

the journey to restore
America's
Everglades



the Restoration of America's Everglades & the South Florida Ecosystem



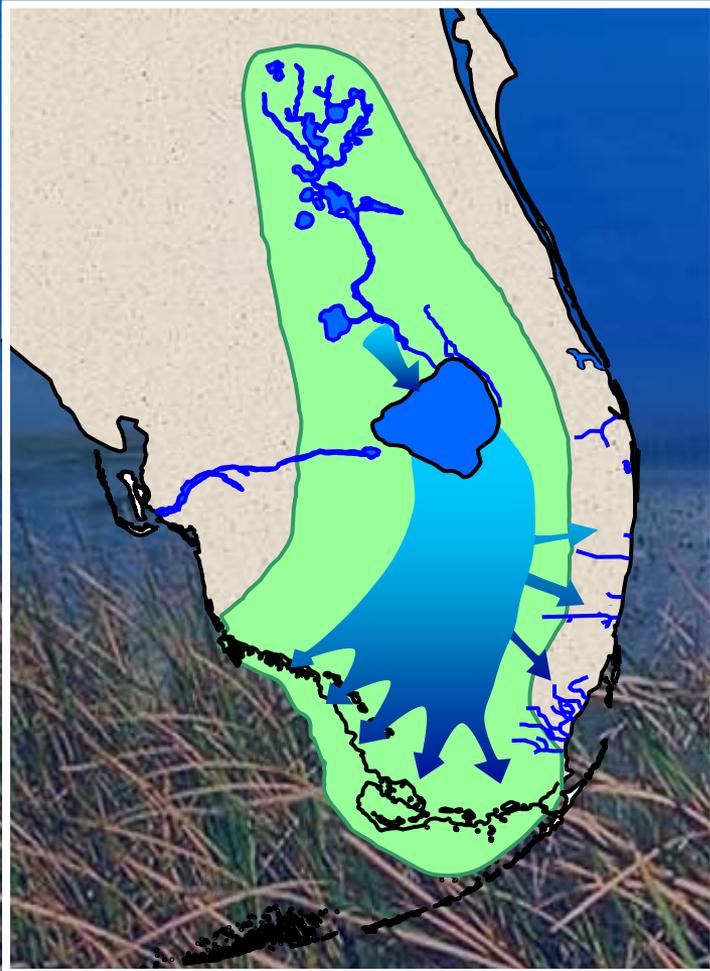
Presentation

- **Background**
- **Program Overview**
- **Hot Topics**
- **Summary**

May 2004

The "Original" Everglades Ecosystem

"River of Grass"



- Water connected the system, from top to bottom
- 9 million acres of wetlands providing a variety of habitat
- Diverse mosaic of landscapes and seascapes

**St. Lucie Canal Constructed
1916 - 1928**

● **Stuart**

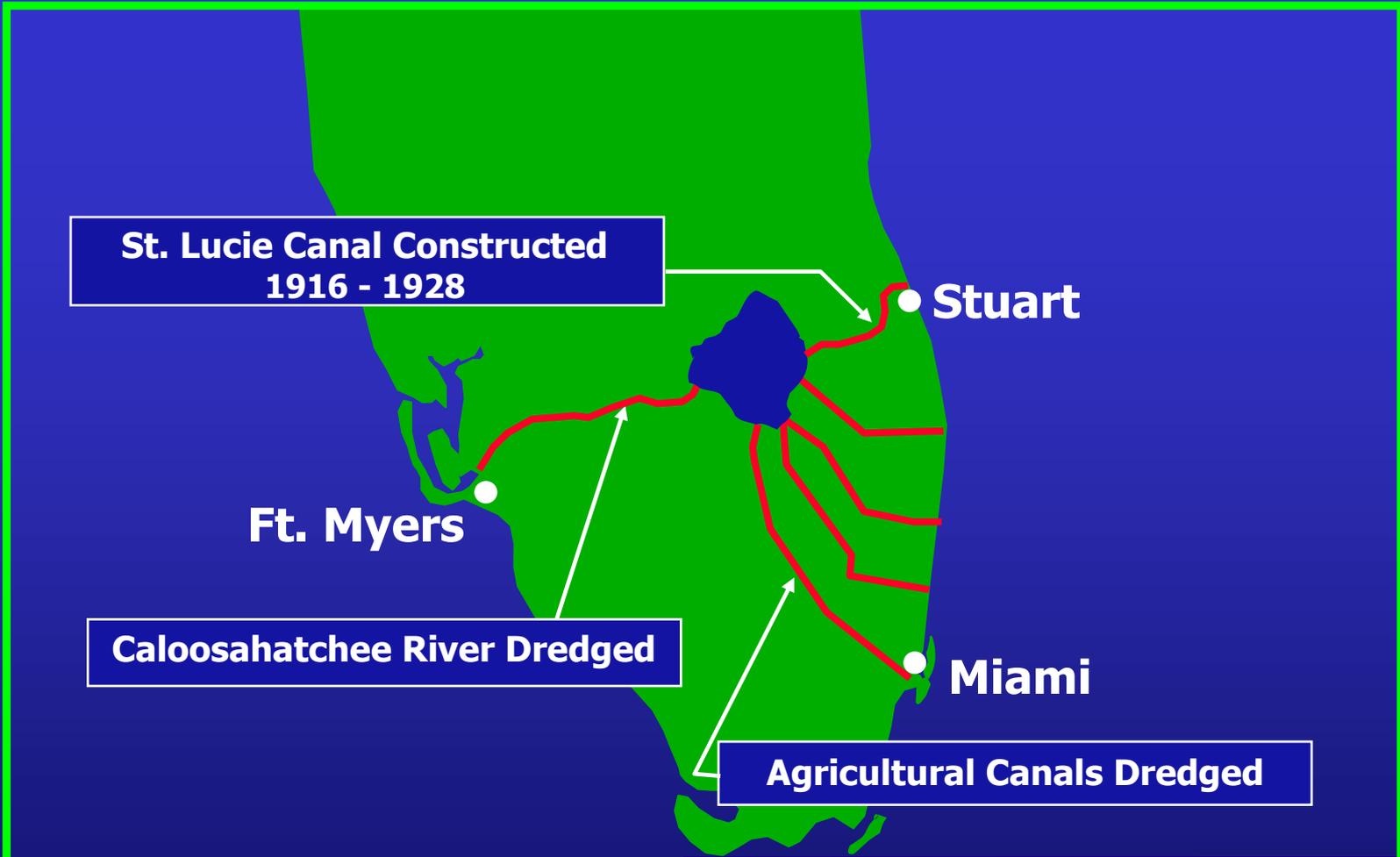
Ft. Myers

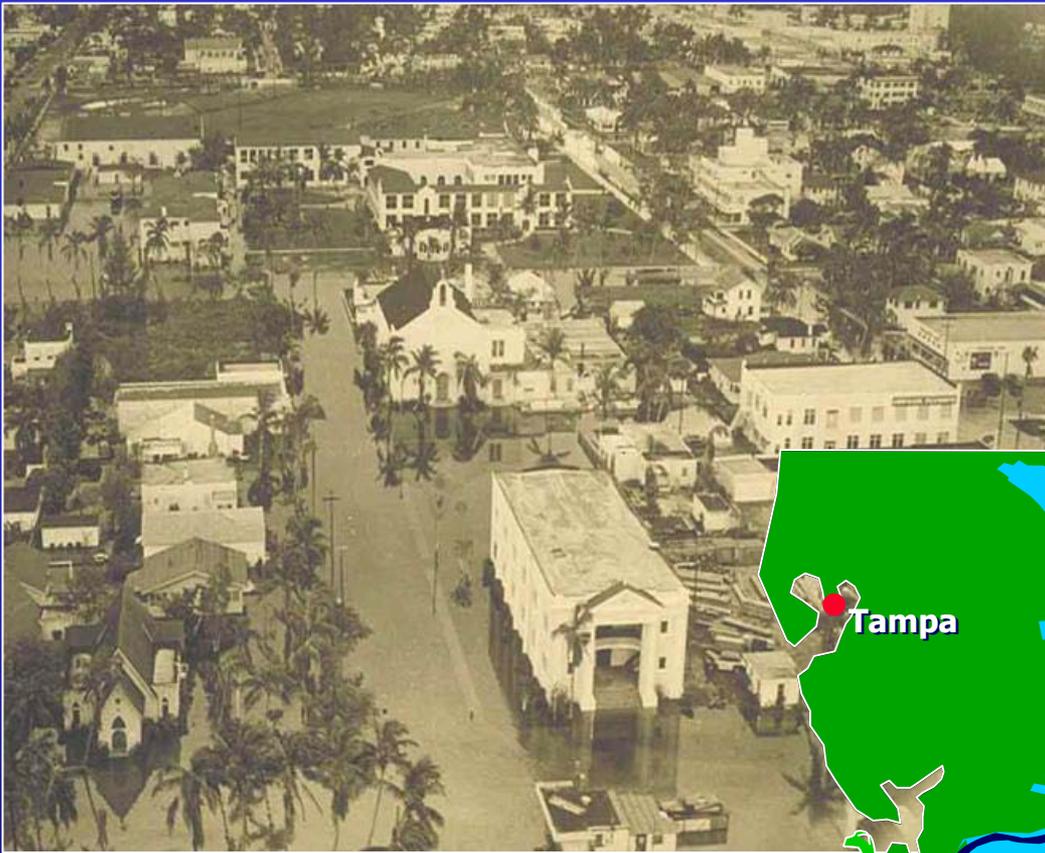
Caloosahatchee River Dredged

● **Miami**

Agricultural Canals Dredged

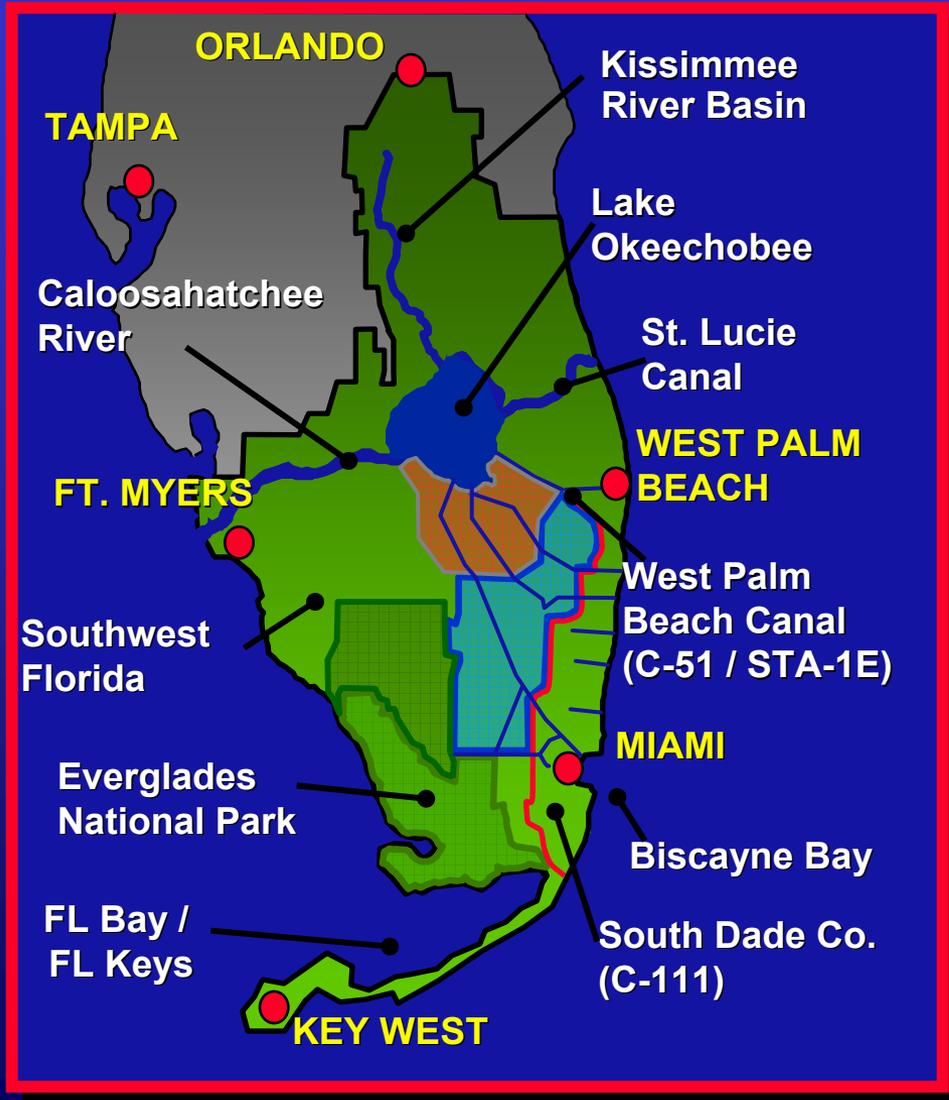
**Everglades Drainage
District Works
1905-1928**



