

9:30 am

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS
WORKSHOP SUMMARY

w/ADDITIONAL
BACKUP

Meeting Date: November 29, 2016

Department: Administration

I. EXECUTIVE BRIEF

Title: SFWMD Everglades Restoration and North County Water Resource Issues

Summary: The Army Corps of Engineers (ACOE) and the South Florida Water Management District (SFWMD) have been working together to develop and implement plans to restore the environmental functionality of the Florida Everglades. Several successful projects have been completed throughout south Florida and significant progress has been made in achieving phosphorous water quality standards throughout the Everglades system. As part of this effort, one of the components is to enhance the Loxahatchee River environmental features by providing restorative flows. The Loxahatchee River Watershed Restoration Project (LRWRP) planning effort is currently being performed by the ACOE along with the SFWMD. This effort involves analyzing five alternatives in order to determine a final plan that meet the ACOE's goals of reestablishing connectivity of several north county sloughs and providing restorative flows for the Loxahatchee River. Local stakeholders developed a locally preferred option that will utilize the C-51 Reservoir to provide enhanced water supply, reduced freshwater flows into Lake Worth Lagoon and enhance flood protection for the western communities in addition to the two goals of the ACOE.

Additionally, a C-51 Reservoir Pilot Project has been proposed for consideration by the SFWMD that would enable the C-51 Reservoir to be utilized for water supply and environmental enhancement purposes.

Countywide (MJ)

Background and Policy Issues: County staff and several local stakeholders have been working collaboratively with the ACOE and SFWMD staff to have the locally preferred option included in the analyses for the LRWRP effort. A Locally Preferred Option will require the local sponsorship of the SFWMD and require the local stakeholders and the state to fund the costs for the locally preferred plan.

Additionally, the C-51 Reservoir Pilot Project will require additional funding for those utilities that participate and receive water from the Reservoir in the near future as part of this Pilot Project utilizing the C-51 Reservoir Phase I and in the long term future as Phase II of the C-51 Reservoir comes on line. Currently, no Palm Beach County utilities have signed an agreement to participate in the Phase I Pilot Project. Therefore, there is no financial impact at this time required of the County.

Attachments:

1. Powerpoint
2. PowerPoint by SFWMD

Recommended by:	<u>Kenneth S. Todd, Jr.</u>	<u>11/16/16</u>
	Water Resource Manager	Date
Approved by:	<u>Verdiana C. Baker</u>	<u>11/16/16</u>
	County Administrator	Date

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact: N/A

Fiscal Years	2017	2018	2019	2020	2021
Capital Expenditures	\$0	\$0	\$0	\$0	\$0
Operating Costs	0	0	0	0	0
External Revenues	0	0	0	0	0
Program Income (County)	0	0	0	0	0
In-Kind Match (County)	0	0	0	0	0
NET FISCAL IMPACT	\$0	\$0	\$0	\$0	\$0
# Additional FTE Positions (Cumulative)	0	0	0	0	0

Is Item Included in Current Budget: Yes _____ No X _____

Budget Account No:

Reporting Category _____

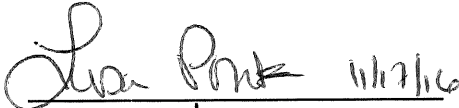
B. Recommended Sources of Funds/Summary of Fiscal Impact:

This contract includes language applying requirements of the Inspector General (IG) Ordinance.

Departmental Fiscal Review: _____

III. REVIEW COMMENTS

OFMB Fiscal and/or


OFMB *ET* 11/17

Contract Development & Control
Comments:


Contract Dev. & Control

Legal Sufficiency:


Assistant County Attorney

Other Department Review:

Department Director

This summary is not to be used as a basis for payment.

EVERGLADES RESTORATION AND NORTH PALM BEACH COUNTY WATER RESOURCE ISSUES

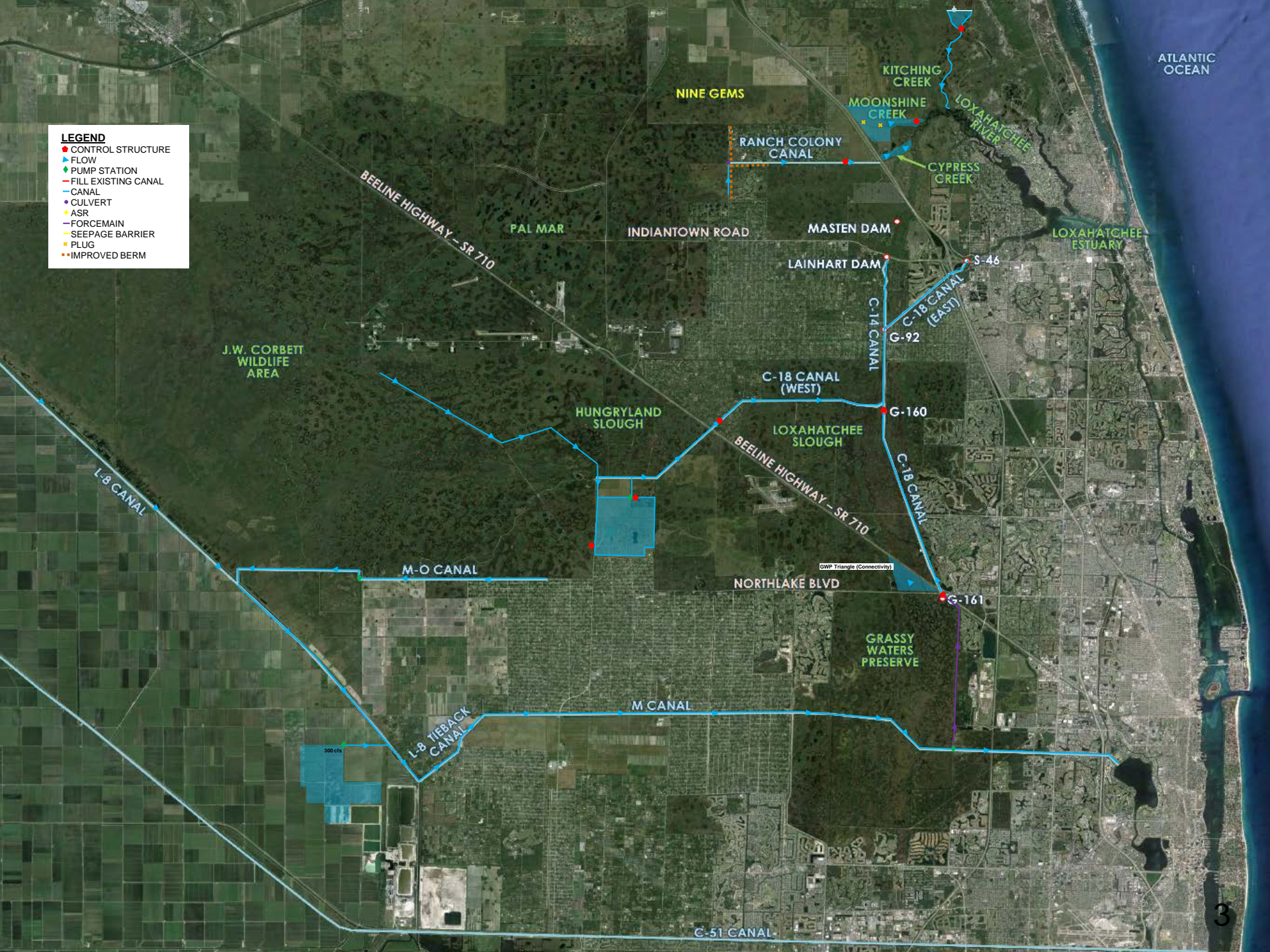
**PRESENTATION TO
PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS**



November 29, 2016

North County Environmental Issues

- Reduce flows into the Lake Worth Lagoon
- Restore flows to the Loxahatchee River
- Restore connectivity of Hungryland Slough, Vavrus Property and Loxahatchee Slough
- Use Mecca Site to help convey water north
- Protect & Preserve water supply
(i.e. recharging well fields) while providing an environmental benefit

