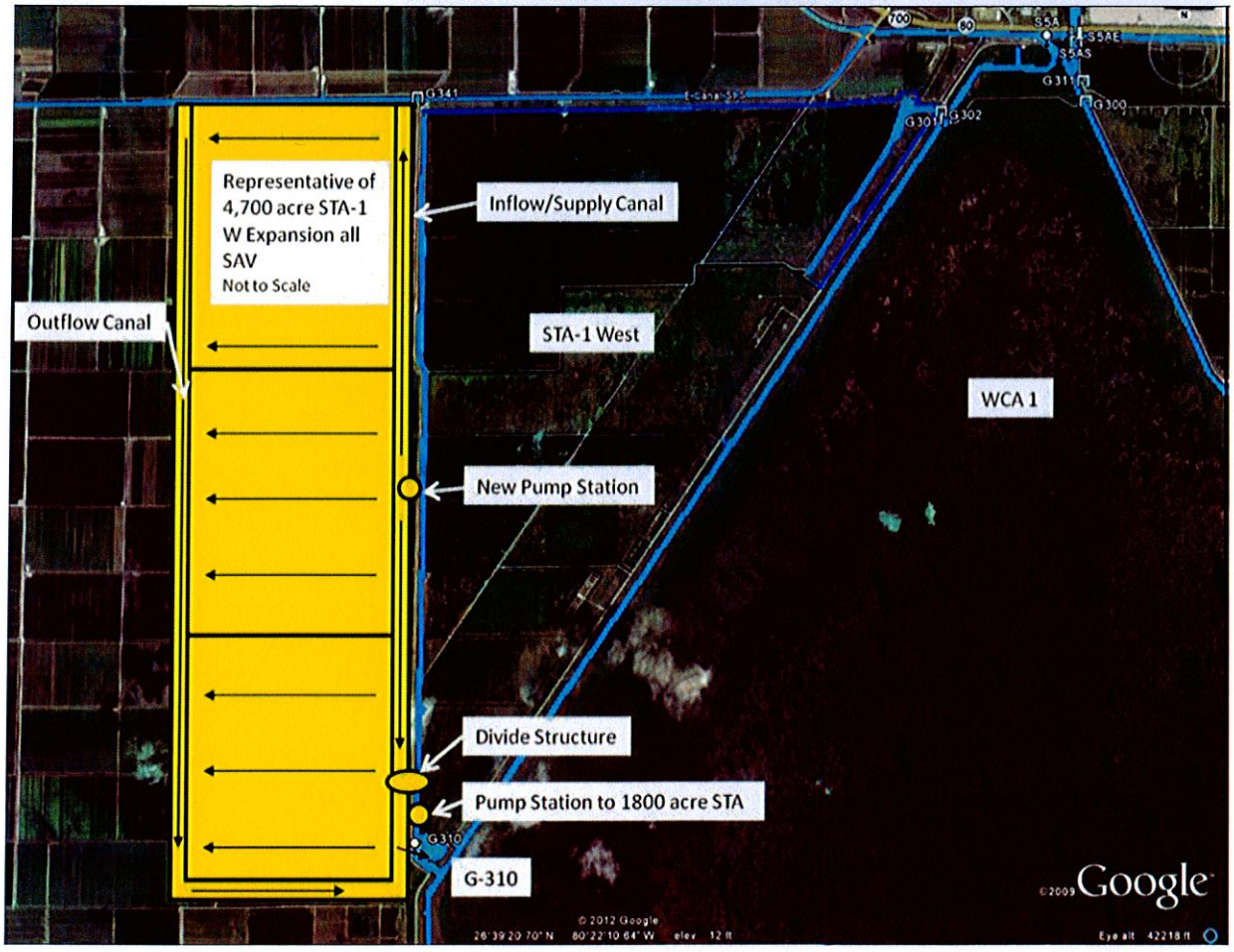


Figure 2 - STA 1W Expansion #1

The current design of STA-1W was constrained by the available land and the need to maximize treatment areas while maintaining the necessary hydraulics to move the water through the system for both treatment and flood control purposes. In the new project design, the existing footprint will be evaluated to determine if the area can be utilized more effectively. The evaluation will consider the vegetation distribution across cells and whether reorientation of flow paths would be beneficial if adjacent land is available for the STA expansion.