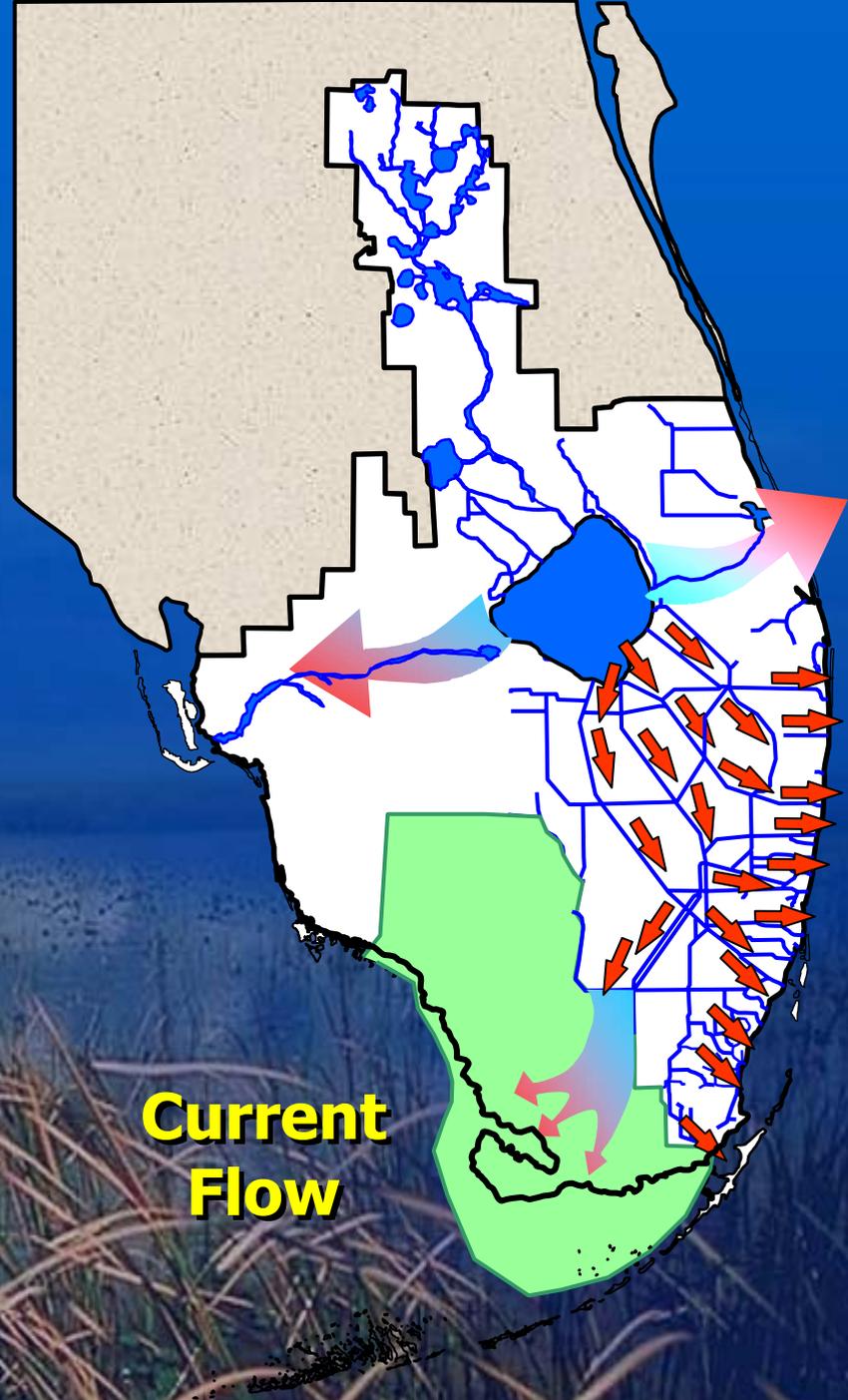
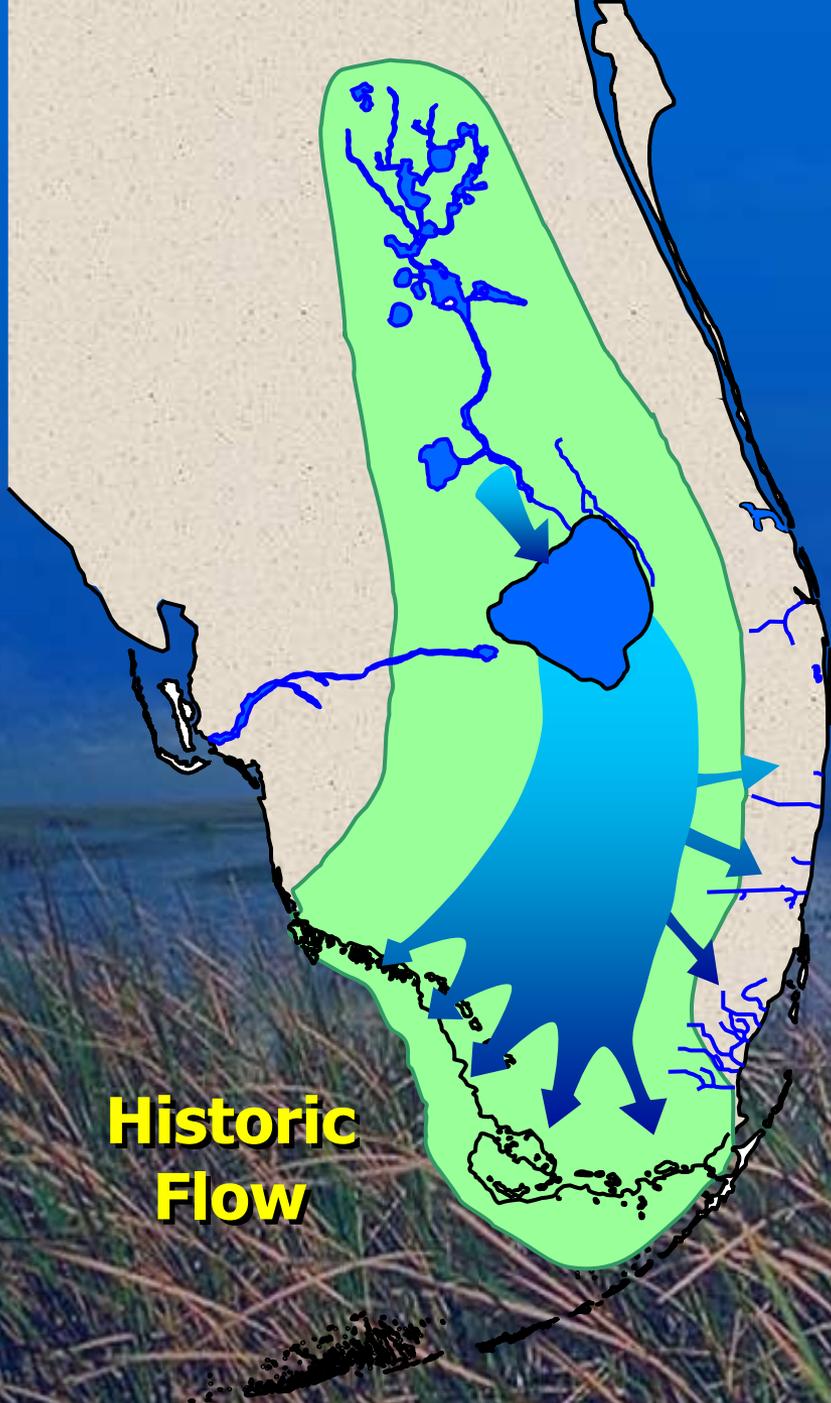


1947 Flood

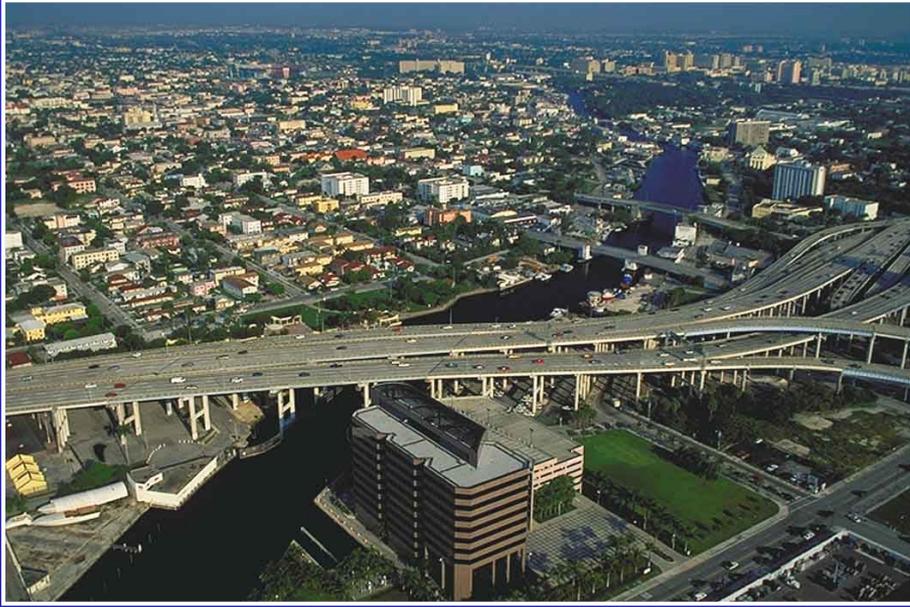
Central & Southern Florida Project (C&SF)



- **Authorization:** Flood Control Act of 1948 +
- **Purpose:** Flood Control, Water Conservation & Control, Salt Water Intrusion, F&W, Water Supply to ENP, FL Bay/FL Keys, & Environmental Restoration
- **Features:** 46 bridges, 10 locks, 670 miles of canals, 809 miles of levees, 130 control & diversion structures, & 16 pump stations
- **Project Cost:** \$2.9B
- **Cost Share:** Varies
- **Local Sponsor:** Various



South Florida Flourished



However, the Ecosystem is in Trouble....

- Too much/too little water for the Everglades/south Florida ecosystem
- Massive reductions in wading bird populations
- Degradation of water quality
- Repetitive water shortages and salt water intrusion
- Declining estuary health
- 1.7 billion gallons of water a day wasted to tide



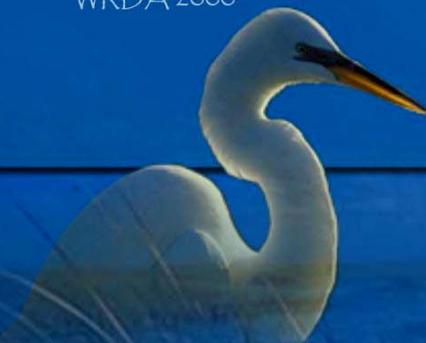
A white egret stands in a field of tall, dry grass. The bird is facing right, with its long neck curved downwards. The background is a clear blue sky. The text "What we are doing about the problem..." is overlaid on the right side of the image in a bold, yellow font with a black outline.

**What we are
doing about
the problem...**

30+ years implementation

WRDA 2000

Program Activities

- 
- **Programmatic Regulations**
 - **Guidance memos**
 - **Initial CERP Update**
 - **Pre CERP Baseline**
 - **Interim Goals & Targets**
 - **MISP**
 - **Banding**
 - **Regional PDT's**

South Florida Ecosystem Restoration

Current Program

Modified Water Deliveries to ENP

(Funded Thru DOI)



Kissimmee River Restoration

Critical Projects Program

Continuing Authorities Program (1135, 206)

Central & Southern Florida Project

Upper St Johns

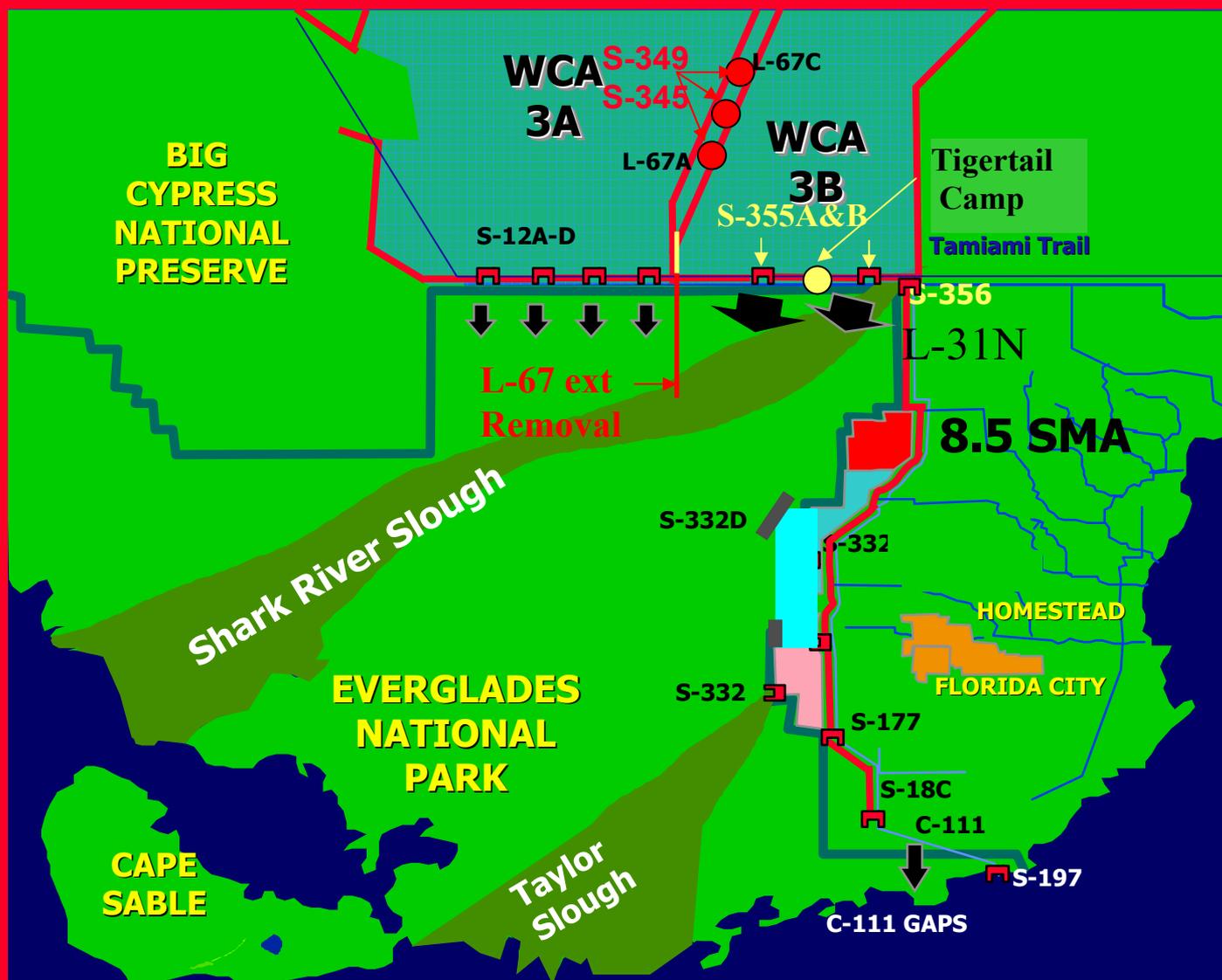
Manatee

C-51 / STA-1E

C-111

CERP

Modified Water Deliveries to Everglades National Park



Completed:

- S-355A&B
- Tigertail Camp
- Removal of 4 miles of L-67 Ext
- Interim S-356

Ongoing:

- Acquisition in 8.5 SMA
- 341 tracts acquired out of 743 needed
- Demolition of acquired structures

Upcoming:

- Construction of 8.5 SMA Levee, Canal and Pump Station

Complete June 06

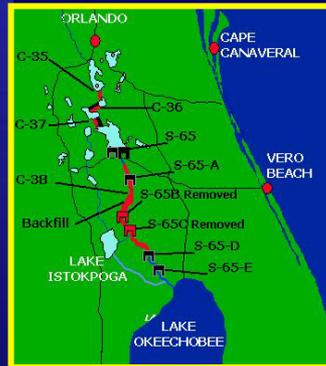
South Florida Ecosystem Restoration continued

Current Program

Modified Water Deliveries to ENP

(Funded Thru DOI)

Kissimmee River Restoration



Critical Projects Program

Continuing Authorities Program (1135, 206)

Central & Southern Florida Project

Upper St Johns

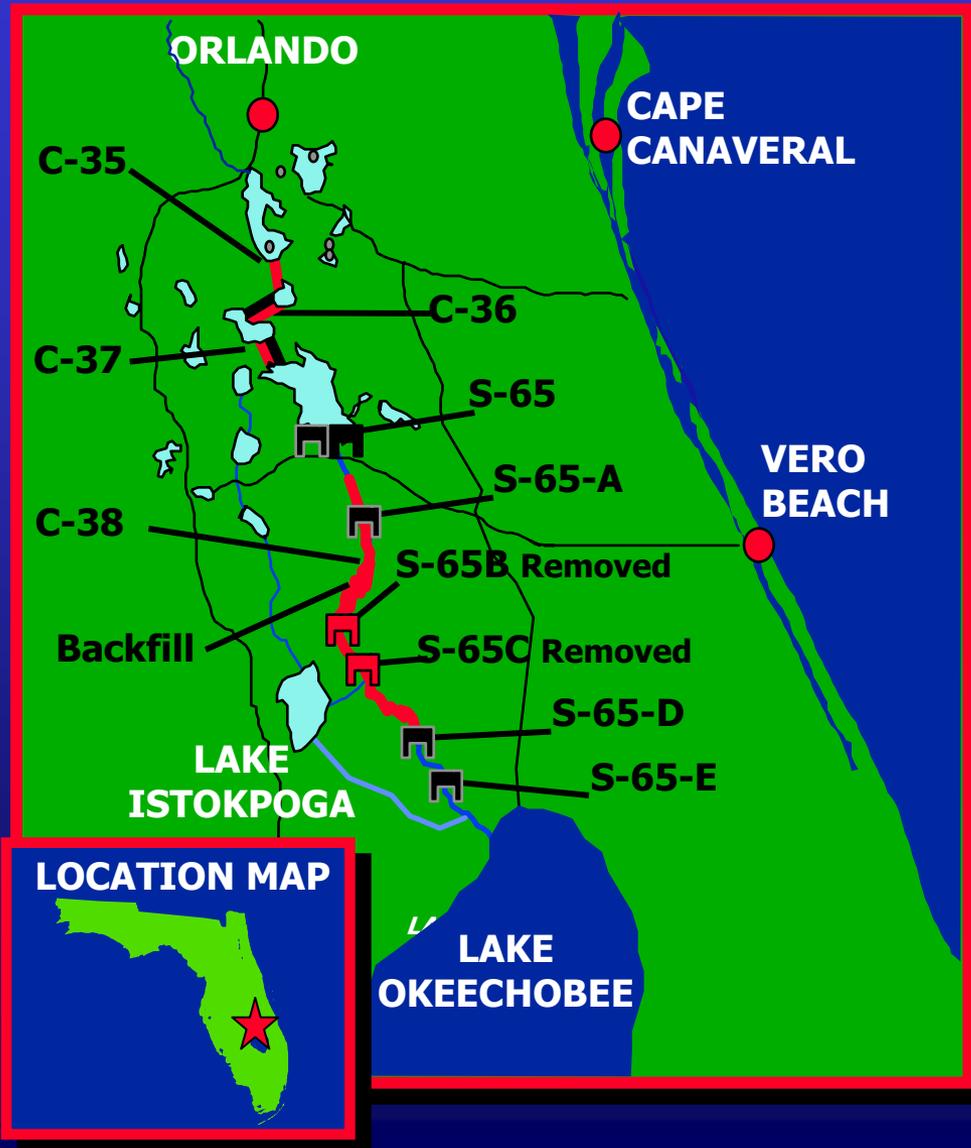
Manatee

C-51 / STA-1E

C-111

CERP

Kissimmee River Restoration



- **Authorization:** WRDA 92
- **Purpose:** Environmental Restoration
- **Features:** 22 Miles of Canal Backfilling, Levees, Control Structure Expansion, Canal Enlargement, and Structure Removal, Land Acquisition
- **Project Cost:** \$572.4M
- **Cost Share:** 50/50
- **Local Sponsor:** South Florida Water Management District
- **Status:** Construction Underway, 1st backfill contract for 7 miles complete, Next backfill in FY 05

An aerial photograph showing a wide, straight canal on the left side of the frame, which runs parallel to a more winding, natural river channel. The surrounding landscape is a mix of green vegetation and brownish, cleared land. The river channel has several large, meandering loops. A blue text box is overlaid on the right side of the image.

Kissimmee River
~1980 with Canal

An aerial photograph showing a wide, meandering river (the Kissimmee River) flowing through a lush, green landscape. The river is dark blue/black and winds in a series of large, sweeping curves across the terrain. The surrounding land is a mix of vibrant green fields and patches of darker, more dense vegetation. In the upper right, a blue rectangular box contains the title and date in yellow and white text. The overall scene is a natural, rural landscape.

Kissimmee River

July 11, 2001

South Florida Ecosystem Restoration continued

Current Program

Modified Water Deliveries to ENP

(Funded Thru DOI)

Kissimmee River Restoration

Critical Projects Program



Continuing Authorities Program (1135, 206)