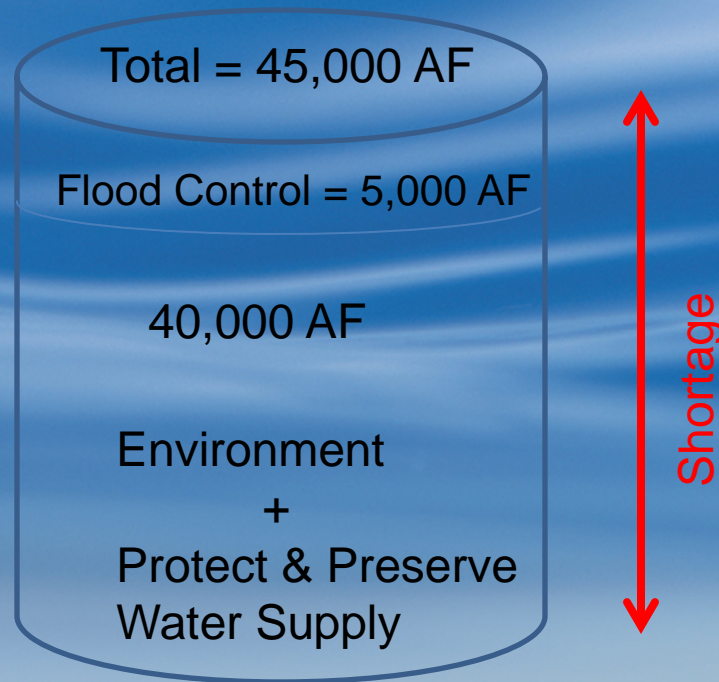


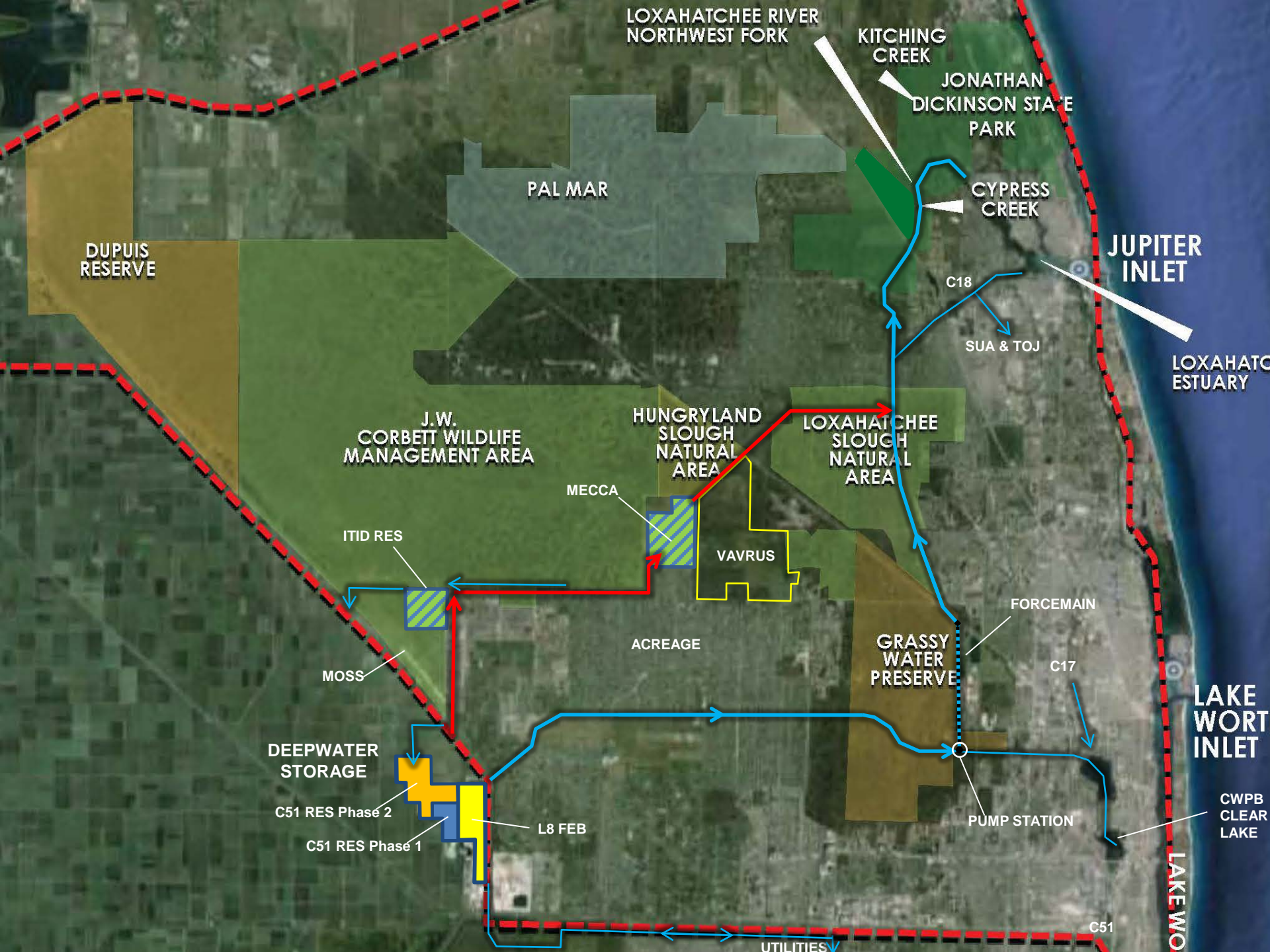
LEGEND

- CONTROL STRUCTURE
- FLOW
- ⬇ PUMP STATION
- FILL EXISTING CANAL
- CANAL
- CULVERT
- ASR
- FORCEMAIN
- SEEPAGE BARRIER
- PLUG
- IMPROVED BERM

Storage Shortfall

- Total Identified in the LRWRP = 25,000 AF
(20,000 AF Short)





Locally Preferred Option Benefits

- Cuts off Flow from Lake Okeechobee into L-8 Canal
- Use of Mecca site for storage
- Use of C-51 Reservoir reduces flow to LWL
- C-51 Reservoir provides opportunity to send water to southern well fields instead of wasting to tide
- C-51 Reservoir provides water for restorative flows to Loxahatchee River since L-8 Reservoir was repurposed to Everglades Restoration

Locally Preferred Option Benefits

- Provide aquifer recharge in the vicinity of Jupiter and Seacoast Wellfields
- Protect aquifers from salt water intrusion /sea level rise impacts
- Rehydrate /restore coastal wetlands
- C-51 Reservoir provides opportunity to further supplement flows to the Loxahatchee River during drought and enhance water quality delivered to the Loxahatchee River

Local Stakeholder Goals For Loxahatchee River Watershed Plan Still Matter

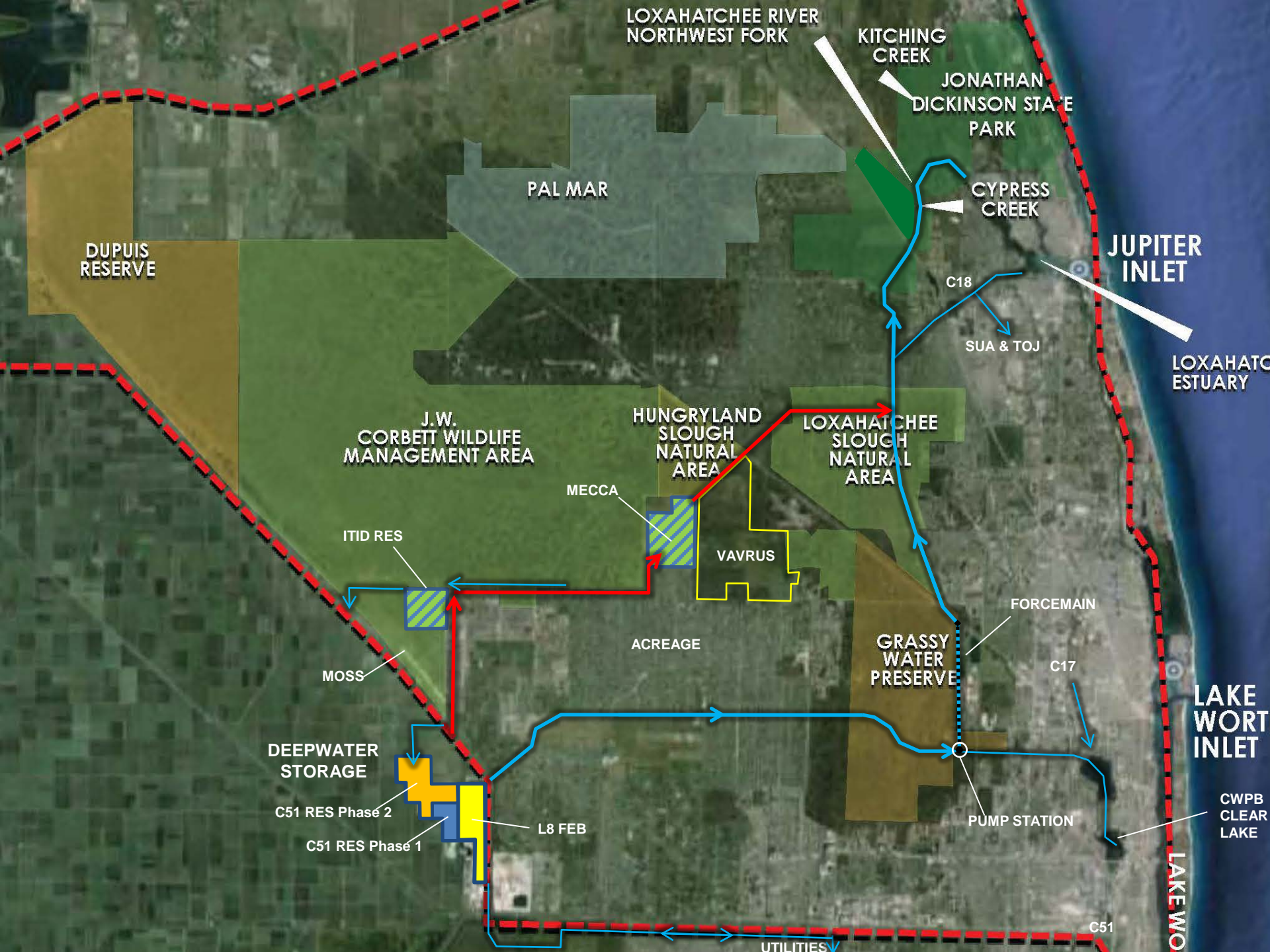
- **Provide Restoration Flows to Loxahatchee River**
- **Enhancement of Loxahatchee Slough**
- **Reduce Freshwater Flows to Lake Worth Lagoon**
- **Protect & Preserve Water Supply For Various Utilities**
- **Better Flood Protection For Western Communities**

C-51 Reservoir Pilot Project

- New Program Per Senate Bill 552 – the “Water Bill”**
 - Program at Sole Discretion of SFWMD**
 - Project Stakeholders will be seeking Legislative Funding for up to 50% of project costs**
 - Must Provide Water Supply and Environmental Benefits by reducing harmful fresh water discharges to tide**
 - Designation of Pilot Project to be made by July 1, 2017**
-
- 8 Projects Submitted for Consideration by SFWMD**
 - Staff to Develop Criteria for Evaluation of Projects**
 - Staff to bring back recommendation in December/January for Governing Board Approval**

C-51 Reservoir Pilot Project

- **Locally Preferred Option involves C-51 Reservoir Phase II**
- **Pilot Project involves C-51 Reservoir Phase I**
- **Must Provide Water Supply and Environmental Benefits by reducing harmful fresh water discharges to tide**
- **Environmental Benefits of this project are reduced harmful fresh water flows to the Lake Worth Lagoon**
- **Water Supply Benefits of this project is that fresh water is not wasted to tide that protects & preserves groundwater use by Lower East Coast utilities**





Questions?

