

Ecosystem Restoration in South Florida

Lt. Col. Jennifer A. Reynolds

Deputy District Commander, South Florida

U.S. Army Corps of Engineers

Jacksonville District

May 20, 2016

***Trusted Partners Delivering Value,
Today and Tomorrow***



US Army Corps of Engineers
BUILDING STRONG®





U.S. ARMY

System-Wide Perspective

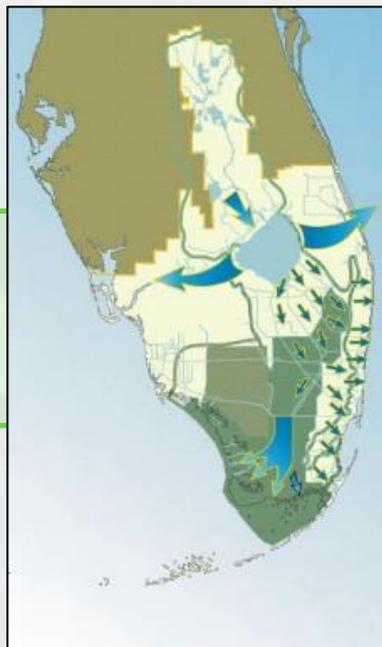


BUILDING STRONG

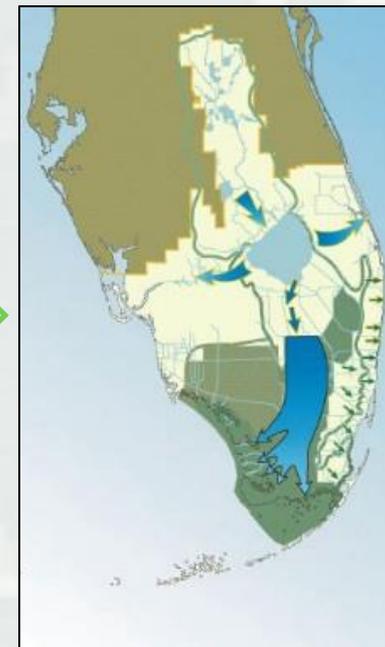
Increased operational flexibility = Relief to estuaries
Restoration of flows to Everglades



