

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

SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

JOINT SCIENCE COORDINATION AND WORKING GROUP MEETING

Presented by: Eva B. Vélez, P.E., Chief, Ecosystems Branch

16 January 2024



Image courtesy of Conservancy of Southwest Florida



U.S. ARMY



**US Army Corps
of Engineers**

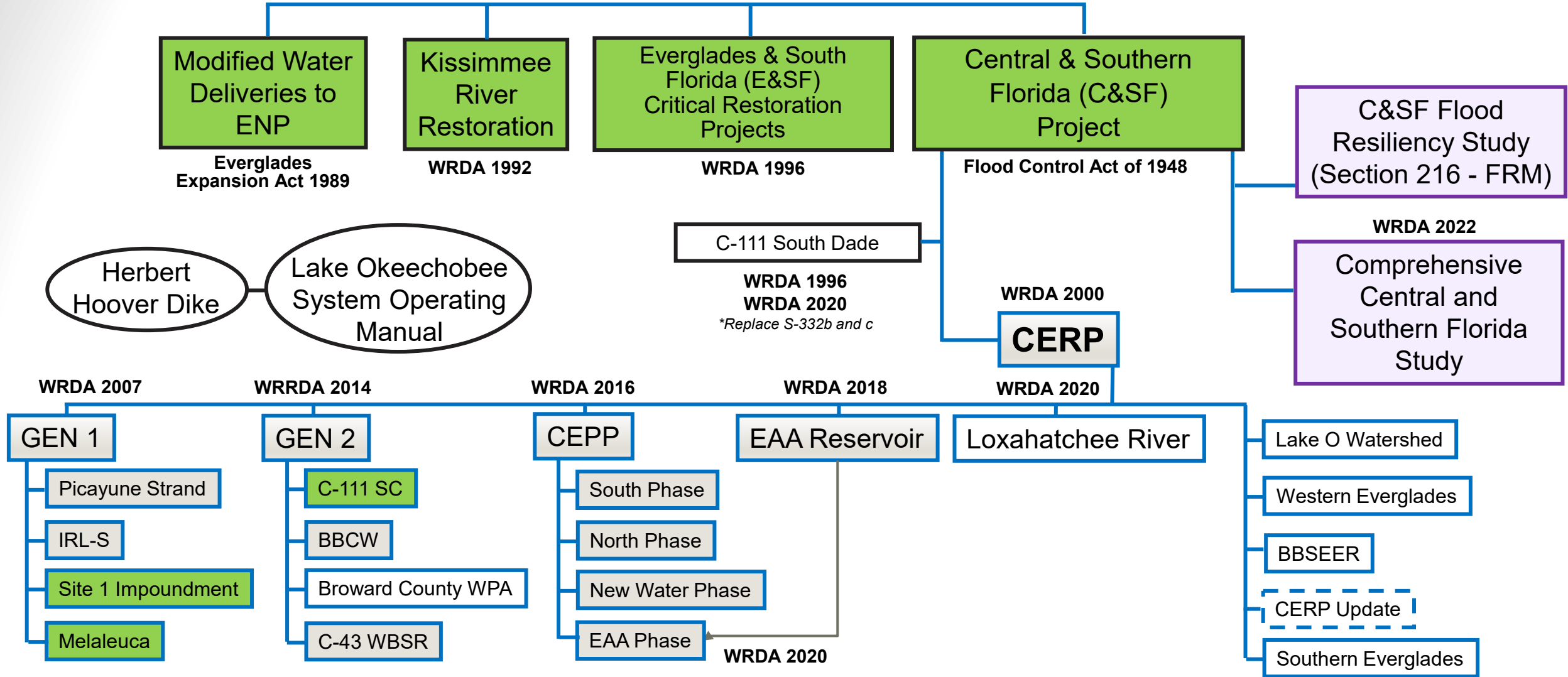


U.S. ARMY

SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS



PROGRAM STRUCTURE



1/12/2024



SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

FY24 EXECUTION FOCUS



 FEASIBILITY  VALIDATION/PACR/OTHER  JOINT OR SFWMD-LED CONSTRUCTION

■ 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)
- ▶ 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