SOUTH FLORIDA WATER MANAGEMENT DISTRICT



Everglades Water Quality Improvement Update

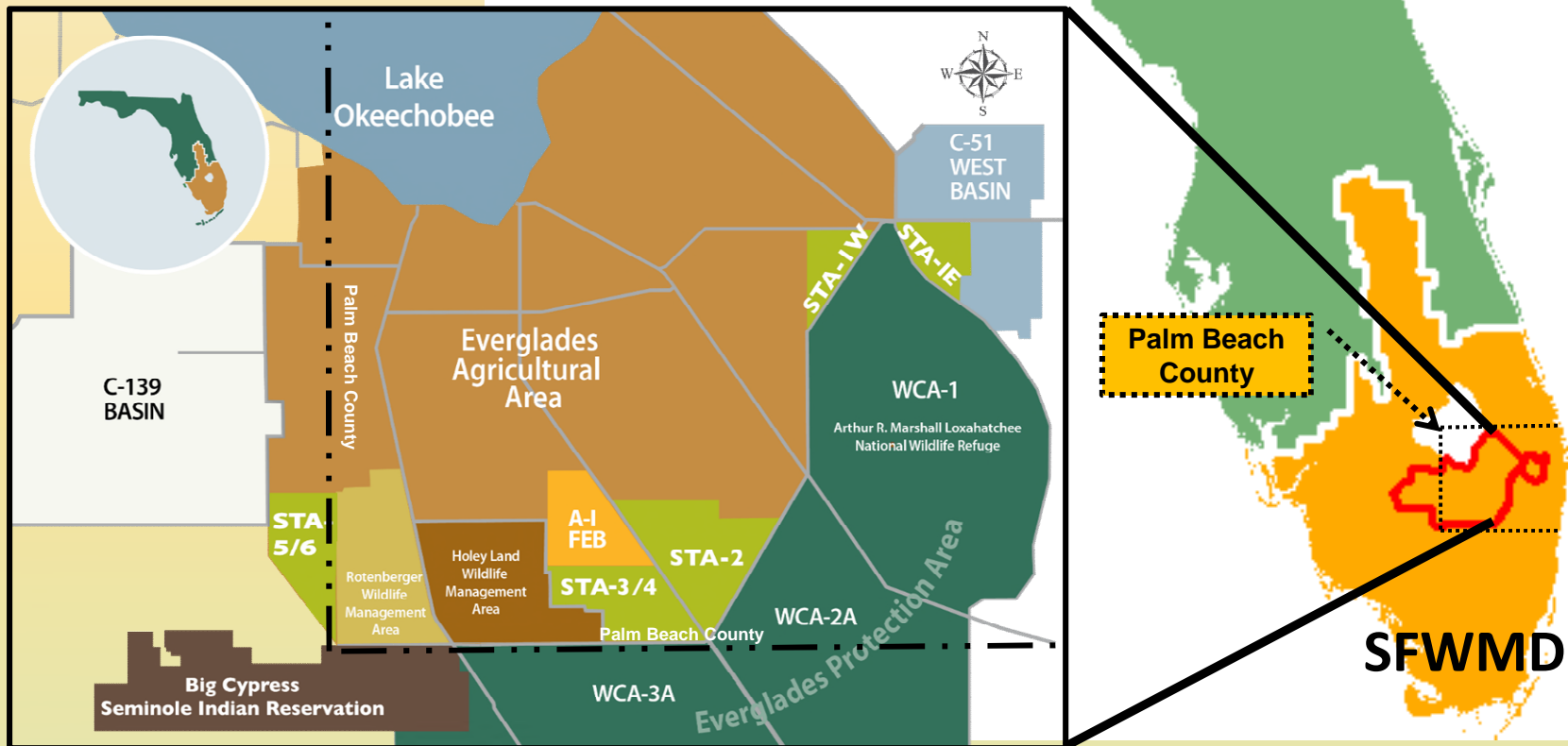
**Palm Beach County
Water Resources Workshop**

November 29, 2016

**Stuart Van Horn, P.E. – Bureau Chief, Water Quality
South Florida Water Management District**

Improving Everglades Water Quality through Phosphorus Control Programs

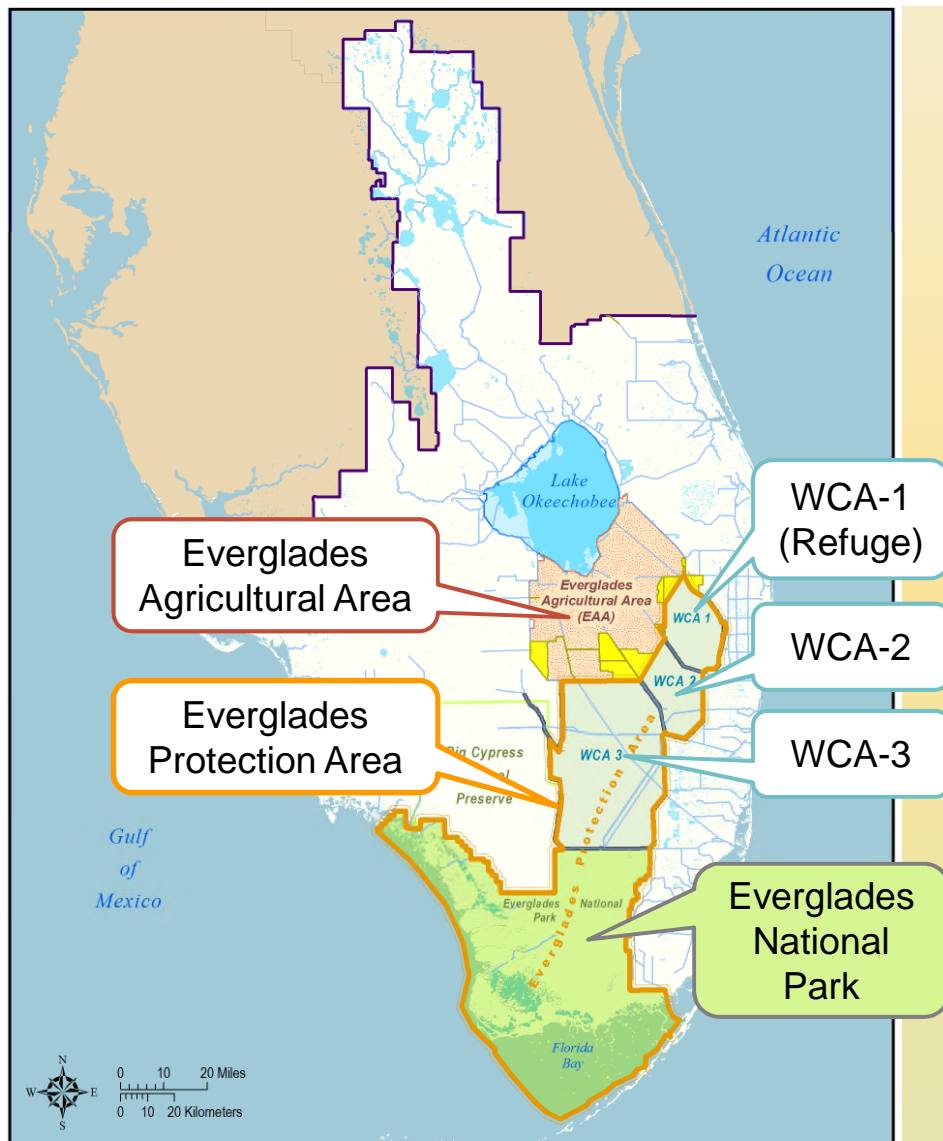
- Agricultural Source Controls (BMPs)
- Stormwater Treatment Areas + Restoration Strategies



WCA: Water Conservation Area
EAA: Everglades Agricultural Area

BMPs: Best Management Practices for Phosphorus Control
STA: Stormwater Treatment Area