PAST FLOW



CURRENT FLOW



FUTURE FLOW

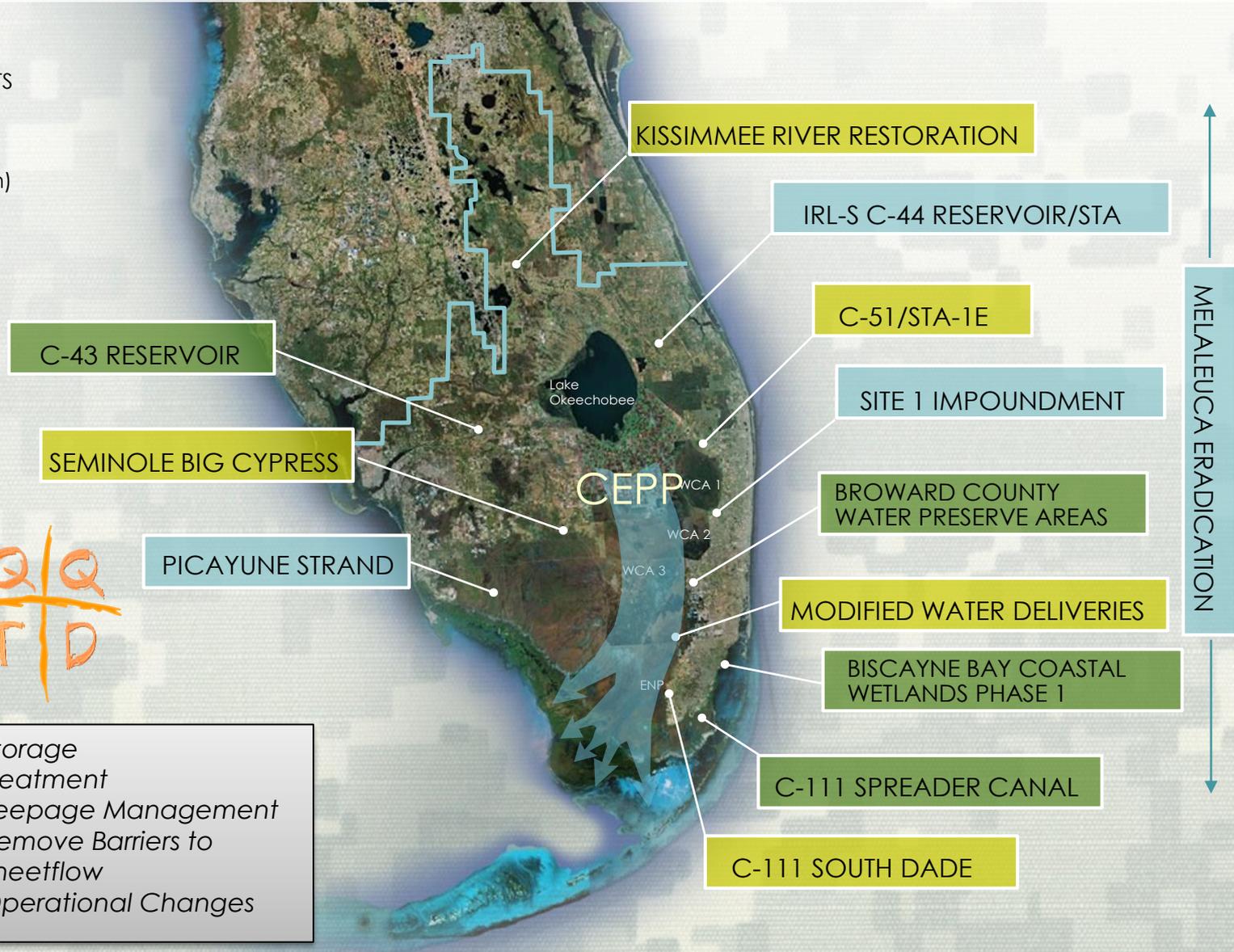
Restoration Overview

- FOUNDATION PROJECTS
 - 1ST GENERATION CERP
 - 2ND GENERATION CERP (awaiting authorization)
- CEPP: Central Everglades Planning Project



Q/Q
T/D

Storage
Treatment
Seepage Management
Remove Barriers to Sheetflow
Operational Changes





