# MARTIN COUNTY BOARD OF COUNTY COMMISSIONERS

# U.S. ARMY CORPS OF ENGINEERS UPDATE

COL Andrew Kelly
Commander, Jacksonville District
U.S. Army Corps of Engineers

Ingrid Bon, PE
Project Manager Forward, IRL-South

5-MAY-2020

US Army Corps of Engineers®


HHD Rehabilitation


IRL-S Construction


Loxahatchee River

# AGENDA

- South Florida Ecosystem Restoration Budget
- Indian River Lagoon – South
- Lake Okeechobee Operations
- Lake Okeechobee System Operating Manual
- Everglades Agricultural Area

## South Florida Ecosystem Restoration Project Area


1. Seminole Big Cypress
2. C-51 Stormwater Treatment Area (STA)
3. Mod Water Deliveries
4. Kissimmee River Restoration
5. C-111 South Dade
6. Melaleuca Eradication
7. Site 1 Impoundment
8. Picayune Strand Restoration
9. Indian River Lagoon – South C-44 Reservoir and STA
10. C-111 Spreader Canal Western Project
11. Biscayne Bay Coastal Wetlands Phase 1
12. C-43 Western Basin Storage Area
13. Broward County Water Preserve Areas
14. Central Everglades Planning Project
15. Loxahatchee River Watershed Restoration
16. Lake Okeechobee Watershed Restoration
17. Western Everglades Restoration

# SOUTH FLORIDA ECOSYSTEM RESTORATION FY20 & FY21 BUDGET

| CONSTRUCTION | | OPERATIONS & MAINTENANCE |
|---|---|---|
| $200M | FY20 President's Budget | $5.454M |
| $35M | FY20 Work Plan | $8.367M |
| $235M | FY20 TOTAL | $13.821M |
| | | |
| $250M | FY21 President's Budget* | $10.052M |

- = Details of the allocation by project are available in the recently-released Justification Sheet (J Sheet)
- https://www.usace.army.mil/Missions/Civil-Works/Budget/

# SFER FY21 BUDGET

| | | |
|---|---|---|
| **CONSTRUCTION** | | |
| **Non-CERP** | | |
| Canal 111 (C-111) South Dade | $ | 2,100,000 |
| Kissimmee River Restoration (KRR) | $ | 3,000,000 |
| **Non-CERP Subtotal** | **$** | **5,100,000** |
| **CERP** | | |
| CERP - Caloosahatchee River (C-43) West Basin Storage Reservoir | $ | 1,000,000 |
| CERP - Indian River Lagoon South (IRL-S) | $ | 150,250,000 |
| CERP - Picayune Strand Restoration Project (PSRP) | $ | 4,549,200 |
| CERP - Biscayne Bay Coastal Wetlands (BBCW) | $ | 7,115,000 |
| CERP - Broward County Water Preserve Areas (BCWPA) | $ | 1,200,000 |
| CERP - Central Everglades Planning Project (CEPP) | $ | 50,610,000 |
| CERP – Everglades Agricultural Area (EAA) | $ | 18,050,800 |
| CERP - CERP Design and Program Management | $ | 12,125,000 |
| **CERP Subtotal** | **$** | **244,900,000** |
| | | |
| **CONSTRUCTION TOTAL** | **$** | **250,000,000** |
| | | |
| | | |
| **OPERATIONS & MAINTENANCE** | **$** | **10,052,000** |