Federal Consent Decree and State Phosphorus Requirements

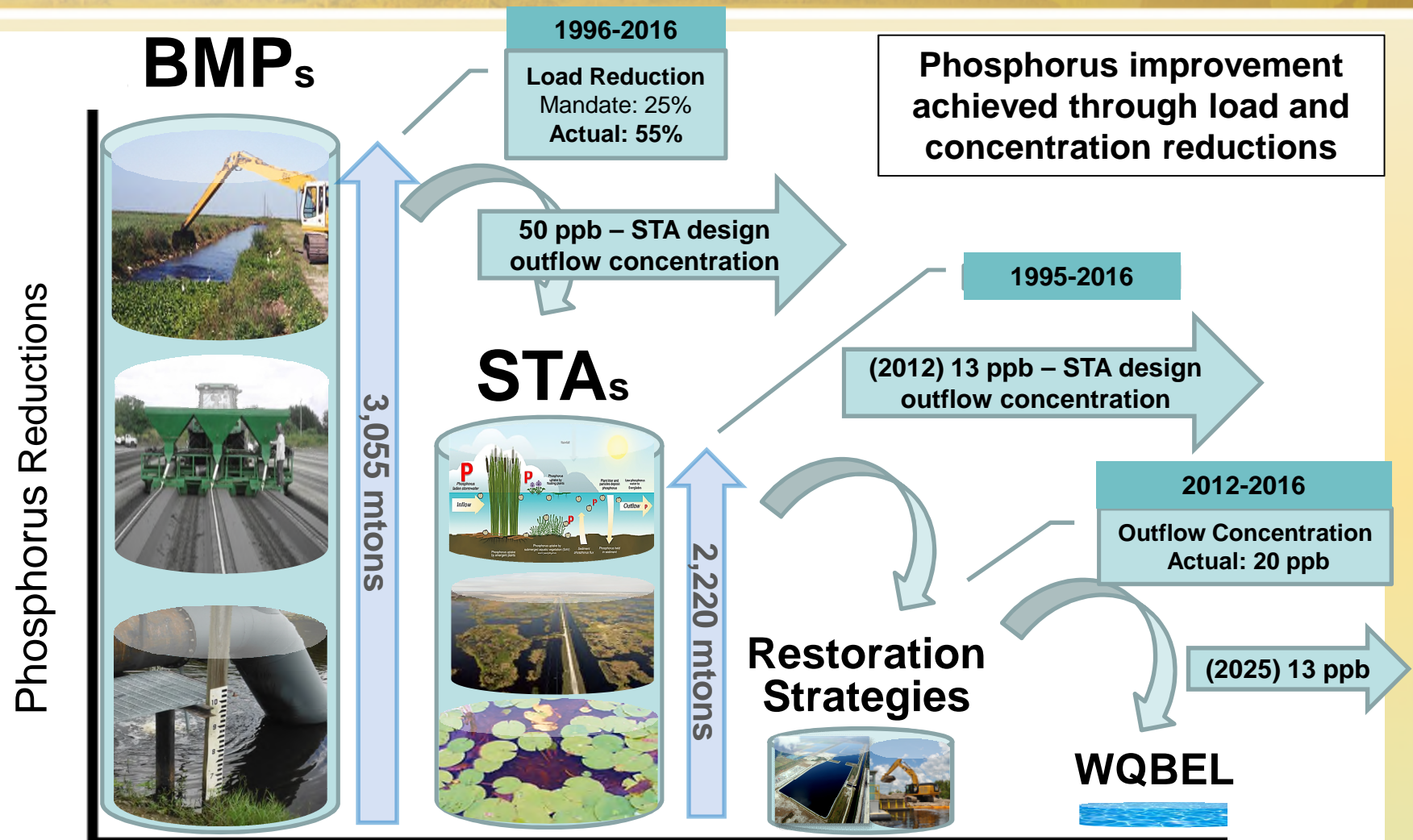


Tracking Progress

- **Agricultural Source Controls (BMPs)**
 - EAA and C139
- **Stormwater Treatment Area Outflows**
 - Water Quality Based Effluent Limit (WQBEL)
- **Everglades Marsh Levels**
 - State Water Quality Standards
 - Loxahatchee Refuge (*Consent Decree*)
- **Everglades National Park Inflows**
 - Shark River Slough (*Consent Decree*)
 - Taylor Slough (*Consent Decree*)

WCA: Water Conservation Area
EAA: Everglades Agricultural Area
BMPs: Best Management Practices for Phosphorus Control
STA: Stormwater Treatment Area

“Treatment Train” Approach to Reduce Phosphorus since Everglades Forever Act



Water Quality Improvement Measures

“Restoration Strategies” Progress

2012

- 57,000 ac of STA

2012-2016

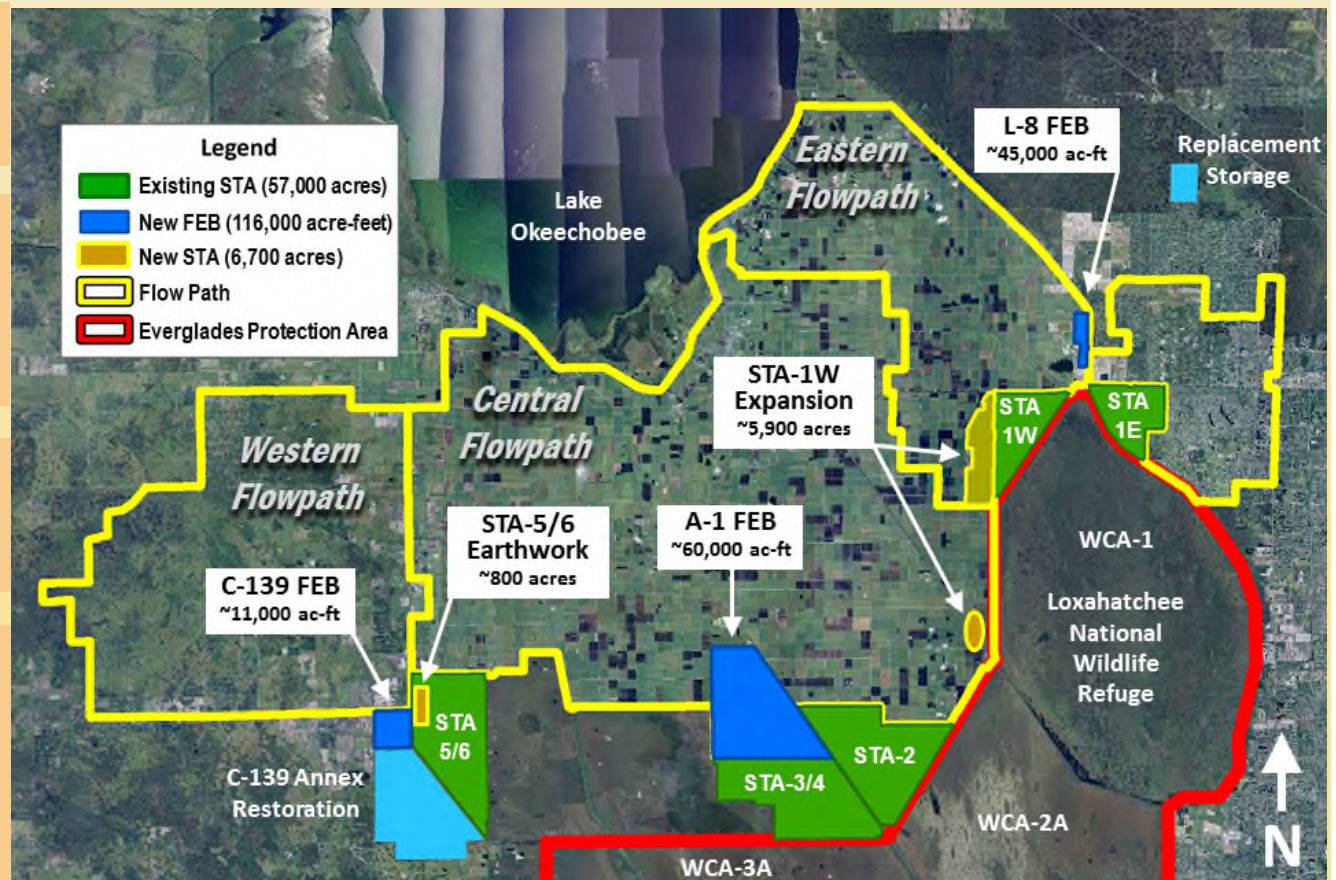
- L-8 FEB (45,000 ac-ft)
- A-1 FEB (60,000 ac-ft)

