

**U.S. ARMY CORPS OF ENGINEERS (USACE)
JACKSONVILLE DISTRICT**

SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

**SOUTH FLORIDA RESTORATION TASK FORCE:
Joint Working Group and Science Coordination Group Meeting
Presented by: Eva B. Vélez, PE, Chief, Ecosystems Branch**

02 May 2023



**US Army Corps
of Engineers** ®

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SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS



FY23 EXECUTION FOCUS

▪ FY23 Appropriations/BIL Funds

▪ Program-level Activities

- ▶ National Academies of Science Review (CISRERP)
- ▶ Interagency Modeling Center (IMC)
- ▶ Integrated Delivery Schedule (IDS)
- ▶ RECOVER (Restoration, Coordination, VERification)
- ▶ Adaptive Assessment and Monitoring
- ▶ CERP Update

▪ Planning

- ▶ Biscayne Bay and Southeastern Everglades Ecosystem Restoration (BBSEER)
- ▶ Lake Okeechobee Watershed Restoration Project (LOWRP)
- ▶ Western Everglades Restoration Project (WERP)
- ▶ Southern Everglades Ecosystem Restoration
- ▶ Indian River Lagoon – South (IRL-S)
- ▶ Central Everglades Planning Project (CEPP)
- ▶ C&SF Flood Resiliency (Section 216) Study
- ▶ Lake Okeechobee Component A Reservoir (LOCAR)

▪ Design and Construction

- ▶ C-111 South Dade (C-111SD)
- ▶ Picayune Strand Restoration (PSRP)
- ▶ Indian River Lagoon – South (IRL-S)
- ▶ Biscayne Bay Coastal Wetlands (BBCW)
- ▶ Central Everglades Planning Project (CEPP)
- ▶ Broward County Water Preserve Areas (BCWPA)
- ▶ C-43 West Basin Storage Reservoir
- ▶ Loxahatchee River Watershed Restoration Project (LRWRP)

▪ Water Management and Operations and Maintenance

- ▶ Kissimmee River Restoration (KRR)
- ▶ Indian River Lagoon – South (IRL-S)
- ▶ Modified Water Deliveries, Combined Operational Plan (COP)
- ▶ Lake Okeechobee System Operating Manual (LOSOM)
- ▶ Central Everglades Planning Project Operational Plan
- ▶ A-2 STA Operational Planning
- ▶ C-43/C-44 Reservoirs Operational Plan
- ▶ Operations, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R)



FY23 BUDGET OVERVIEW

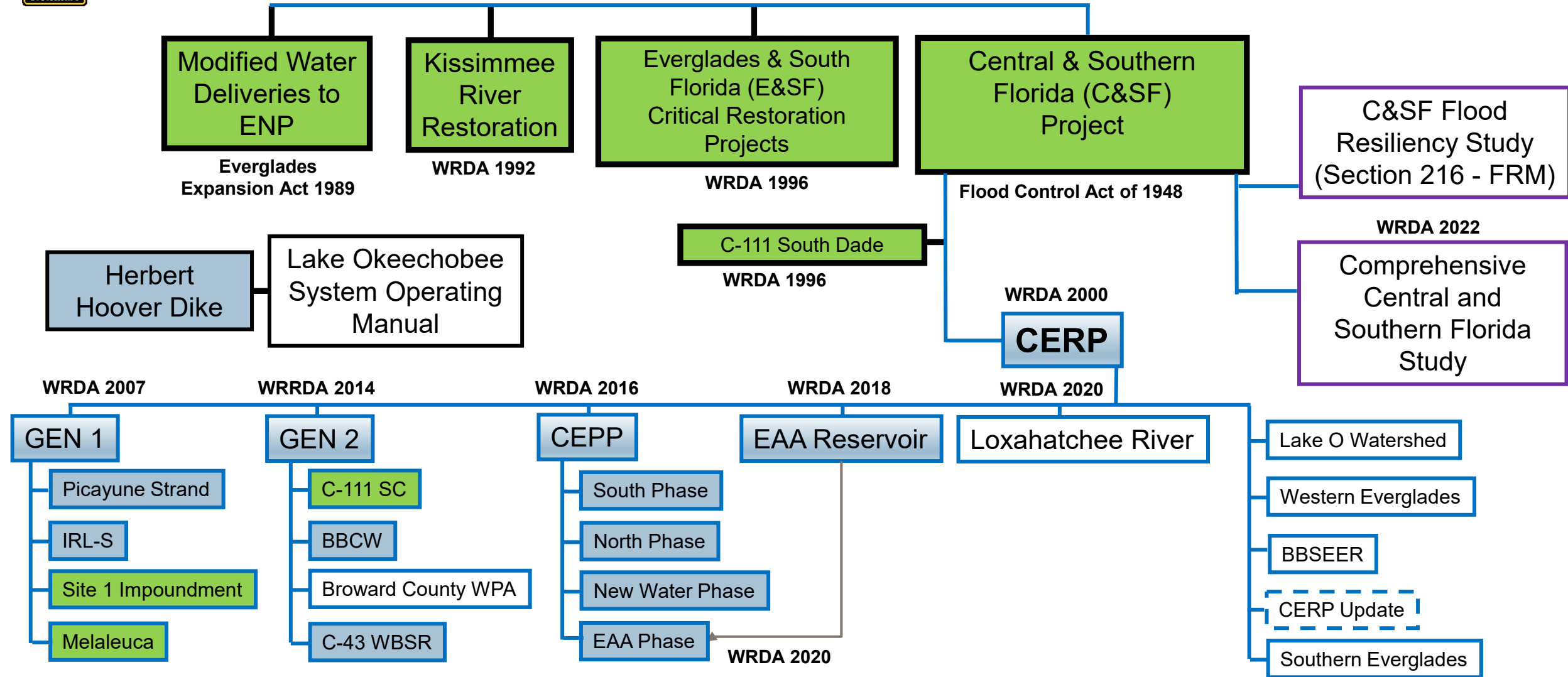


	INVESTIGATIONS	CONSTRUCTION	OPERATIONS & MAINTENANCE	
South Florida Ecosystem Restoration (Annual)	\$0	\$453.84M	\$10.67M	FY23 Omnibus Bill
South Florida Ecosystem Restoration (Supplemental)	\$0	\$1.097B	\$0	Bipartisan Infrastructure Law (2022)
South Florida Ecosystem Restoration (Annual)	\$0	\$415M	\$12.9M	FY24 President's Budget
FY24 J Sheet, Total Estimated SFER Programmed Construction Cost \$ 23,617,006,000				
Central and Southern Florida Resiliency Study (Section 216)	\$975K	\$0	\$0	FY22 + FY23 budget
Comprehensive Central and Southern Florida Resilience Study (WRDA22)	\$0	\$0	\$0	New authority in WRDA22



SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

PROGRAM STRUCTURE



LEGEND:

- Construction Ongoing
- Construction Complete, In Operations
- Foundation Projects
- Investigations

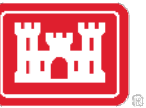
CERP – Comprehensive Everglades Restoration Plan
 GEN – Generation; linked to Authorization
 CEPP – Central Everglades Planning Project
 Legislation Dates = Original Authorization Date



SOUTH FLORIDA
ECOSYSTEM RESTORATION PROGRAM
PROGRAM-LEVEL ACTIVITIES

Today's Highlights:

- Integrated Delivery Schedule (IDS)



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM

PROGRAM-LEVEL ACTIVITIES

INTEGRATED DELIVERY SCHEDULE

INTEGRATED DELIVERY SCHEDULE 2022 UPDATE - WORKING DRAFT

INTEGRATED DELIVERY SCHEDULE 2022 UPDATE - WORKING DRAFT
 SOUTH FLORIDA ECOSYSTEM RESTORATION - CENTRAL AND SOUTHERN FLORIDA COMPREHENSIVE EVERGLADES RESTORATION PLAN

The Comprehensive Everglades Restoration Plan (CERP) is the largest aquatic ecosystem restoration effort in the United States, with total program costs of \$47 billion. The Integrated Delivery Schedule (IDS) is a forward-looking road map of the project's delivery, design, and construction activities and programs. It provides a "big picture" overview for the South Florida Ecosystem Restoration Program (SFERP) and the Comprehensive Everglades Restoration Program (CERP) and is used to coordinate and integrate the activities of all project partners and to ensure the program's successful implementation.

The IDS is a dynamic document that will be updated and revised as the program evolves. It is a key tool for project management and communication. It provides a common language and framework for project management and communication. It is a key tool for project management and communication. It is a key tool for project management and communication.

Project ID	Project Name	Funding Source	Funding										
			2023	2024	2025	2026	2027	2028	2029	2030			
F01	Florida Water Infrastructure	Federal	500	500	500	500	500	500	500	500	500	500	500
F02	Water Quality Improvement	State	100	100	100	100	100	100	100	100	100	100	100

June 2023
 Initiate 2023 IDS update

Oct 2023 (tent)
 Release of Final Draft 2023 IDS
 Update at Task Force Workshop

COMPONENTS AND PROJECTS

The IDS identifies all components that contribute to the overall system benefits. These components are categorized into five regions: South Florida, Central Florida, North Florida, West Florida, and East Florida. Each component is assigned a project number and a completion date. The table below provides a summary of the components and their projected completion dates.

Region	Component ID	Component Name	Completion Date
SOUTH FLORIDA	1.1	South Florida Water Infrastructure	2024
	1.2	Water Quality Improvement	2025
	1.3	Water Conservation	2026
	1.4	Water Conservation	2027
	1.5	Water Conservation	2028
	1.6	Water Conservation	2029
	1.7	Water Conservation	2030
	1.8	Water Conservation	2031
	1.9	Water Conservation	2032
	1.10	Water Conservation	2033
CENTRAL FLORIDA	2.1	Central Florida Water Infrastructure	2025
	2.2	Water Quality Improvement	2026
	2.3	Water Conservation	2027
	2.4	Water Conservation	2028
	2.5	Water Conservation	2029
	2.6	Water Conservation	2030
	2.7	Water Conservation	2031
	2.8	Water Conservation	2032
	2.9	Water Conservation	2033
	2.10	Water Conservation	2034

SOUTH FLORIDA ECOSYSTEM RESTORATION AND GETTING THE WATER RIGHT - 2022 WORKING DRAFT

THE RESTORATION FRAMEWORK

EXPANDING THE RECOVER FOOTPRINT

The Comprehensive Everglades Restoration Plan (CERP) is a multi-decade program to restore the South Florida ecosystem. The program is divided into four phases: Phase I (2008-2015), Phase II (2016-2025), Phase III (2026-2035), and Phase IV (2036-2045). The program is designed to restore the South Florida ecosystem to its natural state and to provide a sustainable water supply for the region.

COMPONENTS AND PROJECTS

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CERP COMPONENTS STATUS AND LOCATIONS BY RECOVER REGIONS

This map shows the locations of various CERP components across the South Florida ecosystem. The components are color-coded by region: South Florida (red), Central Florida (orange), North Florida (yellow), West Florida (green), and East Florida (blue). The map also shows the location of various water bodies and infrastructure projects.

COMPONENTS BY REGION

Region	Component ID	Component Name	Status
SOUTH FLORIDA	1.1	South Florida Water Infrastructure	Planning
	1.2	Water Quality Improvement	Design
	1.3	Water Conservation	Construction
	1.4	Water Conservation	Completed
	1.5	Water Conservation	Completed
	1.6	Water Conservation	Completed
	1.7	Water Conservation	Completed
	1.8	Water Conservation	Completed
	1.9	Water Conservation	Completed
	1.10	Water Conservation	Completed
CENTRAL FLORIDA	2.1	Central Florida Water Infrastructure	Planning
	2.2	Water Quality Improvement	Design
	2.3	Water Conservation	Construction
	2.4	Water Conservation	Completed
	2.5	Water Conservation	Completed
	2.6	Water Conservation	Completed
	2.7	Water Conservation	Completed
	2.8	Water Conservation	Completed
	2.9	Water Conservation	Completed
	2.10	Water Conservation	Completed

- Save the dates:
- August 2023 – IDS 101 workshops
 - September 2023 – Draft IDS workshop



SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCY PROGRAMS

PLANNING

Today's Highlights:

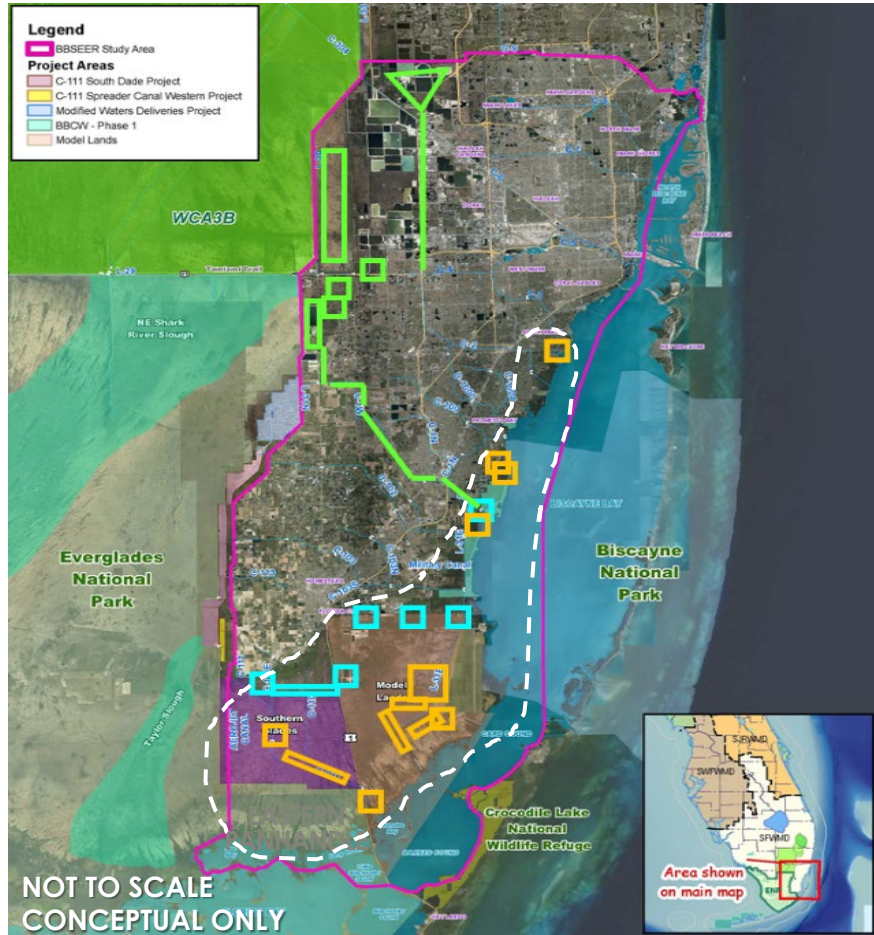
- Biscayne Bay and Southeastern Everglades Ecosystem Restoration (BBSEER)
- Lake Okeechobee Watershed Restoration Project (LOWRP)
- Western Everglades Restoration Project (WERP)
- C&SF Flood Resiliency (Section 216) Study



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM PLANNING



BISCAYNE BAY AND SOUTHEASTERN EVERGLADES ECOSYSTEM RESTORATION (BBSEER)



The objectives of the study:

- Improve quantity, timing and distribution of freshwater to **estuarine and nearshore subtidal areas**, including mangrove and seagrass areas.
- Restore freshwater depths, hydroperiods, and flows for dry and wet seasons in **terrestrial wetlands**.
- Restore **connectivity and habitat gradients** in areas compartmentalized by the C&SF system in the Southern Everglades, Model Lands, and Biscayne Bay Coastal Wetlands.
- Increase and restore **ecological resilience** in coastal habitats in southeastern Miami Dade County

Status:

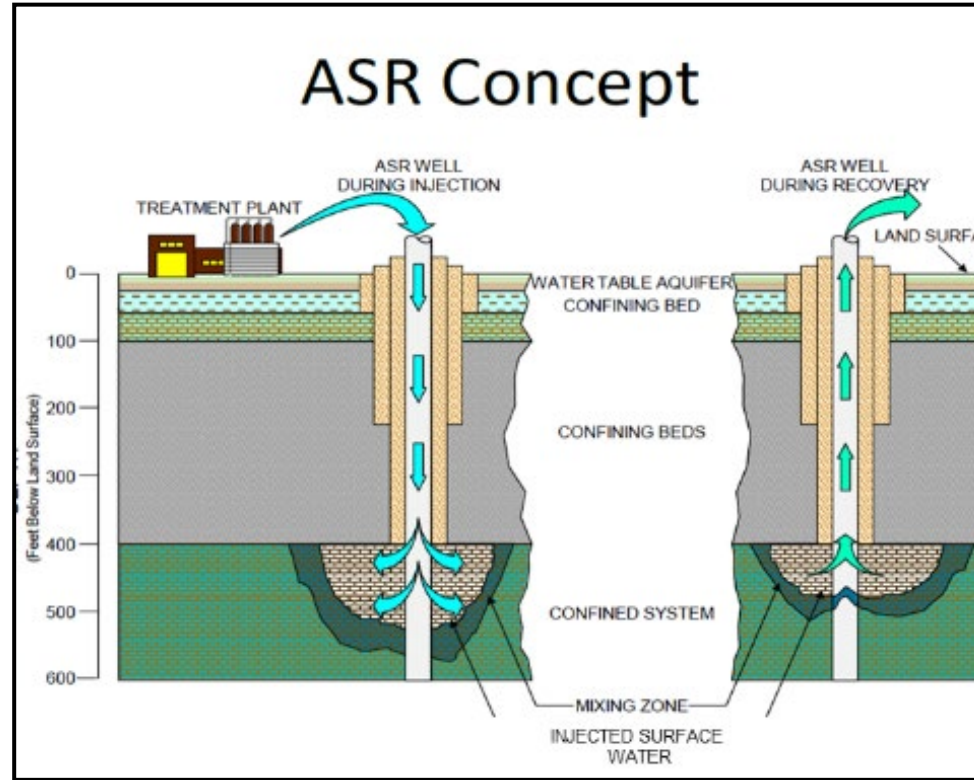
- Continued Engagement with Project Delivery Team
- Modeling and Development of Final Array of Alternatives



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM

PLANNING

LAKE OKEECHOBEE WATERSHED RESTORATION PROJECT



COMPONENTS:

AQUIFER STORAGE AND RECOVERY (ASR) WELLS

WETLAND RESTORATION SITES

- Restore hydrology of isolated, riverine wetlands
- Paradise Run: Approx. 4,700 acres
- Kissimmee River Center: Approx. 1,200 acres
- Recreational facilities

STATUS

- Waiver Package for updated Recommended plan with separable elements in coordination with HQUSACE, for interim PIR for Wetland Restoration and final PIR for ASR.





SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM

PLANNING

WESTERN EVERGLADES RESTORATION PROJECT



Images Courtesy of Big Cypress National Preserve

WERP Study Objectives:

- Restore freshwater flow paths, flow volumes & timing, seasonal hydroperiods, and historic distributions of sheetflow to reestablish ecological connectivity and ecological resilience of the historic wetland/upland mosaic.
- Restore water levels to reduce wildfires associated with altered hydrology, which damage the underlying geomorphology and associated ecological conditions of the western Everglades.
- Restore aquatic low nutrient (oligotrophic) conditions to reestablish and sustain native flora and fauna.

