Everglades Restoration

Moving Towards Integrated Regional Management

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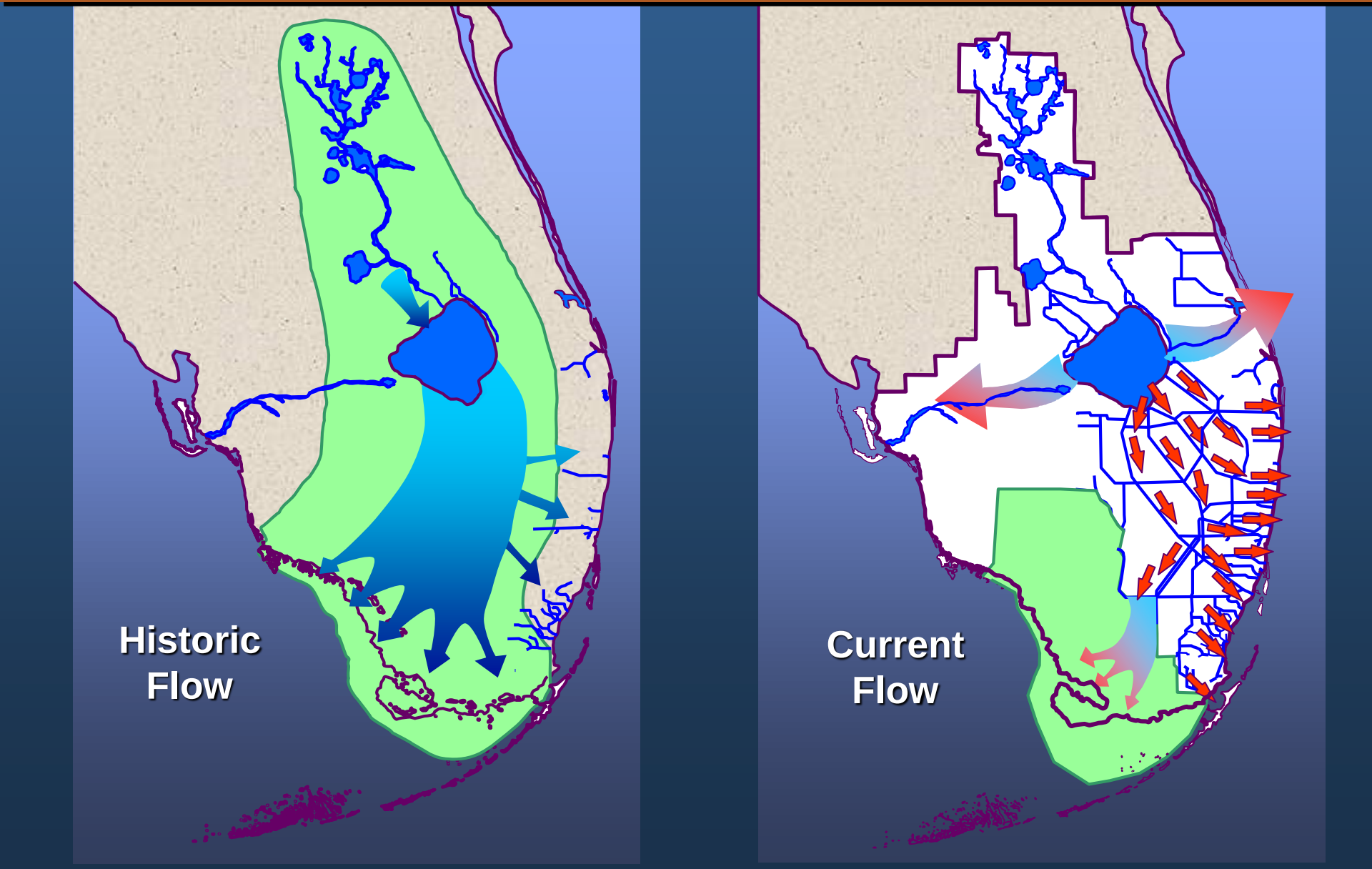
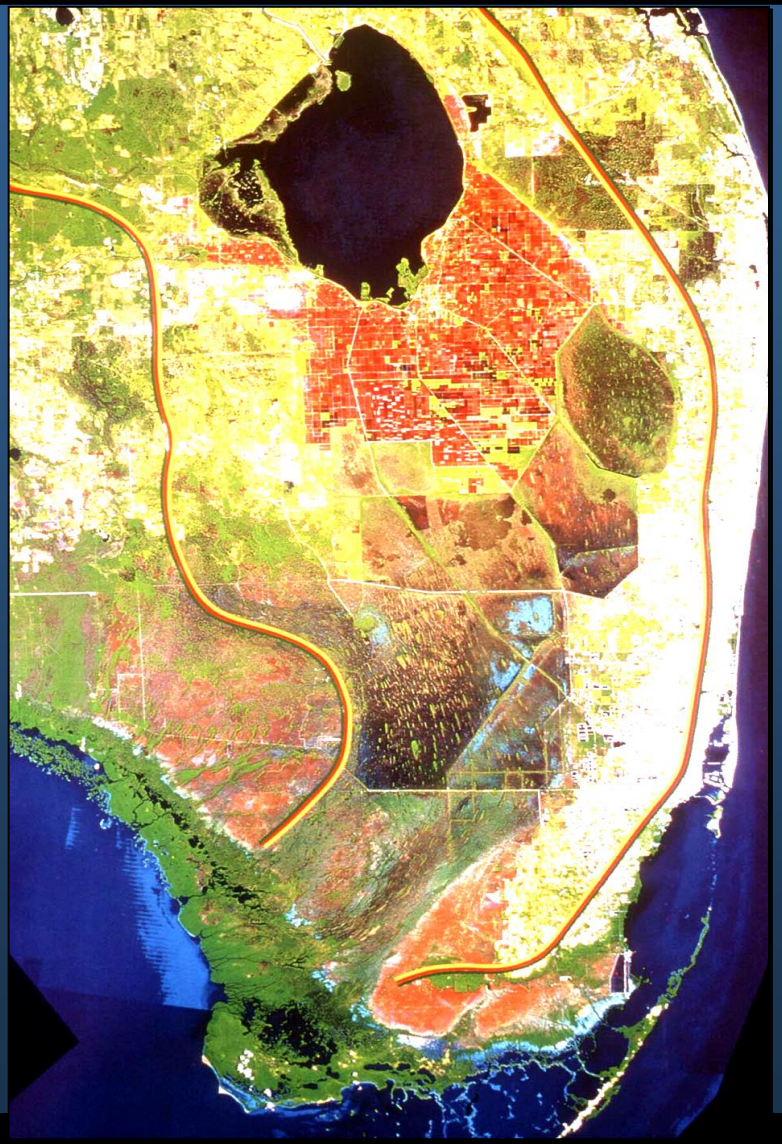
System Modifications



Water management had unintended consequences for critical habitats and key inhabitants

An Ecosystem in Trouble....