The scope of work for this project includes Land Acquisition of the STA 1W Expansion #1 proposed site. Also, conceptual modeling of STA 1W Expansion #1 and #2, and the S5A and C-51W Basins will be part of this scope of work. Analysis of the modeling will help define the different alternatives for the most effective STA configurations. Based on the alternatives selected, survey and geotechnical studies will be conducted to have enough details to perform the Detailed Design and Construction of the selected alternative.

Background

The Eastern Flow Path consists primarily of the C-51 West and S-5A Basins. The flows from these drainage basins are currently routed to STA-1W and STA-1E for treatment prior to discharging into Water Conservation Area (WCA) 1 (**Figure 3**). The S-5A and S-319 Pump Stations will continue to provide the existing level of flood protection to the S-5A Basin and the C-51 West Basin.

The Eastern Flow Path projects are intended to manage basin runoff in a more advantageous manner, by reducing the impacts of storm event driven inflows on the existing STAs, as well as expanding the effective stormwater treatment area. This is accomplished by: redirecting a portion of the STA inflows to a FEB (approximately 45,000 ac-ft of storage) to be located adjacent to the L-8 borrow canal, for flow attenuation, prior to conveyance to STAs for treatment; increasing the spatial extent of STA-1W by adding approximately 6,500 acres to the west of existing STA-1W (5,900 acres of effective treatment area) for additional phosphorus treatment capacity; and modifying the system to allow the G-341 structure to function consistent with its design intent as a divide between the S-5A and S-6 Basins.