Central & Southern Florida Project

Upper St Johns

Manatee

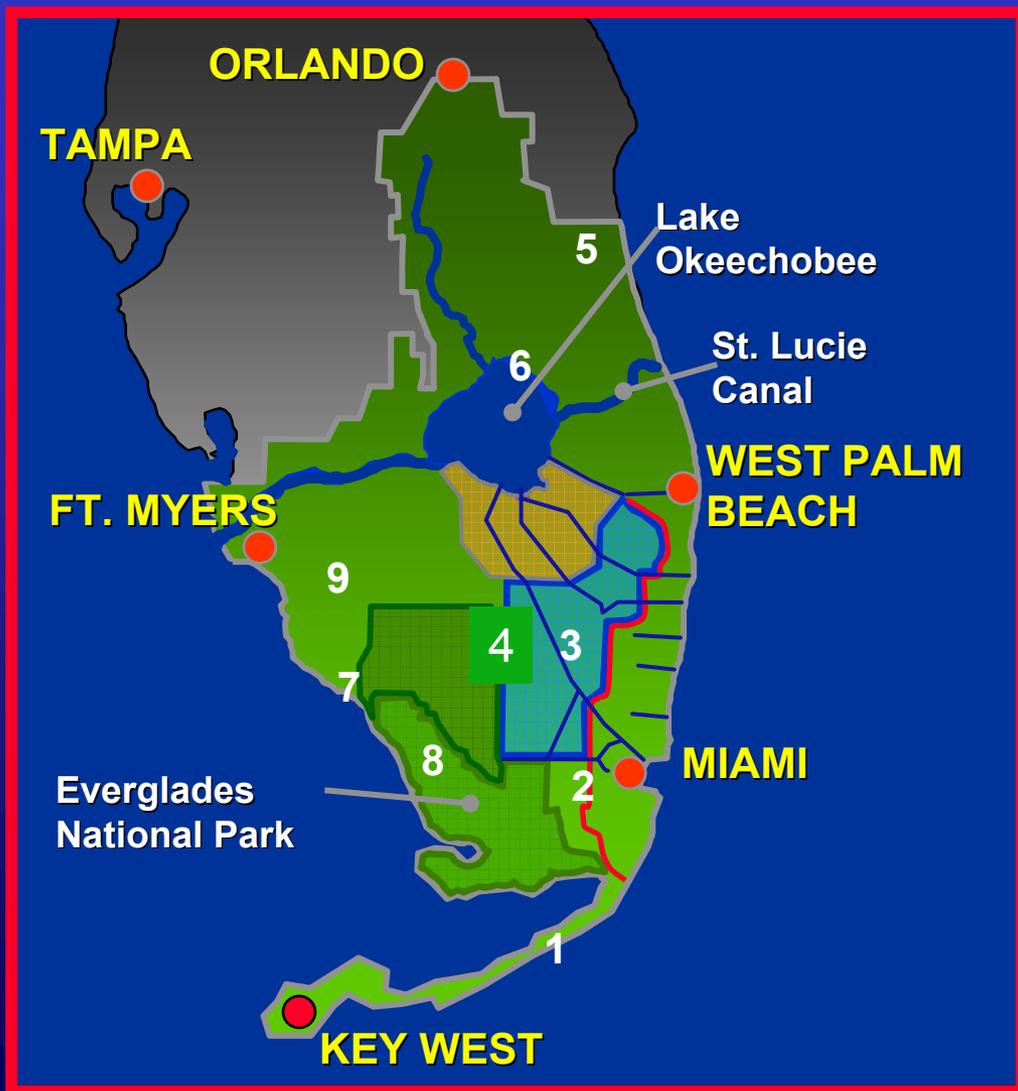
C-51/STA-1E

C-111

CERP

Critical Ecosystem Restoration Projects

Special Program authorized by Congress in 1996
at total cost of \$150 million

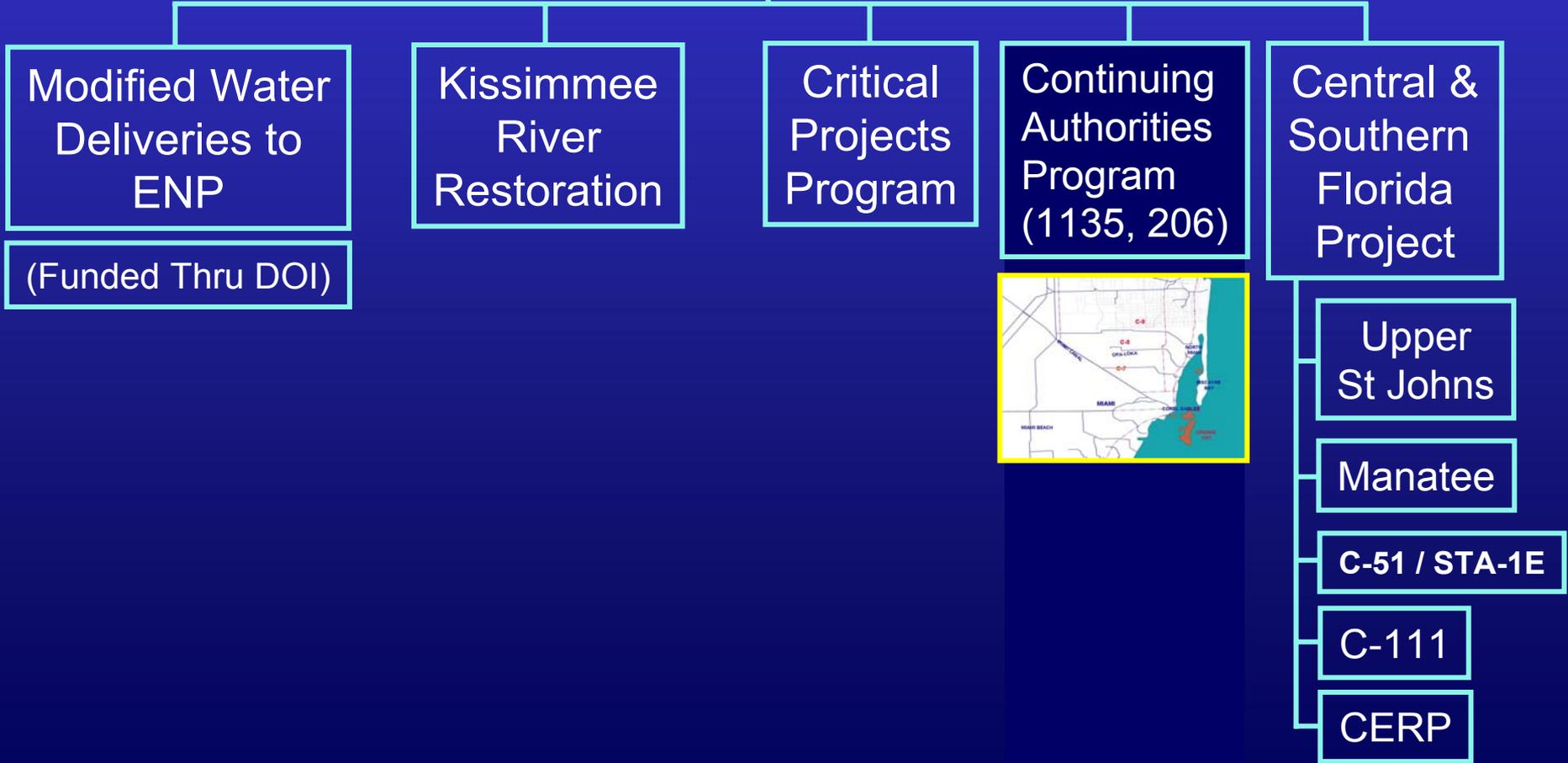


1. Keys Carrying Capacity
2. C-4 East Coast Canals
3. Western C-11
4. Seminole-Big Cypress
5. Ten Mile Creek
6. Lake Okeechobee
7. Southern CREW
8. Tamiami Trail Culverts
9. Lake Trafford Restoration