Restoration Progress

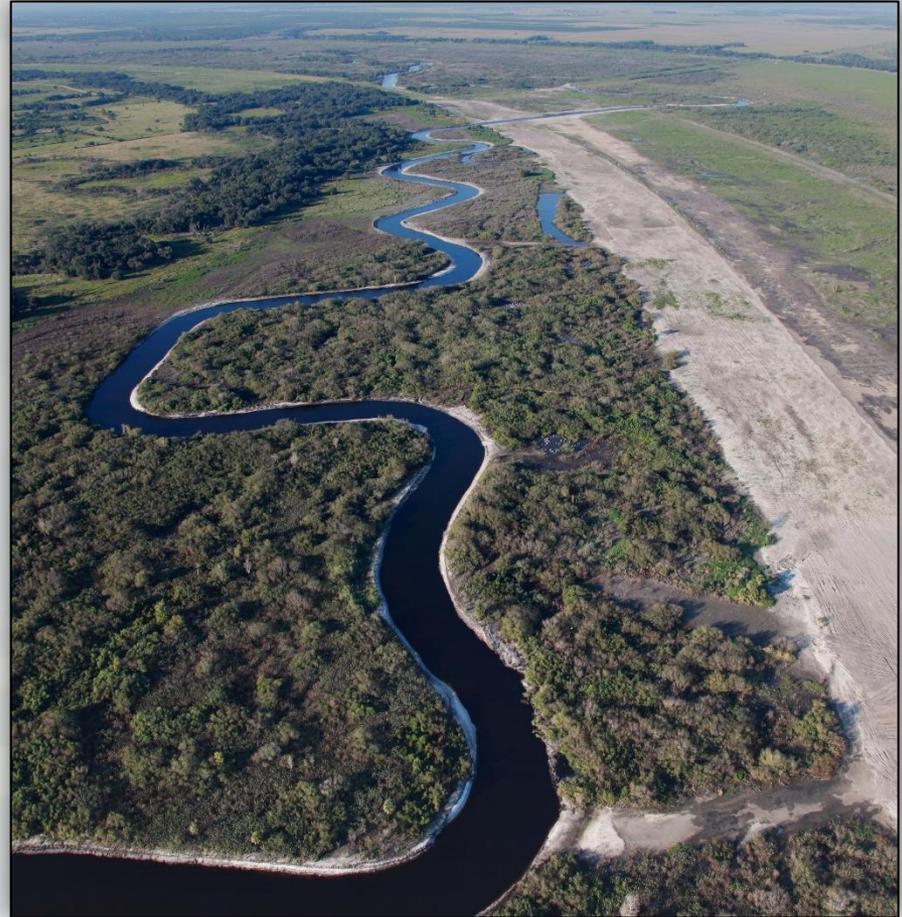


BUILDING STRONG

KISSIMMEE RIVER RESTORATION



BEFORE



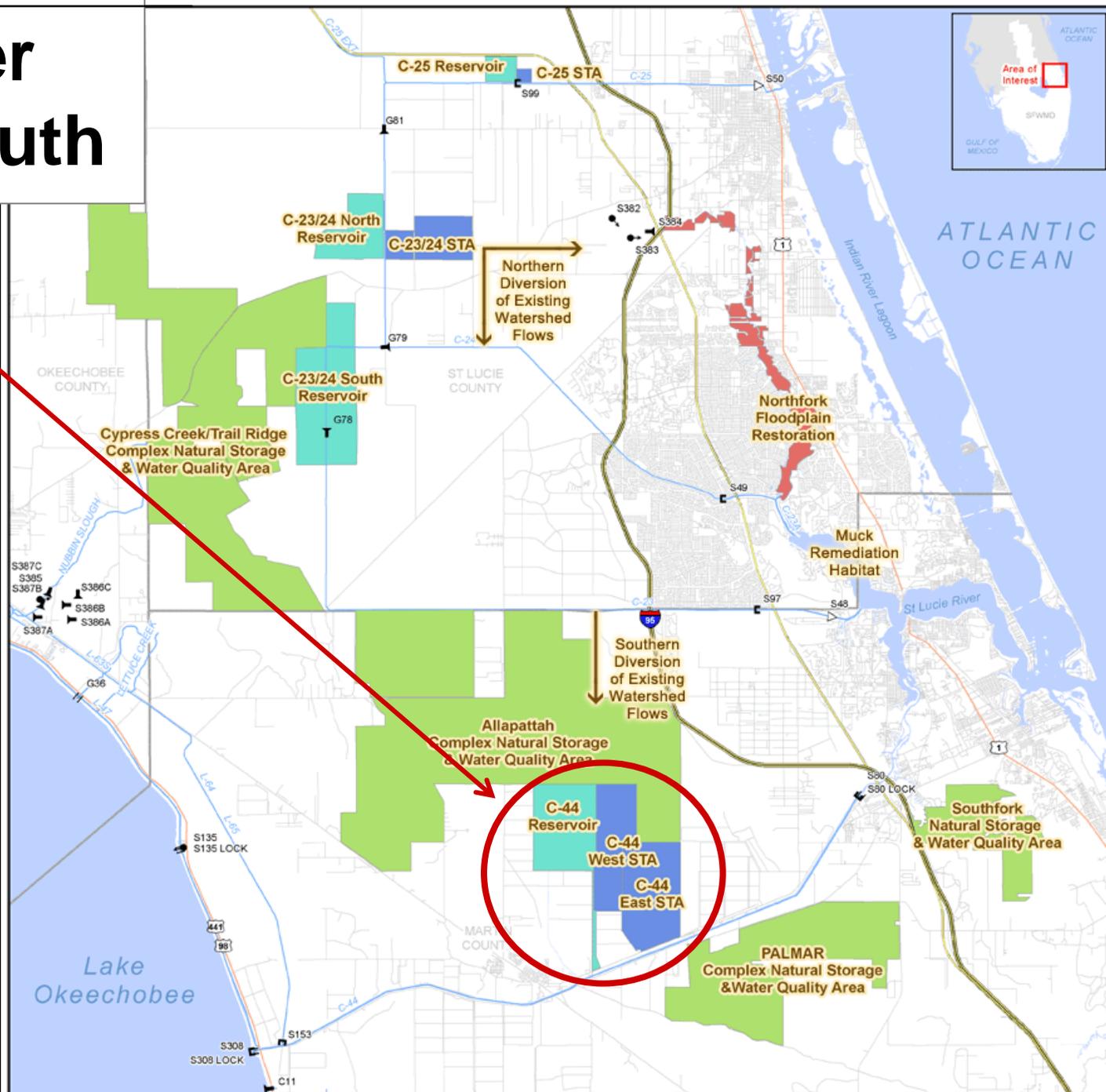
AFTER

Trusted Partners Delivering Value, Today and Tomorrow

Indian River Lagoon South

COMPONENTS:

- **C-44 Reservoir & STA**
- C-25 Reservoir & STA
- C-23/24 North Reservoir & STA
- C-23/24 South Reservoir
- North Fork Floodplain Restoration
- Muck Remediation for Artificial Habitat
- Natural Storage & Water Quality Treatment Areas
- Diversion of Existing Watershed Flows

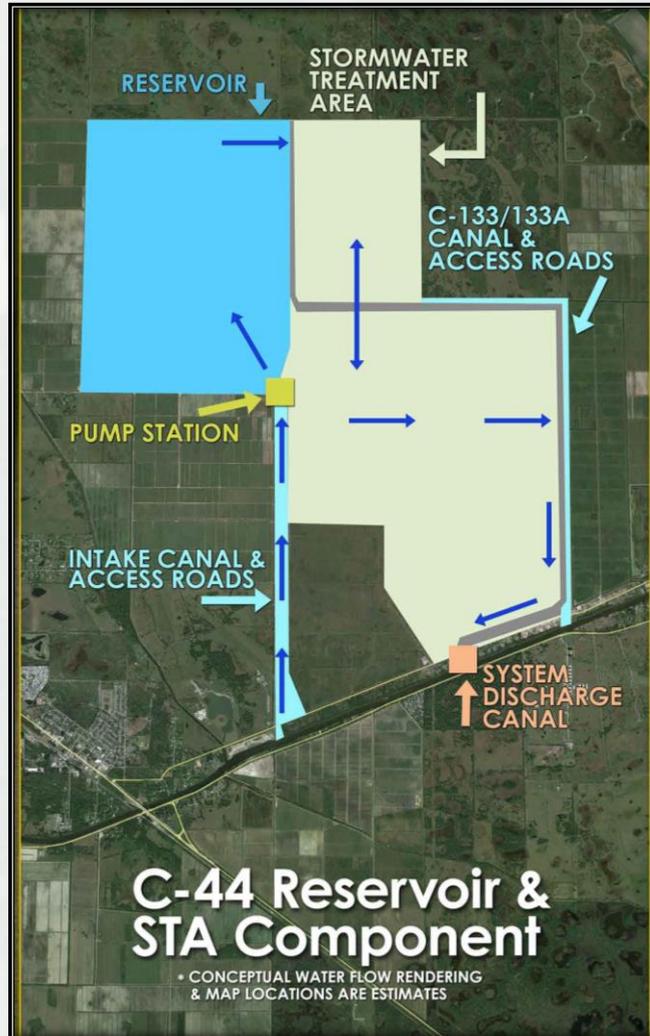




C-44 Reservoir & STA



BUILDING STRONG



RESERVOIR

Contract Awarded: Sept. 2015
Contract Total: \$197 million

PUMP STATION

Contract Awarded: April 2015
Contract Total: \$40 million

SYSTEM DISCHARGE CANAL

Contract Awarded: August 2014
Contract Total: \$5.4 million

STORMWATER TREATMENT AREA (STA)