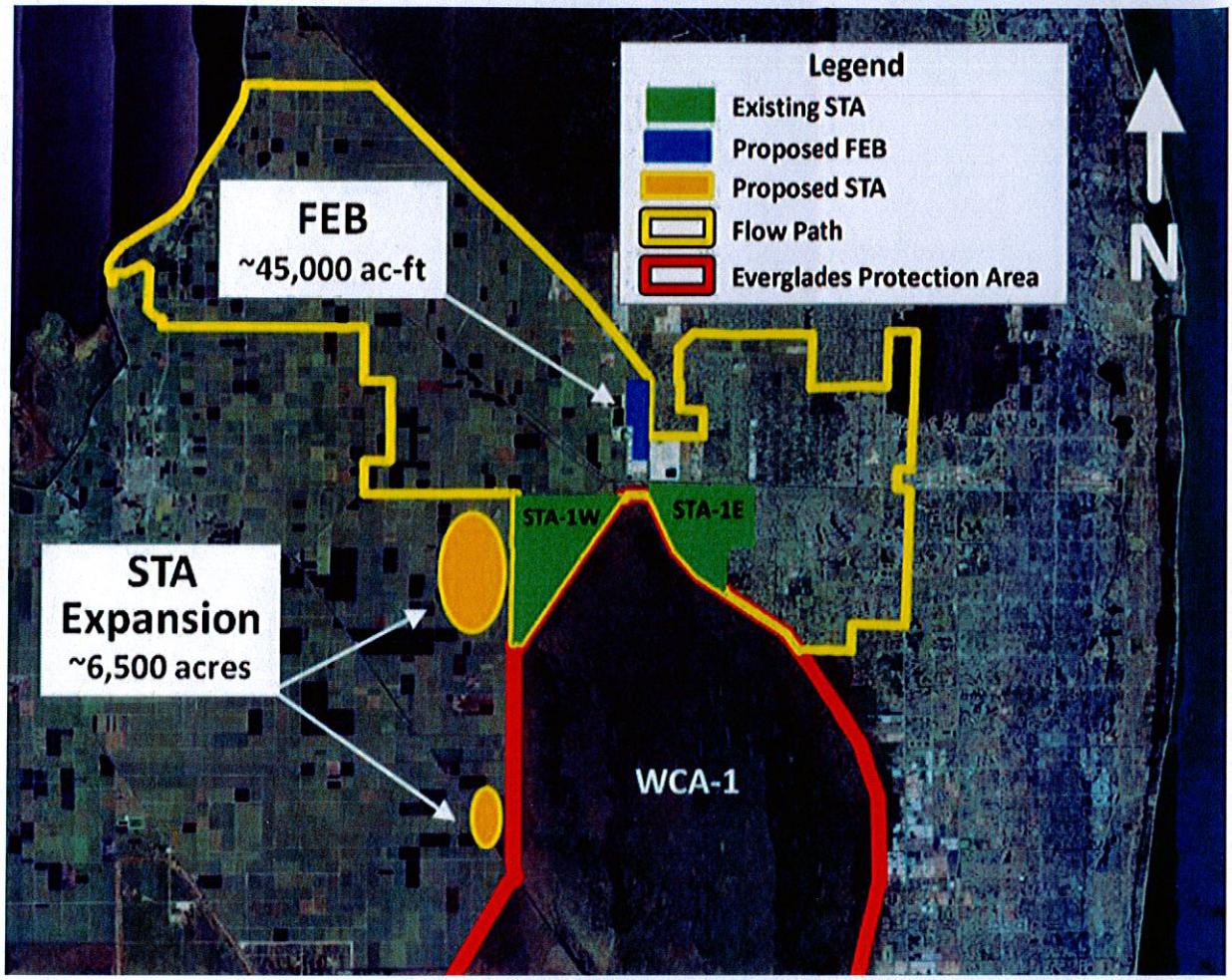


Figure 3 - STA 1W Expansion #1

Permitting

The STA 1W Expansion project is authorized as part of the flow path corrective actions under the Florida Department of Environmental Protection National Pollutant Discharge Elimination System (NPDES) Consent Order No. 12-1148 and Everglades Forever Act (EFA) Consent Order No. 12-1149 and will require a NPDES and EFA permit. The STA 1W Expansion no. 1 project may alter or change the Central and Southern Florida (CS&F) project. A US Army Corps of Engineers (USACE) 408 approval may be necessary prior to obtaining a Clean Water Act (CWA) 404 permit.

It is the contractor's responsibility to apply for and obtain any dewatering permits from the South Florida Water Management District (SFWMD) and any applicable local permits from Palm Beach County.

Coordination with the SFWMD Permit Acquisition and Compliance Section staff will be required prior to and during permit acquisition.

Right of Way

The project proposed land impacts or alters right of way permits with Florida Power & Light. Existing distribution lines (**Figure 4**) are inside the footprint of the proposed land for the STA 1W Expansion no. 1. Coordination with FP&L may be necessary.