- Too much or too little water for the South Florida ecosystem
- 6.4 million cubic meters of water per day is lost to the ocean
- Declining estuary health
- Reductions in wading birds
- Degradation of water quality
- Loss of native habitat
- Invasive exotic species

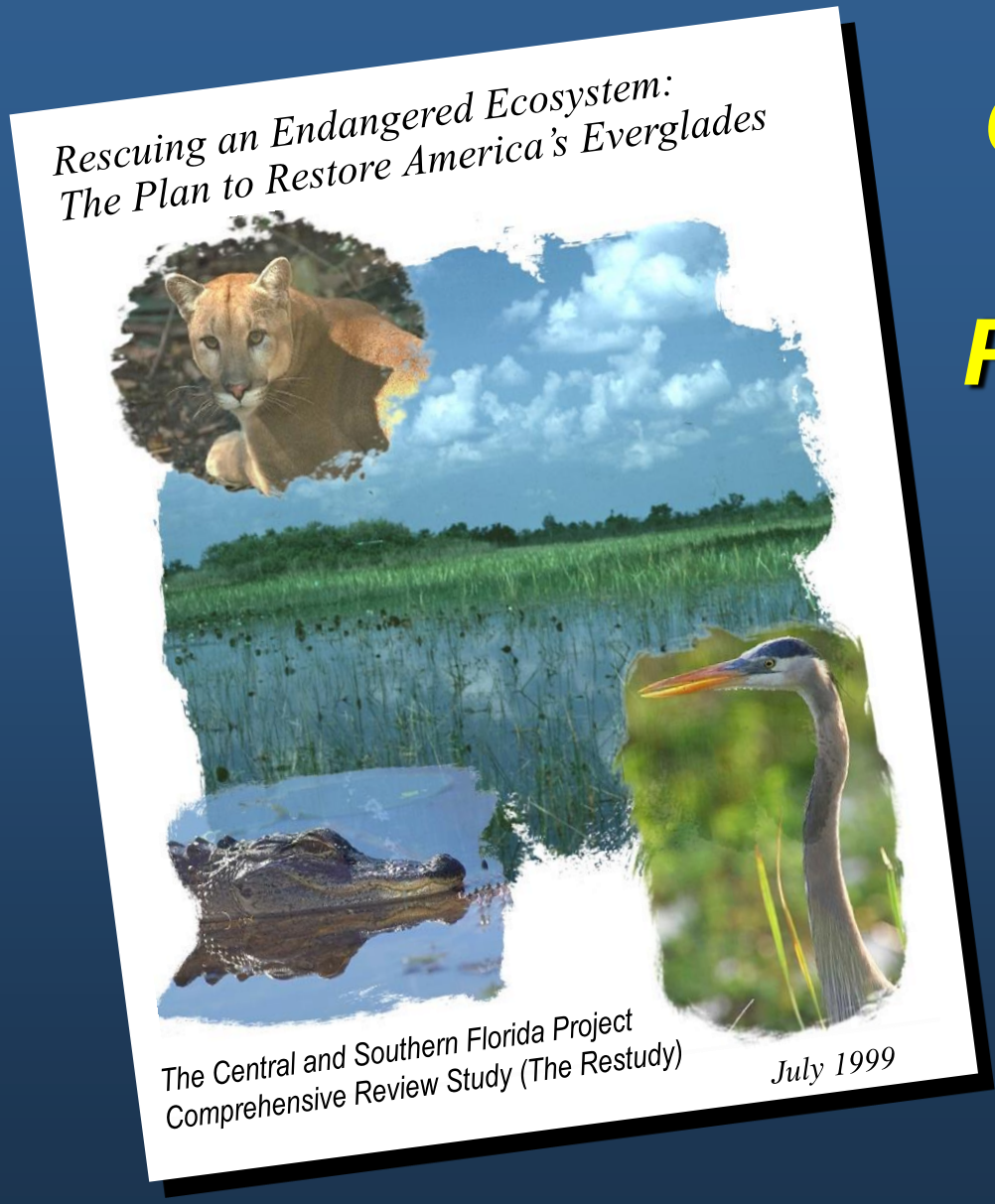


Ecosystem Restoration

Water must be right in:

- Quantity
- Quality
- Timing
- Distribution

- Tinkering won't work
- Integrated planning essential



Comprehensive Everglades Restoration Plan

- On July 1, 1999, the Secretary of the Army and the State of Florida presented the Plan to Congress
  -- Congressional authorization, then appropriation

Comprehensive Everglades Restoration Plan

CERP plans to:

- Restore and improve quality, quantity, timing and distribution of water AND……
- Provide sustainable water supply to meet environmental, agricultural and urban needs

Primary Goal of CERP

Increase the Amount of Available Water

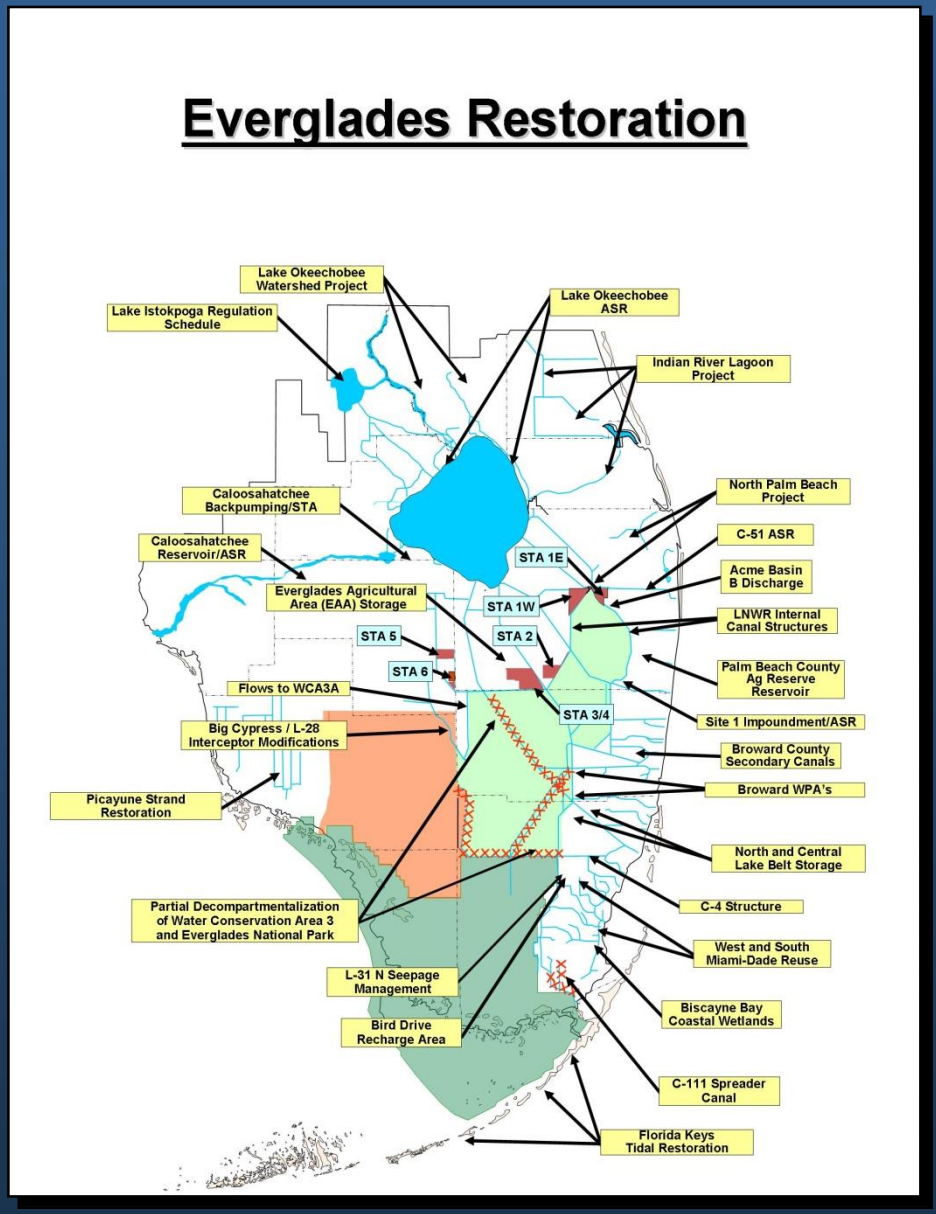
- **Current Deliveries: 1.5 billion cubic meters per year**
- **Deliveries with CERP: 3 billion cubic meters per year of high quality**
- **How? Store and redistribute water to cut the losses to the coast and 'get the water right', the Plan's motto**
  - ***Restore wetlands; use reservoir and aquifer storage; and reduce seepage***
  - ***Treat stormwater to meet standards***