Contract Awarded: Oct. 2014
Contract Total: \$100 million

INTAKE CANAL & C-133/133A CANALS

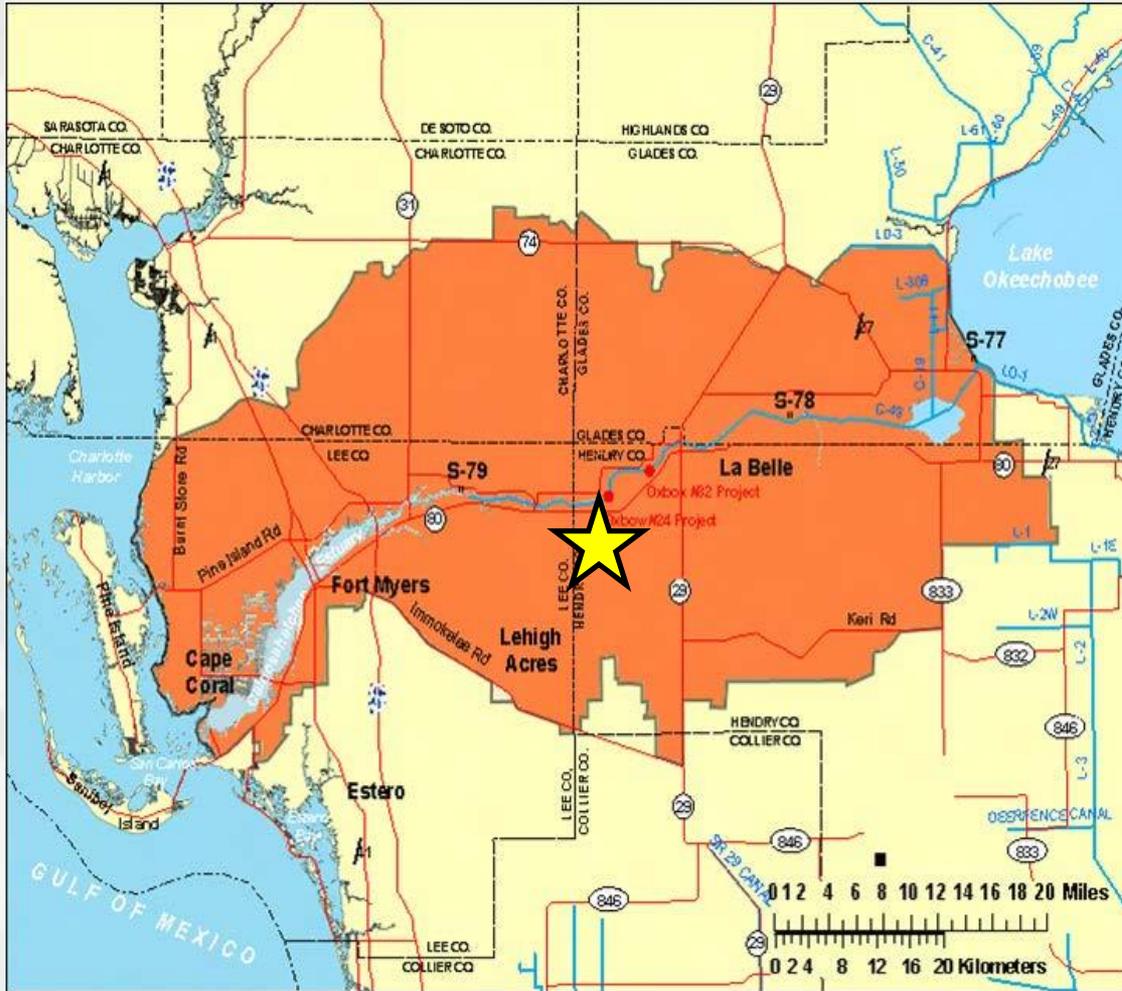
Contract Awarded: July 2014
Contract Total: \$36 million