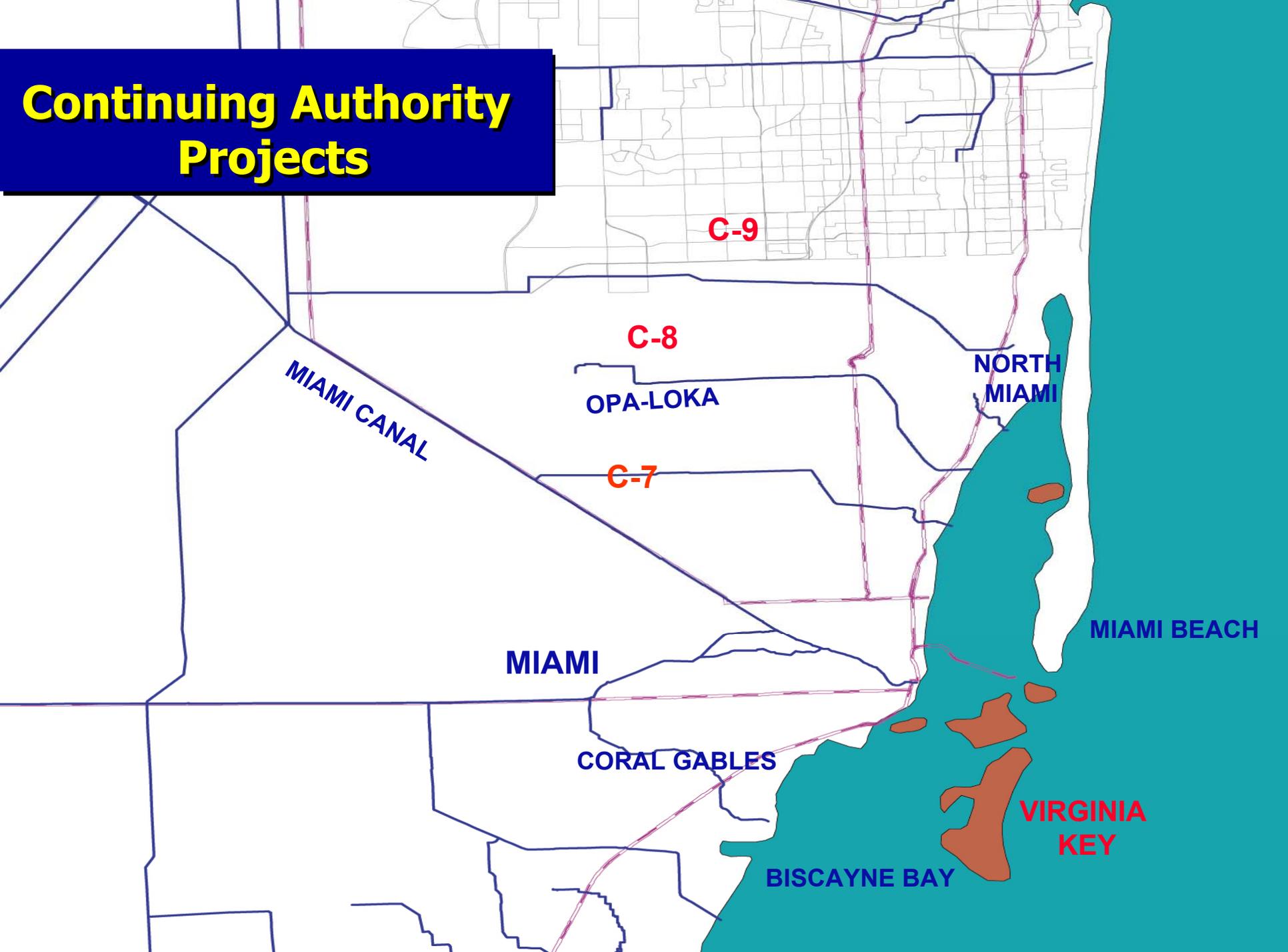


South Florida Ecosystem Restoration continued

Current Program



Continuing Authority Projects



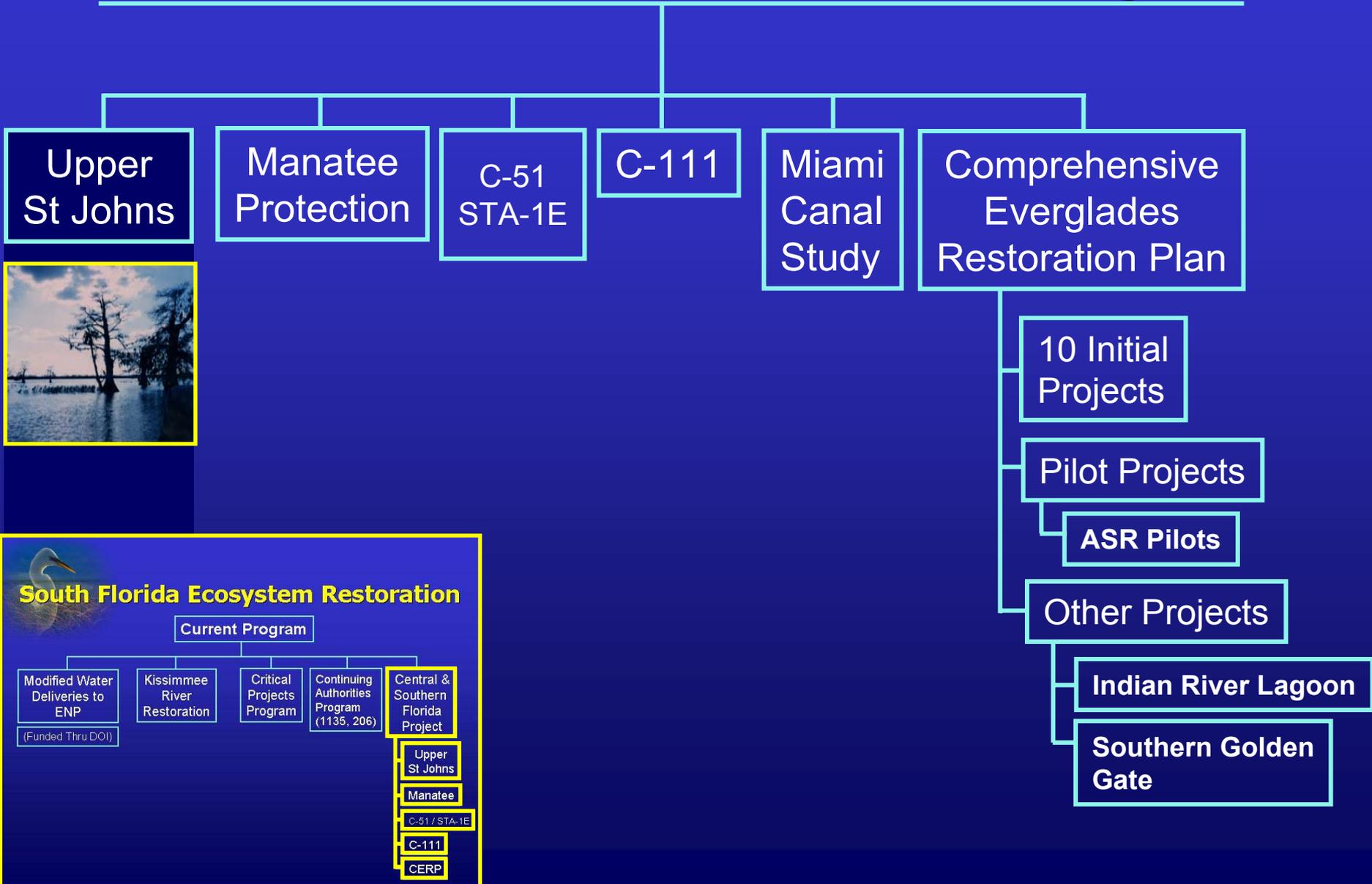


South Florida Ecosystem Restoration continued

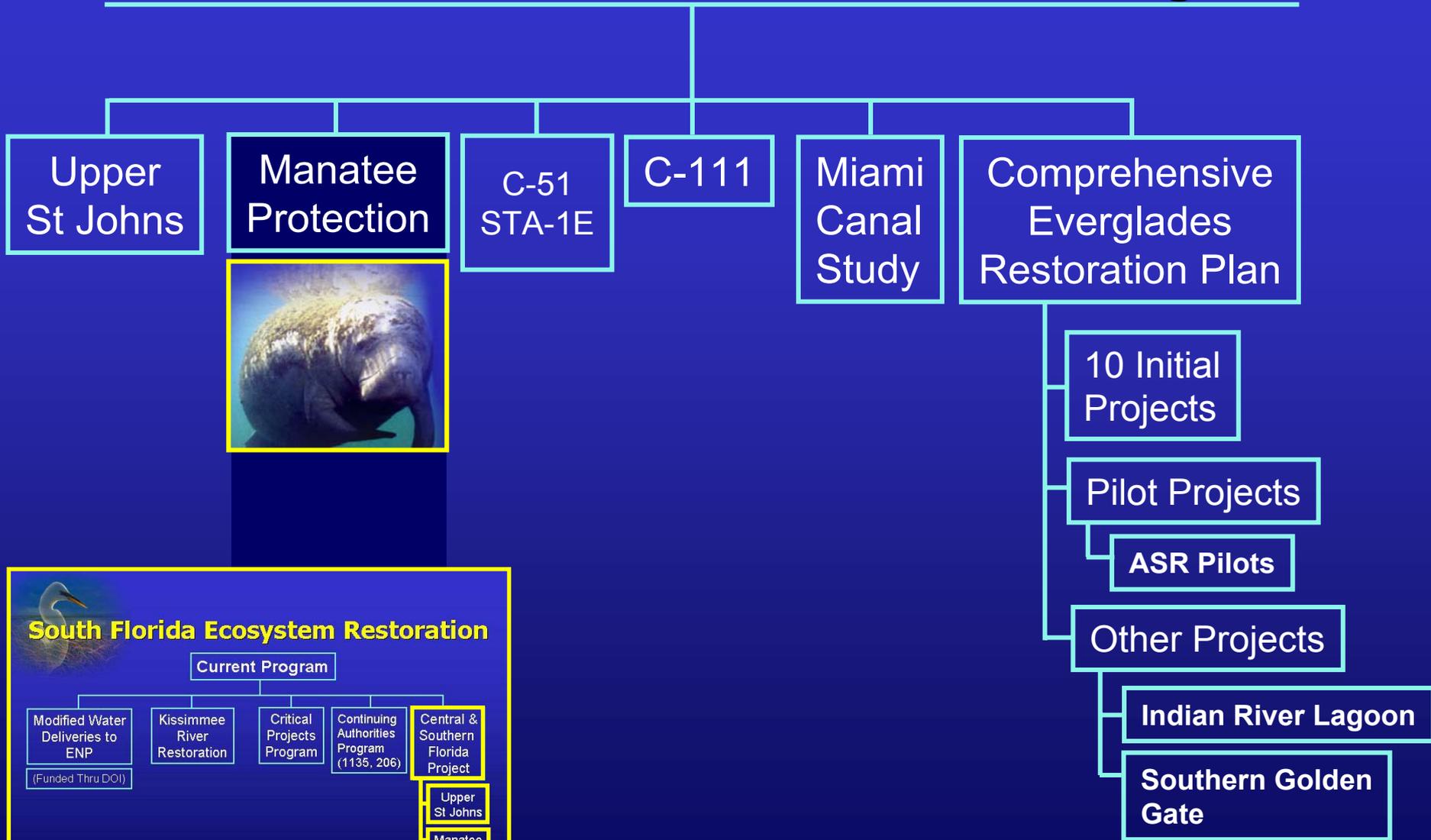
Current Program

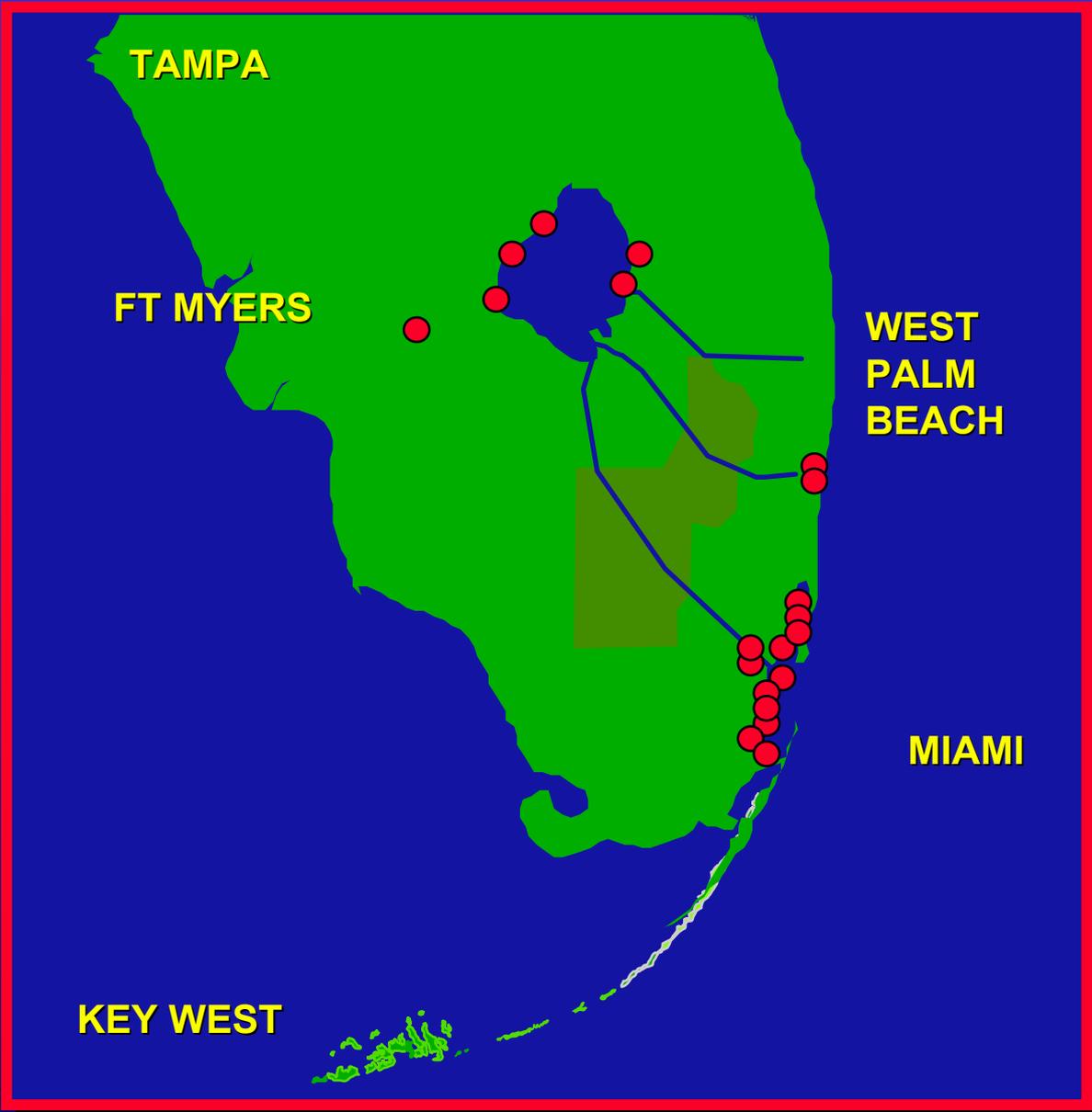


Central & Southern Florida Project



Central & Southern Florida Project



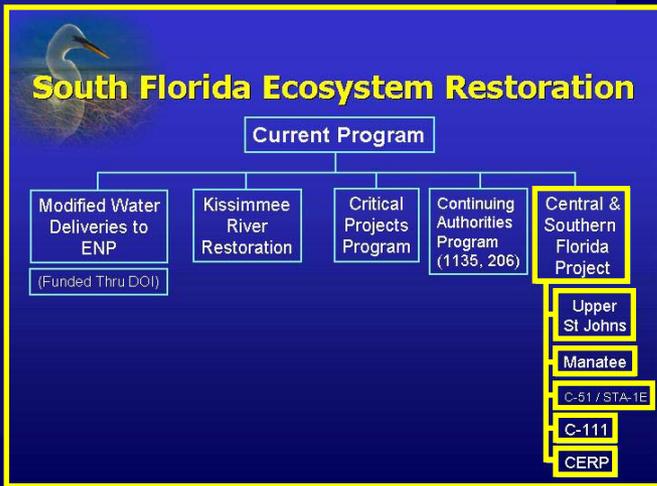
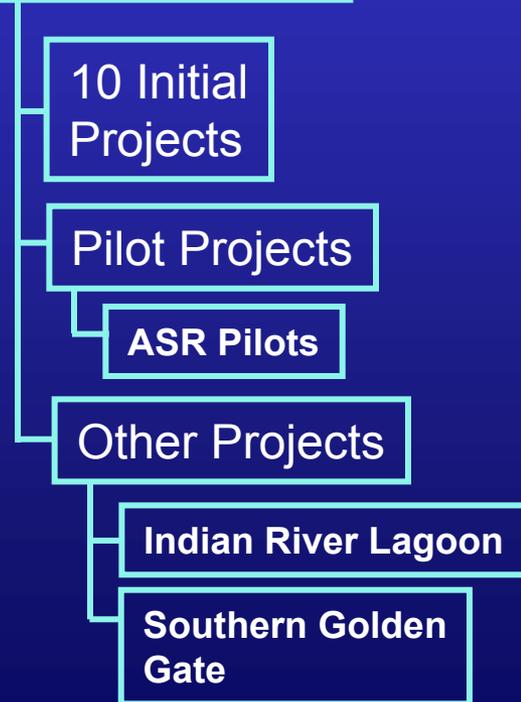


CENTRAL AND SOUTHERN FLORIDA PROJECT

Manatee Pass Gates



Central & Southern Florida Project



CENTRAL AND SOUTHERN FLORIDA PROJECT

West Palm Beach Canal (C-51) / STA 1E



LOCATION MAP



PROJECT COSTS

PED	\$ 35,735,000
Real Estate	\$ 78,734,000
Construction	\$144,631,000

Total \$259,100,000

Federal \$232,900,000

Non-Fed \$ 26,200,000

COST SHARING: 91/9

SPONSOR: SFWMD

PURPOSE: Flood Control,
Water Quality, Water Supply

STATUS: Under Construction,
Completion in spring 2004 with
follow on PSTA field test

PSTA Field Test

STA-1E

Conceptual Plan to Achieve 10 ppb Phosphorus



Emergent Growth



Submerged Aquatic Vegetation (SAV)

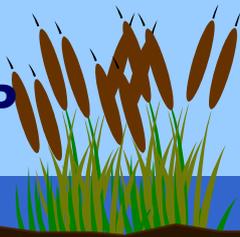
1 yr of sedimentation

2 cm



Periphyton (PSTA)

100 ppb P



25-50 ppb P

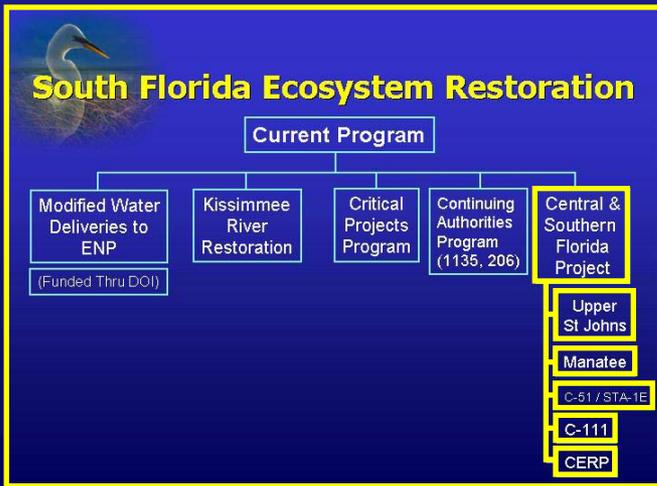
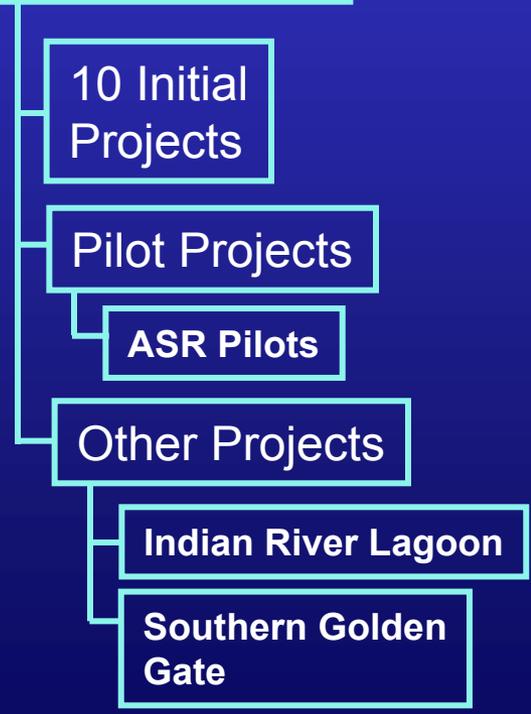


10 ppb P



low phosphorus substrate

Central & Southern Florida Project



CENTRAL AND SOUTHERN FLORIDA PROJECT SOUTH DADE COUNTY (C-111)



PROJECT COSTS

PED	\$ 42,269,000
Real Estate	\$118,342,000
Construction	<u>\$114,059,000</u>
Total	\$274,670,000
Federal	\$137,335,000
Non-Fed	\$137,335,000

COST SHARING: 50/50

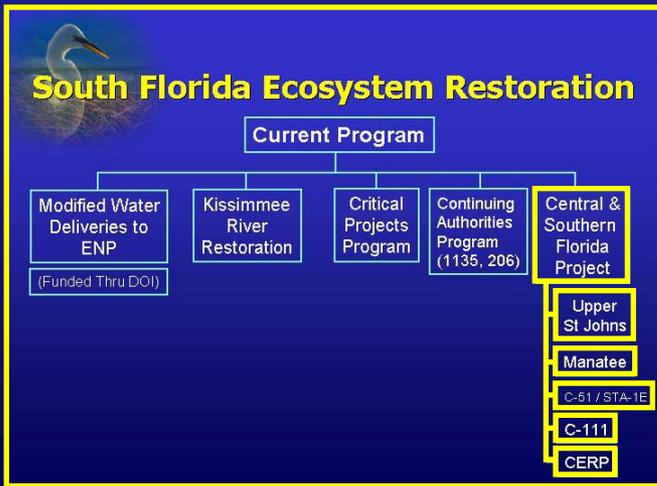
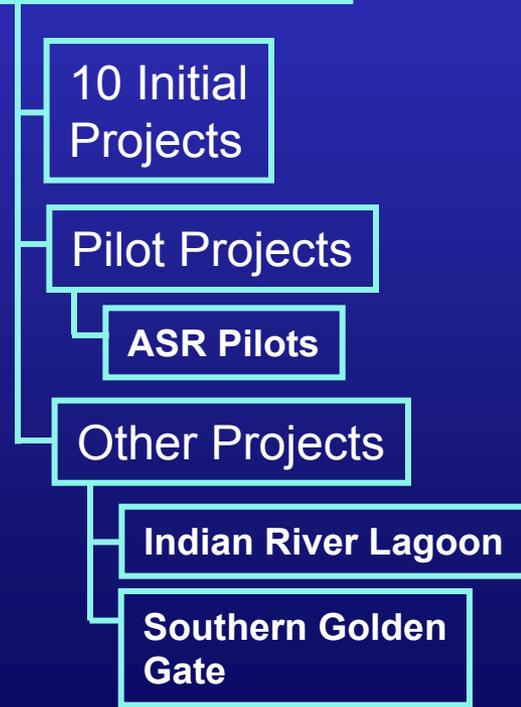
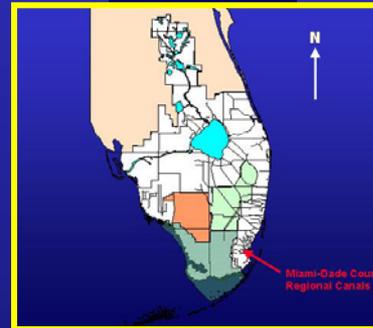
SPONSOR: SFWMD

