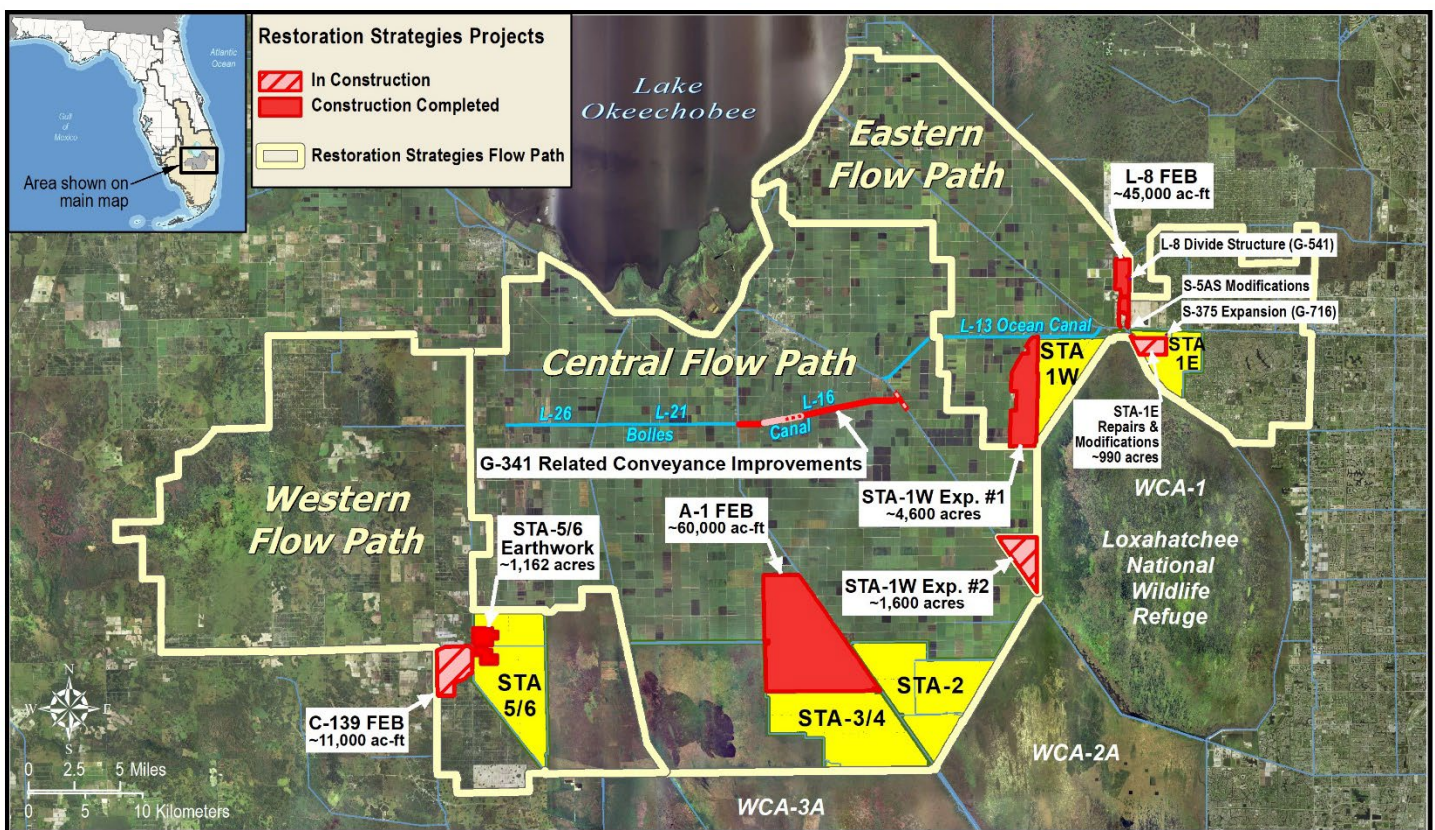


# Restoration Strategies Program and Stormwater Treatment Area Enhancement Update August 2021

The South Florida Water Management District's (District) \$880 million Restoration Strategies Program will improve water quality flowing into America's Everglades by implementing a suite of flow equalization basins (FEB's), stormwater treatment area (STA) expansions, and conveyance improvement projects over a 13 year timeline. The program includes a robust Science Plan focused on investigating the critical factors that influence phosphorus reduction and a better understanding of improving treatment performance at low phosphorus concentrations. A third part of the program is investigation of additional sub-regional source controls – where pollution is reduced at the source – in areas where phosphorus levels in stormwater runoff have been historically higher.

In 2012, FDEP issued watershed National Pollutant Discharge Elimination System (NPDES) and Everglades Forever Act (EFA) permits to the District to continue to operate its STAs. At the same time, Consent Orders were issued with these permits that require the District to construct 13 projects on an aggressive timeline to be completed by December 2025 with specific milestone due dates for each project activity. The existing Everglades STAs, an essential component of Restoration Strategies, are unique constructed treatment wetlands designed to improve the quality of water flowing into the Everglades. Upon completion of all Restoration Strategies projects, the permits require each STA to meet the Water Quality Based Effluent Limit (WQBEL), to ensure that the State's water quality standard for the Everglades is achieved.