Comprehensive Everglades Restoration Plan

- Features include:
  - Aquifer Storage & Recovery
  - Surface Water Storage Reservoirs
  - Stormwater Treatment Areas
  - Seepage Management
  - Removing Barriers to Sheetflow
  - Operational Changes
  - Reuse Wastewater

Comprehensive Everglades Restoration Plan (CERP)

Plan includes 68 components to be implemented over 35 years.



Foundation Restoration Projects
(restoration outside the Plan)

Kissimmee River Restoration
Everglades Forever Act
Park Modified Water Deliveries

First Generation Projects

Authorized and Underway

Picayune Strand
Indian River C-44 Reservoir
Site 1 Impoundment
Melaleuca Eradication

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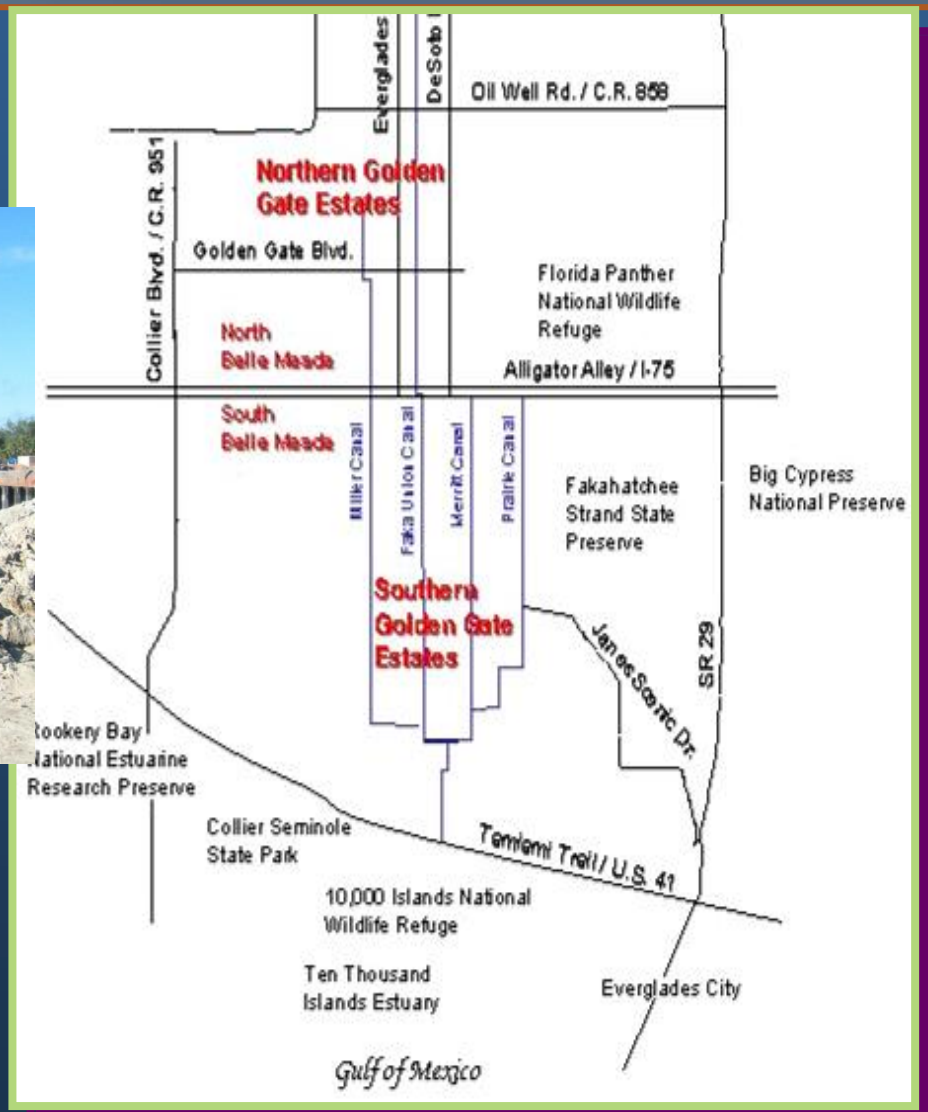
Picayune Strand

Suburban development

Back to nature

- Merritt Pump Station



Picayune Strand

- Components:
  - 3 Spreader Canals
  - 3 Pump Stations
  - 100+ Canal Plugs
  - Roadways
  - Levees

Second Generation Projects

In Line for Congressional Action

Different phases and complexities

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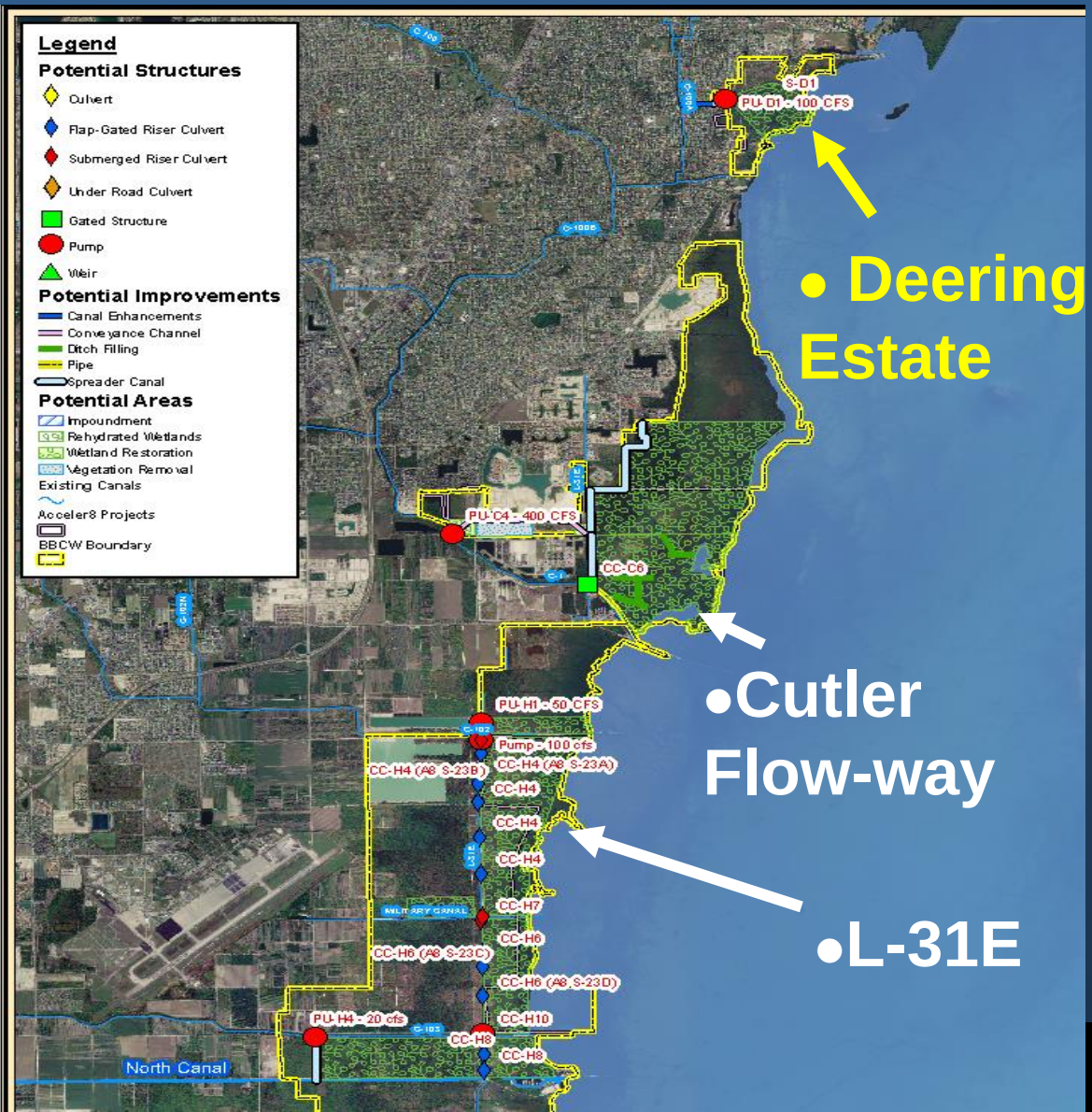
Biscayne Bay Coastal Wetlands