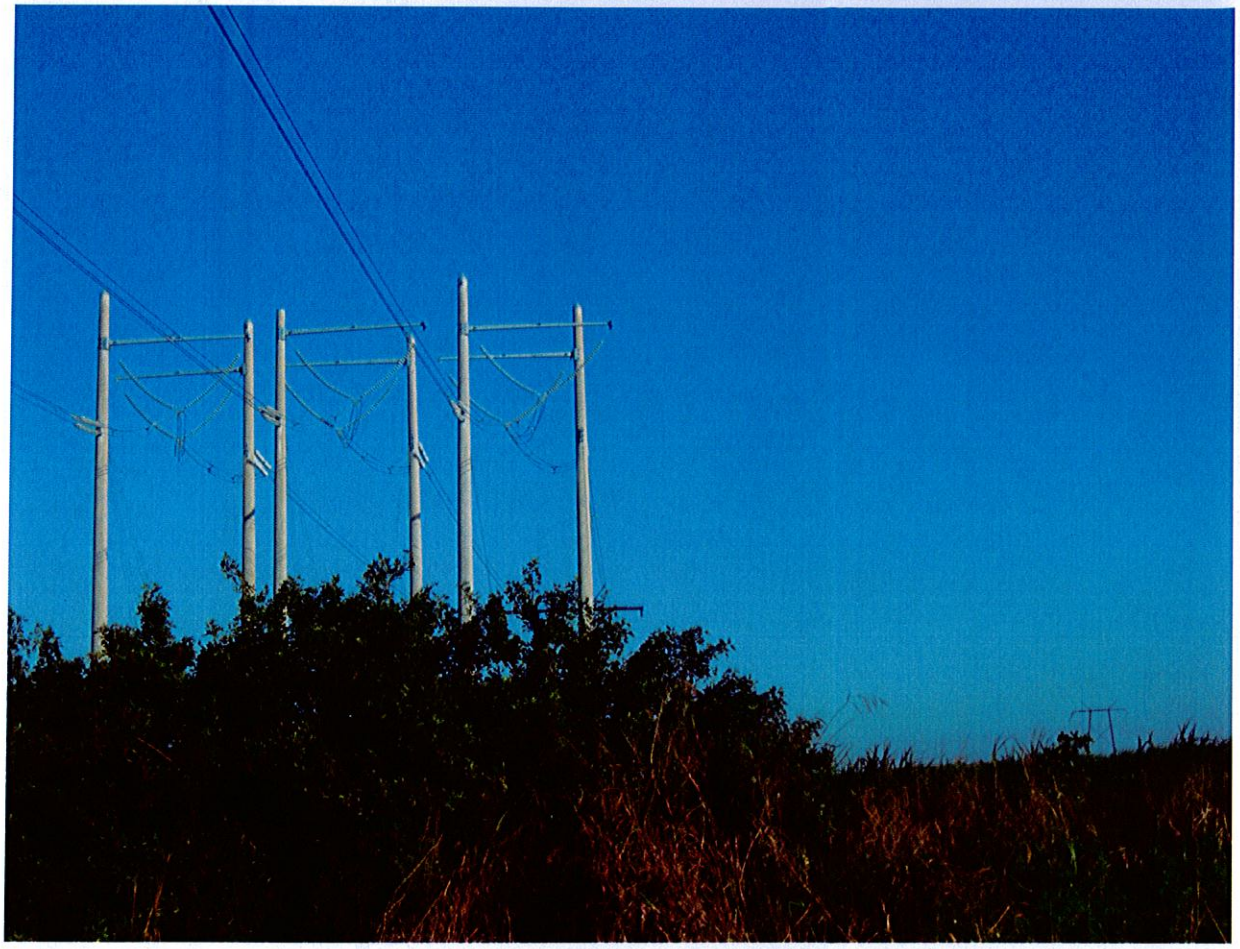


Figure 4 - FP&L Distribution Lines

Real Estate

The SFWMD is in the process of acquiring the proposed land as shown on **Figure 2**. As part of this process the SFWMD is currently in the process of the Environmental Assessment Phase 1 and Phase 2. Land use or zoning changes may be required prior to construction.

Public Use

Public use associated with this project will be consistent with public use on other Stormwater Treatment Areas. These features will be determined during the design and permitting process.

Stakeholder Considerations

The project lies within the West Palm Beach (WPB) Field Station's area of responsibility. Public stakeholders may include but are not limited to Palm Beach County, USACE, and the US Department of the Interior.

Public Outreach

Public outreach will include but is not limited to Agricultural Stakeholders, Environmental Nonprofit Organizations, U.S. Fish and Wildlife Service, permitting agencies, and FP&L.

Operations

Coordination with Operations is required and will be ongoing. Preliminary planning discussions occurred with operations during the initial modeling when formulating the Restoration Strategies projects but detailed discussions have not taken place yet. As this project goes into conceptual and preliminary design, close coordination between the project team and Operations needs to occur to ensure modeled operations and real time operations match and hydraulic capacity is sufficient with existing structures and STA 1W.

Operations and Maintenance

The existing STA 1W as well as the STA 1W Expansion no. 1 proposed site is located within the WPB Field Station's area of responsibility. The project will need to be coordinated with the WPB Field Station to ensure there are appropriate resources for this project.

SCADA, Instrumentation, Telemetry

The STA 1W Expansion no. 1 project will include multiple structures, including pump stations and gated culvert structures which will require SCADA, instrumentation and telemetry. It has not been determined the location and number of structures. This will be further defined during design. Power will be required for the pump stations and the gated structures.

The projects are located near the following towers:
Primary: S-5A
Secondary: S-319

Security

Multiple pump stations and water control structures are part of the overall project scope. Security design considerations shall be incorporated during design and coordination with Facilities will be required.

Information Technology

IT requirements for this project will need to be determined during the design phase.