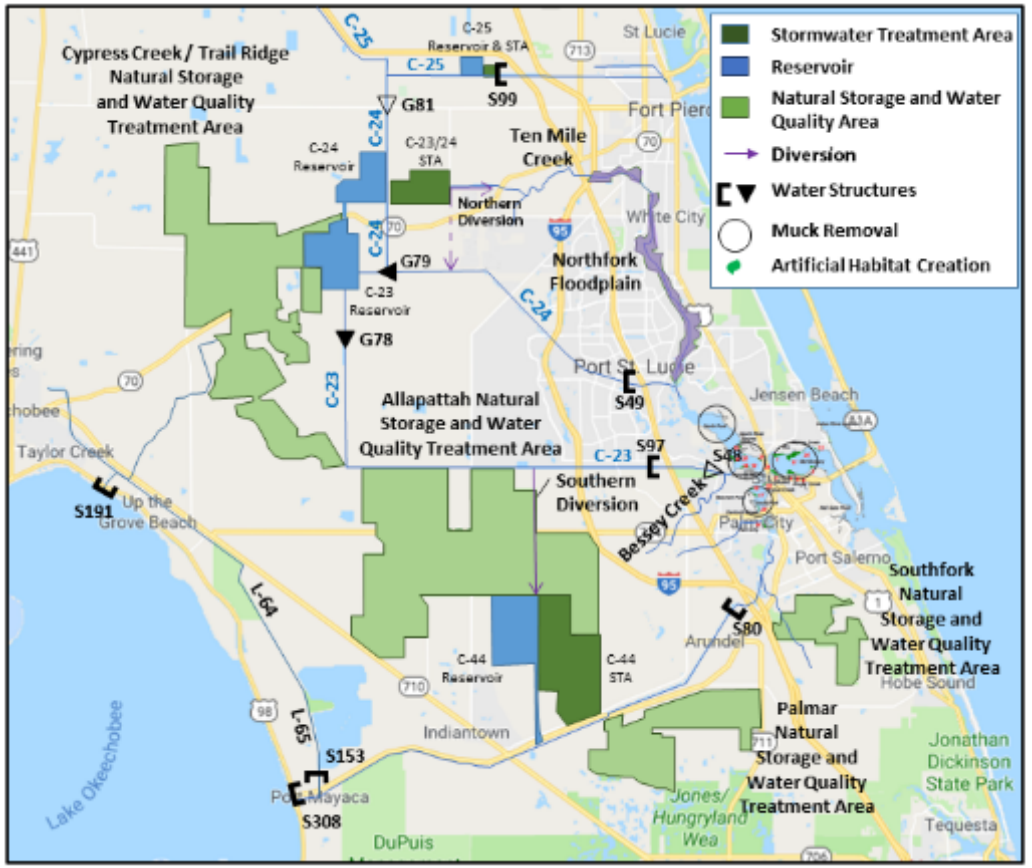
# INDIAN RIVER LAGOON SOUTH (IRL-S) GOALS AND OBJECTIVES

## Goal 1: Restore Ecological Values

- Re-establish a natural pattern of freshwater flows
- Improve water quality
- Improve estuarine habitat
- Improve spatial extent and functional quality of native watershed wetlands/habitat
- Increase diversity and abundance of native plant and animal species

## Goal 2: Restore Economic Values and Social Well Being

- Maintain existing flood protection
- Increase (agricultural) water supply (reduce dependency on Floridian Aquifer at C-23, C-24, and C-25 basins)
- Improve opportunities for environmental education, tourism, and recreation
- Enhance commercial and recreational fisheries and associated industries



# IRL-S PROJECT SUMMARY

**Large, multi-components project authorized in 2007 (648,000 acre watershed – 1000 sq. mi.)**

- 84% new storage (165,000 ac-ft) – 4 large reservoirs and 3 stormwater treatment areas (RSTA)
- 16% new storage (30,000 ac-ft) and large areas – 4 large natural storage, habitat, and water quality areas (92,000 ac)
- Floodplain restoration (3,100 ac), muck removal, habitat creation will restore and create new estuary habitat

**$3.5 billion total project cost estimate (2018 cost certification)**

- $917M (obligations thru September 2019)
- FY20 budget: $7.5M
- FY21 allocation: $150.25M

**C-44 Reservoir and Stormwater Treatment Area (Martin County, FL)**

- Three completed construction contracts (CNT-1 $37M, System Discharge $5M, Pump Station $40M)
- Three active construction contracts (2 USACE – Reservoir $217M, ICBS $21M; 1 SFWMD – STA $115M)

**C-23/C-24 Reservoirs and Stormwater Treatment Area (St. Lucie County, FL)**

- Design underway for reservoirs and STA
- STA construction fully funded for a FY21 contract award