- Deering Estate

- Cutler Flow-way

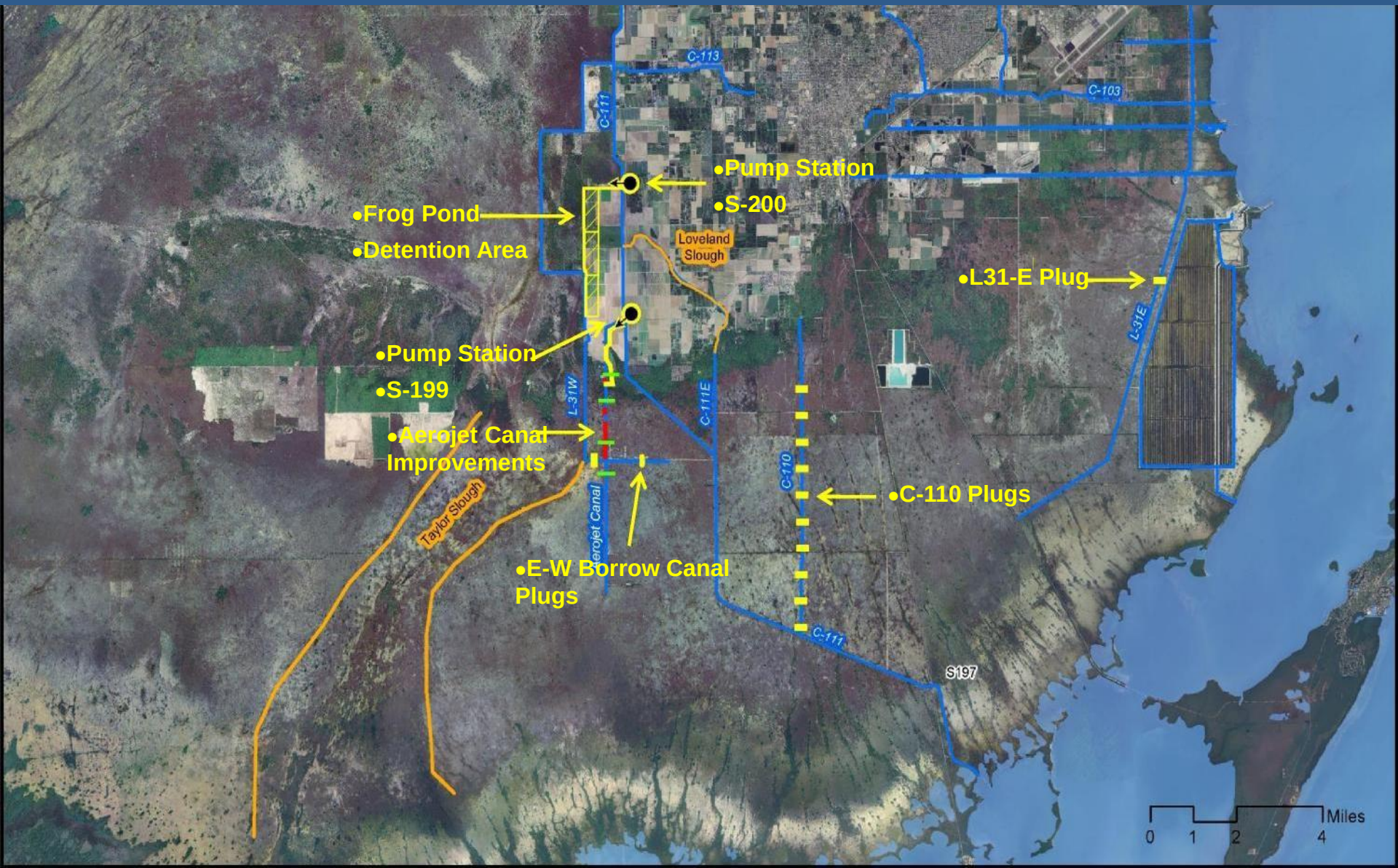
- L-31E

- Phase I

Components:

- Deering Estate Flow-way
- Cutler Flow-way
- L-31E Flow-way

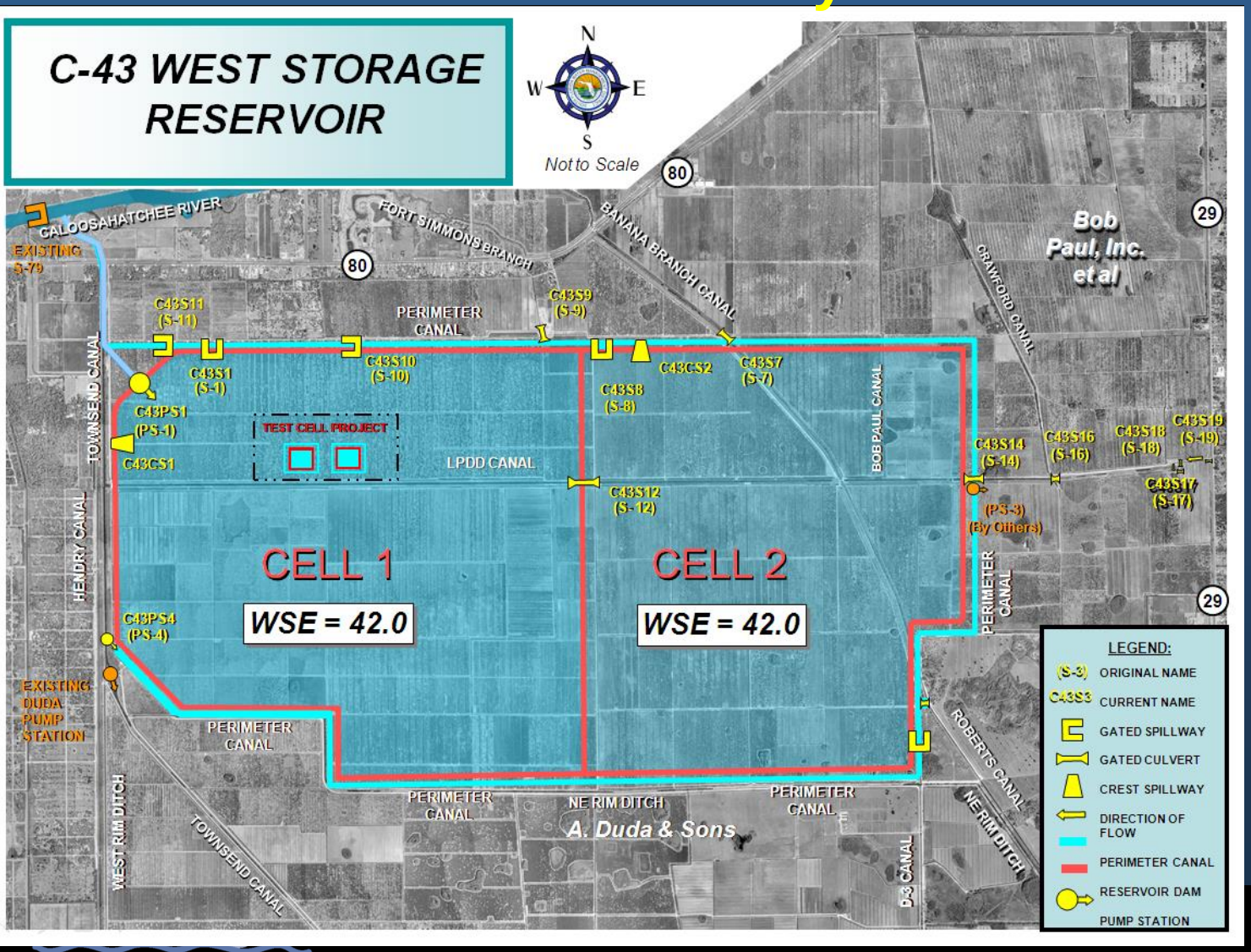
C-111 Spreader Canal Western Project



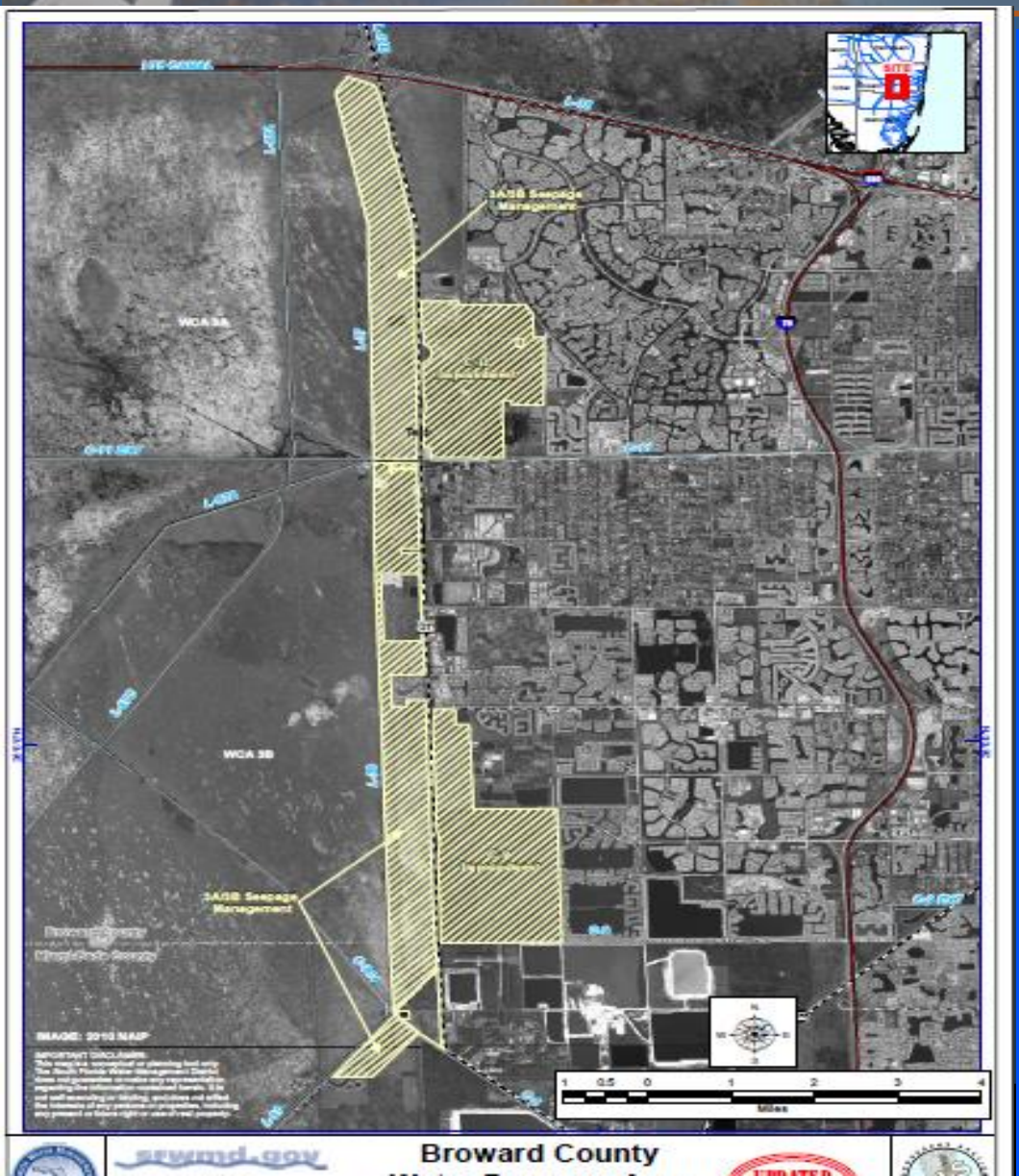
C-111 Spreader Canal Western Project
Expedited Construction by SFWMD