Environmental

It is anticipated this project will impact existing wetlands or sensitive areas. An Environmental Assessment Phase I and II are being developed. Also an Environmental Impact Assessment will be developed to determine and identify any environmental impacts.

Monitoring

Turbidity monitoring will be required for the project during and post construction. Water sampling and other types of monitoring will be required during and post construction, including phosphorus levels to measure if the STA is complying with the WQBEL.

Commissioning

Commissioning will be required for the STA 1W Expansion #1 project including the structures within the project and as a system.

Lessons Learned

Lessons learned from previous STAs including existing STA 1W, STA 1E, STA 2, STA 3-4, STA 5, STA 6 will be taken into account including all aspects or phases of design, construction, vegetation, etc.

Conceptual Alternative Options

Conceptual Alternative Options will need to be identified and reviewed, if required, during detailed design.

Cash Flow, Project Delivery and Schedule, & Milestones

The following are the milestone compliance dates and estimated cash flow by fiscal year for each project feature:

STA 1W Expansion #1	
Milestone	**Compliance date**
Initiate design	9/30/2013
complete design	7/30/2015
initiate construction	1/31/2016
complete construction	12/31/2018

Planning activity by fiscal year	Cash flow
FY13	$5,232,000
FY14	$7,729,403
FY15	$71,862,462
FY16	$32,000,000
FY17	$36,972,906

Recommendations

The project described in this document is conceptual and the preferred project features will be further detailed during design.

