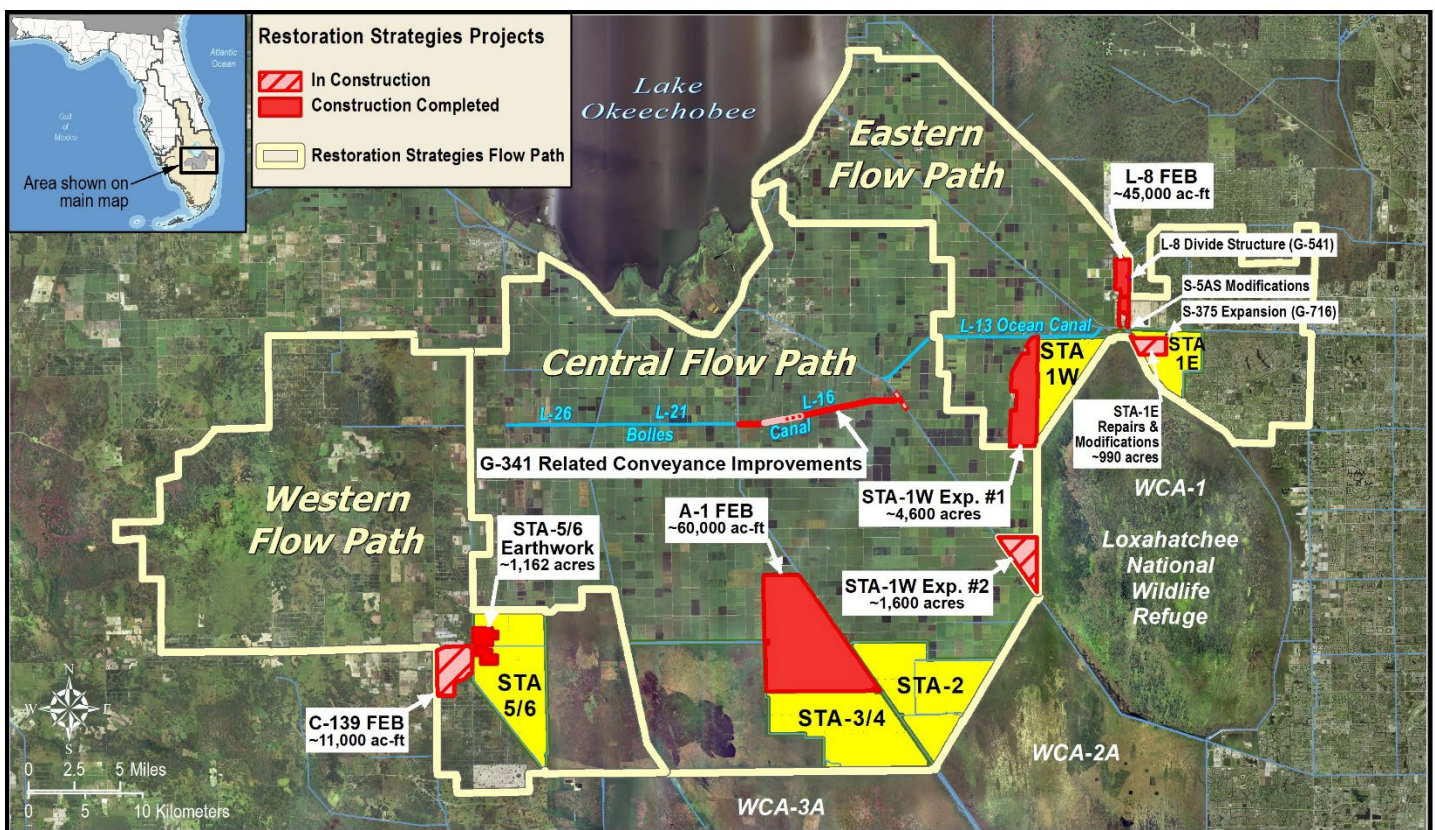


Restoration Strategies Program and Stormwater Treatment Area Enhancement Update December 2021

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 December 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. Vegetation management planting activities are ongoing. Cell 7 regrade is ongoing. Substantial completion is expected by January 2022.

STA-1W Expansion #2

Construction of Civil Works and Inflow Pump Station is ongoing. Formwork and reinforcing steel installation for the lower walls and columns of G-780 and G-781 pump stations is ongoing. Sheet pile installation for G-782 pump station is complete. Blasting for Collection Canal is complete.

G-341 Related Conveyance Improvements

Construction of Segment 4 is complete. Segment 5 design is ongoing and is expected to be finalized in late December 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. The 2B /4 levee removal is complete. The Cell 3 earthwork is complete and vegetation management activities are ongoing. The levee removal between 5B and 2A levee is near completion. Substantial completion of all STA-1W refurbishments is expected in March 2022.

Central Flow Path

STA-2 Refurbishment

Earthwork to regrade uneven topography in the northern portion of Cell 2 is ongoing. The earthwork involves lowering an area in northeast Cell 2 and raising a 500-acre low-lying area in northwest Cell 2. The northeast regrade area is nearly complete. 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 for the G-550 Inflow pump station and G-551 structures are ongoing. ERP Permits for G-552 and G-711E complete.

Connection of STA-5/6 to Lake Okeechobee

Hydraulic Feasibility Study and Conceptual Design have been completed. Phase 1 design will commence in December 2021 to improve conveyance, build a pump station, and rely on temporary facilities to connect the Miami Canal to the inflow of STA-5/6.

Restoration Strategies Program and Stormwater Treatment Area Enhancement Update December 2021

Restoration Strategies Science Plan

Of the fourteen Science Plan studies, eight have been completed and six are in progress. Six additional study proposals have been approved.

Ongoing Science Plan Studies

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

Additional Studies

Biomarker Study.....	Sept 2022
Fauna study	Sept 2023
Ecotopes Study	Sept 2023
P Dynamics Study	Sept 2023
Data Integration Study	Sept 2024
Marl Study	Sept 2024



District employees filtering water samples for analyses (P dynamics study).

Restoration Strategies Program and Stormwater Treatment Area Enhancement Update December 2021

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

Projects Complete = 7 of 13
 Activities Complete = 61 of 74
 % Activities Complete = 82 %
 % Time Complete = 69 %

Revised November 22, 2021