2013-2018

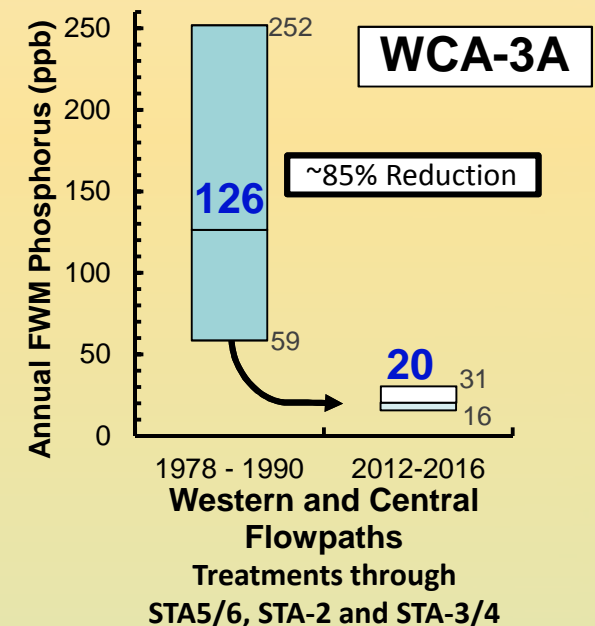
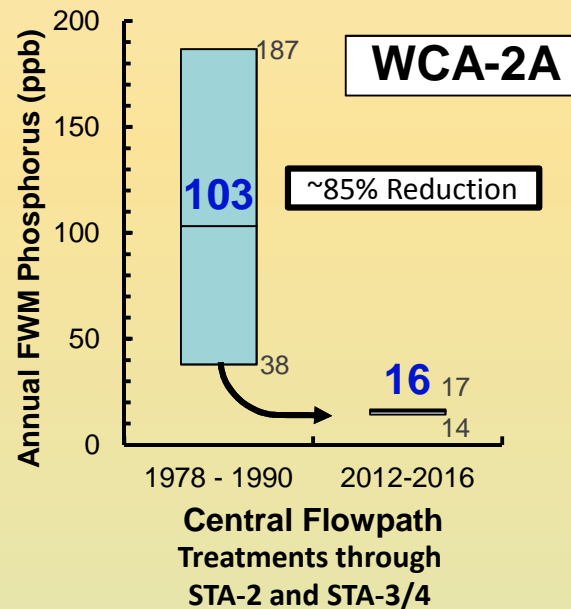
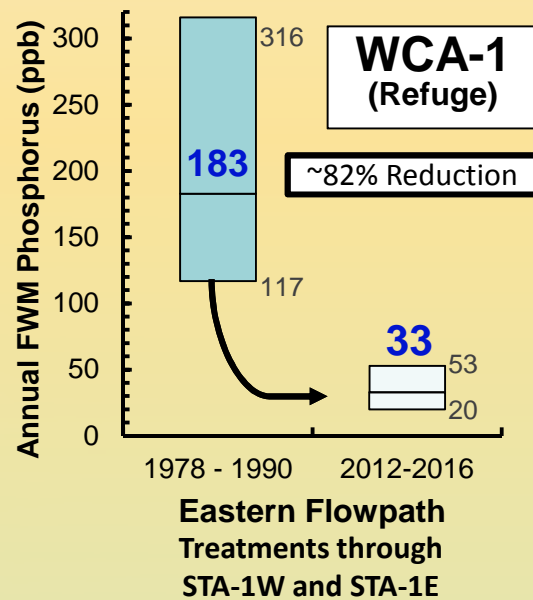
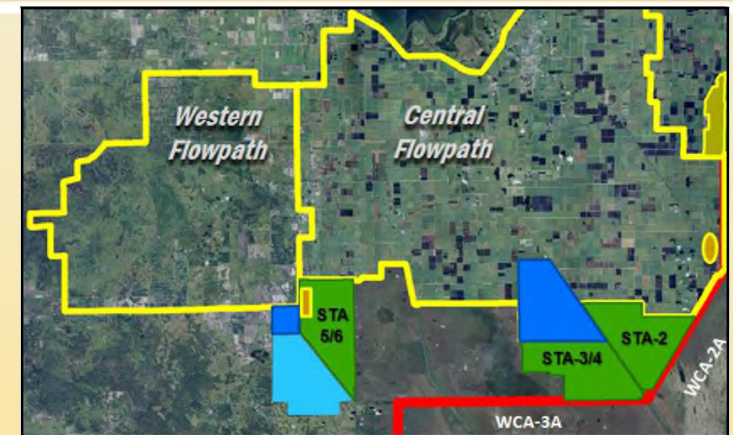
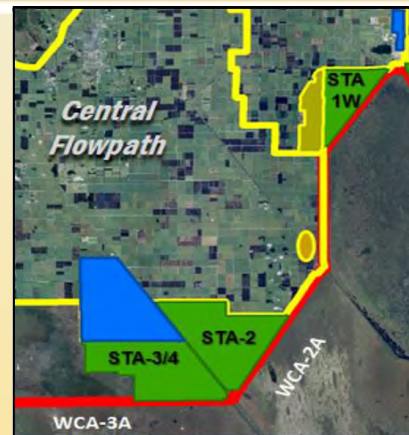
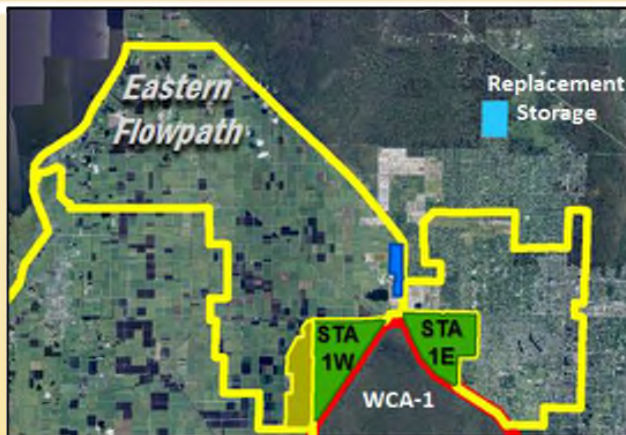
- STA (4,600 ac)

2018-2024

- STA (1,900 ac)
- C-139 FEB (11,000 ac-ft)
- STA Earthwork (800 ac)



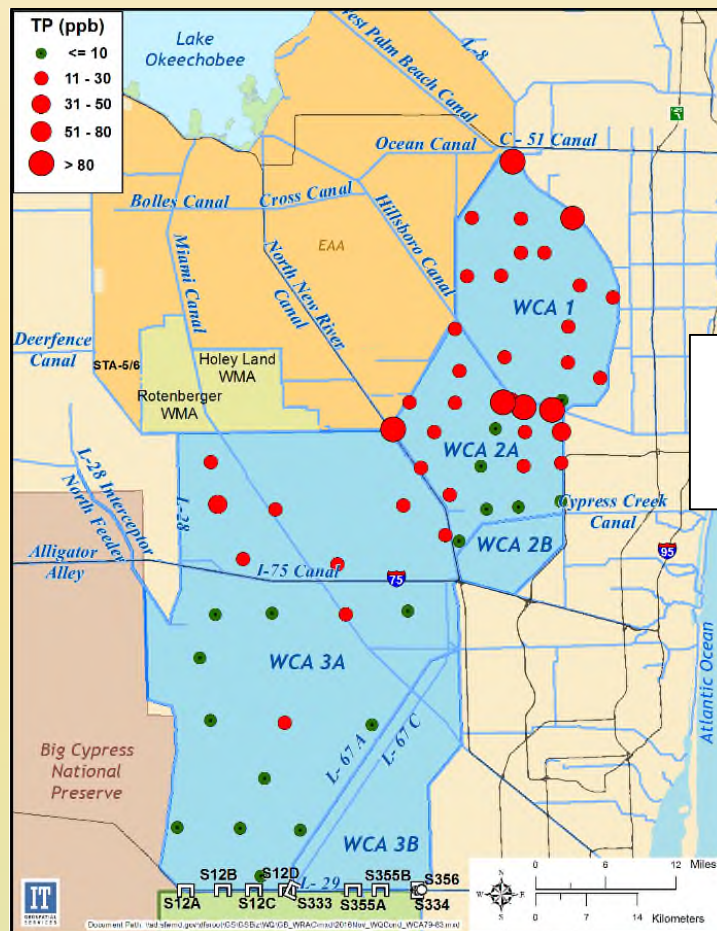
Water Conservation Areas Inflow Phosphorus Improvement



Water Conservation Areas Marsh Phosphorus Trends

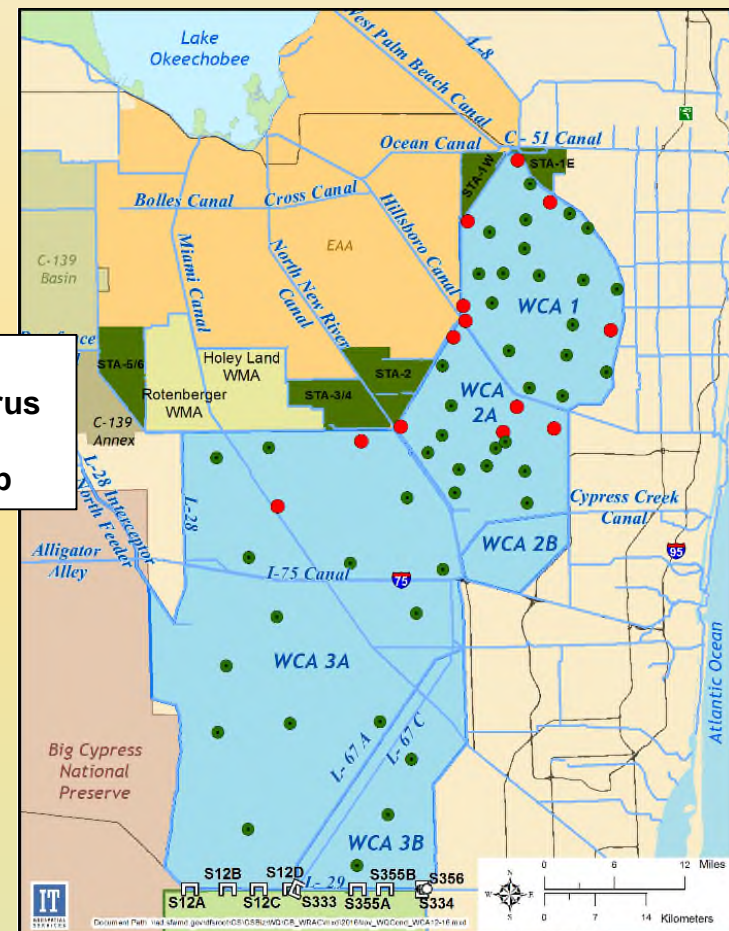
WY: Water Year
(May 1 – April 30)