STATUS

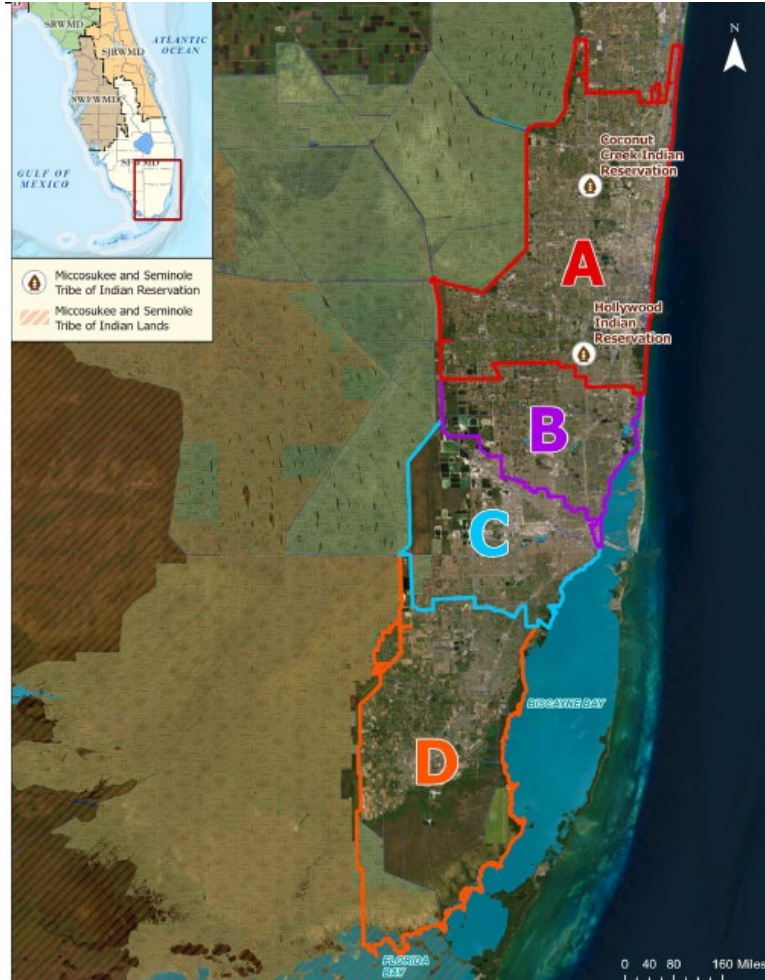
- Waiver package under review to revise TSP and update project schedule
- Wingate Mill STA feature removed from TSP, restoring more natural overland flows being evaluated
- April 2023, additionally modeling and performance measures being finalized
- Ongoing engagement with stakeholders and partners



C&SF RESILIENCE PROGRAM PLANNING



C&SF FLOOD RESILIENCY (SECTION 216) STUDY



Study objectives:

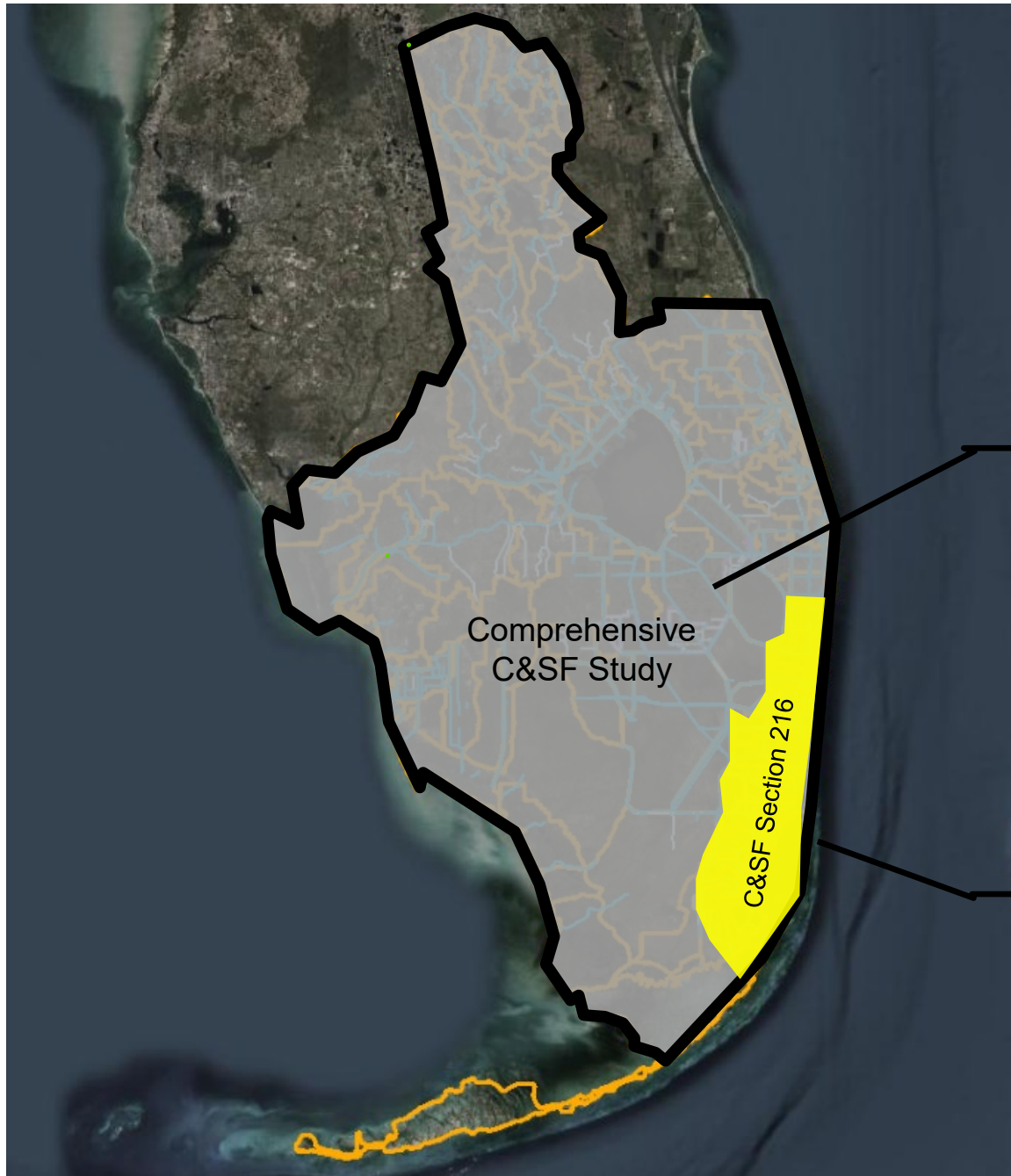
- **Reduce flood risks and damages** in Palm Beach, Broward, and Miami-Dade counties resulting from the combination of rainfall runoff, storm surge, high tide and/or high-water table to residences, businesses, and critical infrastructure.
- **Reduce potential life safety risk** in Palm Beach, Broward, and Miami-Dade counties due to flooding as a result of the combination of rainfall runoff, storm surge, high tides and/or water table.