**C-25 Reservoir and Stormwater Treatment Area (St. Lucie County, FL)**

- Design for reservoir and STA scheduled to start in FY21

# IRL-S PHASE 1 COMPONENTS

**C-44 Reservoir and Stormwater Treatment Area (STA)**

**C-23/C-24 Reservoirs and STA**

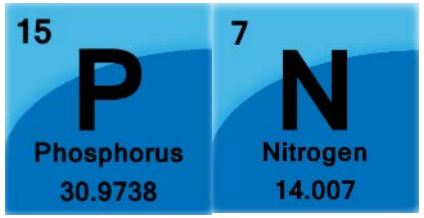
**C-25 Reservoir and STA**

**C-23/C-44 Connector Canal**

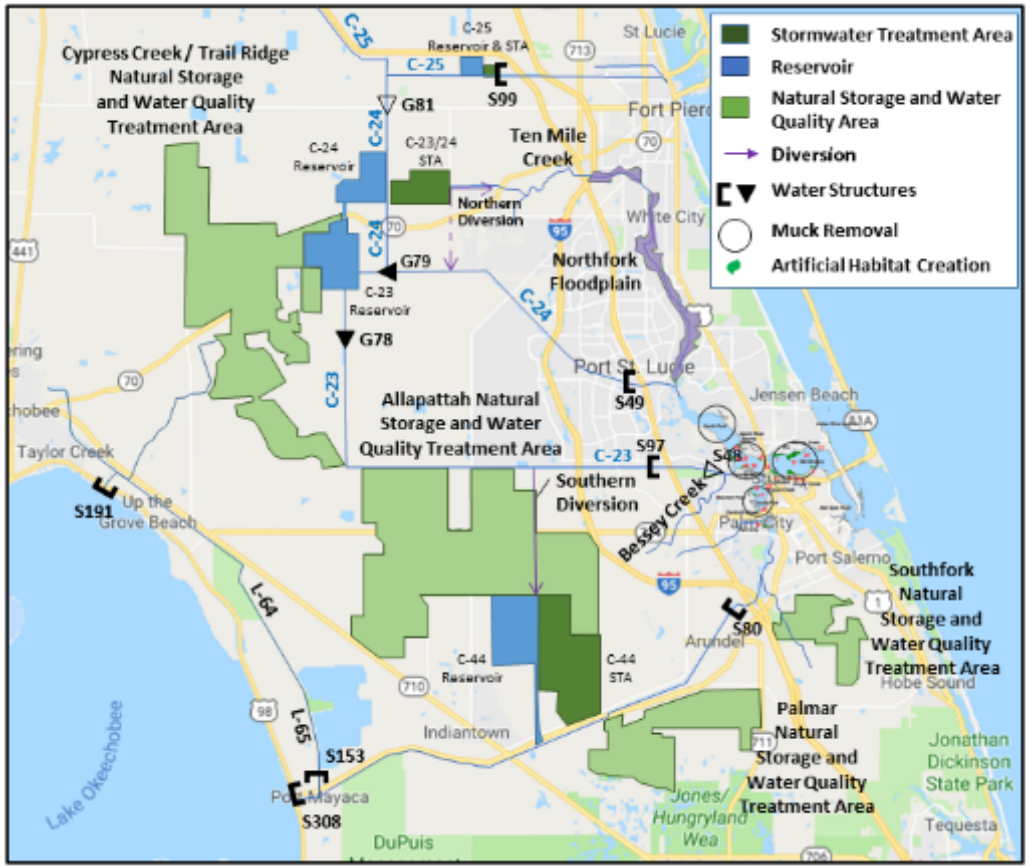
130,000 acre-feet new storage in 13,000 acre reservoirs