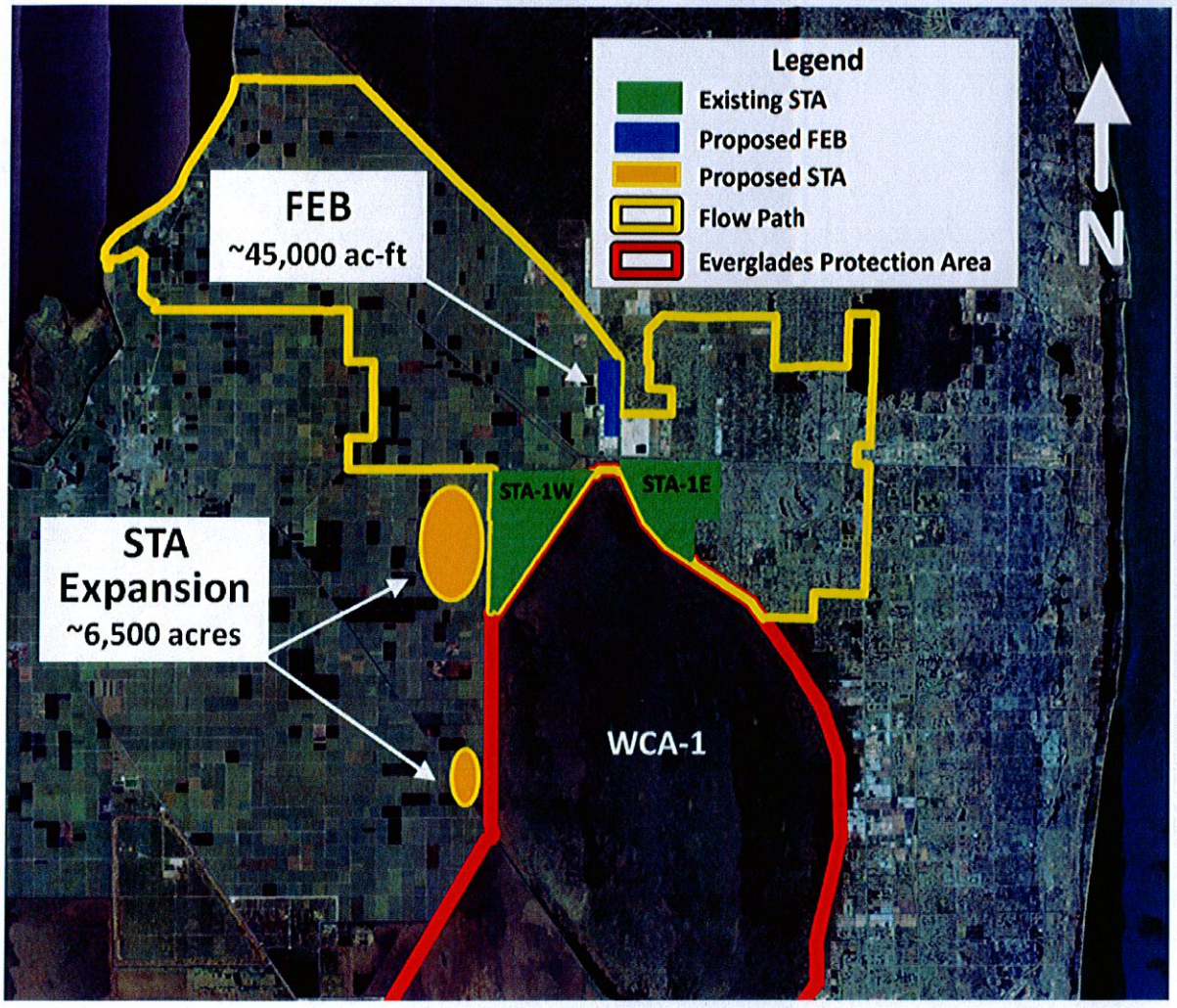
Project Funding Sources

Funding source for this project will be from multiple funds within the B199 functional area. The STA 1W Expansion no. 1 project will include new capital assets requiring coordination with asset accounting.