C-43 Reservoir



BUILDING STRONG

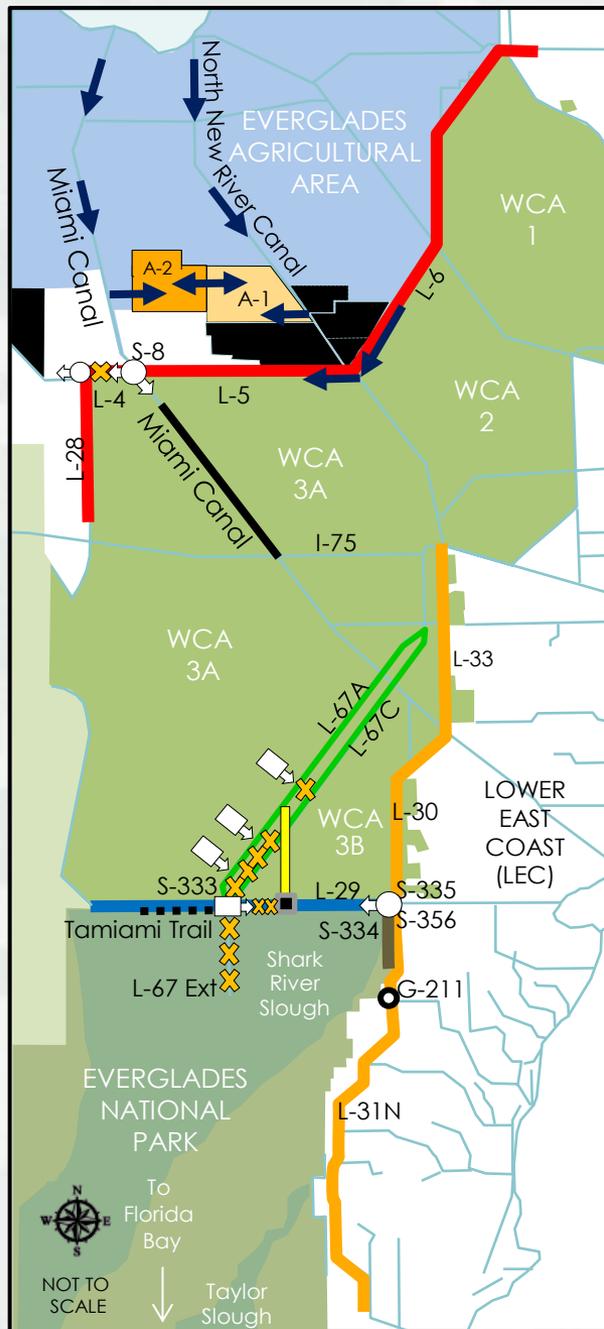


- Working collaboratively to get project constructed as quickly as possible
 - June 2015: Facilitated agreement with our partner, the SFWMD, to initiate construction on the first phase of project
 - SFWMD has started preliminary work on the site to prepare for Phase 1 of the project

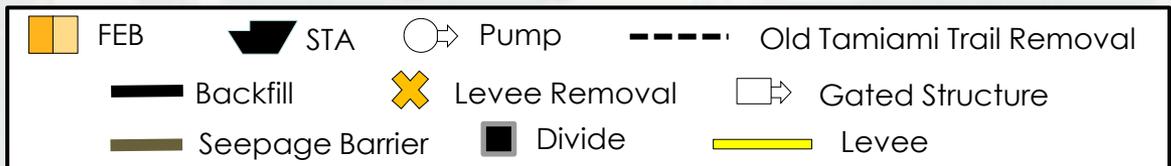
Central Everglades



BUILDING STRONG



- Currently awaiting Congressional authorization
- Central Everglades Planning Project (CEPP) will:
 - Send approx. 210,000 acre-feet of water south from Lake Okeechobee
 - Increase freshwater flows to the central portion of the Everglades by 22%
 - Increase water flow and distribution to Everglades National Park by 30%
 - Reduces unnatural freshwater discharges to the estuaries and re-directs it to the heart of the Everglades and Florida Bay