PURPOSE: Environmental Restoration, Flood Control, and Water Supply

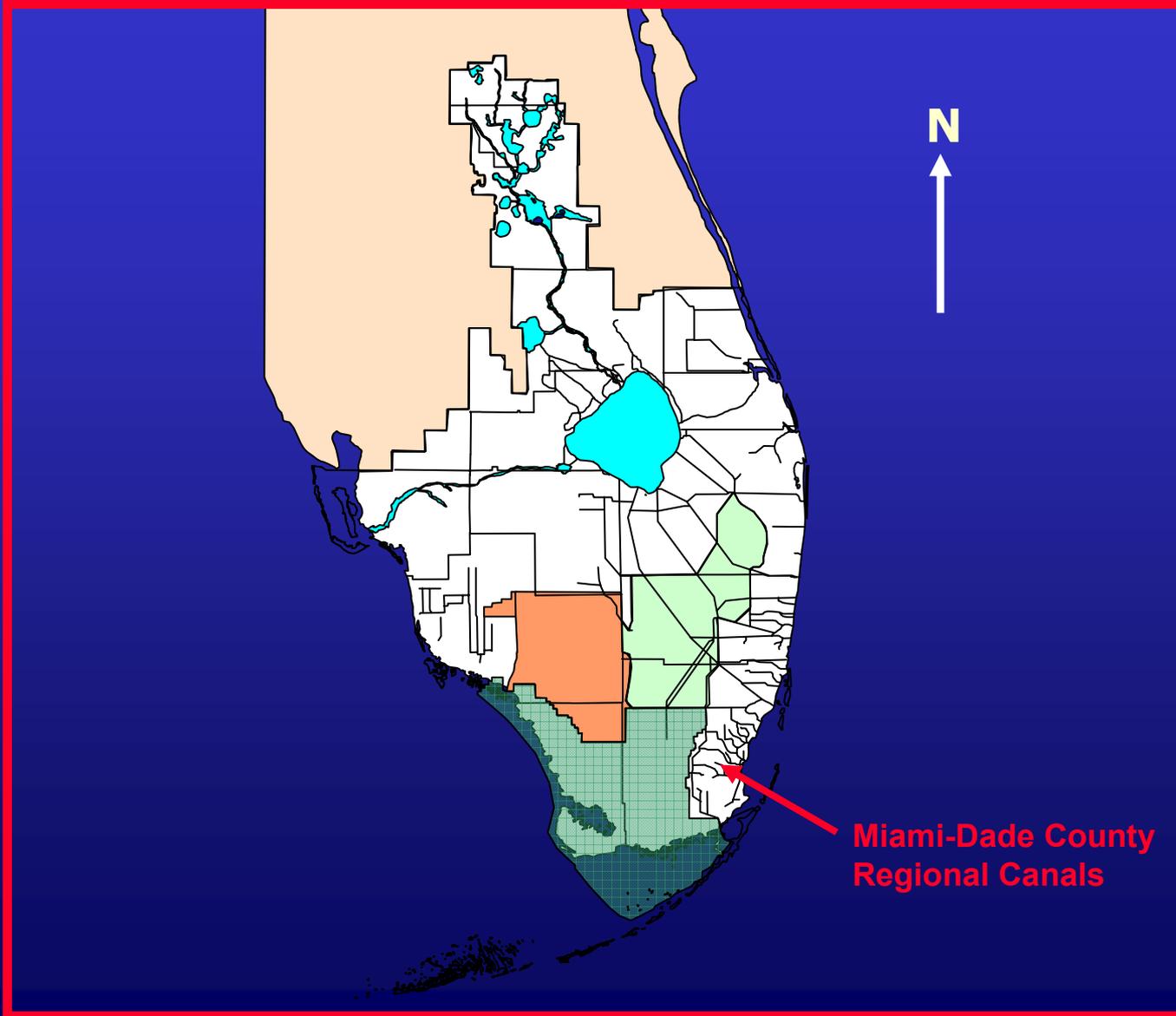
STATUS: final GRR being completed.

Land Swap

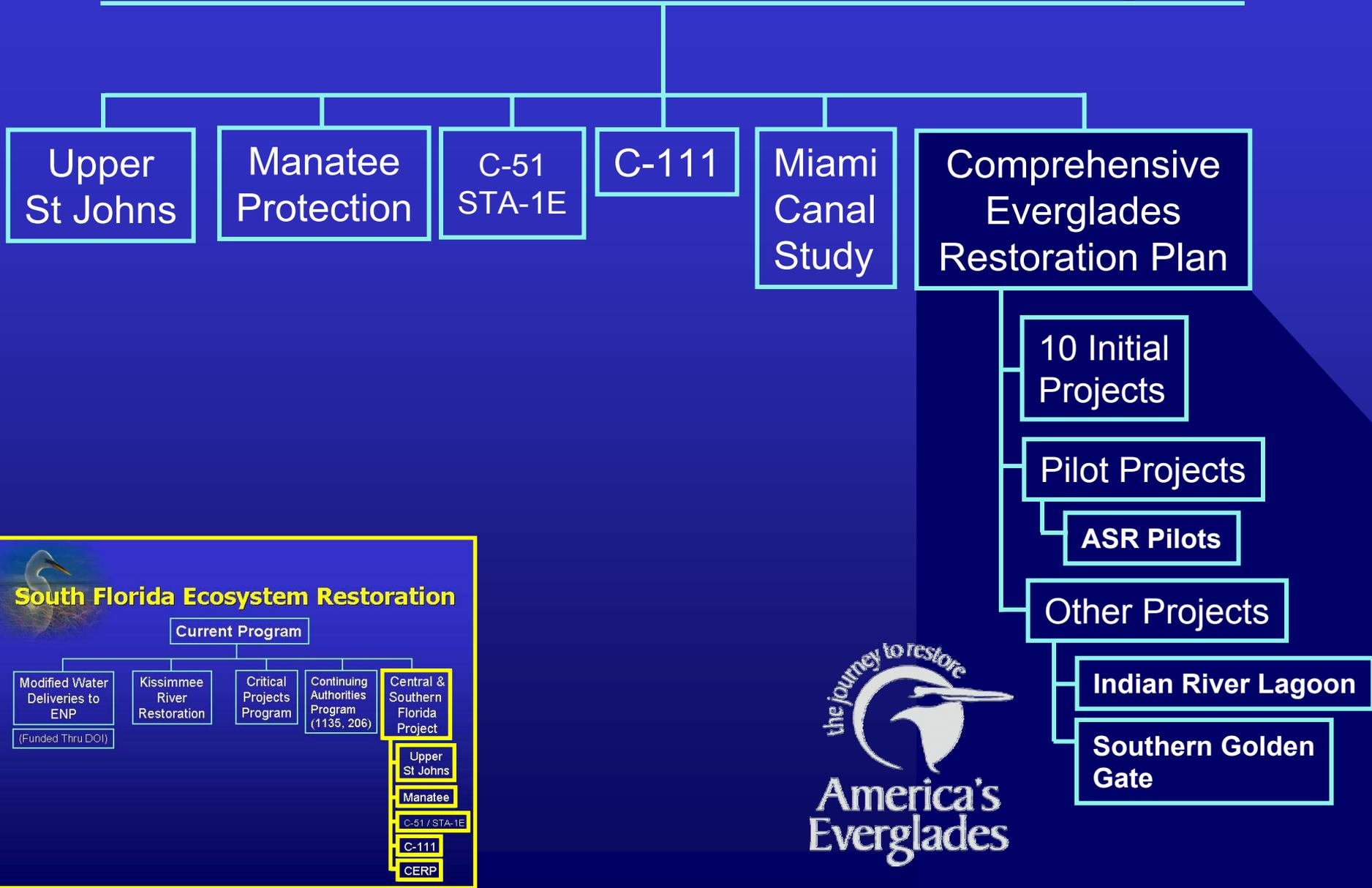
Central & Southern Florida Project



CENTRAL AND SOUTHERN FLORIDA PROJECT MIAMI-DADE COUNTY REGIONAL CANALS Feasibility Study



Central & Southern Florida Project



CERP is all about Getting The Water Right

Quantity

Quality

Q

Q

T

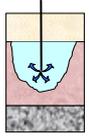
D

Timing

Distribution



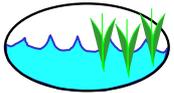
68 CERP Components



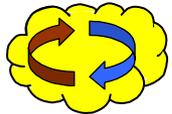
**Aquifer Storage
& Recovery – 330
Wells**