Status

- Four (4) planning focus areas were identified for the study: Reach A: Broward and Hillsboro Basins, Reach B: Little River and Nearby Basins, Reach C: Miami River and Nearby Basins, Reach D: South Miami Basins
- Initial Array of Alternatives and Alternatives Milestone Meeting in MAR 2023
- Updating Project Management Plan, scope, schedule and funding
- Ongoing engagement with stakeholders



C&SF RESILIENCE PROGRAM PLANNING



WRDA22, Section 8214 Comprehensive C&SF Study

- Multipurpose Project focus on short term and long-term solutions for community resiliency
- Focus on: FRM; Water Supply; Ecosystem Restoration, Saltwater Intrusion; Recreation
- 18 Counties – inland and coastal areas
- ~9 Million Population
- ~18,000 Square Miles
- Multiple Federal Projects including CERP

(Section 216) C&SF Flood Resiliency Study

- Focus on coastal salinity structures for flood resiliency
- 4 Planning Reaches 3 Counties
- Many municipalities
- > 5 Million Population
- > 1,100 Square Miles



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM DESIGN | CONSTRUCTION

Today's Highlights:

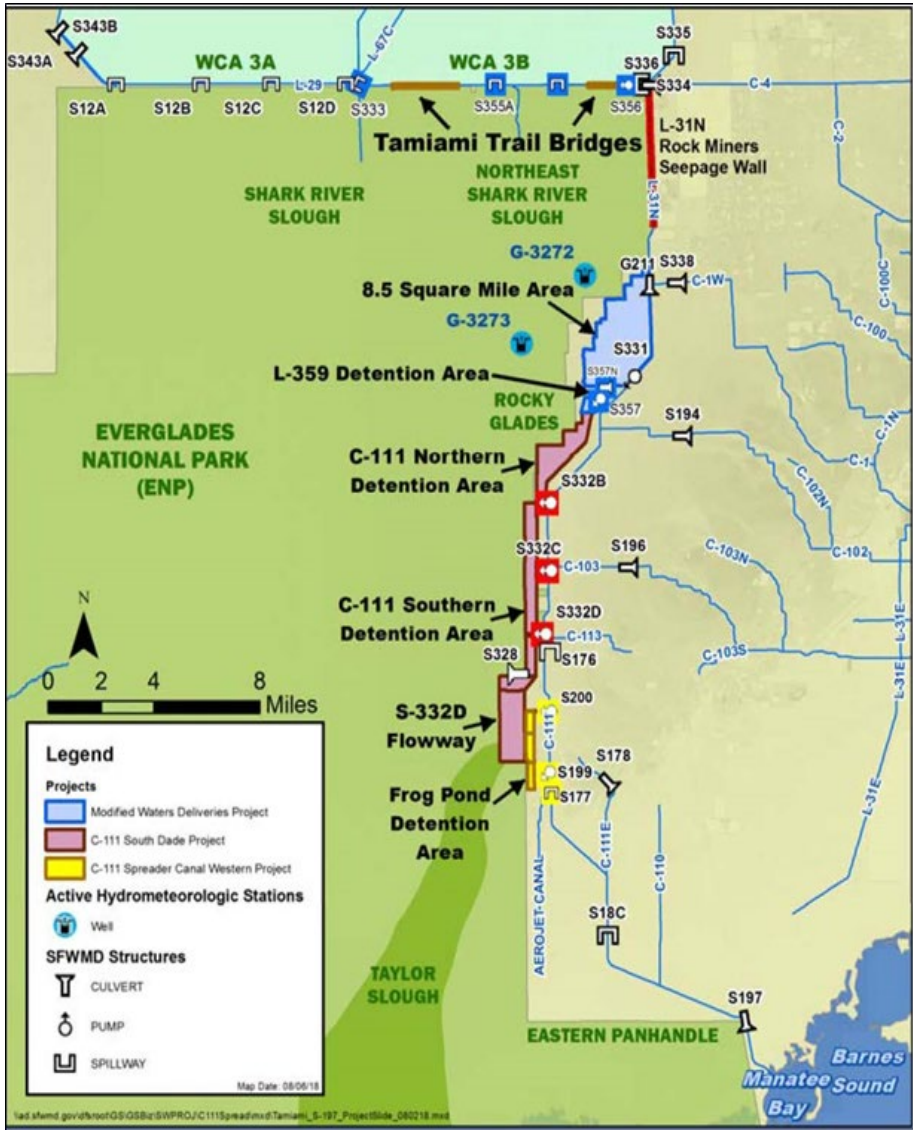
- C-111 South Dade (C-111SD)
- Picayune Strand Restoration (PSRP)
- Indian River Lagoon – South (IRL-S)
- Biscayne Bay Coastal Wetlands (BBCW)
- Central Everglades Planning Project (CEPP)
- Broward County Water Preserve Areas (BCWPA)



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM

DESIGN | CONSTRUCTION

CANAL 111 (C-111) SOUTH DADE



The project maintains existing flood protection and other C&SF project purposes in developed areas east of C-111 while restoring natural hydrologic conditions in the Taylor Slough and eastern panhandle areas of ENP. Increased freshwater flows in these areas will also help conditions in Florida Bay.

Status:

- Collaborating with SFWMD on engineering design to replace the S-332B and S-332C pump stations (60% in MAY 23 and 100% in MAY 24.)



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM

DESIGN | CONSTRUCTION

PICAYUNE STRAND RESTORATION PROJECT



Plugged Faka Union Canal

The project will restore 55,000 acres of native Florida wetlands and uplands.

Total Project Benefits:

- Conveyance of water will restore natural habitat
- Three pump stations: Merritt, Faka Union, and Miller
- Plugging 48 miles of canals and removing/degrading 260 miles of roads

Under Construction:

- Miller Tram and Road Removal
- Southwest Conveyance Feature
- Southwest Protection Feature
- Miller Canal Clearing



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM

DESIGN | CONSTRUCTION

INDIAN RIVER LAGOON - SOUTH PROJECT



C-23/C-24 Stormwater Treatment Area Construction, APR 2023

The Indian River Lagoon and St. Lucie Estuary are two of the country's most productive and most threatened estuaries; the project will reconnect and restore natural areas in the headwaters and improve water flow to the river.

In Design:

- C-23/C-24 North Reservoir
- C-23/C-24 South Reservoir

Under Construction:

- C-23/C-24 Stormwater Treatment Area



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM DESIGN | CONSTRUCTION BISCAYNE BAY COASTAL WETLANDS PROJECT



S-705 Construction Site

The project will restore the natural pattern of freshwater inflows to Biscayne Bay.

Total Project Benefits:

Conveyance and distribution of flows to rehydrate coastal wetlands, reduce point source discharges, and redistribute surface water; improve the ecology of Biscayne Bay.