35,000 acre-feet new storage in 8,700 acre new wetlands

North and South Diversions

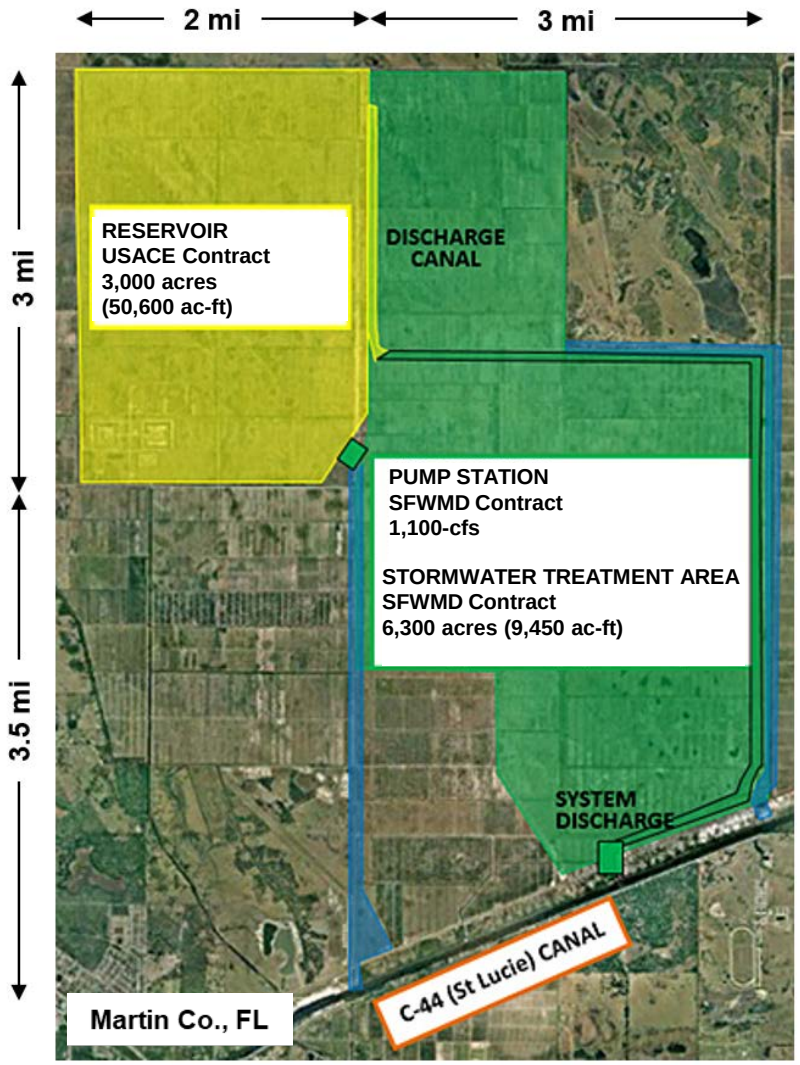



122 metric tons of P, 475 metric tons of N long-term load reduction




**1 acre-foot = 325,851 gal**
**1 metric ton = 2,205 lb**

# IRL-S C-44 RESERVOIR AND STA




## C-44 Reservoir

- 50,600 ac-ft of storage
- 15-ft depth
- 3,000 acres
- 1,100-cfs pump station
- 4-mi intake canal
- Reservoir construction completion: August 2021
- Intake Canal Bank Stabilization completion: January 2022

## C-44 STA (SFWMD)

- 9,450 ac-ft of storage
- 1.5-ft average depth
- 6,300 wetted acres
- STA construction completion: December 2020

## Benefits

- 60,050 ac-ft of new storage
- 132,700 lb/yr of Total Phosphorus reduction
- 467,000 lb/yr of Total Nitrogen reduction
- 6,300 acres of new wetlands