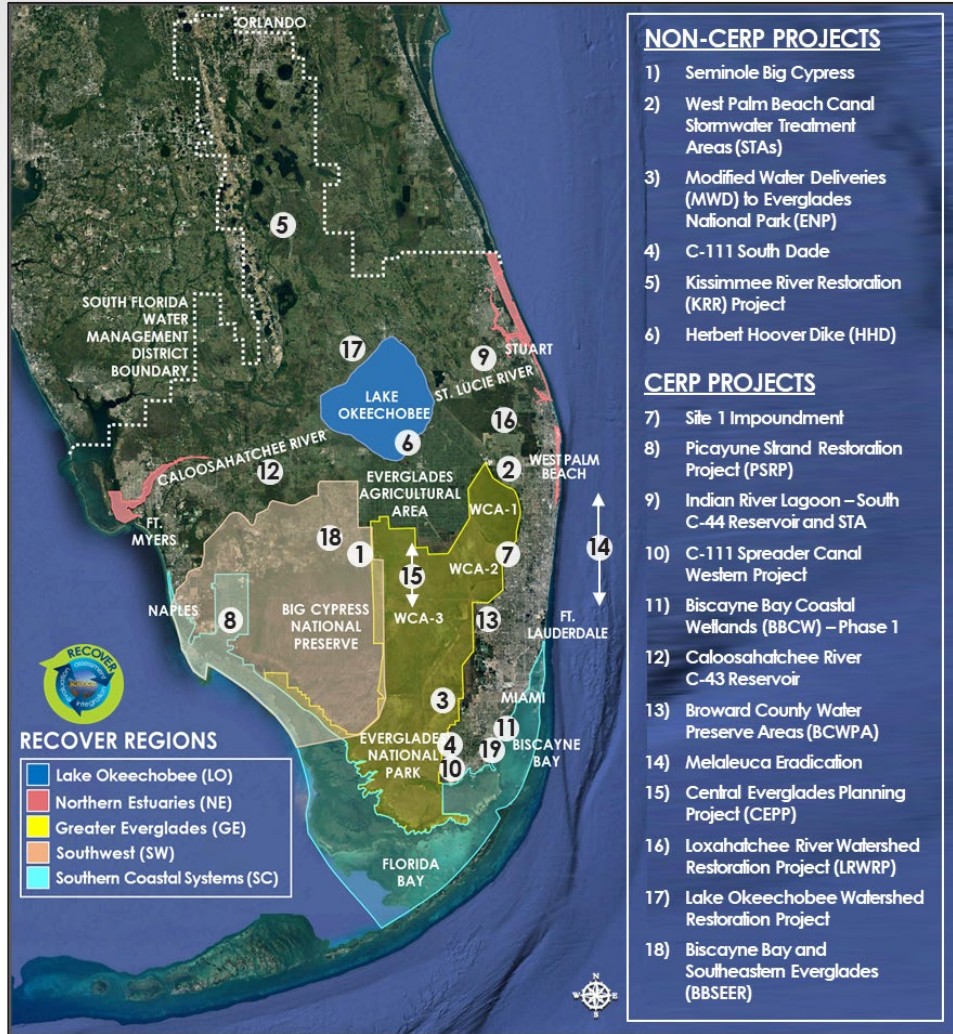
- ▶ C-111 South Dade (C-111SD)
- ▶ Picayune Strand Restoration (PSRP)
- ▶ Indian River Lagoon – South (IRL-S)
- ▶ Biscayne Bay Coastal Wetlands (BBCW)
- ▶ Central Everglades Planning Project (CEPP)
- ▶ Broward County Water Preserve Areas (BCWPA)
- ▶ C-43 West Basin Storage Reservoir
- ▶ Loxahatchee River 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 – CEPP 1.0
- ▶ Central Everglades Planning Project Operational Plan – A-2 STA
- ▶ C-43/C-44 Reservoirs Operational Plan
- ▶ Operations, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R)



SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS FY24 BUDGET OVERVIEW



- NON-CERP PROJECTS**
- 1) Seminole Big Cypress
 - 2) West Palm Beach Canal Stormwater Treatment Areas (STAs)
 - 3) Modified Water Deliveries (MWD) to Everglades National Park (ENP)
 - 4) C-111 South Dade
 - 5) Kissimmee River Restoration (KRR) Project
 - 6) Herbert Hoover Dike (HHD)
- CERP PROJECTS**
- 7) Site 1 Impoundment
 - 8) Picayune Strand Restoration Project (PSRP)
 - 9) Indian River Lagoon – South C-44 Reservoir and STA
 - 10) C-111 Spreader Canal Western Project
 - 11) Biscayne Bay Coastal Wetlands (BBCW) – Phase 1
 - 12) Caloosahatchee River C-43 Reservoir
 - 13) Broward County Water Preserve Areas (BCWPA)
 - 14) Melaleuca Eradication
 - 15) Central Everglades Planning Project (CEPP)
 - 16) Loxahatchee River Watershed Restoration Project (LRWRP)
 - 17) Lake Okeechobee Watershed Restoration Project
 - 18) Biscayne Bay and Southeastern Everglades (BBSEER)

| | INVESTIGATIONS | CONSTRUCTION | OPERATIONS & MAINTENANCE | |
|---|----------------|--------------|--------------------------|--|
| South Florida Ecosystem Restoration (Annual) | \$0 | \$507M* | \$12.897M | FY24 President's Budget + FY23 Carryover |
| South Florida Ecosystem Restoration (Supplemental) | \$0 | \$1.097B | \$0 | Bipartisan Infrastructure Law (2022) |
| FY24 J Sheet, Total Estimated SFER Programmed Construction Cost \$ 23,617,006,000 | | | | |
| Central and Southern Florida Resiliency Study (Section 216) | \$425K* | \$0 | \$0 | FY24 President's Budget |
| Comprehensive Central and Southern Florida Resilience Study (WRDA22) | \$0 | \$0 | \$0 | New authority in WRDA22 |

*FY24 budget adjusted to add FY23 carryover. May also be adjusted to +\$10M in Community Project Funding pending congressional action. Under CR through 19 Jan 2024.