**Surface Water
Storage Reservoir –
170,000 acres**



**Stormwater Treatment
Areas (STAs) – 36,000
acres**



**Reuse Wastewater at 2
Regional Plants**



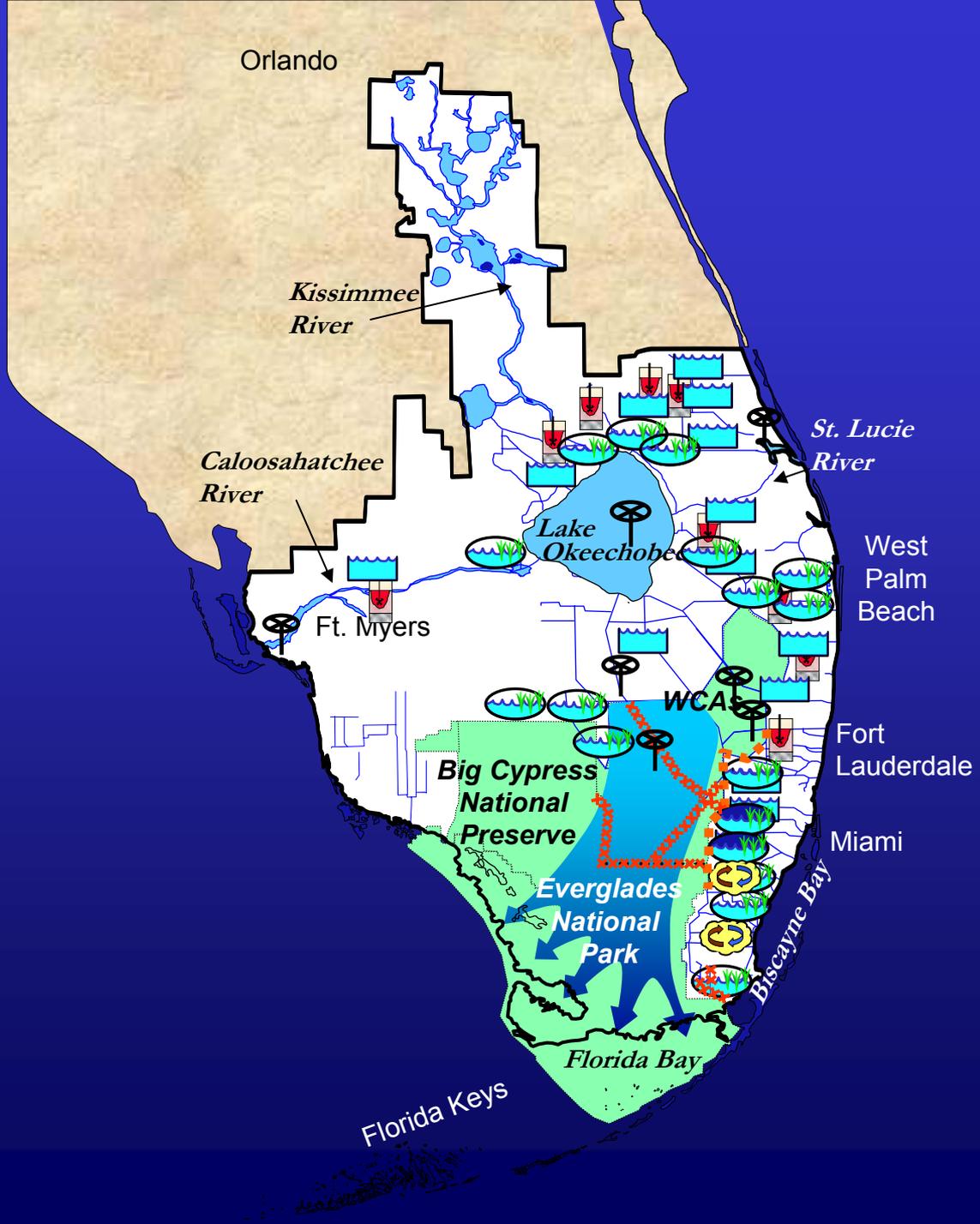
Seepage Management



**Removing 240 miles of
Barriers to Sheetflow**



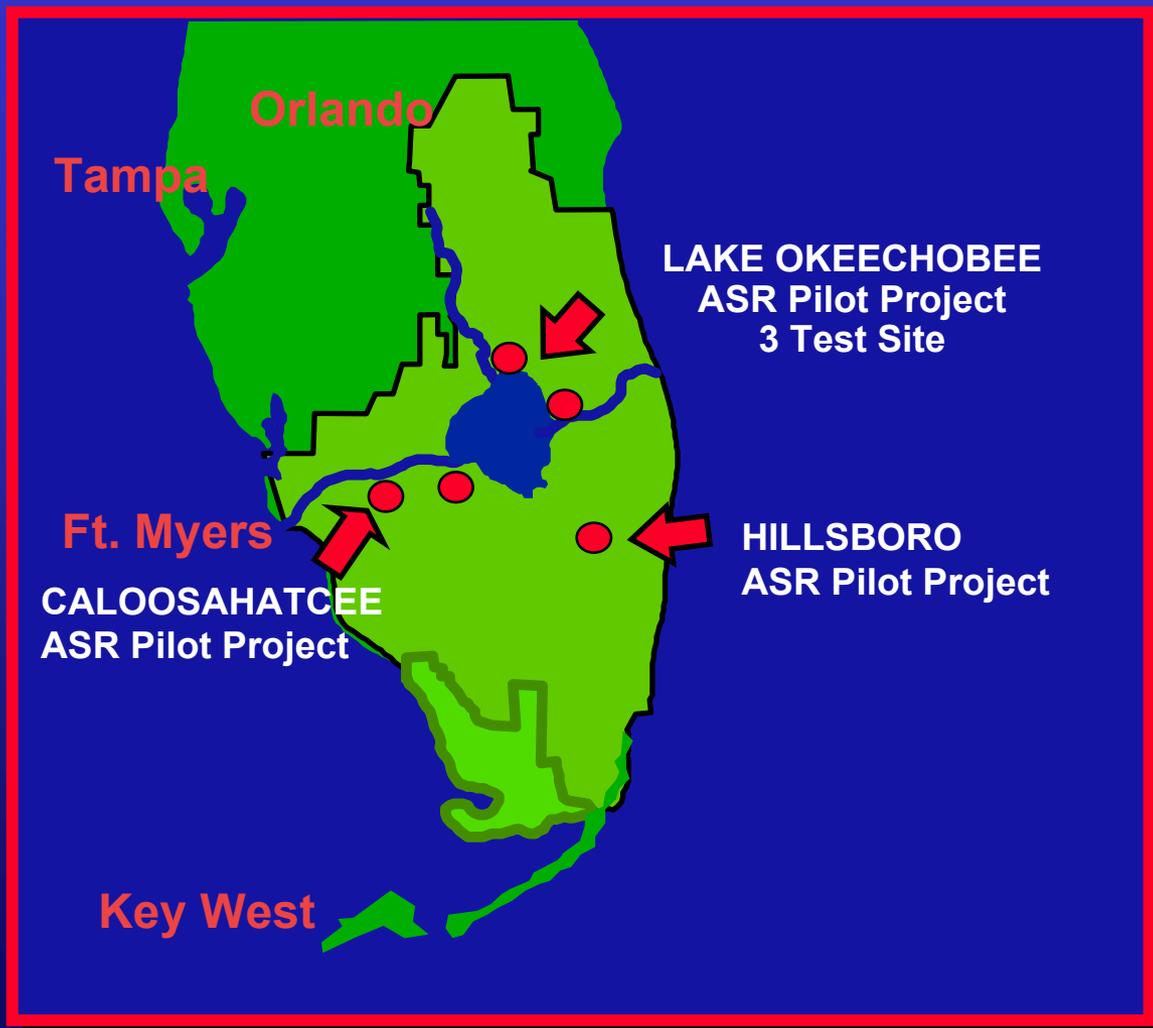
Operational Changes



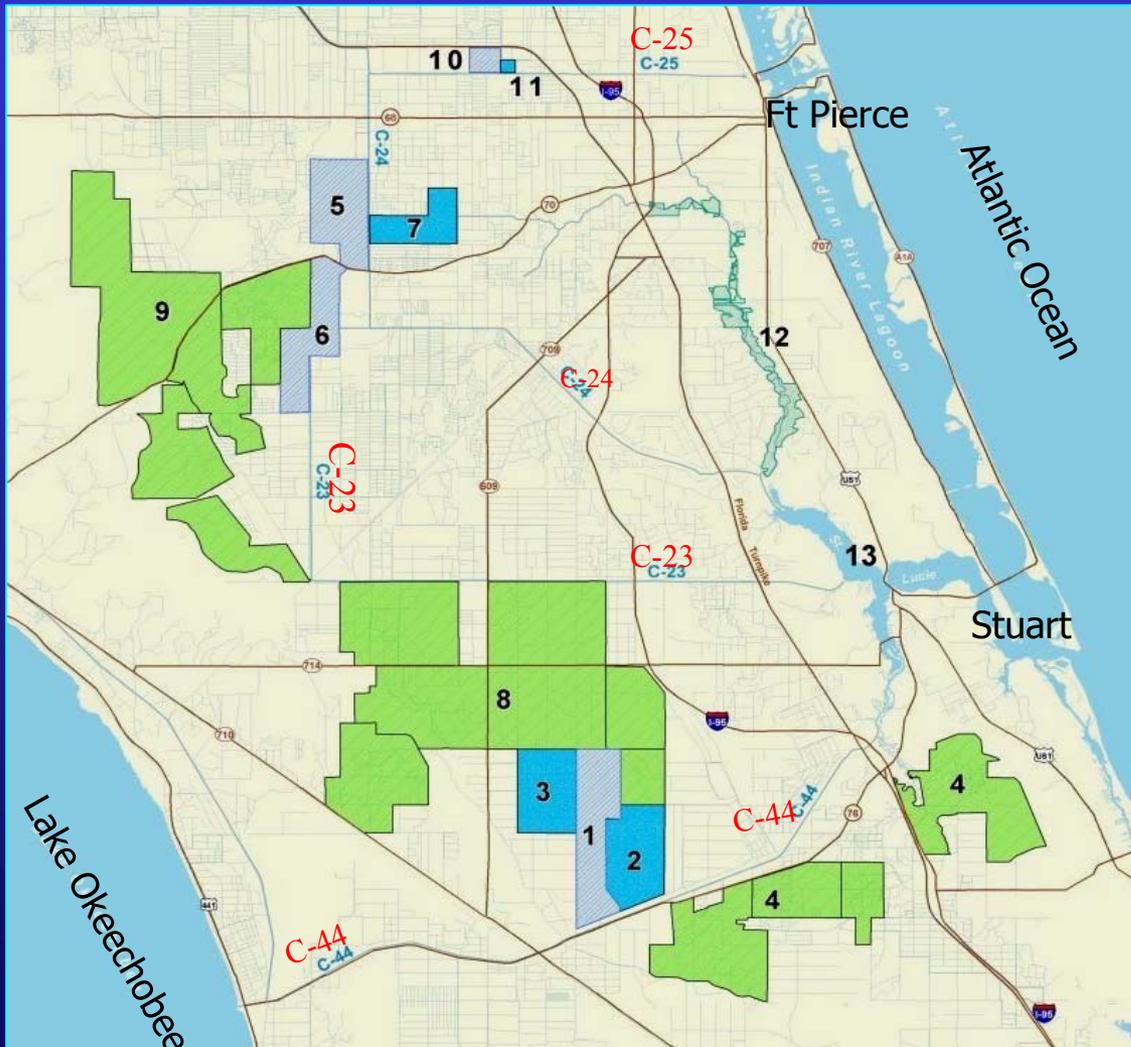


Hot Topics

Aquifer Storage & Recovery Pilots Proposed FY 05 New Construction Start



Indian River Lagoon – South Recommended Plan



C-44 Basin Components

- 1 C-44 - Reservoir
- 2 C-44 - Stormwater Treatment Area(East)
- 3 C-44 - Stormwater Treatment Area(West)
- 4 Palmar Complex - Natural Storage and Water Quality Area

C-23/24 Basin Components

- 5 C-23/C-24 - North Reservoir
- 6 C-23/C-24 - South Reservoir
- 7 C-23/C-24 - Stormwater Treatment Area
- 8 Allapattah - Complex Natural Storage and Water Quality Area
- 9 Cypress Creek/Trail Ridge Complex - Natural Storage and Water Quality Area

C-25, Northfork and Southfork Basin Components

- 10 C-25 - Reservoir
- 11 C-25 - Stormwater Treatment Area
- 12 Northfork Natural Floodplain Restoration
- 13 Muck Remediation and Artificial Habitat

- Natural Floodplain Restoration
- Natural Storage and Water Quality Area
- Reservoir
- Stormwater Treatment Area



CERP

Indian River Lagoon – South Features

- Project Features:
 - Reservoirs – 130,000 acre-feet (C-44, C-23/24 North and South, C-25)
 - STAs – 35,000 acre-feet (C-44, C-23/24 and C-25)
 - Natural storage areas – 92,000 acres (Allapattah, PalMar, Cypress Creek)
 - Flood Plain Restoration – 3,100 acres
 - Muck removal (7.9 million cy) and artificial habitat creation in St. Lucie Estuary
- Project Cost: \$1.2 Billion

Indian River Lagoon – South Project Status

- Project Implementation Report (PIR) completed:
March 24, 2004
- Division Engineer's Notice: March 31, 2004
- Independent Scientific Review completed: May 3,
2004
- 30 day final State/Agency/Public Review of PIR:
May 7, 2004 - June 5, 2004
- Chief's report
- Authorization

Indian River Lagoon – South Comparison of Alternatives

- The IRL-S Final PIR compared eight different alternatives through plan formulation.
- Alternatives 1-6 compared different plans.
- Alternatives 7A and 7B provided a sensitivity analysis of a watershed only, estuary only and combination of both plans.
- All alternatives compared at same price level – Oct 2001
- Recommended plan Alternative 6 was selected and inflated to October 2003 price levels for purpose of authorization.

Indian River Lagoon – South Restudy vs. PIR

Restudy Plan

(Oct 03 price levels)

- Cost - \$962 mil
- Components:
 - Mainly Reservoirs
(C-44, C-23/24 and C-25)

PIR Plan

(Oct 03 price levels)

- Cost - \$1,207 mil
- Components:
 - Reservoirs
 - Storm water Treatment Areas
 - Natural Storage Areas
 - Muck Removal
 - Artificial Habitat creation
 - Flow Diversion

Indian River Lagoon – South

Why Alternative 6 was selected

- Lowest per unit cost of any alternative (for combined, normalized output).
- Estuary outputs equal to largest alternative.
- 95% of total outputs (estuary & watershed) of largest alternative (Alt 4), but \$53.4 million less (\$4.3 million on average annual basis).
- Fully meets IRL-S planning objectives.
- Strong public & resource agency support (USFWS, FDEP, EPA, Martin & St. Lucie Counties).

Indian River Lagoon – South

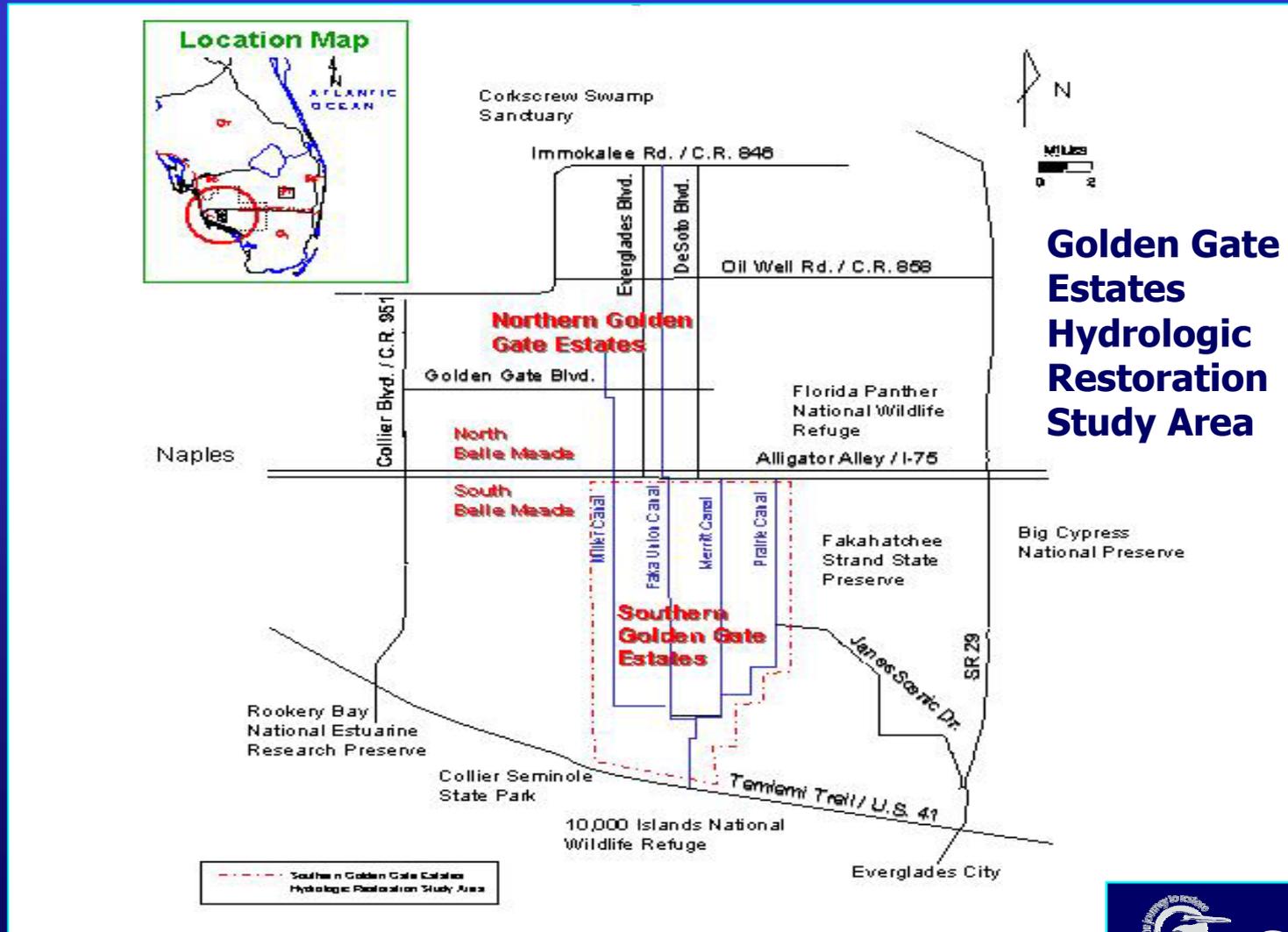
What does IRL-S do for the Everglades system?