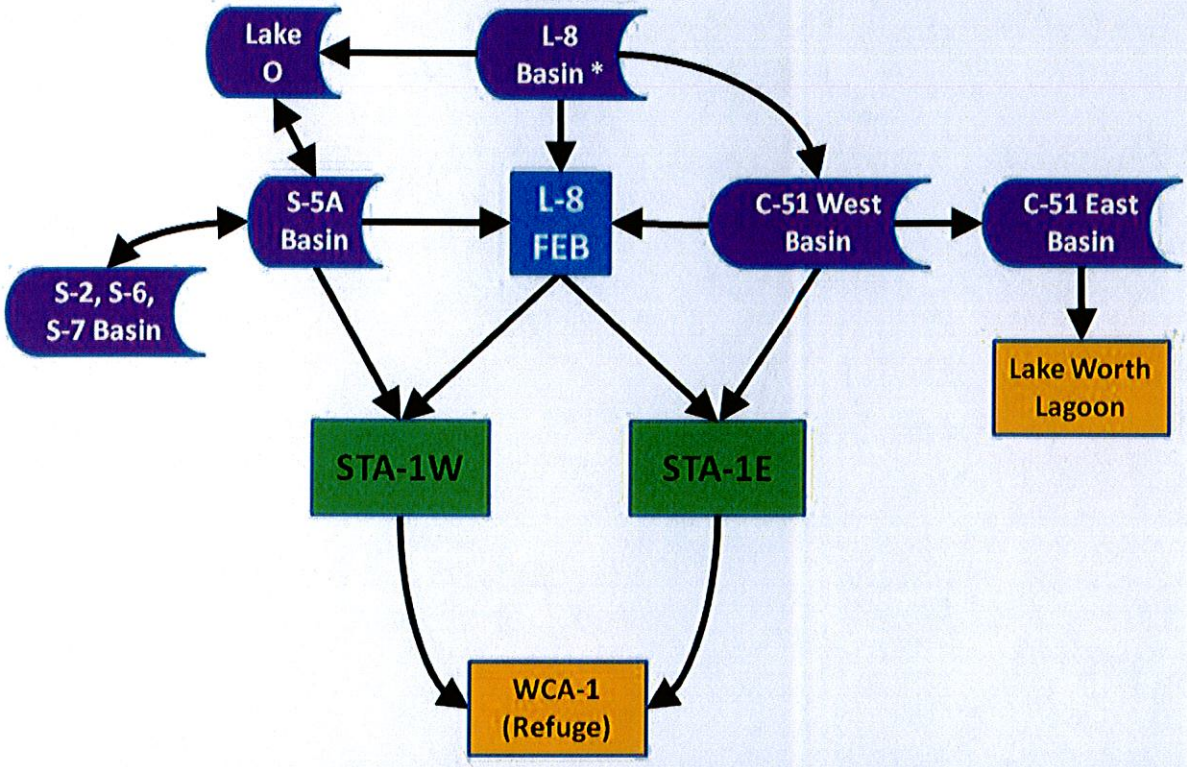
References

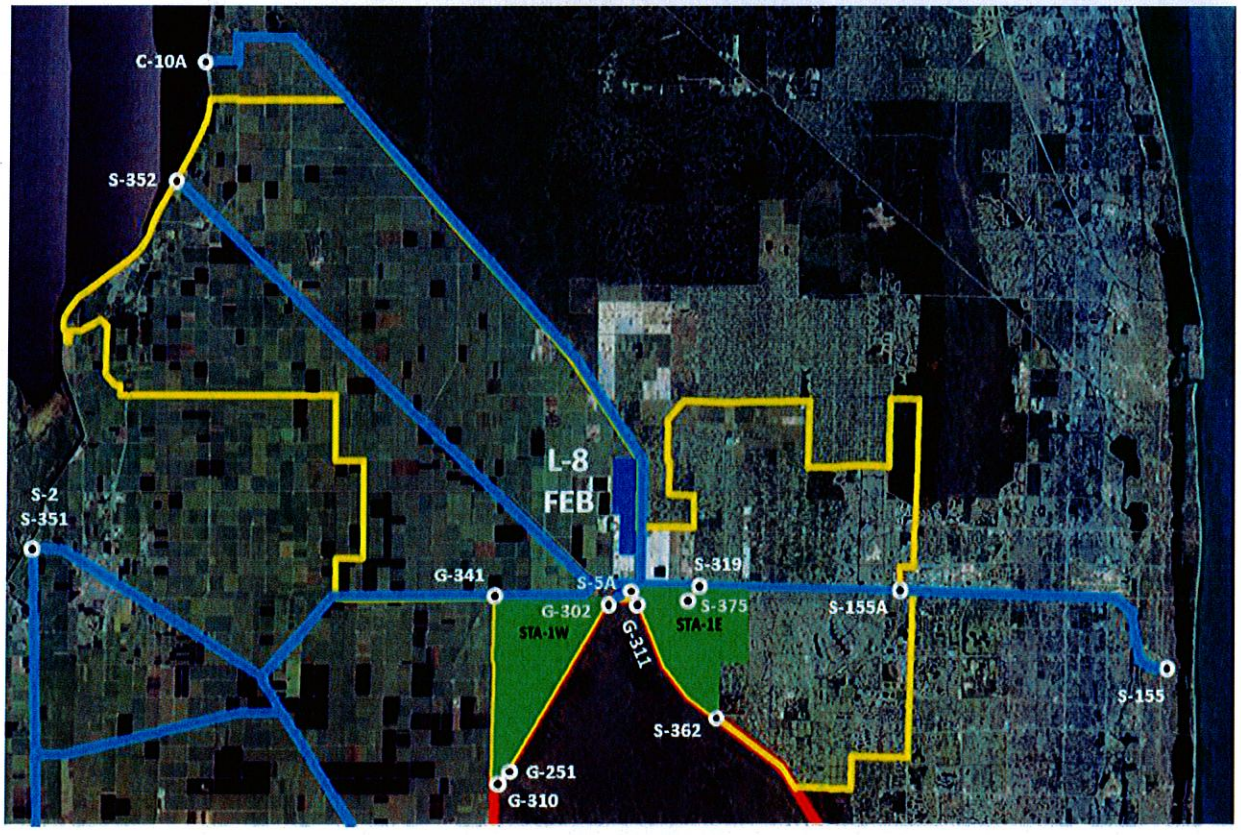
N/A

Project Schematic Diagram



Eastern Flow Path Major Project Components


Lake O
L-8 Basin *
S-5A Basin
L-8 FEB
C-51 West Basin
C-51 East Basin
S-2, S-6, S-7 Basin
Lake Worth Lagoon
STA-1W
STA-1E
WCA-1 (Refuge)


C-10A
S-352
L-8 FEB
S-2
S-351
G-341
S-5A
S-319
G-302
STA-1W
G-311
S-375
STA-1E
S-155A
S-155
S-362
G-251
G-310