U.S. ARMY



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM PROGRAM-LEVEL ACTIVITIES

Today's Highlights:

- Second Periodic CERP Update





U.S. ARMY

SOUTH FLORIDA ECOSYSTEM RESTORATION | PROGRAM LEVEL ACTIVITIES

SECOND PERIODIC CERP UPDATE



OBJECTIVE:

- Evaluate “the Plan” to ensure that the goals and purposes of the Plan are achieved, with new or updated modeling that includes the latest available scientific, technical, and planning information.
- Determine the total quantity of water that is expected to be generated by implementation of the Plan, including the quantity expected to be generated for the natural system to attain restoration goals as well as the quantity expected to be generated for use in the human environment.

STATUS:

- Initial modeling :
 - An existing condition baseline made up of CERP and non-CERP activities
 - Future with “in progress” CERP component-based activities on approved decisions
- RECOVER is preparing updates to performance measures to evaluate the Plan
- Ongoing coordination with SFER Task Force, Working Group and Science Coordination Group
- Ongoing Tribal Government to Government Technical Staff coordination



U.S. ARMY



SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCY PROGRAMS

PLANNING

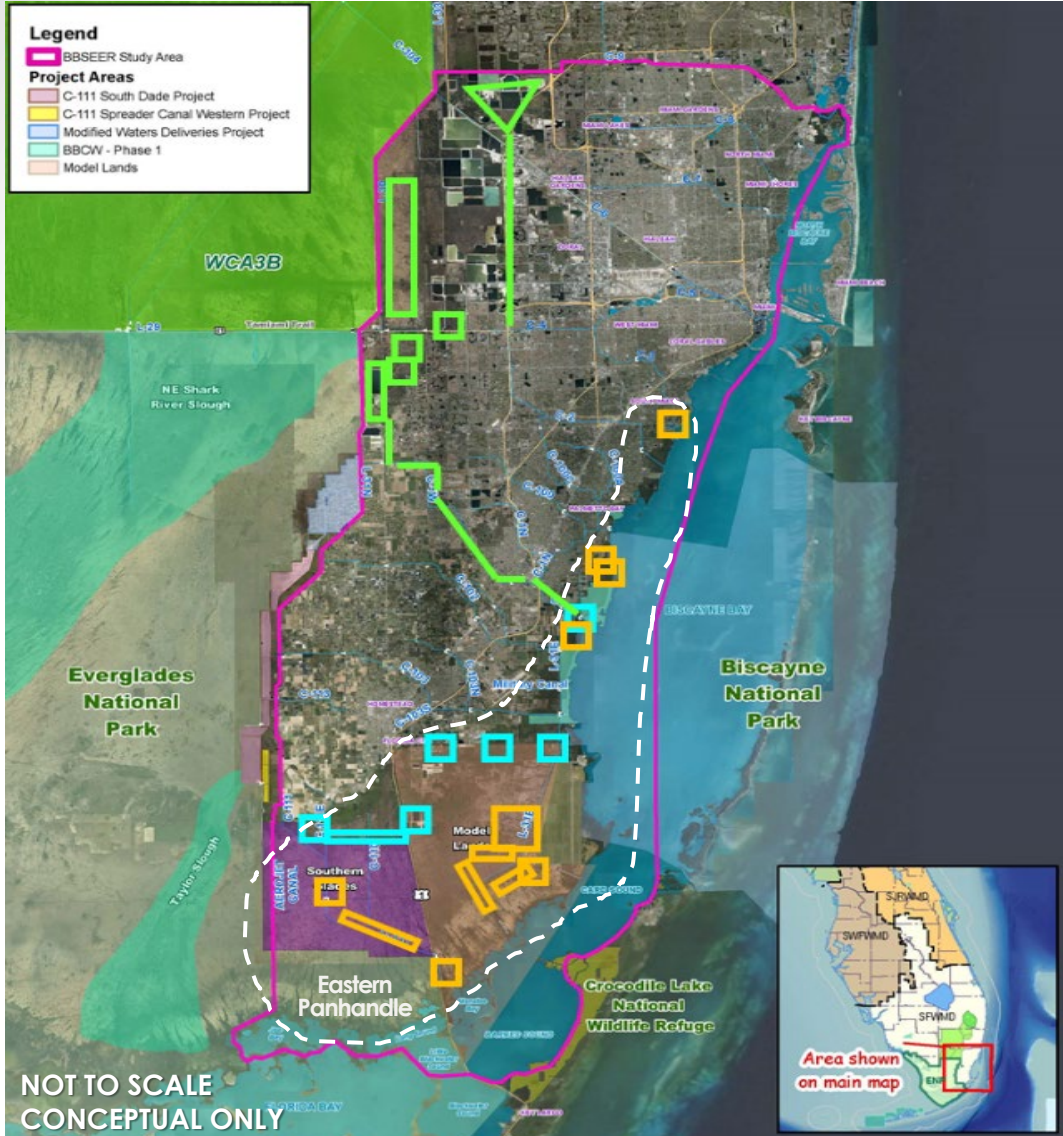
Today's Highlights:

- 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



U.S. ARMY

BISCAYNE BAY AND SOUTHEASTERN EVERGLADES ECOSYSTEM RESTORATION (BBSEER)



STUDY OBJECTIVES:

- 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:

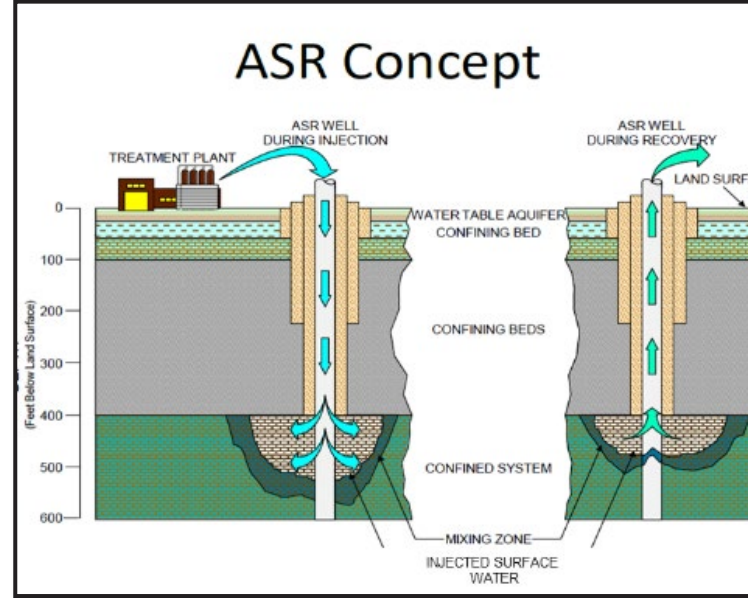
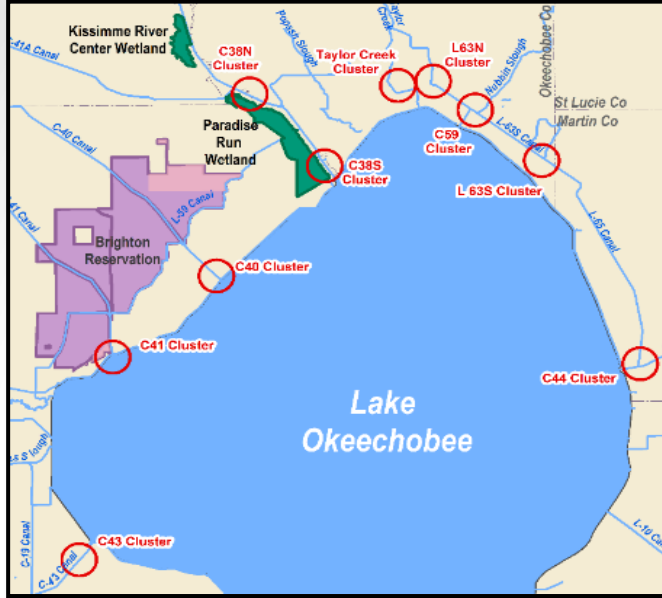
- Continued engagement with Project Delivery Team (PDT)
- Round 3 Alternatives formulated with PDT
- Round 3 & Hydrologic Results released Dec 2023
- Evaluation of Round 3 results and performance metrics underway



SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS | PLANNING LAKE OKEECHOBEE WATERSHED RESTORATION (LOWRP) PROJECT



U.S. ARMY



COMPONENTS:

○ Aquifer Storage and Recovery (ASR) Wells

WETLAND RESTORATION SITES

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

STATUS:

- Waiver Package for additional study time and budget under review
- First Report: LOWRP Wetlands Restoration Report – Target WRDA 2024
- Second Report: LOWRP ASR – Pending additional science from USACE Engineering and Research Development Center (ERDC)





U.S. ARMY

WESTERN EVERGLADES RESTORATION PROJECT (WERP)



Images Courtesy of Big Cypress National Preserve

WERP STUDY OBJECTIVES:

- Restore freshwater flow paths, flow volumes and 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