WY1979-1983
High TP in WCAs



State
Phosphorus
Rule
 ≤ 10 ppb

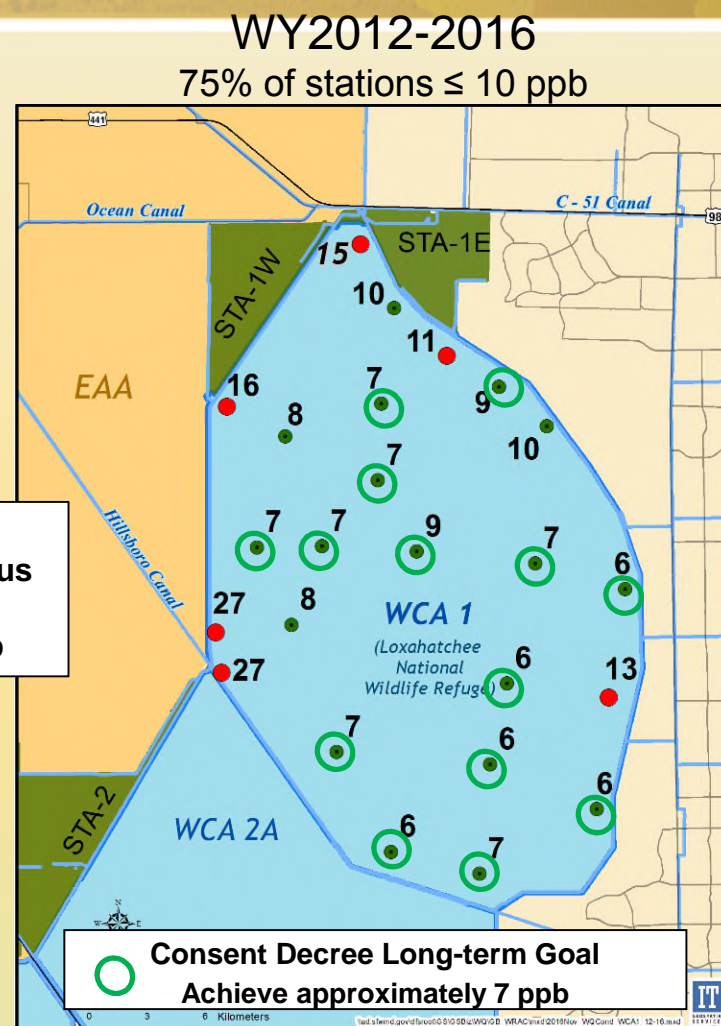
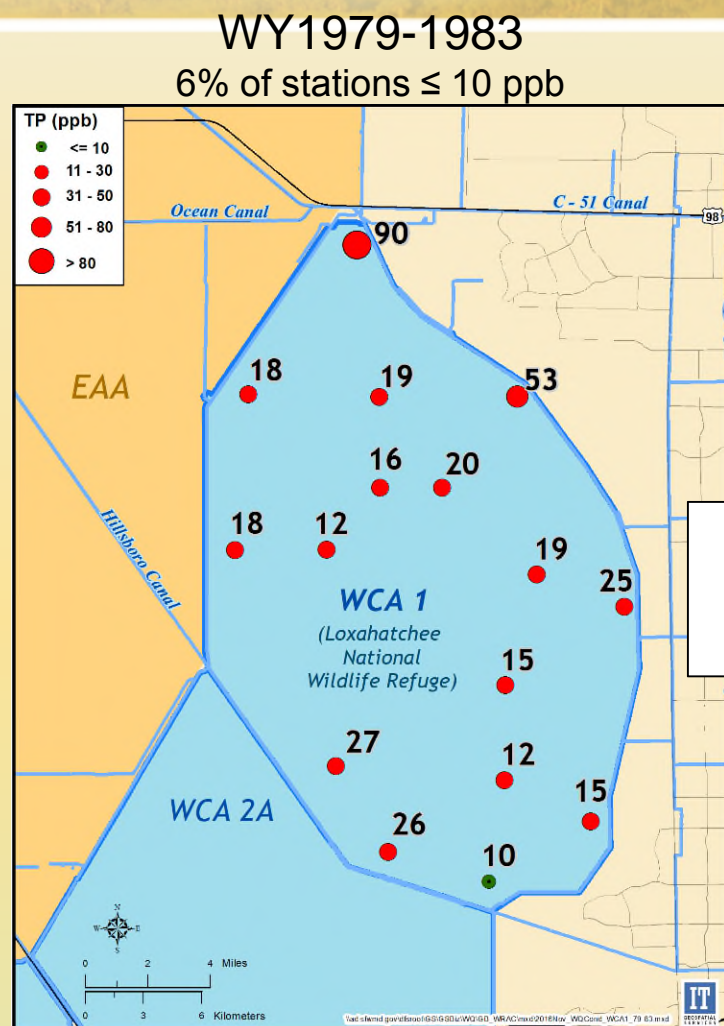
WY2012-2016
Majority of area below
10 parts per billion (ppb)



TP values represent the 5-year average of annual geometric means at each station (ppb – parts per billion)

Water Conservation Area 1 (Refuge) Marsh Phosphorus Improvement

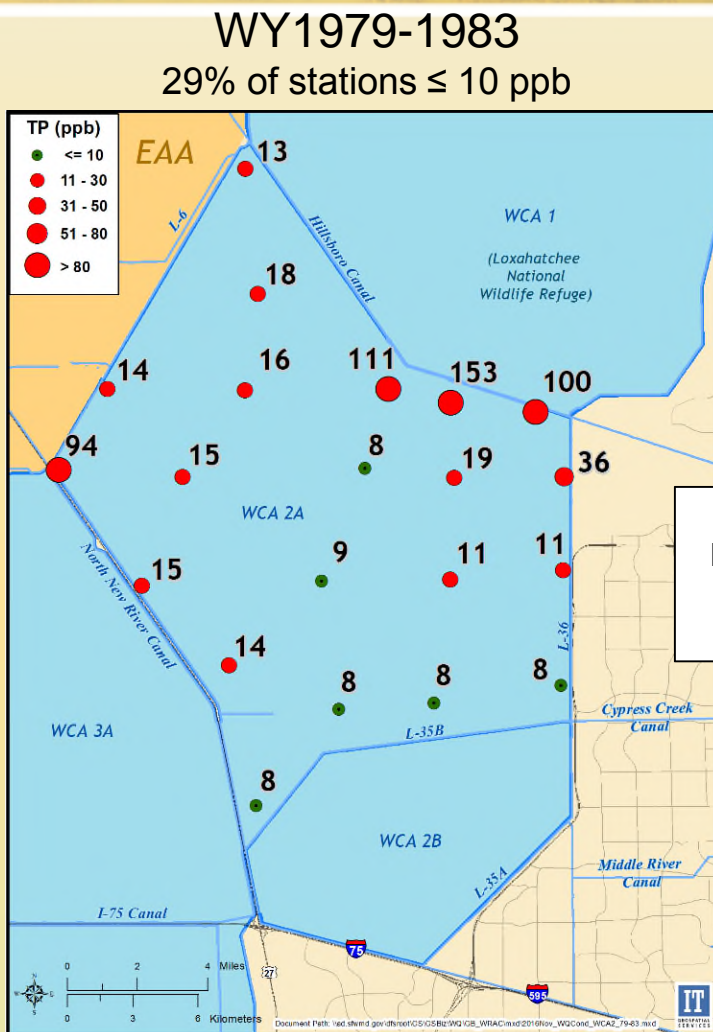
WY: Water Year
(May 1 – April 30)



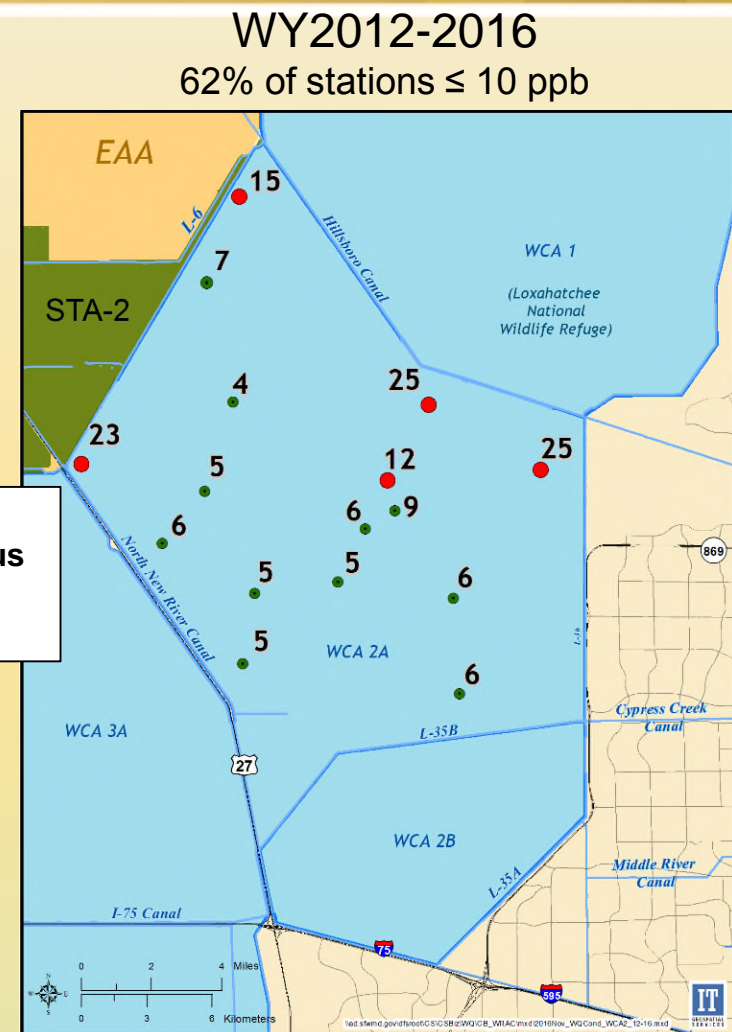
TP values represent the 5-year average of annual geometric means at each station (ppb – parts per billion)