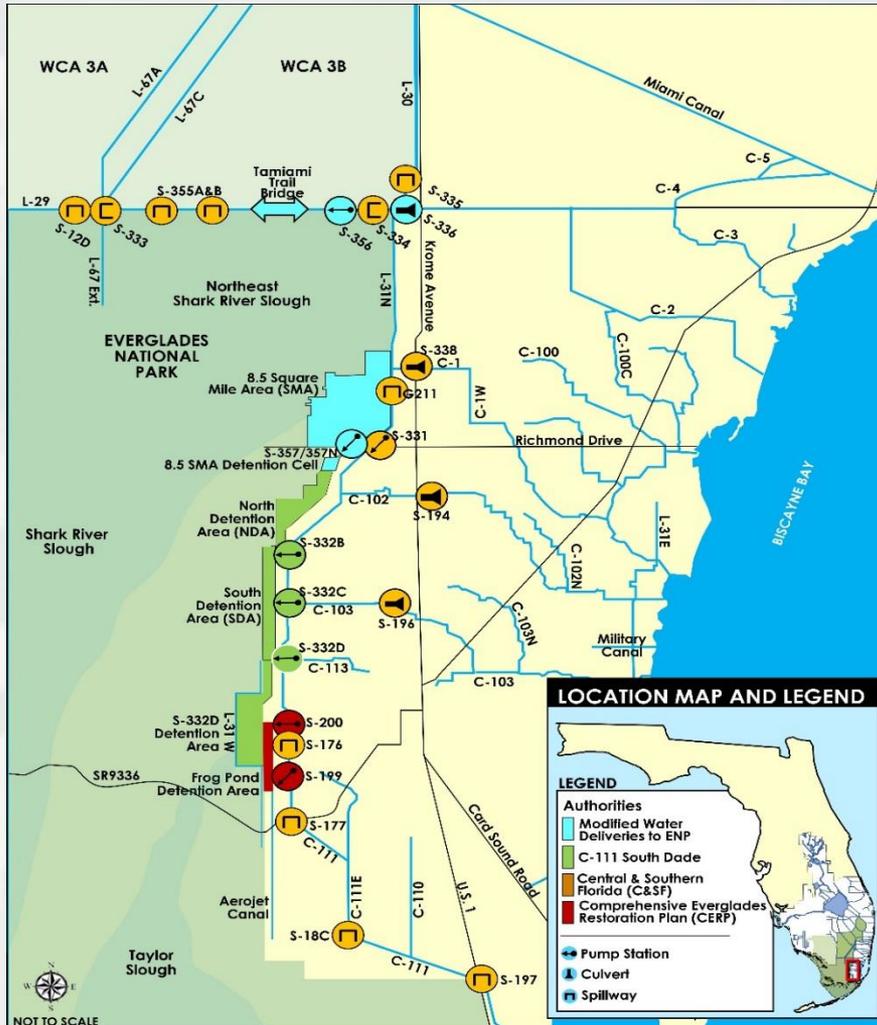




Southern Everglades



BUILDING STRONG



MODIFIED WATER DELIVERIES (MOD WATERS)

Re-distributes existing water flow to Everglades National Park (ENP)

C-111 SOUTH DADE PROJECT

Works in concert with Mod Waters project to prevent groundwater from seeping out of ENP, enabling additional water flow into ENP and Florida Bay.

G-3273/S-356 PUMP STATION FIELD TEST

Incremental field test evaluating how additional water will ultimately be sent south to ENP through the Mod Waters and C-111 South Dade projects.



Synchronizing Priorities



- A formal re-evaluation of the Integrated Delivery Schedule (IDS) was completed in December 2015.
- The IDS:
 - Synchronizes program & project priorities with the State of Florida
 - Is needed to request funding required to plan & build South Florida Ecosystem Restoration Projects

Project	Yellow Book Code	Timeline (2015-2035)																							
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035			
Federal Construction Cost (SFER)		41	130	142	190	204	141	212	192	195	221	213	186	200	144	151	100	0	0	0	0	0			
Non-Federal Construction Cost (SFER)		43	139	161	161	77	119	55	39	142	141	141	210	192	192	123	123	0	0	0	0	0			
Total Construction Cost (SFER)		84	277	303	350	282	260	267	231	338	362	354	396	392	336	223	123	0	0	0	0	0			
Modified Water Deliveries to Everglades National Park*		●○○○	○○○○	○○○○	○○○○	○○○○																			
Herbert Hoover Dike*		●																							
Seminole Big Cypress*	OPE	●																							
Restoration Strategies*		●																							
Tamiami Trail Next Steps Phase 1*		●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●			
Kissimmee River Restoration		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
West Palm Beach Canal/STA-1E		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-111 South Dade Contract 8 & 9		●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●			
C-111 South Dade PACR		●○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○			
Picayune Strand Restoration	OPE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Merritt Pump Station		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Faka Union Pump Station		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Manatee Mitigation and Flood Protection Features		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Miller Pump Station		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Remaining Features - Road removal & canal backfill		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Site 1 Impoundment	M																								
Phase 1																									
Indian River Lagoon-South																									
C-44 Intake Canal	B	●○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○			
C-44 Reservoir	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-44 STA & Pump Station	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-23/24 Reservoir North	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-23/24 Reservoir South	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-23/24 STA	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-25 Reservoir	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-25 STA	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Natural Lands	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Decomp Physical Model	Q	●○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○	○○○○			
Caloosahatchee River (C-43) West Basin Storage																									
Pump Station & Cell 1	D	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Cell 2	D	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Broward County Water Preserve Areas																									
C-11 Impoundment	Q	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
WCA 3A&3B Seepage Management	O	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-9 Impoundment	R	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Biscayne Bay Coastal Wetlands Phase 1	FFF, OPE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
L-31 East Flowway		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Cutler Wetlands		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-111 Spreader Canal Western Project	WW	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Central Everglades Planning Project (Authorization WRDA 2016)																									
PPA South: LRR & PPA Execution	AA, FF, H, QQ	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Remove Old Tamiami Trail (CNTX)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
L-67A Structure 1 & Gap in L-67C Levee (CNT 3)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Increase S-356 (CNT 4)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
L-29 Gated Spillway (CNT 4b)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Increase S-333 (CNT 4a)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
L-67A Structures 2 & 3 (CNT 5)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Removal L-67C & L-67 Ext, Constr L-67D Levee (CNT 6)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Removal L-29 Levee & Backfill L-67 Ext (CNT 7)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
PPA North	QQ, II, G	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
PPA New Water	V	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Loxahatchee River Watershed Restoration Project	X, Y, K	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Lake Okeechobee Watershed, ASR		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Big Cypress/L-28 Interceptor (Western Everglades)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
EAA Storage & ASR/Decomp Ph2		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
C-111 Spreader Canal Eastern & BBCW Ph2		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			