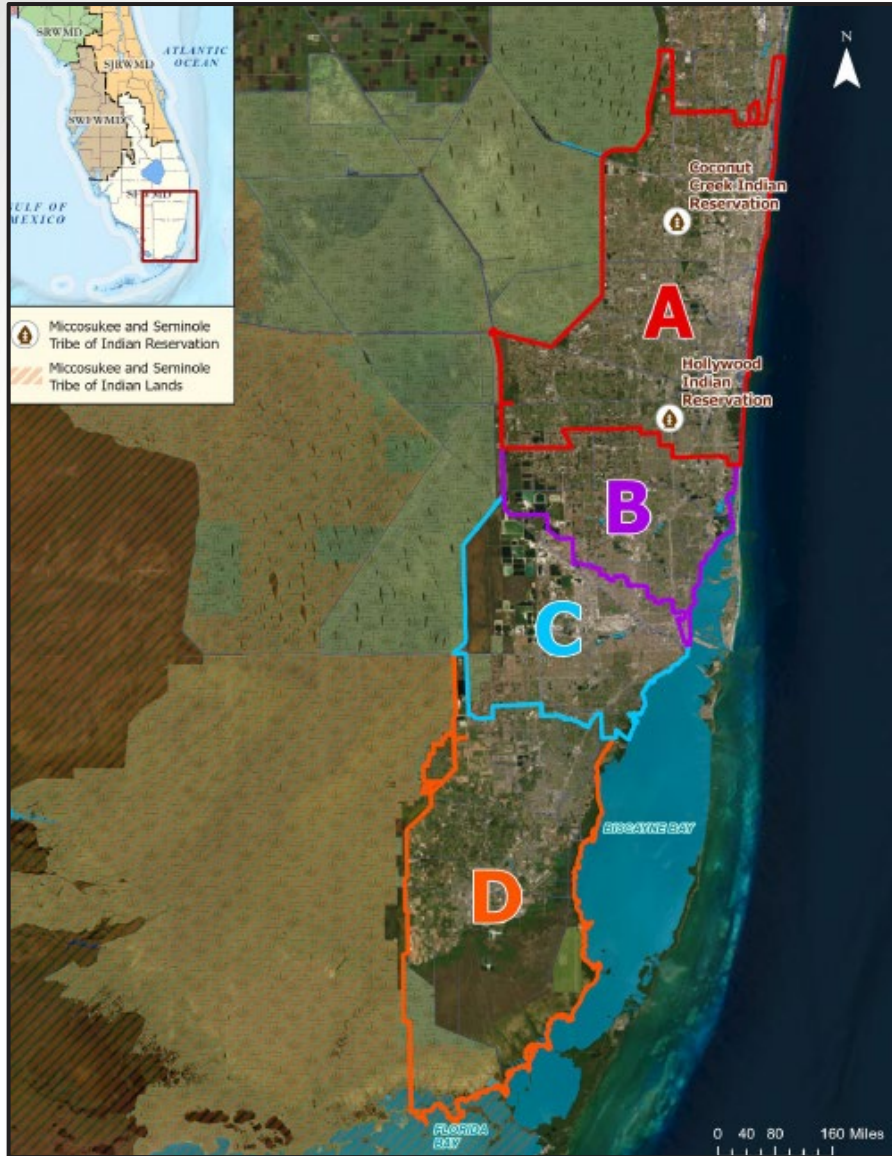
STATUS:

- Completed the Draft Project Implementation Report and Environmental Impact Statement (Draft Report)
- Released the Draft Report for Public Review December 2023
- PDT and Open House Meetings held December 2023
- NEPA Review Meeting January 2024
- Public Comments due January 29 2024
- Complete Final Report June 2024
- Chief's Report signed September 2024
- Project Authorization Target WRDA 2024



U.S. ARMY

SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS | 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
- July 2023 Recommended study scope to focus on enhancing the capacity of vulnerable coastal water/salinity control structures and adjacent primary canals
- Aug 2023 Study schedule 4-years and budget of \$11.3M; study target completion for WRDA 2026 – Under USACE review
- Jan 2024 request for additional time and resourcing for additional investigations to better inform planning level design and costs
- Ongoing: engagement with stakeholders, plan formulation and modeling



U.S. ARMY



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM DESIGN AND CONSTRUCTION

Today's Highlights:

- 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)



U.S. ARMY

PICAYUNE STRAND RESTORATION PROJECT



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:

- Southwest Conveyance Feature
- Southwest Protection Feature
- Miller Canal Clearing

Levee Construction – Southwest Protection Feature December 2023



U.S. ARMY

INDIAN RIVER LAGOON – SOUTH PROJECT



C-23/C-24 Stormwater Treatment Area, view S-432 Box Culvert Construction, December 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: Anticipated award of the first increment of the C-23/24 North Reservoir in FY24

UNDER CONSTRUCTION:

- C-23/C-24 Stormwater Treatment Area



U.S. ARMY

BISCAYNE BAY COASTAL WETLANDS



S-703 Pump Station and spreader system, December 2023

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-710, S-711 and C-711
Seepage canal
- Pump station S-705 completed final inspection, endurance testing and is in operational testing and monitoring phase (OTMP)



U.S. ARMY

CENTRAL EVERGLADES PLANNING PROJECT



Everglades Agricultural Area (EAA) Reservoir - Foundation Preparation and Cutoff Wall, December 2023

The Central Everglades Planning Project (CEPP) increases 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
- Gated Spillway S-355W: final design complete; procurement process underway; anticipated contract award in FY24
- Pump Station S-356: final design complete; procurement process underway; anticipated contract award in FY24

CEPP - EAA

- Seepage and Inflow/Outflow Canal under construction
- Reservoir Foundation and Cut-off Wall under construction
- Reservoir Embankment: design nearly complete; transitioning to procurement; anticipated contract award Q4 FY24



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM | DESIGN AND CONSTRUCTION

BROWARD COUNTY WATER PRESERVE AREAS | C-11 IMPOUNDMENT



PURPOSE:

- Reduce runoff from developed areas in western Broward County into Water Conservation Area 3 (WCA 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 WCA 3 and 200,000 acres in the greater Everglades will benefit from project implementation

FEATURES:

- Final Design of C-11 Impoundment underway; anticipate award of first increment of construction of C-11 feature in FY24



U.S. ARMY



SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM OPERATIONS

Today's Highlights:

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



U.S. ARMY

SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM | OPERATIONS

INDIAN RIVER LAGOON - SOUTH



C-44 Reservoir

C-44 RESERVOIR STATUS

- Operational monitoring and testing period, extended
- **In use:** Operating up to 10-feet; target is a 15-foot holding pool
- Current operations in accordance with Preliminary Project Operating Manual
- Design of seepage management feature underway for southwest external corner of reservoir
- Overall conditions remain normal with no dam safety concerns



U.S. ARMY

SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM | OPERATIONS



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 (BO) (COMPLETE)
- IEPR Completion, ATR Certification, South Atlantic Division (SAD) Review (September 2022– March 2023)
- Final National Marine Fisheries Service (NMFS) BO (September 29, 2023)

- Remaining Activities**
- NMFS Consultation ongoing
 - NEPA public, agency, and tribal review of Final EIS and SOM
 - Corps SAD review and approval of Record of Decision (ROD)

DOCUMENTATION PROCESS



U.S. ARMY

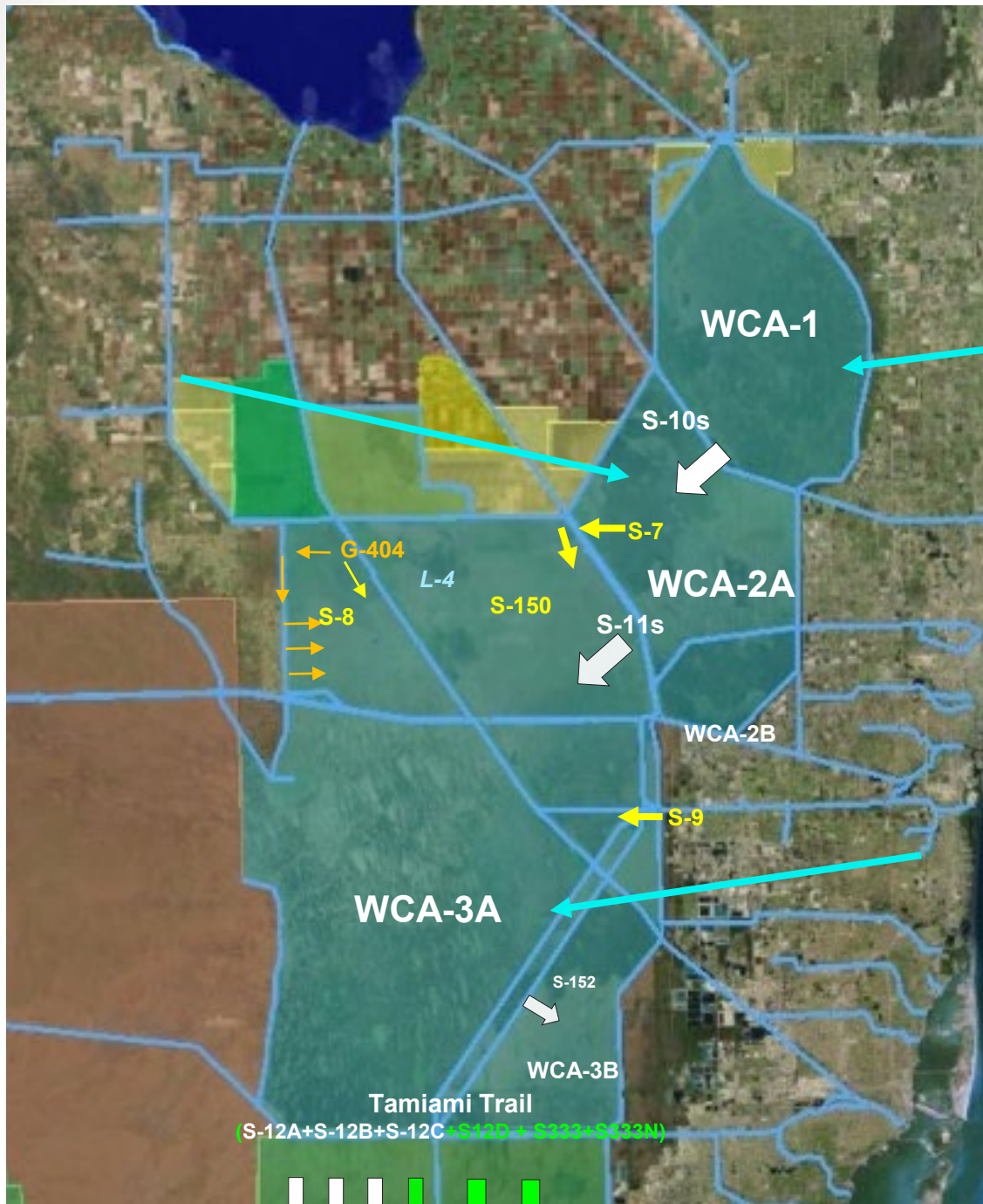


21

SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM OPERATIONS COMBINED OPERATIONAL PLAN