# IRL-S C-44 RESERVOIR CONSTRUCTION

C-44 Reservoir South Embankment

C-44 Reservoir Pump Station

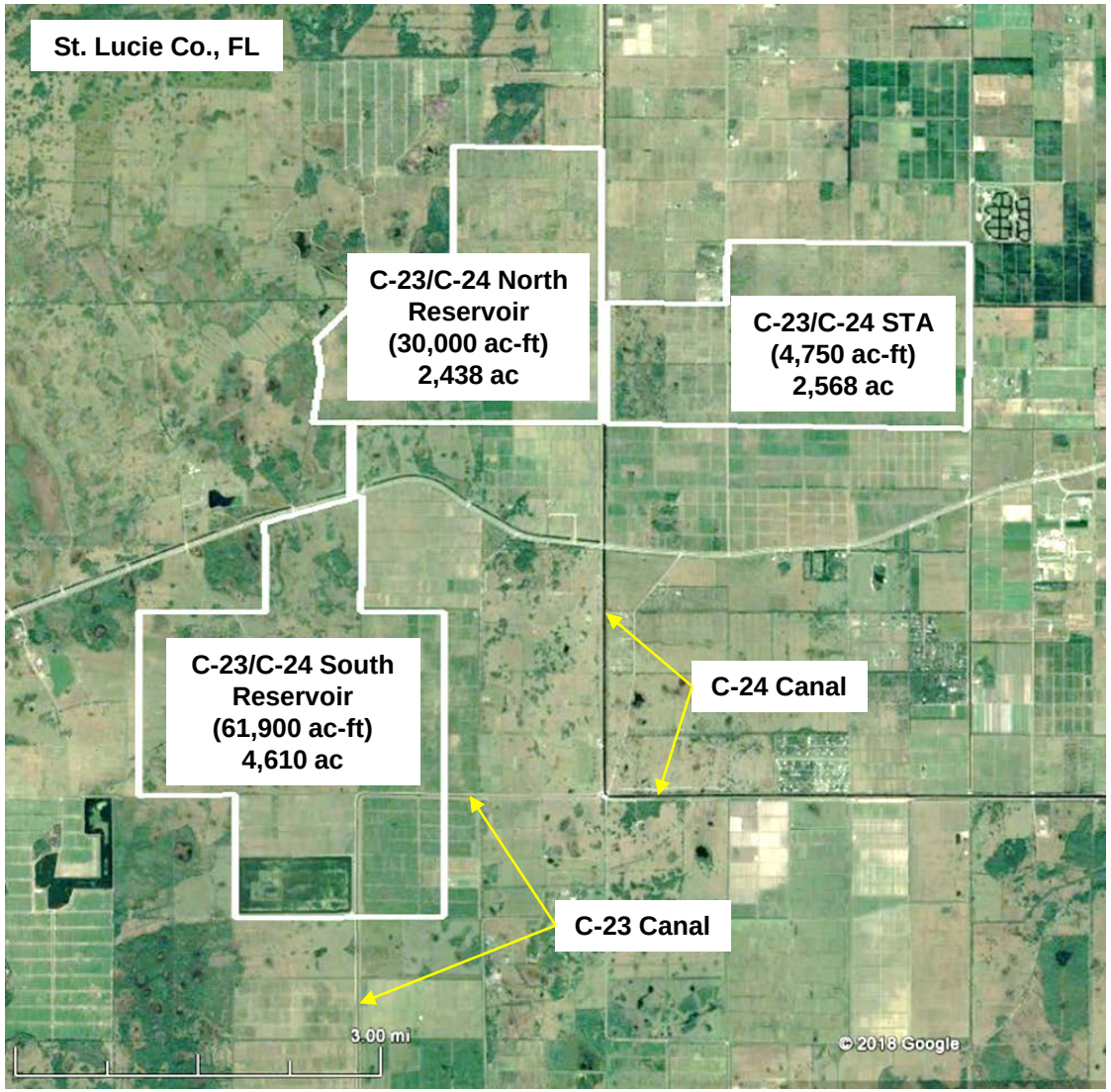
C-44 Reservoir East Embankment

C-44 Reservoir Outlet Structure

C-44 Reservoir Soil Cement Batch Plant

C-44 Reservoir Soil Cement Placement

# IRL-S C-23/C-24 RESERVOIRS AND STA




## C-23/C-24 STA

- Cultural resources and environmental surveys complete
- Complete design in 2021
- Construction contract award in September 2021

## C-23/C-24 North Reservoir

- Cultural resources and environmental surveys complete
- Complete design in 2022

## C-23/C-24 South Reservoir

- Cultural resources and environmental surveys ongoing
- Complete design in 2024

## Benefits

- 96,650 ac-ft of new storage
- 53,000 lb/yr of Total Phosphorus reduction
- 230,000 lb/yr of Total Nitrogen reduction

# IRL-S C-25 RESERVOIR AND STA


## C-25 Reservoir and STA

- Land acquisition is pending
- Surveys cannot be done until lands are acquired
- Design scheduled to start in FY21
- Complete design in 2025

## Benefits

- 5,400 ac-ft of new storage
- 20,000 lb/yr of Total Phosphorus reduction
- 164,000 lb/yr of Total Nitrogen reduction