Water Conservation Area 2 Marsh Phosphorus Improvement

WY: Water Year
(May 1 – April 30)



Mean of all 21 stations: 33 ppb



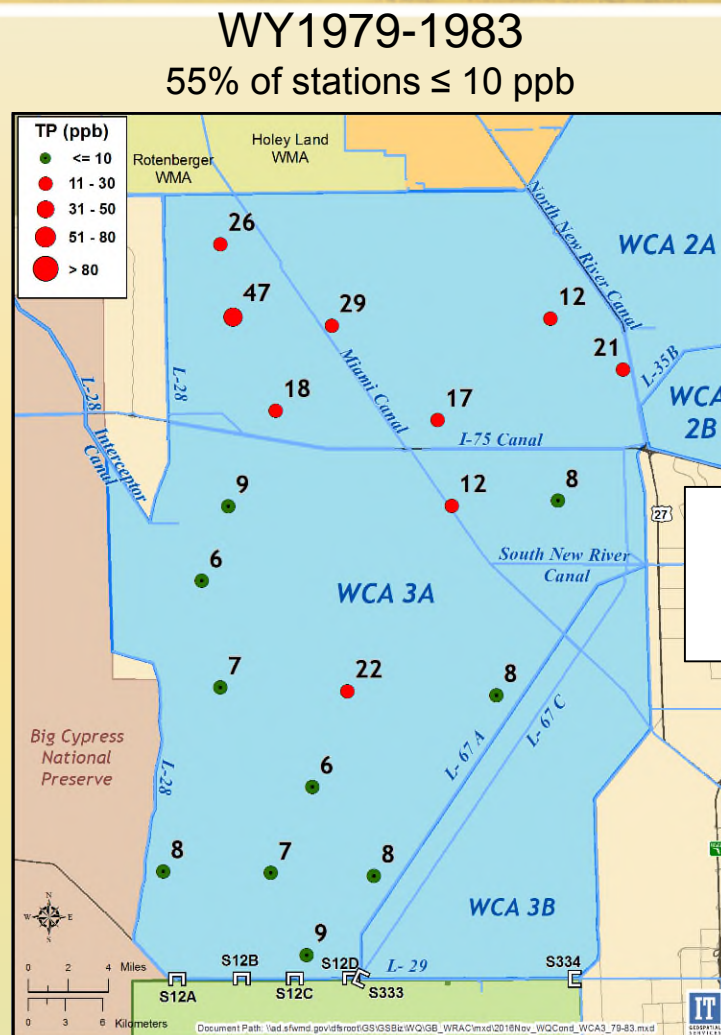
Mean of all 16 P-Rule stations: 10 ppb

**State
Phosphorus
Rule
 ≤ 10 ppb**

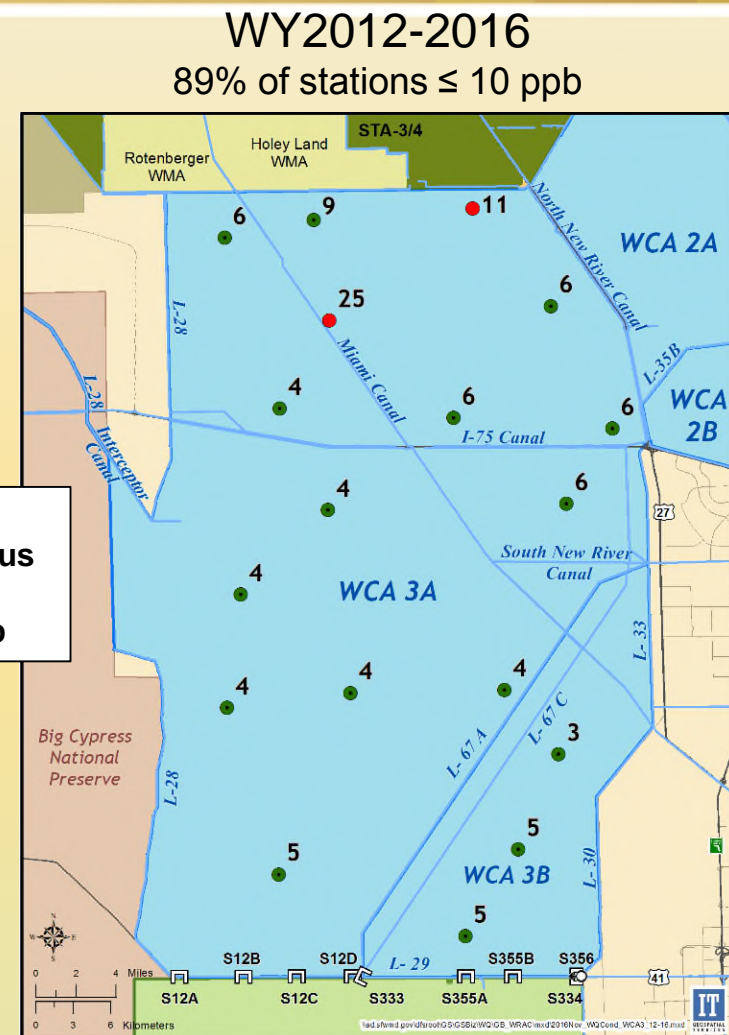
TP values represent the 5-year average of annual geometric means at each station (ppb – parts per billion)

Water Conservation Area 3 Marsh Phosphorus Improvement

WY: Water Year
(May 1 – April 30)



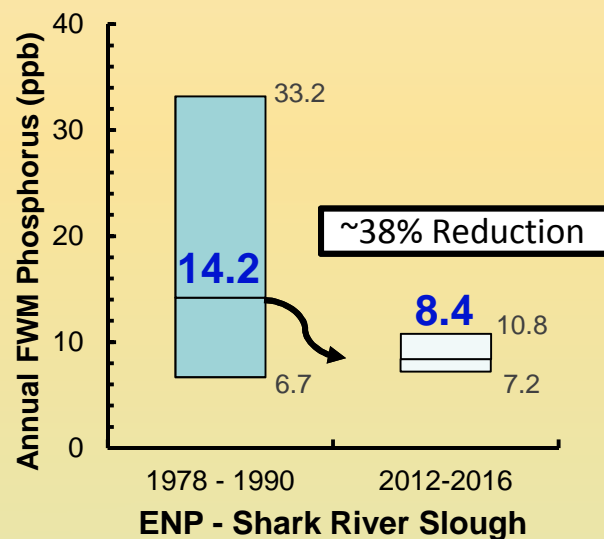
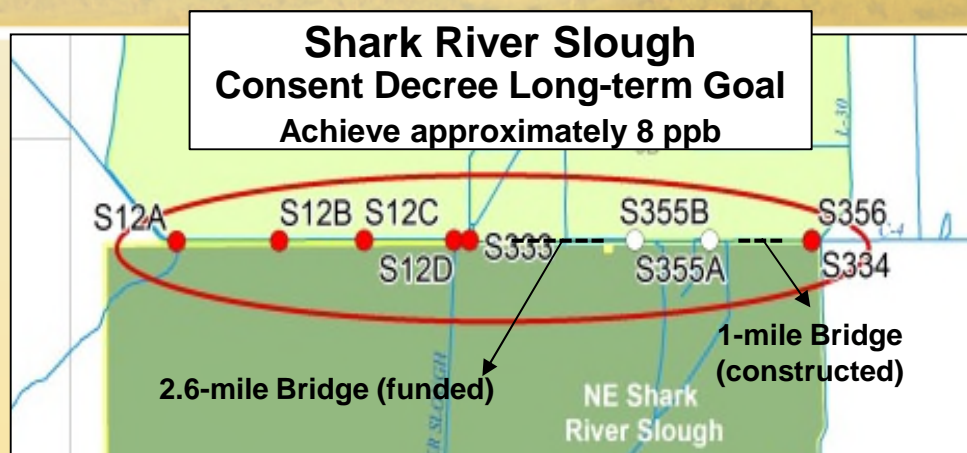
Mean of all 20 stations: 15 ppb



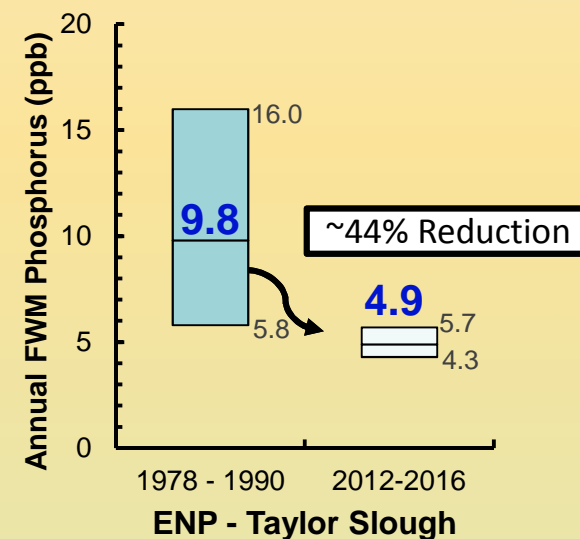
Mean of all 18 P-Rule stations: 7 ppb

TP values represent the 5-year average of annual geometric means at each station (ppb – parts per billion)