In addition to the Restoration Strategies projects, the District is enhancing the performance of the existing Everglades STAs through a series of construction projects to refurbish, rehabilitate, and renew large portions of the existing facilities, some of which have been in operation for the last 20 years.



Restoration Strategies Flow Paths and Projects

# Restoration Strategies Program and Stormwater Treatment Area Enhancement Update August 2021

## Eastern Flow Path

### **STA-1E Repairs and Modifications (Cells 5 and 7)**

Earthwork to regrade Cells 5 to correct topographic deficiencies of the original construction is complete; Cell 7 regrade is ongoing. Project is on schedule and expected to be complete by April 2022.

### **STA-1W Expansion #2**

Construction of Civil Works and Inflow Pump Station is ongoing.

### **G-341 Related Conveyance Improvements**

Segment 4 construction is ongoing; pile driving for the Boca Chica bridge has commenced. Construction is expected to be completed by January 2022. Segment 5 design is ongoing and is expected to be finalized by November 2021.

### **STA-1W Refurbishment**

Earthwork for various enhancements is ongoing. Work includes 50-acre regrade in Cell 3 to remove finger canals, levee realignment between Cells 5B and 2A for improved flow patterns, removal of levees and structures between Cells 2B and 4, and replacement of structures between Cells 1B and 3. Cell 3 earthwork is near completion.

## Central Flow Path

### **STA-2 Refurbishment**

Earthwork to regrade a 500-acre low-lying area, repair plugs in borrow canal, and other enhancements in Cell 2 is ongoing. Earthwork to make 49 cuts through remnant farm berms in Cell 3 is complete.

## Western Flow Path

### **STA-5/6 Internal Improvements**

Cells 2A and 3A are currently in the initial flooding and optimization period.

### **C-139 Flow Equalization Basin (FEB)**

Construction activity to remove vegetation is ongoing.

### **Connection of STA-5/6 to Lake Okeechobee**

Hydraulic Feasibility Study and Conceptual Design are complete. Phase 1 design is underway to improve conveyance in the western reach and connect it to the L-3 canal.

# Restoration Strategies Program and Stormwater Treatment Area Enhancement Update August 2021

## Restoration Strategies Science Plan

Of the fourteen Science Plan studies, seven have been completed and seven are in progress. Six additional study proposals have been approved and are in start-up.

<u>Ongoing Science Plan Studies</u>	<u>Completion By</u>
Vegetation Inundation Depth and Duration Sustainability.....	Sept 2021
Factors for Formation of Floating Tussocks in STAs .....	Sept 2021
L-8 FEB and STA Operational Guidance .....	Sept 2021
Improving Resilience of Submerged Aquatic Vegetation in STAs .....	Sept 2022
Effects of Faunal Species on P Cycling in STAs .....	Sept 2022
Periphyton and Phytoplankton P Uptake and Release.....	Sept 2023
Soil Amendments to Control P Flux .....	Sept 2023

<u>Additional Studies</u>	
Biomarker Study.....	Sept 2022
Fauna study.....	Sept 2023
Data Integration Study .....	Sept 2023
P Dynamics Study .....	Sept 2023
Marl Study.....	Sept 2024
Ecotopes Study .....	TBD



STA 1W Refurbishment project to remove the old 5B southern levee in STA 1W.