# IRL-S TAKEAWAY

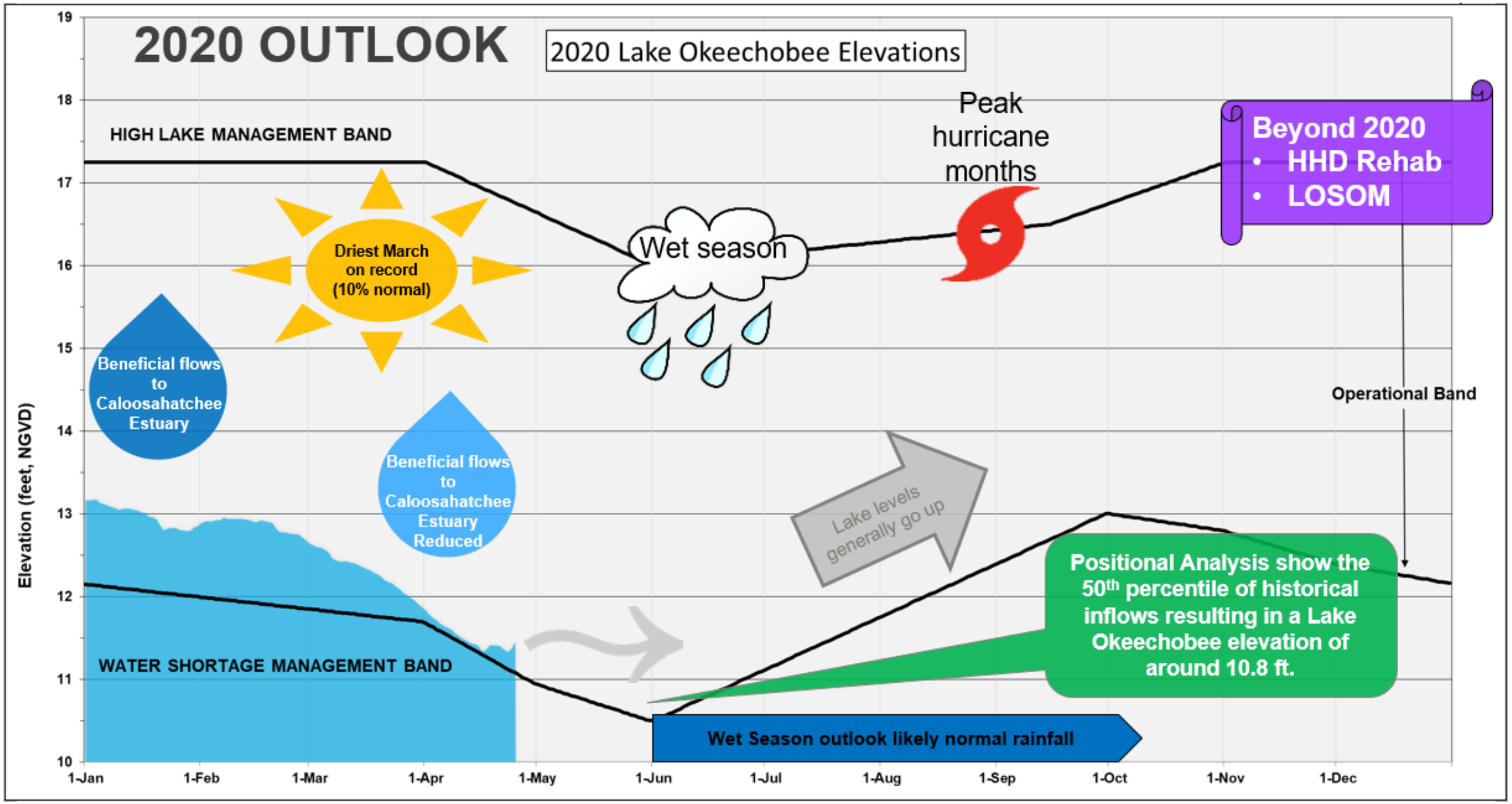
## $3.5B IRL-S Program

- Tremendous local support form St. Lucie and Martin counties
- Completing construction of the C-44 Reservoir and STA
- Moving forward with design and construction of the C-23/C-24 Reservoirs and STA
- Routine progress meetings with stakeholders (virtual or face-to-face once travel restrictions are lifted)

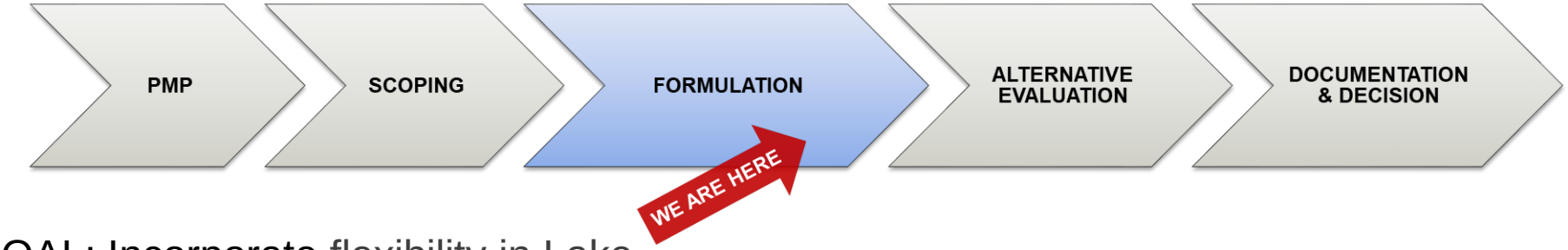
**QUESTIONS?**




# LAKE OKEECHOBEE 2020 OUTLOOK



# LAKE OKEECHOBEE SYSTEM OPERATING MANUAL




GOAL: Incorporate flexibility in Lake Okeechobee operations while balancing congressionally authorized project purposes.


| MILESTONE | DATE |
|---|---|
| Scoping Meetings (complete) | February - March 2019 |
| Plan Formulation & Performance Evaluation Finalized | June 2020 |
| Evaluation of Alternative Lake Schedules | June 2020 – July 2021 |
| Draft Report Release | January 2022 |
| Final Report Release | July 2022 |
| Record of Decision (ROD) | October 2022 |

# CERP: EVERGLADES AGRICULTURAL AREA


**Everglades Agricultural Area (EAA) Features:**

- A-2 Reservoir: 10,500 acres with 240,000 acre-foot storage at ~23 feet deep
- A-2 Stormwater Treatment Area (STA): 6,500 acres
- Adds 160,000 to CEPP's 210,000 for a total of 370,000 average annual acre-feet of new water flowing through to the central Everglades

The purpose of Everglades Agricultural Area (EAA) is to improve the quantity, quality, timing, and distribution of water flows to the central Everglades (Water Conservation Area 3 (WCA-3) and Everglades National Park (ENP)).