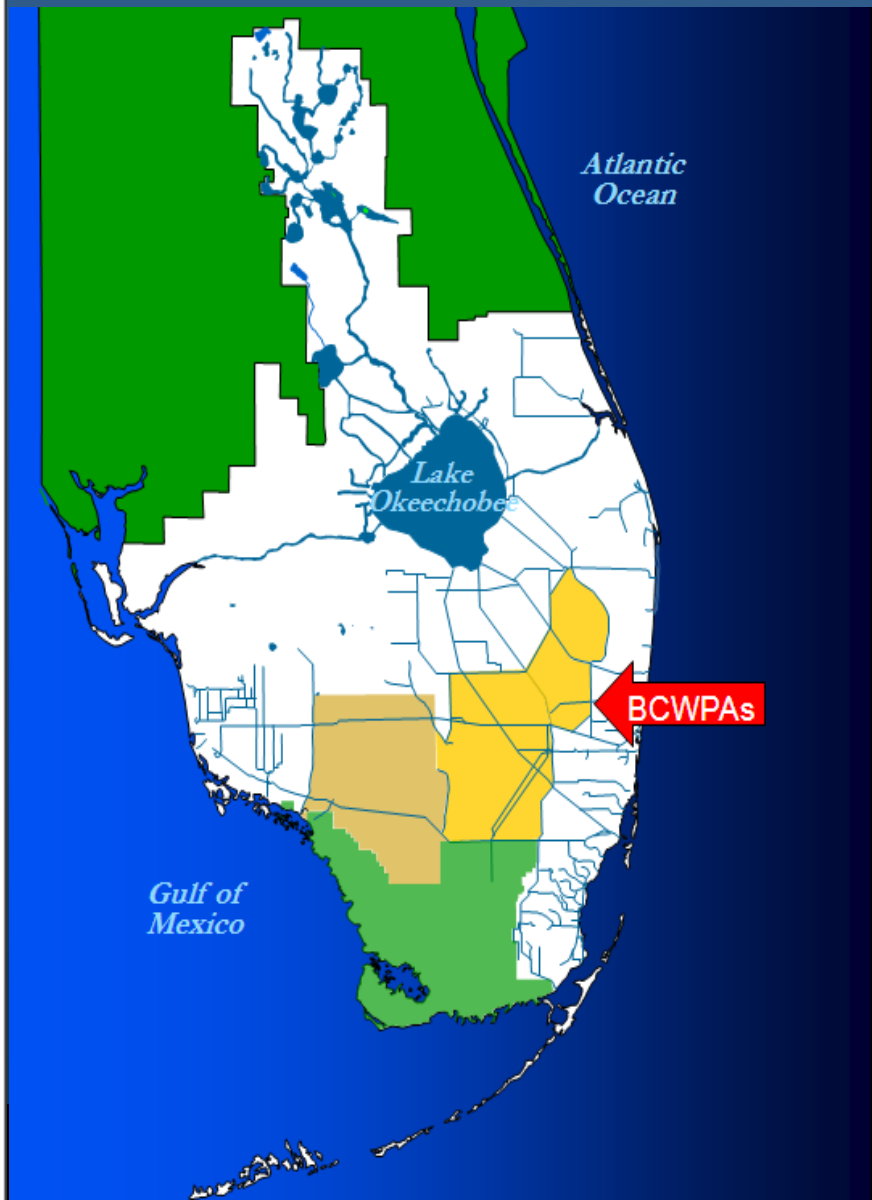
C-43 West Reservoir

Pilot Study



Broward Water Preserve Area





Project Delays for CERP

- Long project planning time
- Justifying benefits project by project
- Delays in congressional actions
- Uncertainty and complexity
- Water quality challenges

Third Generation Project

Central Everglades Planning Project

Expediting the Corps Planning Process
Integrated series of steps to improve QQTD in the central Everglades

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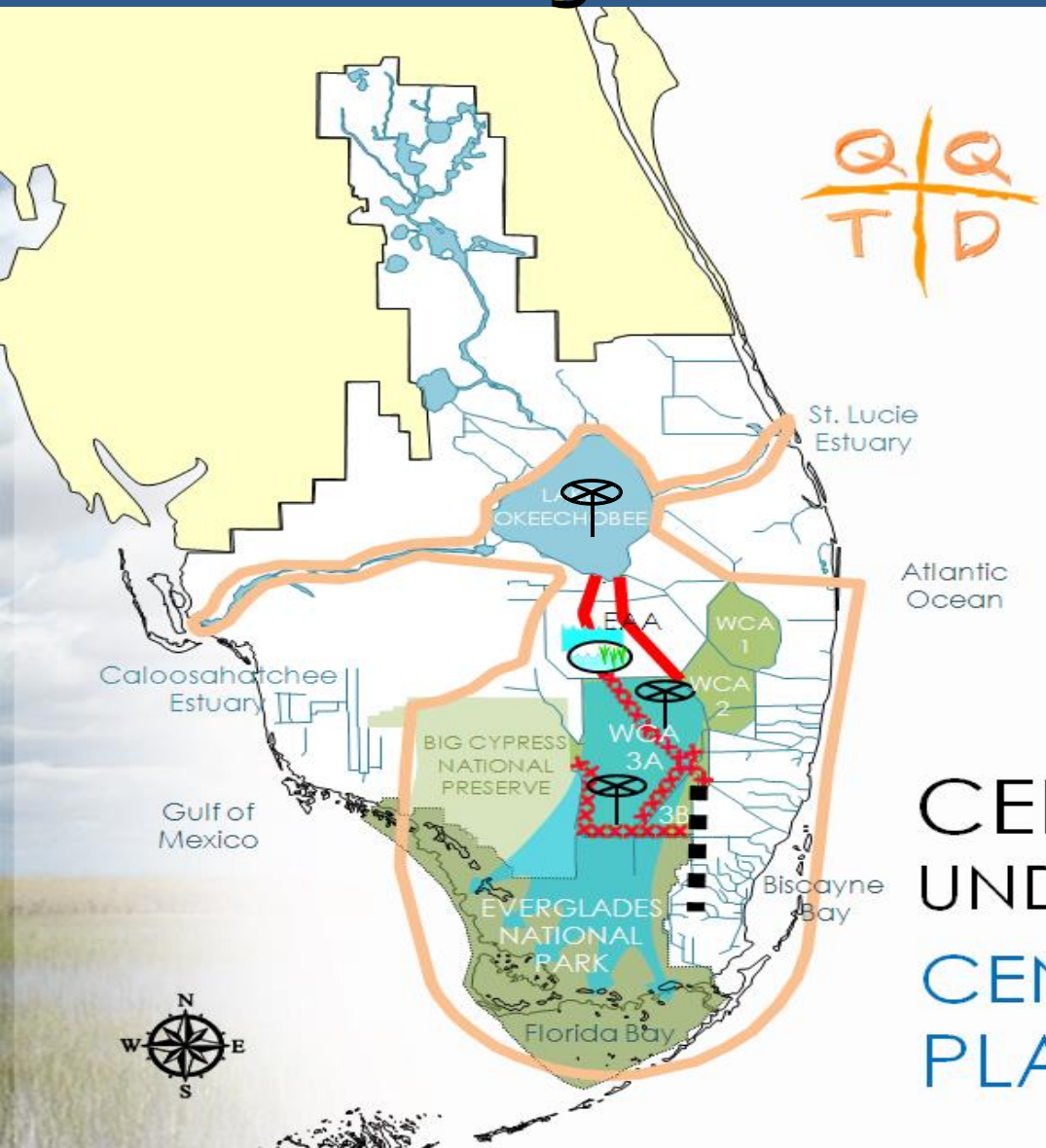
CERP Components Under Central Everglades Planning Process