Under Construction:

- Pump stations S-703, S-705, S-709, S-710, and S-711
- Anticipated Ribbon Cutting, S-709, Summer 2023



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM

DESIGN | CONSTRUCTION

CENTRAL EVERGLADES PLANNING PROJECT



Everglades Agricultural Area
Reservoir, Construction of Inflow-Outflow and
Seepage Canals underway, APR 2023

The Central Everglades Planning Project (CEPP) focuses restoration on more natural flows into and through the central and southern Everglades by increasing storage, treatment and conveyance of water south of Lake Okeechobee; removing canals and levees within the central Everglades and retaining water within Everglades National Park.

Status:

- CEPP – South:
 - ▶ L-67A structures, *under construction*
 - ▶ Pump Station S-356, final design ongoing, anticipated contract award FY23
 - ▶ Gated Spillway S-355W, final design ongoing, anticipated contract award FY23
- CEPP – EAA:
 - ▶ Seepage and Inflow/Outflow Canal, *under construction*
 - ▶ Reservoir Foundation and Cut-off Wall, *under construction*
 - ▶ Reservoir Embankment, design ongoing, anticipated contract award FY24

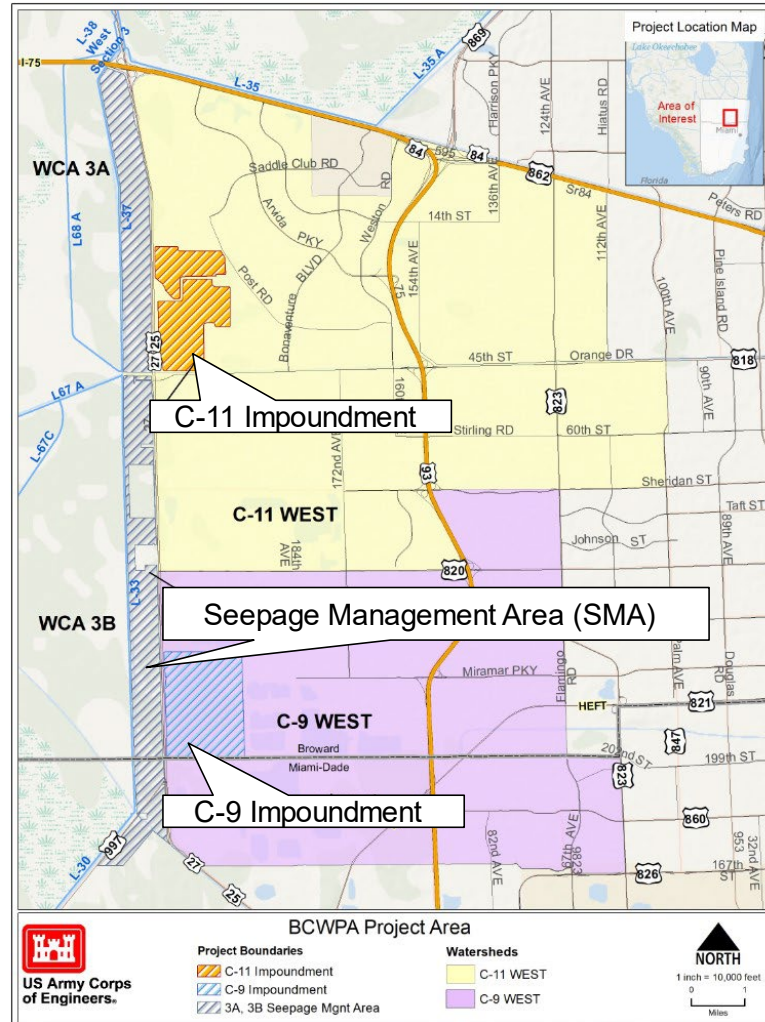


SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM

DESIGN | CONSTRUCTION



BROWARD COUNTY WATER PRESERVE AREAS | C-11 IMPOUNDMENT



Purpose

- Reduce discharges of runoff from developed areas in western Broward County into Water Conservation Area 3 which flows to the Everglades National Park
- C-11 Impoundment is key to full operation of CEPP South
- Reduce seepage of water out of the Everglades to developed areas in western Broward County
- The project will improve fish and wildlife habitat including that of 5 federally-listed species
- 563,000 acres in Water Conservation Area 3 and 200,000 acres in the greater Everglades will benefit from project implementation

Features

- Final Design of C-11 Impoundment underway



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM OPERATIONS

Today's Highlights:

- Kissimmee River Restoration (KRR)
- Indian River Lagoon – South (IRL-S)
- Lake Okeechobee System Operating Manual (LOSOM)
- Central Everglades Planning Project (CEPP) Operational Plan



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM OPERATIONS KISSIMMEE RIVER RESTORATION



Restored
Kissimmee River



S-69 Weir

The Kissimmee River Restoration (KRR) restores critical floodplain habitat and timing of flows to Lake Okeechobee.

Total Project Benefits:

- Conveyance of 130,000 acre-feet of natural floodplain storage to slow the flow of water into Lake Okeechobee and reduce the impacts of high-volume discharges into the St. Lucie and Caloosahatchee estuaries.

Status:

- KRR Headwaters Revitalization: Increment 1 development ongoing
- S-69 Weir repairs
- Navigation signage starting



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM OPERATIONS INDIAN RIVER LAGOON - SOUTH