Water Conservation Areas (WCAs), South Dade Conveyance System and Everglades National Park

- Deliver Tamiami Trail Flow Formula target flow –maximum
- Temporary deviation implemented





U.S. ARMY

SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM OPERATIONS COMBINED OPERATIONAL PLAN



WATER DELIVERIES (AC-FT) ACROSS TAMiami TRAIL (S-12s + S-333 + S-333N + S-356 - S-334)

| | Jan* | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---------|---------|---------|---------|--------|---------|---------|---------|---------|---------|---------|---------|-----------|
| Min. Del. Thru S-12s (PL 91-282 June 1970) | 22,000 | 9,000 | 4,000 | 1,700 | 1,700 | 5,000 | 7,400 | 12,200 | 39,000 | 67,000 | 59,000 | 32,000 | 260,000 |
| 2012 | 32,700 | 13,300 | 5,900 | 700 | 25,600 | 44,900 | 71,500 | 87,000 | 115,000 | 177,900 | 123,900 | 105,600 | 804,000 |
| 2013 | 40,200 | 14,600 | 3,900 | 700 | 47,900 | 63,800 | 112,600 | 149,300 | 133,800 | 122,700 | 88,000 | 40,800 | 818,300 |
| 2014 | 6,400 | 43,000 | 55,200 | 600 | 100 | 12,300 | 61,700 | 75,500 | 101,600 | 100,500 | 91,200 | 23,700 | 571,800 |
| 2015 | 13,100 | 15,100 | 8,900 | 0 | 0 | 0 | 0 | 0 | 14,500 | 122,500 | 56,700 | 108,900 | 339,700 |
| 2016 | 108,500 | 180,800 | 203,100 | 127,400 | 61,600 | 44,300 | 66,900 | 79,400 | 110,700 | 120,100 | 76,100 | 8,000 | 1,186,900 |
| 2017 | 2,900 | 5,300 | 1,400 | 400 | 200 | 109,700 | 191,400 | 183,200 | 240,700 | 323,400 | 253,800 | 196,800 | 1,509,200 |
| 2018 | 97,000 | 37,400 | 3,100 | 900 | 31,100 | 105,700 | 149,300 | 157,500 | 163,100 | 127,100 | 1,400 | 900 | 874,500 |
| 2019 | 1,000 | 21,100 | 27,900 | 16,300 | 24,700 | 53,600 | 104,000 | 127,200 | 147,600 | 109,400 | 25,800 | 100 | 658,700 |
| 2020 | 160 | 250 | 360 | 410 | 9,700 | 113,600 | 181,700 | 198,900 | 159,600 | 181,200 | 360,800 | 366,300 | 1,572,980 |
| 2021 | 233,860 | 140,070 | 120,630 | 70,970 | 23,000 | 31,200 | 70,600 | 100,700 | 116,600 | 186,400 | 150,032 | 145,993 | 1,390,055 |
| 2022 | 119,286 | 85,296 | 68,924 | 26,614 | 8,453 | 91,964 | 166,719 | 135,833 | 105,547 | 208,375 | 173,758 | 146,350 | 1,337,118 |
| 2023 | 115,477 | 79,869 | 54,672 | 51,472 | 63,929 | 98,634 | 145,097 | 158,969 | 172,580 | 196,770 | 147,163 | 157,341 | 1,441,973 |
| 2024 | 15,185 | | | | | | | | | | | | 15,185 |

| LEGEND |
|---------------------------|
| Minimum Water Delivery |
| IOP |
| ERTP |
| Increment 1 |
| 2016 Emergency Deviation |
| Increment 1.1/1.2 |
| 2017 Temporary Deviations |
| Increment 2 |
| COP |

Deviation:
2023: 60,000 ac-ft
2024: 3,500 ac-ft

Note: All data is provisional.

*The latest monthly value may include an Incomplete Monthly Period of Record



U.S. ARMY

SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM | OPERATIONS CENTRAL EVERGLADES PLANNING PROJECT OPERATIONAL PLAN (INCREMENTAL)



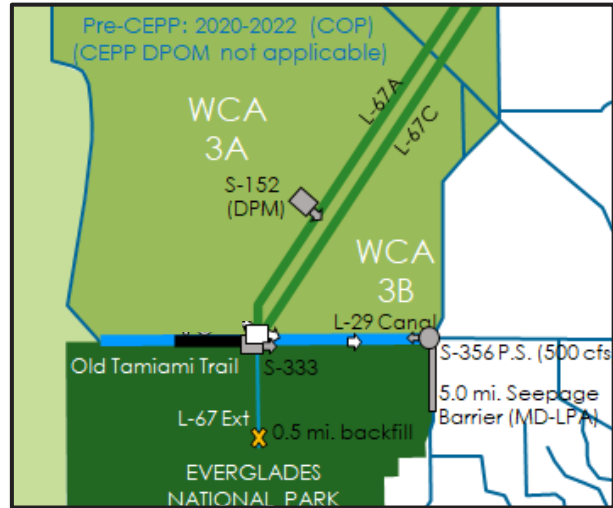
PROJECT PURPOSE:

- Redistribute Water Conservation Area 3A (WCA 3A) inflows to enhance flows into Everglades National Park (ENP).
- Make incremental changes to the Combined Operations Plan (COP) to include Central Everglades Restoration Projects (CERP) and non-CERP implementation.