Central Everglades Planning Project Study Area

Storage, Treatment, and Conveyance in the EAA

Decompartmentalization and Sheetflow Enhancement

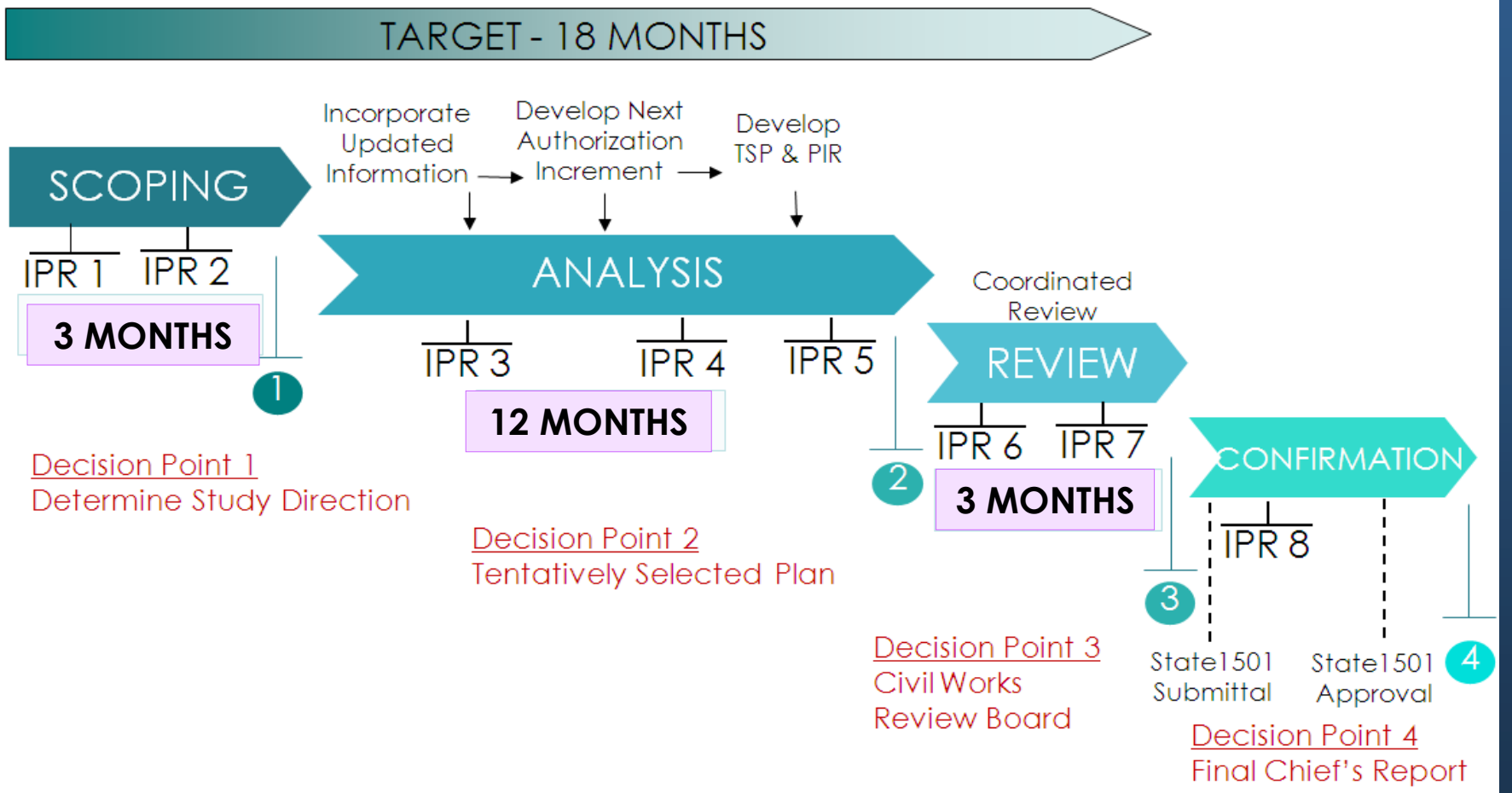
Seepage Management

Operational Changes

CERP COMPONENTS UNDER CONSIDERATION

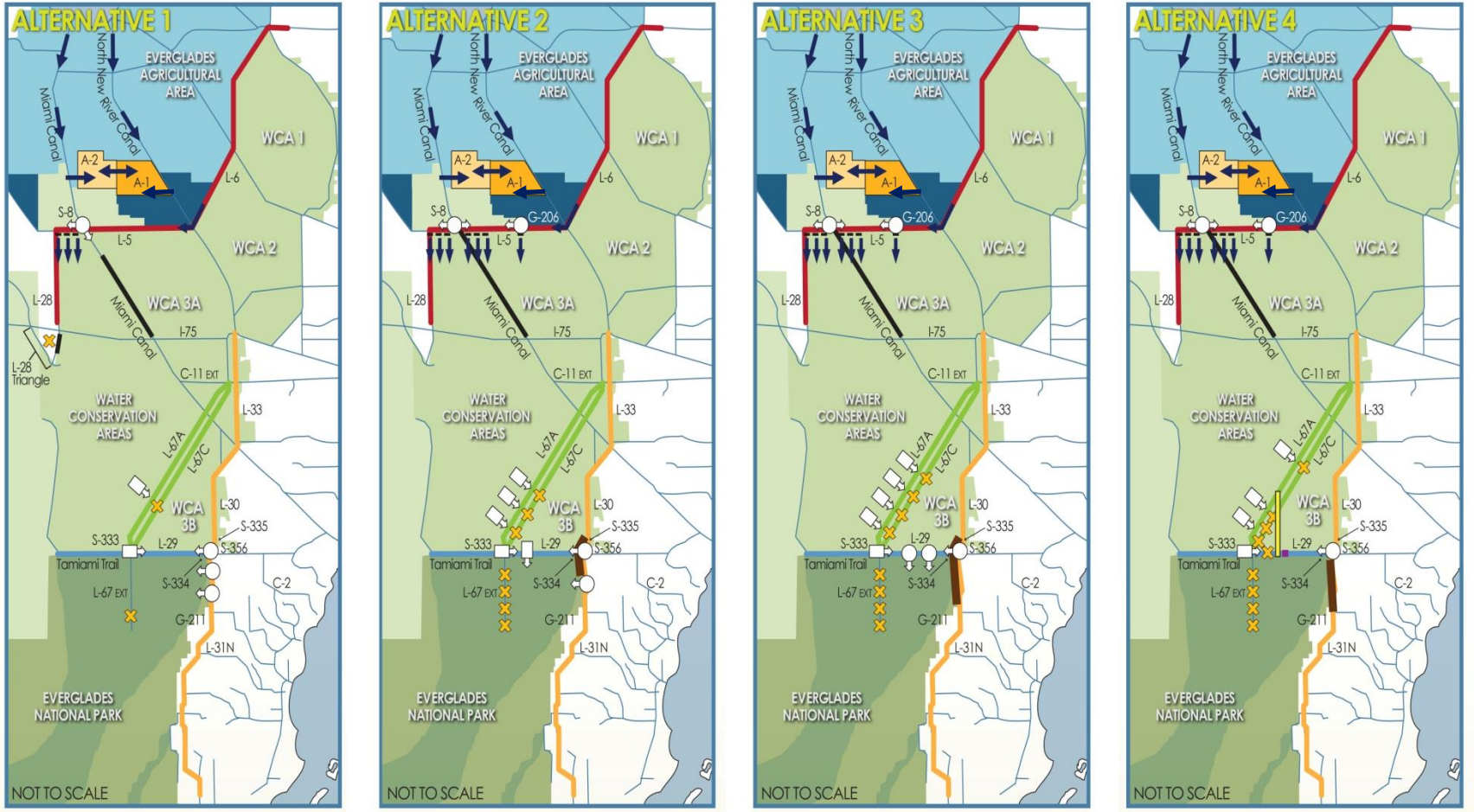
CENTRAL EVERGLADES PLANNING PROJECT

Central Everglades Process
Multiple points of review and decision

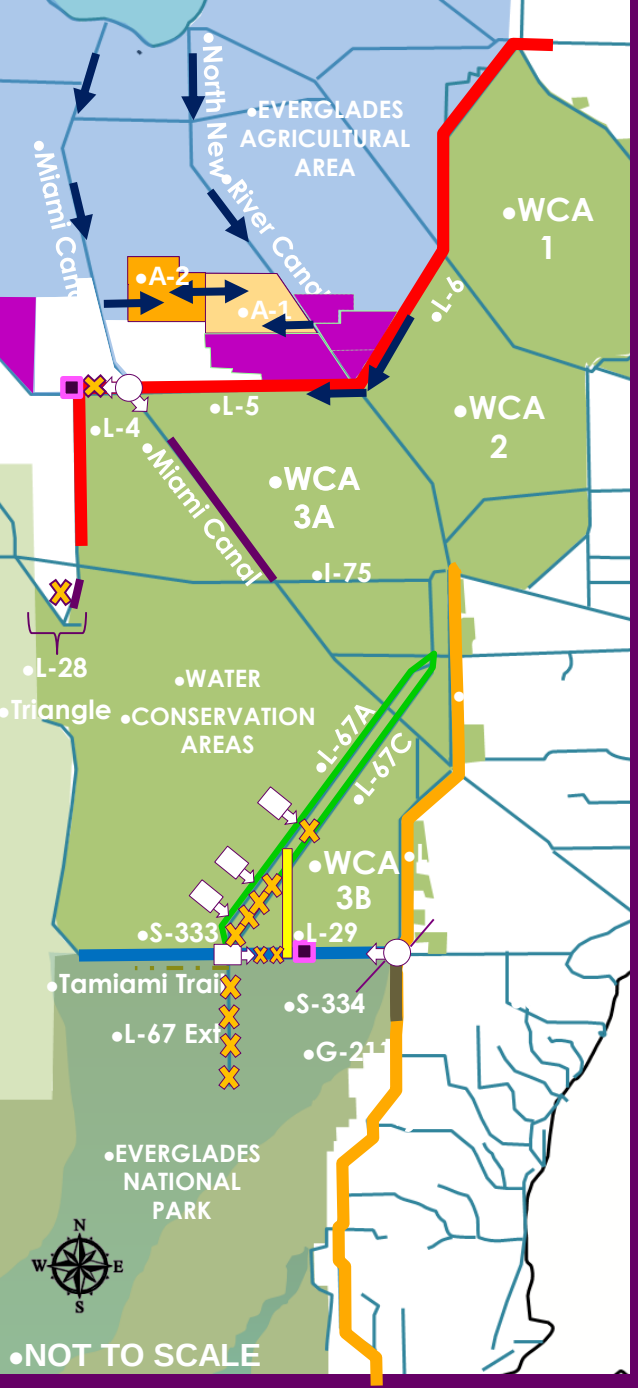


IPR: In-Progress Review with Corps Leadership

CEPP FINAL ARRAY OF ALTERNATIVES



Multiple model runs used for each alternative



WATER MANAGEMENT DISTRICT

•STORAGE AND TREATMENT

- Construct A-2 FEB and integrate with A-1 FEB operations
- Lake Okeechobee operation refinements within LORS

•DISTRIBUTION/CONVEYANCE

- Diversion of L-6 flows, Infrastructure and L-5 canal improvements
- Remove western ~2.9 miles of L-4 levee (west of S-8 3,000 cfs capacity)
- Divide structure at western terminus of L-4 levee removal
- Backfill Miami Canal and Spoil Mound Removal ~1.5 miles south of S-8 to I-75
- L-28 Triangle – levee gap and canal backfill (~ 9,000 LF)
- Increase S-333 capacity to 2,500 cfs
- Two 500 cfs gated structures in L-67A, 0.5 mile spoil removal west of L-67A canal north and south of structures
- Construct ~8.5 mile levee in WCA 3B, connecting L-67A to L-29