Restoration Progress



BUILDING STRONG



BUILDING MORE STORAGE

- Construction ongoing for the Indian River Lagoon-South C-44 Reservoir, which will enable an additional 16.5 billion gallons of water to be stored from the C-44 Basin.



SETTING CONDITIONS TO FLOW MORE WATER SOUTH

- Construction ongoing for critical infrastructure that will enable additional water flow south into Everglades National Park & provide additional operational flexibility.



INITIATING NEW PLANNING STUDIES

- Two new planning studies scheduled to begin this summer:
 - Lake Okeechobee Watershed
 - Western Everglades



Stay Informed!



BUILDING STRONG

JACKSONVILLE DISTRICT
US Army Corps of Engineers

Search Jacksonville District

HOME ABOUT BUSINESS WITH US MISSIONS LOCATIONS CAREERS MEDIA LIBRARY CONTACT

HOME > MISSIONS > ENVIRONMENTAL > ECOSYSTEM RESTORATION

Ecosystem Restoration



The U.S. Army Corps of Engineers has a long history of maintaining the nation's waterways, but only in the last two decades has the Corps taken its knowledge of routing water and applied it towards ecosystem restoration. The Ecosystem Branch oversees the planning, design, construction and management of ecosystem restoration projects in Florida, Puerto Rico, and other U. S. territories in the Caribbean Islands.

The majority of ongoing restoration projects are located in south Florida, including the Comprehensive Everglades Restoration Plan (CERP) and the Central and Southern Florida projects such as C-111 South Dade and Kissimmee River Restoration. Because these projects are some of the first ecosystem restoration projects undertaken by the Corps, the Jacksonville District leads the way in ecosystem restoration and adaptive management. A key component of successful ecosystem restoration projects is the use of interagency teams during the planning process and continued communication during execution. The Ecosystem Branch is proud to be the Jacksonville District's representative on the South Florida Ecosystem Restoration Task Force and utilizes this position to continue to inform other agencies regarding ongoing activities.

For additional background information on the Corps' Everglades restoration efforts, visit: www.evergladesrestoration.gov/

What's New

C-111 South Dade Project

- Oct. 29: Corps awards contract for C-111 South Dade project

CERP Report to Congress

- Oct. 21: Agencies release draft Report to Congress for Comprehensive Everglades Restoration Plan

G-3273 & S-356 Pump Station Field Test

- Oct. 15: Water operations field test begins in Everglades

Kissimmee River Restoration

- Sept. 28: Corps awards second contract this year for Kissimmee River Restoration

Indian River Lagoon-South C-44 Reservoir & Stormwater Treatment Area (STA)

- Sept. 11: Corps awards Indian River Lagoon-South construction contract

Latest information on the U.S. Army Corps of Engineers' Everglades restoration efforts available at:

<http://bit.ly/EvergladesRestoration>

Follow us on social media:

Facebook: Jacksonville District

Twitter: @JaxStrong



BUILDING STRONG



**US Army Corps
of Engineers** ®
Jacksonville District

www.saj.usace.army.mil

On Facebook www.facebook.com/JacksonvilleDistrict

On YouTube! www.youtube.com/JaxStrong

On Twitter www.twitter.com/JaxStrong

On Flickr www.flickr.com/photos/jaxstrong

Useful Restoration Sites:

www.evergladesrestoration.gov

www.sfwmd.gov

Trusted Partners Delivering Value, Today and Tomorrow