Status:

- Authorized in WRDA 2018 (Section 1308)
- SFWMD design efforts ongoing; construction efforts initiated 20 April 2020
- USACE design efforts ongoing; awaiting construction funding and approval to execute Project Partnership Agreement (PPA) and award construction contract


QUESTIONS
Photo: Savannah Lacy (USACE)

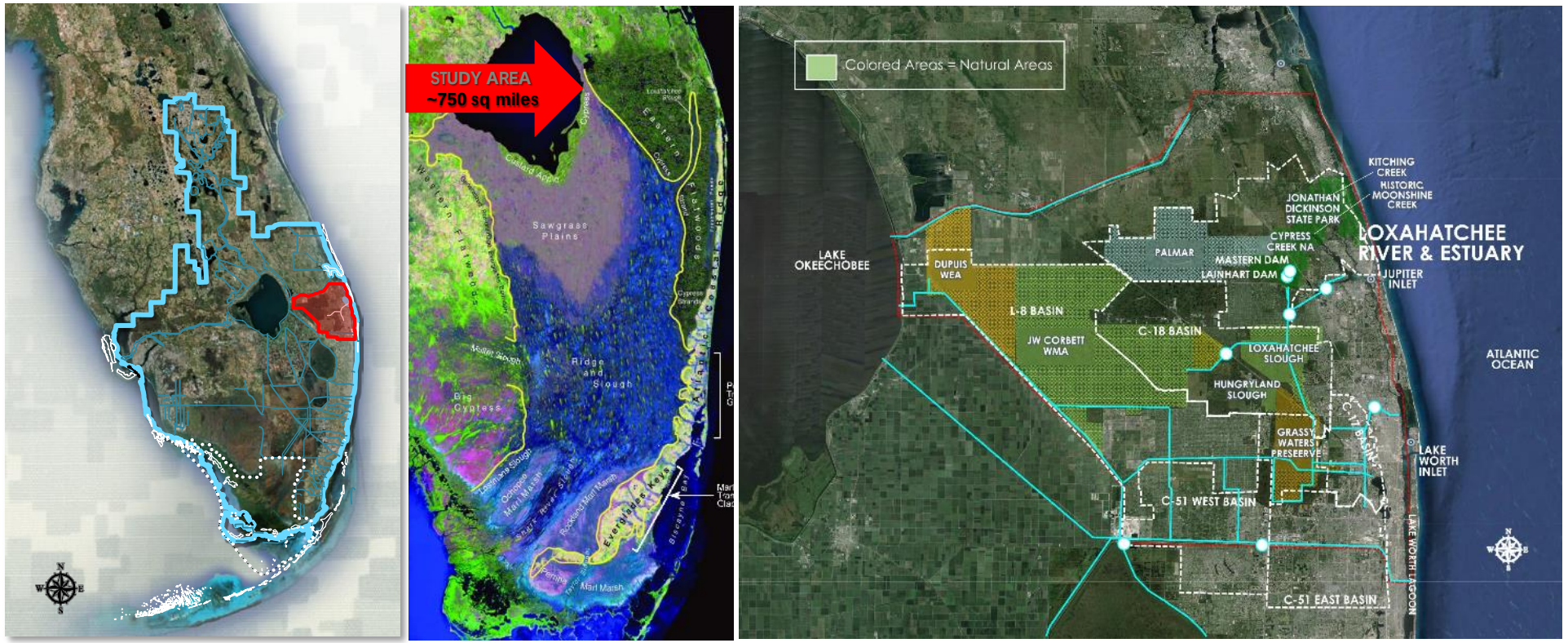
# BACKUP SLIDES

# LOXAHATCHEE RIVER WATERSHED RESTORATION PROJECT (LRWRP) PURPOSE AND LOCATION

To restore and sustain the overall quantity, quality, timing, and distribution of freshwater to the federally designated "National Wild and Scenic" Northwest Fork of the Loxahatchee River, while maintaining levels of flood risk and water supply.

This project also seeks to restore, sustain, and reconnect the area's wetlands and watersheds that form the historic headwaters for the river.