- Remove ~8 miles of L-67C levee in Blue Shanty flow way (no canal back fill)
- One 500 cfs gated structure north of Blue Shanty levee and 6,000-ft gap in L-67C levee
- Remove ~4.3 miles of L-29 levee in Blue Shanty flow way, divide structure east of Blue Shanty levee at terminus of western bridge
- Tamiami Trail western 2.6 mile bridge and L-29 canal max stage at 9.7 ft (FUTURE WORK BY OTHERS)
- Remove entire 5.5 miles L-67 Extension levee, backfill L-67 Extension canal
- Increase S-356 pump station capacity to 1,000 cfs (from L-67 Ext to Tram Rd)
- Partial depth seepage barrier south of Tamiami Trail (along L-31N)
- G-211 operational refinements; use coastal canals to convey seepage

•SEEPAGE MANAGEMENT

- Remove & keep Old Tamiami Trail road

•Note: System wide operational changes and adaptive management considerations will be include in project

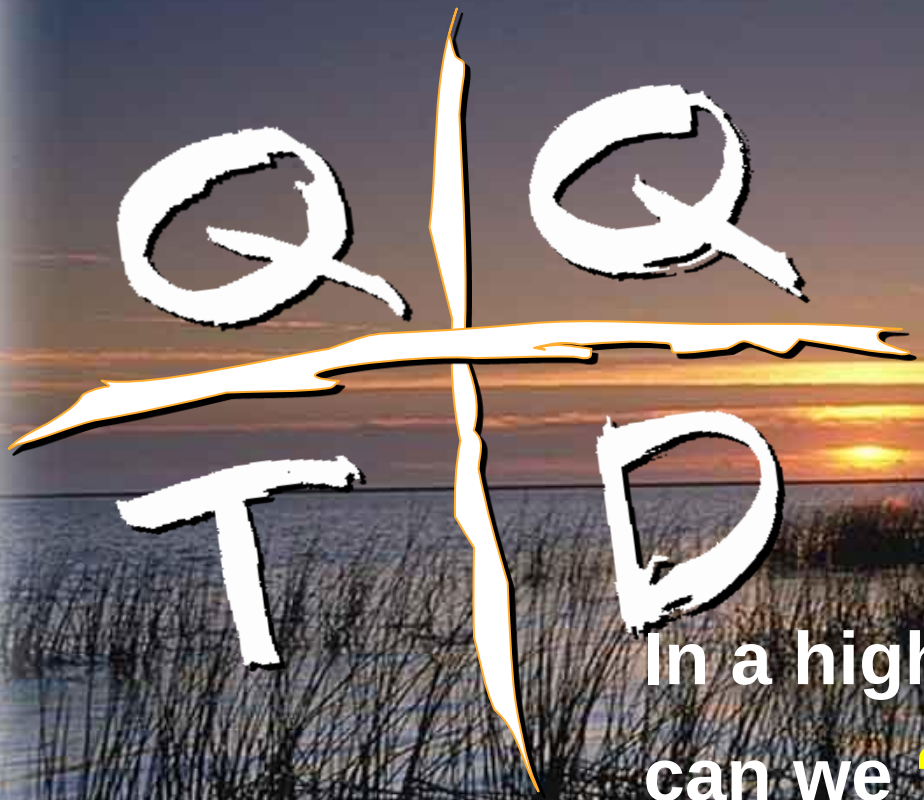
Everglades Restoration

Overcoming Obstacles

Benefits derive from the whole, so how can we justify each part?

- **Water quality is a regional issue**
- **Global change will alter plans and priorities**
- **Exotic species are a real threat**

Ecosystem Restoration



Water must be right in:

- Quantity
- Quality
- Timing
- Distribution

In a highly managed ecosystems, can we 'get the water right'?

Thank you

~~Questions?~~

We need answers!