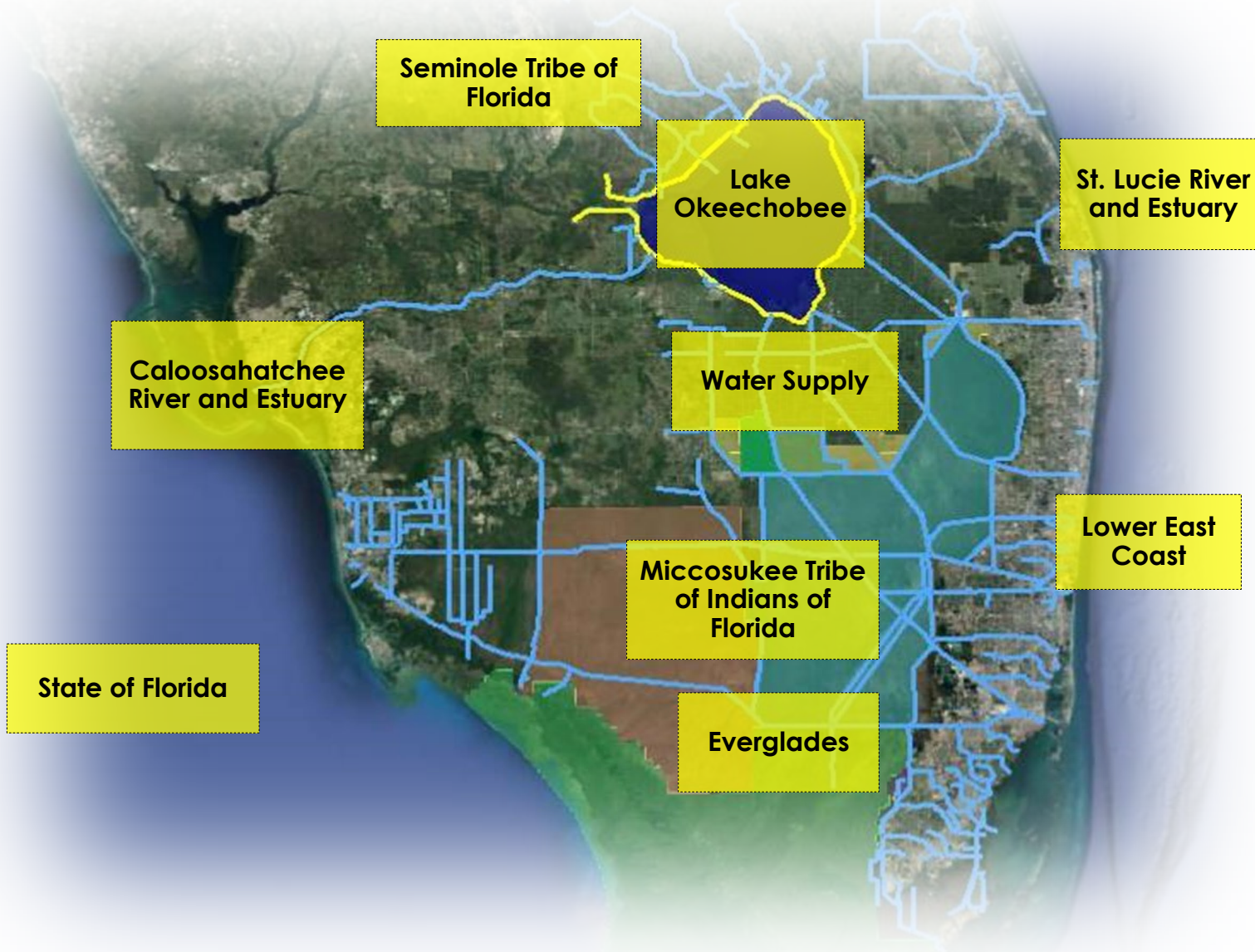
C-44 Reservoir

C-44 Reservoir Status

- Operational monitoring and testing period, extended
- Up to 10-feet now, Target is a 15-foot holding pool
- Current operations in accordance with Preliminary Project Operating Manual
- Addressing seepage in outside canal bank on southwest corner
- Overall conditions remain normal with no dam safety concerns



LAKE OKEECHOBEE SYSTEM OPERATIONS MANUAL



- Benefits-focused
- System with holistic perspective
- Will use real time knowledge of climate conditions, weather data, climate projections, and system needs to make educated decisions about how releases are made
- Key seasonal assessment points to analyze the past, the present, and the anticipated/desired future



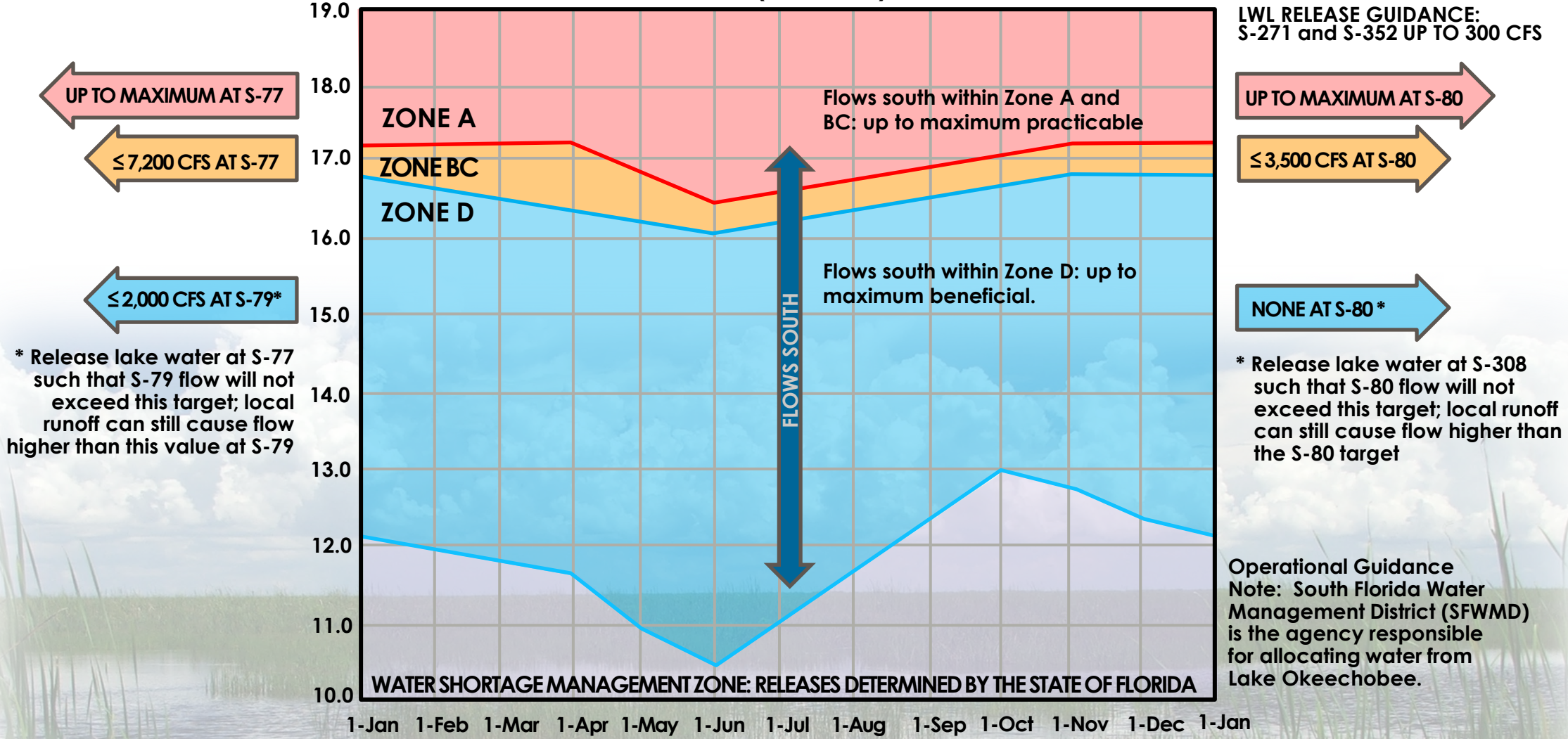
THE LOSOM REGULATION SCHEDULE



TO THE CALOOSAATCHEE RIVER ESTUARY (CRE)