The study is part of CERP and addresses 3 of the 68 components



# LRWRP PROBLEM AND RESTORATION STRATEGY

## PROBLEM

The Loxahatchee River Watershed is severely fragmented resulting in degraded natural areas, especially in the Northwest Fork of the Loxahatchee River (NWFLR) – a National Wild & Scenic River and an Outstanding Florida Water

## RESULTS FROM PRIOR STUDIES AND H&H MODELING

Improving flows (QQTD) throughout the watershed
will also improve the health of the NWFLR

## PLAN FORMULATION STRATEGY

- 3 interconnected flow ways based on remaining natural areas & existing canals and structures
- Focus areas:  increase storage, reduce drainage, and improve connectivity



# LRWRP RECOMMENDED PLAN ENVIRONMENTAL BENEFITS


**Restores flows: 91% of target for dry season, 98% for wet season**


**Restores 27,000 acres of wetlands, reconnects an additional 51,000 acres**


**Improves habitat for fish and wildlife**



**Improves habitat for listed species**

# LRWRP RECOMMENDED PLAN OTHER BENEFITS







## RECREATION BENEFITS

**Passive and active recreation including canoeing, kayaking, fishing, hunting, walking, camping, cycling, birds watching.**

# HERBERT HOOVER DIKE IMPLEMENTATION

**Completed Work**

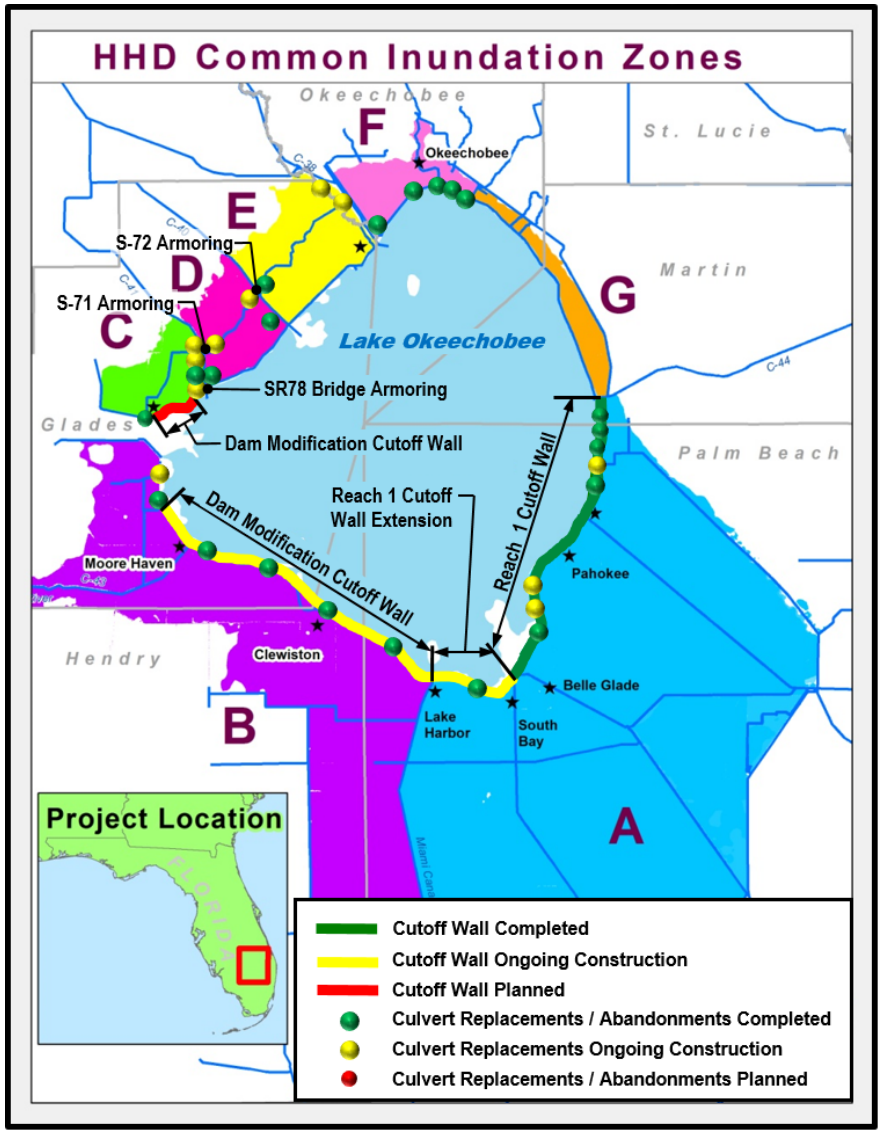
- 21.4 miles of cutoff wall in Reach 1
- Reach 1 Cutoff Wall Gap Closures
- 17 culvert replacements
- 4 culvert removal / abandonments

**Ongoing Work**

- 31 miles of cutoff wall extension
- 11 culvert replacements (10 contracts)

**Planned Work**

- 4.1 miles of cutoff wall extension
- SR78 Bridge & S-71 Embankment Armoring
- S-72 Embankment Armoring



# LAKE OKEECHOBEE POSITIONAL ANALYSIS