# Restoration Strategies Program and Stormwater Treatment Area Enhancement Update August 2021

EASTERN FLOW PATH			CENTRAL FLOW PATH		
<b>STA-1W Expansion #2 (100864)</b>			<b>G-341 Related Conveyance Improvements (100802)</b>		
<b>Activity</b>	<b>Deadline</b>		<b>Activity</b>	<b>Deadline</b>	
Complete land acquisition	3/31/2018 ✓		Initiate design	10/1/2020 ✓	
Initiate design	10/1/2018 ✓		Submit state and federal permit applications	8/1/2021 ✓	
Submit state and federal permit applications	8/1/2019 ✓		Complete land acquisition (if required)	9/30/2021 ✓	
Complete design	7/31/2020 ✓		Complete design	7/31/2022 ✓	
Initiate construction	11/30/2020 ✓		Initiate construction	11/30/2022 ✓	
Construction status report	3/1/2021 ✓		Construction status report	3/1/2023 ✓	
Construction status report	3/1/2022 ✓		Construction status report	3/1/2024 ✓	
Complete construction	12/31/2022 ✓		Complete construction	12/31/2024 ✓	
Initial flooding and optimization period complete	12/31/2024 ✓				
<b>STA-1W Expansion #1 (100818)</b>			<b>L-8 Divide Structure (100817)</b>		
<b>Activity</b>	<b>Deadline</b>		<b>Activity</b>	<b>Deadline</b>	
Complete land acquisition	9/30/2013 ✓		Initiate design	10/1/2012 ✓	
Initiate design	9/30/2013 ✓		Complete design	9/30/2014 ✓	
Submit state and federal permit applications	7/30/2014 ✓		Initiate construction	10/1/2016 ✓	
Complete design	7/30/2015 ✓	<b>COMPLETE</b>	Complete construction	9/30/2018 ✓	
Initiate construction	1/31/2016 ✓				
Construction status report	3/1/2017 ✓				
Construction status report	3/1/2018 ✓				
Complete construction	12/31/2018 ✓				
Initial flooding and optimization period complete	12/31/2020 ✓				
<b>STA-1E Repairs and Modifications</b>			<b>S-5AS Modifications (100822)</b>		
<b>Activity</b>	<b>Deadline</b>		<b>Activity</b>	<b>Deadline</b>	
PSTA Decommissioning complete	12/31/2022 ✓		Initiate design	10/1/2012 ✓	
Culvert repairs complete	12/31/2022 ✓		Complete design	9/30/2014 ✓	
Cell 5 and 7 improvements complete	12/31/2022 ✓		Initiate construction	10/1/2014 ✓	
			Complete construction	9/30/2016 ✓	
<b>STA-1E Repairs and Modifications</b>			<b>S-375 Expansion (100819)</b>		
<b>Activity</b>	<b>Deadline</b>		<b>Activity</b>	<b>Deadline</b>	
PSTA Decommissioning complete	12/31/2022 ✓		Initiate design	9/30/2013 ✓	
Culvert repairs complete	12/31/2022 ✓		Complete design	7/30/2015 ✓	
Cell 5 and 7 improvements complete	12/31/2022 ✓		Initiate construction	1/31/2016 ✓	
			Complete construction	12/31/2018 ✓	
<b>L-8 FEB (100813)</b>			<b>LEGEND</b>		
<b>Activity</b>	<b>Deadline</b>		Flow Equalization Basin		
Submit state and federal permit applications	1/31/2014 ✓		Stormwater Treatment Area		
Construction status report	3/1/2014 ✓		Conveyance Improvement		
Construction status report	3/1/2015 ✓		Complete		
Complete construction (begin multi-purpose ops)	12/31/2016 ✓				
Long term operations commence	12/31/2022 ✓				
<b>STA-2 Expansion: Compartment B</b>			<b>STA-5/6 Internal Improvements (100868)</b>		
<b>Activity</b>	<b>Deadline</b>		<b>Activity</b>	<b>Deadline</b>	
Initial flooding and optimization period complete	5/31/2014 ✓	<b>COMPLETE</b>	Initiate design	10/31/2019 ✓	
			Submit state and federal permit applications	8/30/2020 ✓	
			Complete design	10/31/2021 ✓	
			Initiate construction	1/31/2022 ✓	
			Construction status report	3/1/2023 ✓	
			Construction status report	3/1/2024 ✓	
			Complete construction	12/31/2024 ✓	
			Initial flooding and optimization period complete	12/31/2025 ✓	
<b>A-1 FEB (100706)</b>			<b>STA-5/6 Expansion: Compartment C</b>		
<b>Activity</b>	<b>Deadline</b>		<b>Activity</b>	<b>Deadline</b>	
Initiate design	4/1/2012 ✓		Initial flooding and optimization period complete	5/31/2014 ✓	
Submit state and federal permit applications	12/1/2012 ✓				
Design status report	3/1/2013 ✓				
Complete design	8/1/2013 ✓	<b>COMPLETE</b>			
Initiate construction	6/30/2014 ✓				
Construction status report	3/1/2015 ✓				
Construction status report	3/1/2016 ✓				
Complete construction	7/30/2016 ✓				
Operational monitoring and testing period complete	7/29/2018 ✓				
<b>WESTERN FLOW PATH</b>			<b>C-139 FEB (100867)</b>		
<b>STA-5/6 Internal Improvements (100868)</b>			<b>Activity</b>	<b>Deadline</b>	
<b>STA-5/6 Expansion: Compartment C</b>			Initiate design	10/31/2018 ✓	
<b>COMPLETE</b>			Submit state and federal permit applications	8/30/2019 ✓	
<b>COMPLETE</b>			Complete design	10/31/2020 ✓	
<b>COMPLETE</b>			Initiate construction	1/31/2021 ✓	
<b>COMPLETE</b>			Construction status report	3/1/2021 ✓	
<b>COMPLETE</b>			Construction status report	3/1/2022 ✓	
<b>COMPLETE</b>			Construction status report	3/1/2023 ✓	
<b>COMPLETE</b>			Complete construction	12/31/2023 ✓	
<b>COMPLETE</b>			Operational monitoring and testing period complete	12/31/2024 ✓	

**Projects Complete = 7 of 13**  
**Activities Complete = 61 of 74**  
**% Activities Complete = 82 %**  
**% Time Complete = 66 %**

Revised June 17, 2021