STATUS:

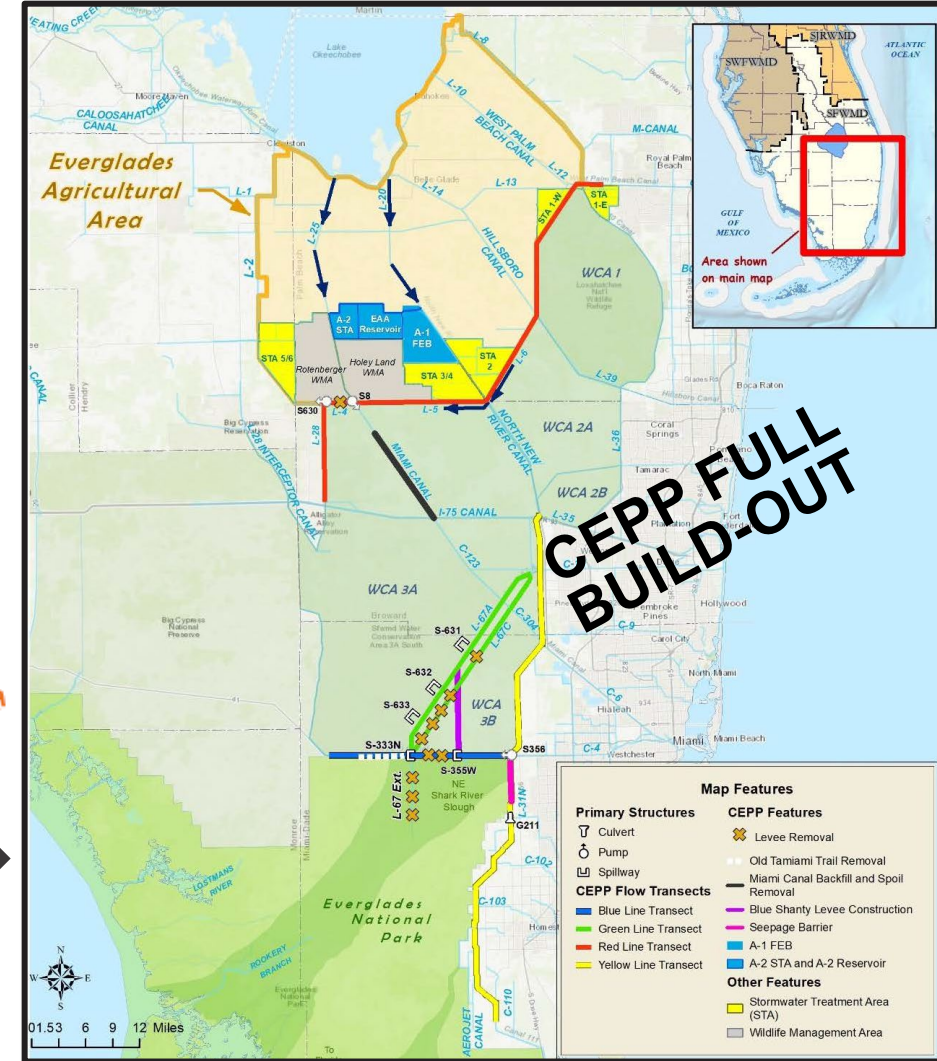
- Public scoping meetings held in April 2023. Scoping period concluded May 2023. Project Delivery Team meeting held September 2023 focused on Pre-Formulation Informational Runs (Round 1 Modeling) and plan concepts.
- Formulation of Round 2 alternatives by PDT is ongoing.

CURRENT



CONSTRUCTION & INTERIM OPERATIONS

Develop operating plans for CEPP infrastructure to incrementally progress towards CEPP benefits





SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM | OPERATIONS

CENTRAL EVERGLADES PLANNING PROJECT

OPERATIONAL PLAN (INCREMENTAL)



Increment 1 (~2025-2027)

Primary Rationale for updating operations in 2026

- Tamiami Trail Next Steps Phase 2 comes online in 2026
- New Lake Okeechobee Regulation Schedule (LOSOM)
- Lessons learned from COP implementation

Current Plan

Increment 2 (~2028-2030)

Primary Rationale for updating operations in 2028

- Blue Shanty Flowway and CEPP North features completed

Next Step:

- For Increment 1: Project delivery team to establish an array of operational plan alternatives

Increment 3 (~2030+)

Primary Rationale for updating operations in 2030+

- IDS projected completion of EAA Reservoir



U.S. ARMY



We're Hiring!



JOIN THE JACKSONVILLE DISTRICT TEAM

SEEKING TO FILL MULTIPLE POSITIONS !

Biologists, Physical Scientists, Program Analysts, Engineers,
Geologists, Hydrologists, Administrative and many more.

Submit Resumes To: HRJAX@USACE.ARMY.MIL



Scan the QR code for job information
or visit

<https://www.saj.usace.army.mil/NowHiring/>