- Significant increase in spatial extent of South Florida wetlands.
- Provides a unique opportunity for re-hydration and habitat restoration due to availability of large tracts of lands.
- Provide a substantial amount of clean freshwater for Lake Ok., the Everglades ecosystem, Loxahatchee or other locations.
- C-44 provides additional storage to relieve the pressure on Lake Ok and reduce damaging discharges to both estuaries and Everglades.

Indian River Lagoon – South Independent Science Review

- “The Project Implementation report stands as an impressive document that addresses a substantial number of issues with an obvious concern for achieving public goals and legislated directives.”
- “... the Plans presented in the Report have a high likelihood of meeting the restoration objectives and that the supporting technical analyses are based on sound science.”
- “... recommendations for additional detailed analyses as this project is implemented.”

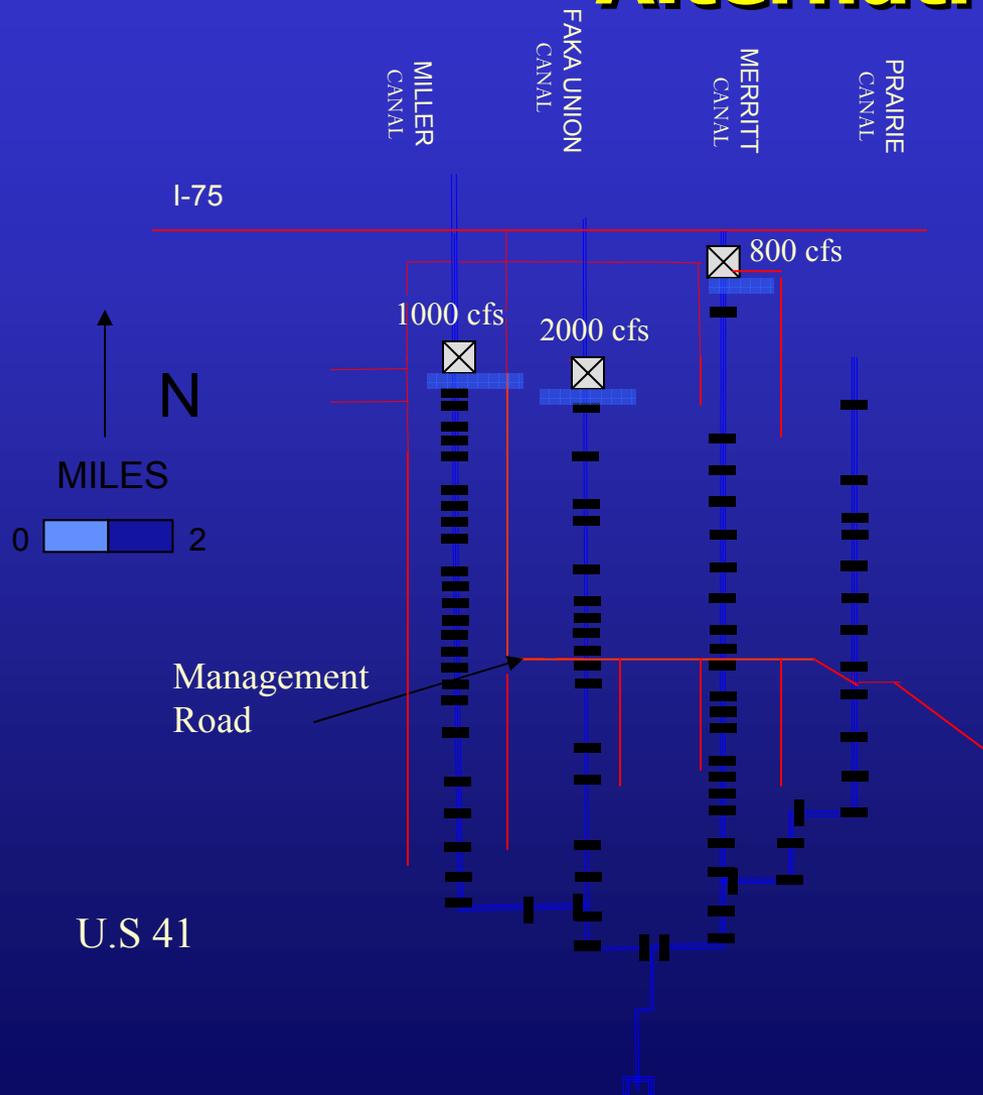
Southern Golden Gate Estates - Picayune Strand Restoration



SGGE - Picayune Strand Restoration Alternatives

- Total of 19 alternatives considered for the project
- Alternatives vary from filling all canals south of I-75 to construction of large pump stations
- All alternatives include road removal and removal of exotic vegetative species
- Final array includes 3 viable alternatives which produce desirable environmental restoration while maintaining flood protection for residents in North Golden Gate Estates

SGGE - Picayune Strand Restoration Alternative 3D



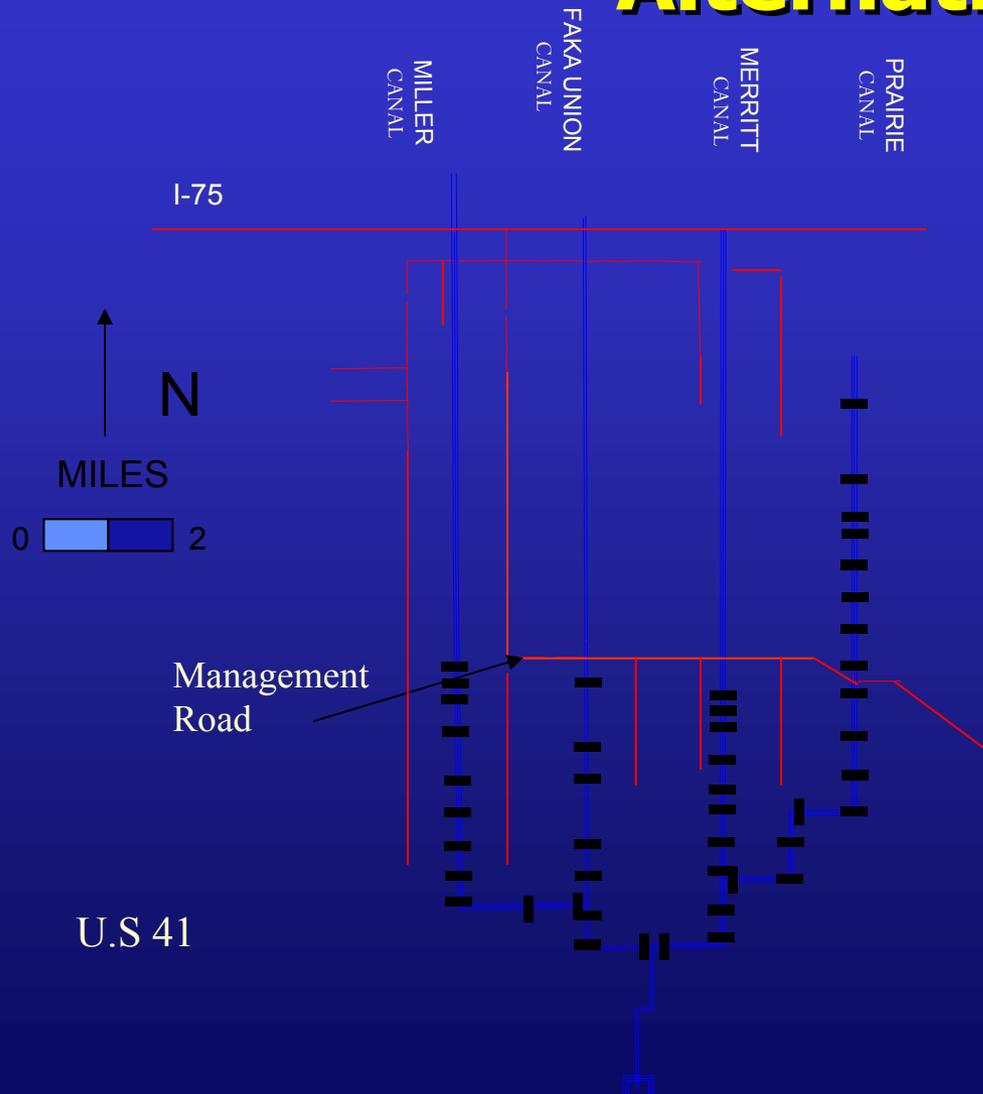
Elements

- 3 Spreaders
- 3 Pump Stations
- 83 Canal Plugs
- 227 miles of Road Removed

Cost - \$362 million

Most Roads Removed and Northern Spreader

SGGE - Picayune Strand Restoration Alternative 6



Elements

- No Spreaders or Pump Stations

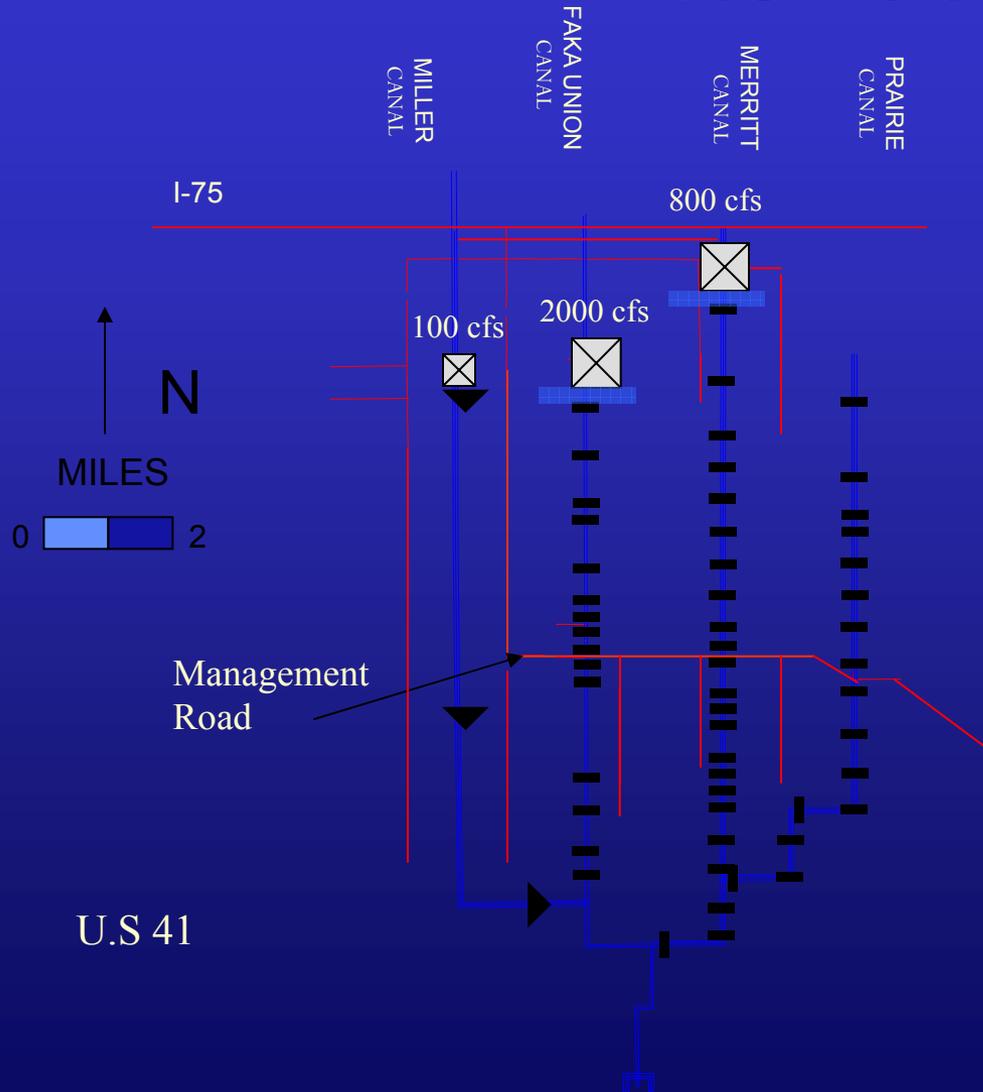
■ - 46 Canal Plugs

■ - 227 miles of Road Removed

Cost - \$687 million

Most Roads Removed and No Pumps

SGGE - Picayune Strand Restoration Alternative 12



Elements

-  - 2 Spreaders
-  - 3 Pump Stations
-  - 64 Canal Plugs
-  - 3 Obermeyers in Miller Canal
-  - 227 miles of Road Removed

Cost - \$351 million

Smaller Pumps and special Weirs

SGGE - Picayune Strand Restoration PIR Status

- Anticipate Draft PIR to be released for public comment 14 May
- Final PIR to be complete in July/August timeframe
- Chief's report this fall

How to keep up www.evergladesplan.org

Rescuing an endangered ecosystem – the Plan to restore America's

EVERGLADES



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- [Business Outreach](#)
- [Calendar](#)
- [Everglades Restoration Plan](#)
- [Learning About the Everglades](#)
- [Events](#)
- [Program & Projects](#)
- [Everglades Science](#)
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Questions?