TO THE ST. LUCIE ESTUARY (SLE) AND LAKE WORTH LAGOON (LWL)

LAKE LEVELS (FEET, NGVD)



* Release lake water at S-77 such that S-79 flow will not exceed this target; local runoff can still cause flow higher than this value at S-79

* Release lake water at S-308 such that S-80 flow will not exceed this target; local runoff can still cause flow higher than the S-80 target

TO THE GREATER EVERGLADES



LOSOM SCHEDULE OVERVIEW

THROUGH THE RECORD OF DECISION (ROD)



ACTIVITIES

- Draft NEPA documentation of the effects of the alternatives and how the preferred alternative was chosen
- Draft water control plan (WCP) documentation including regulation schedule and operational guidance
- Endangered Species Act (ESA) consultation initiated, and Biological Assessments (BA) transmitted

February – July 2022
COMPLETE

- NEPA public, agency, and tribal review and comment on the Draft LOSOM Environmental Impact Statement (EIS) and Water Control Plan
- Corps Agency Technical Review (ATR) and Independent External Peer Review (IEPR)
- Draft Fish and Wildlife Service (FWS) Biological Opinion (BO)

July - September 2022
COMPLETE

- Final EIS and System Operating Manual (SOM) completed to address review comments **(January 2023)**
- Final FWS Biological Opinion **(COMPLETE)**
- IEPR Completion, ATR Certification, South Atlantic Division (SAD) Review

September 2022 – March 2023

- Final National Marine Fisheries Service (NMFS) Biological Opinion **(July 2023)**
- NEPA public, agency, and tribal review of Final EIS and SOM **(October 2023)**
- Corps SAD review and approval of Record of Decision (ROD) **(December 2023)**

March 2023 – December 2023

DOCUMENTATION PROCESS



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM OPERATIONS



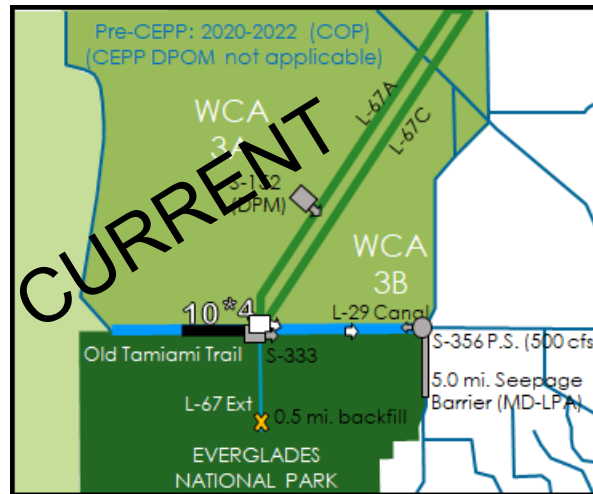
CEPP OPERATIONAL PLAN (incremental)

Project Purpose:

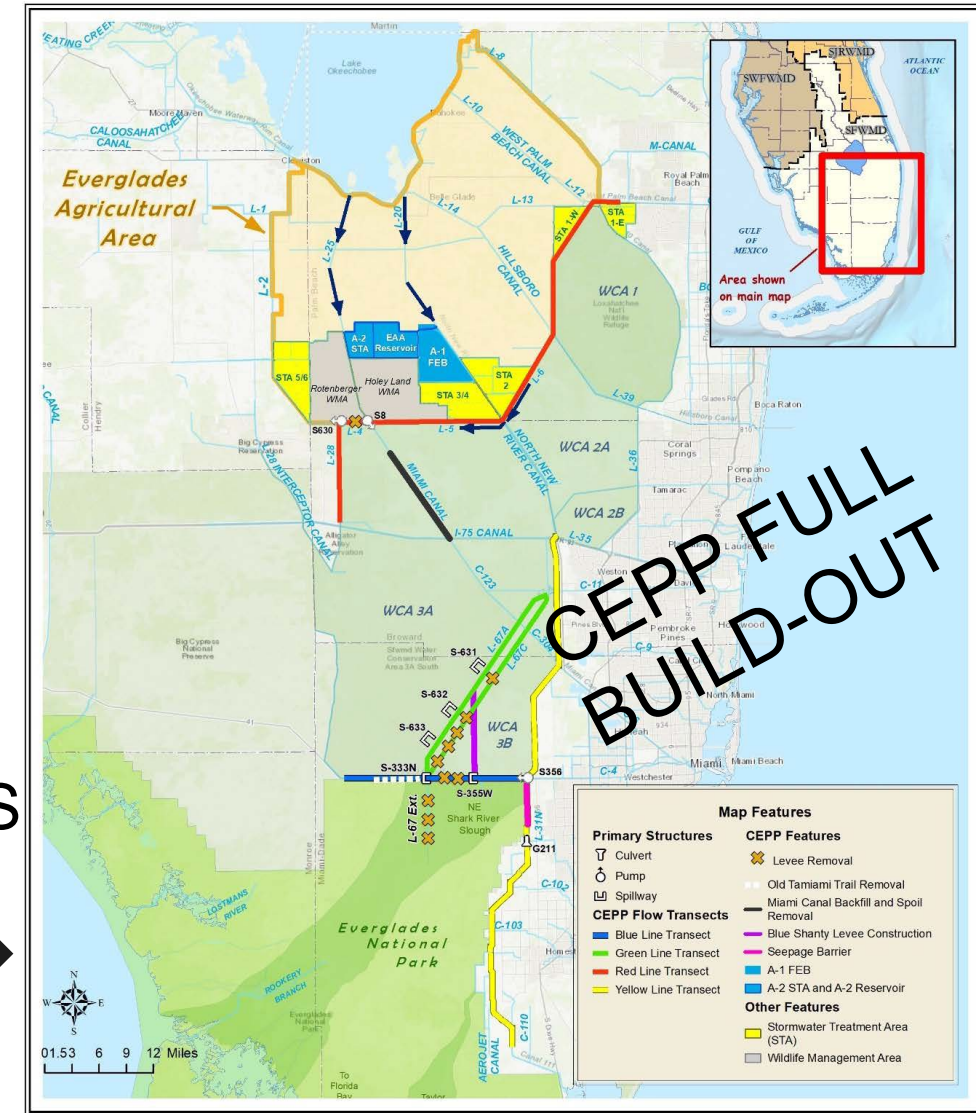
- The Central Everglades Planning Project (CEPP) Operations Plan aims to redistribute Water Conservation Area (WCA) 3A inflows to enhance flows into Everglades National Park (ENP).
- Incremental changes to the Combined Operations Plan (COP) to include Central Everglades Restoration Projects (CERP) and non-CERP implementation.

Status:

- Scoping period has begun, Public meetings underway April 2023
- 15 May 2023, End of scoping



INTERIM OPERATIONS & BENEFITS





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