Everglades National Park Inflow Phosphorus Improvement



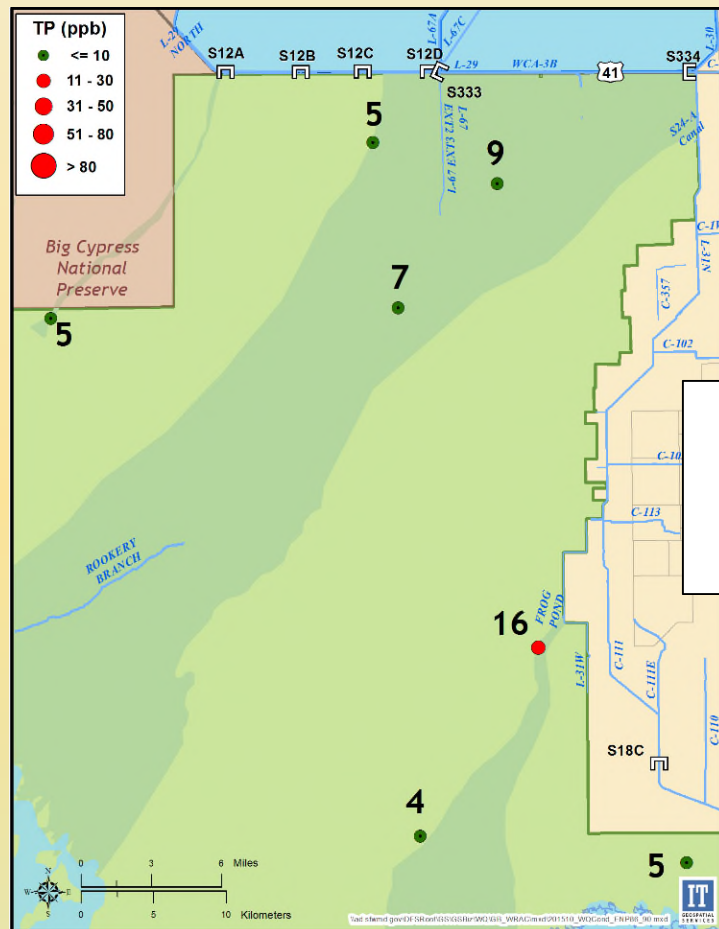
Taylor Slough
Consent Decree Long-term Goal
Achieve approximately 6 ppb



Everglades National Park Marsh Phosphorus Improvement

WY1986-1990

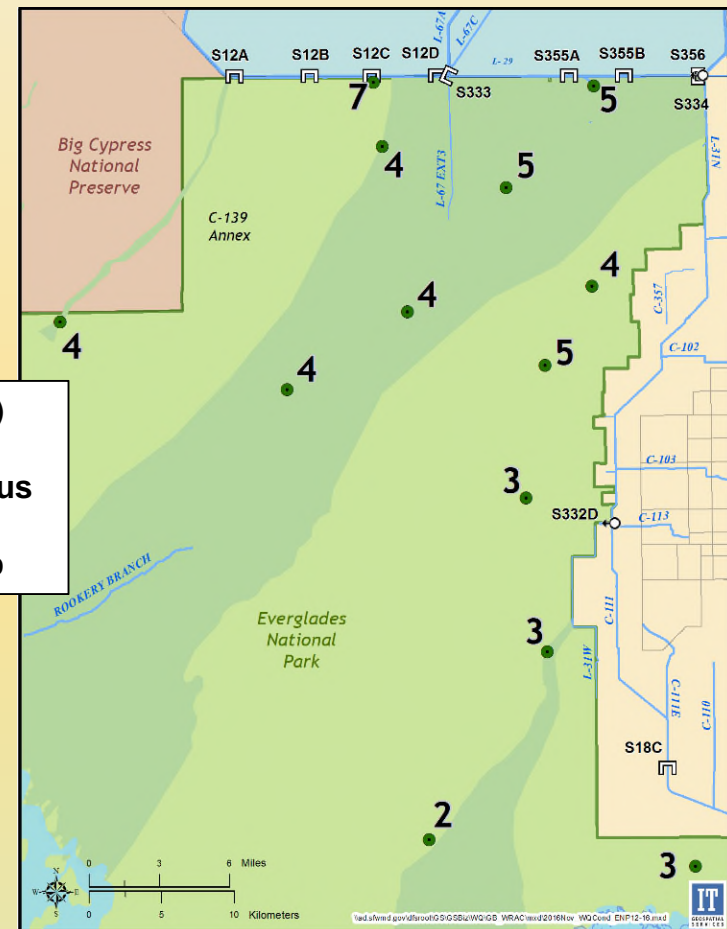
86% of stations ≤ 10 ppb



Mean of all 7 stations: 7 ppb

WY2012-2016

100% of stations ≤ 10 ppb



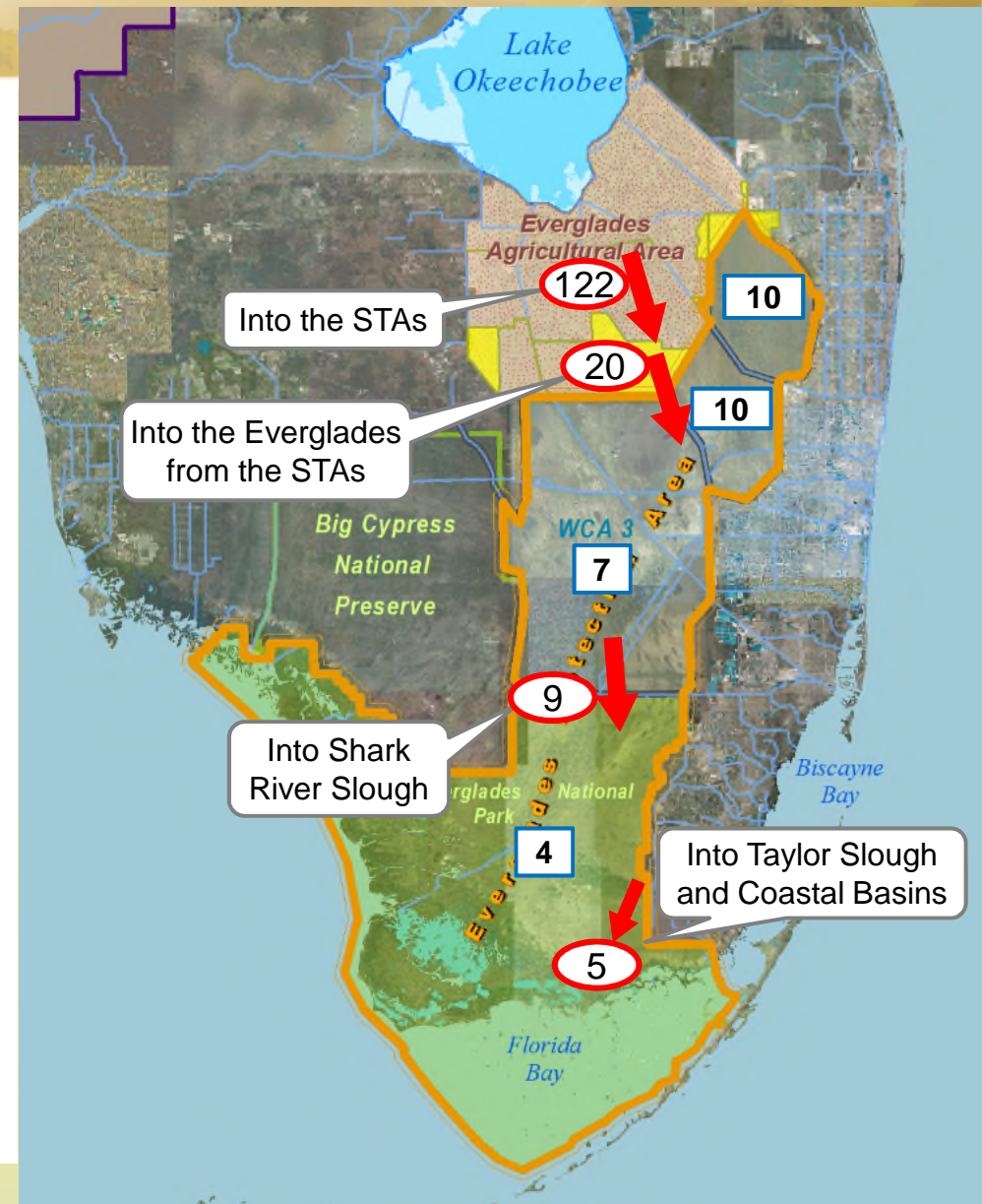
Mean of all 13 P-Rule stations: 4 ppb

TP values represent the 5-year average of annual geometric means at each station (ppb – parts per billion)

Phosphorus in the Everglades Watershed WY2012 to WY2016

Current Condition

- Flow-weighted mean TP concentrations in discharge decrease from North to South
- Water Conservation Areas and Everglades National Park marshes at or below 10 ppb



An aerial photograph of the Everglades marshes, showing a vast expanse of green vegetation interspersed with dark, water-filled channels. The perspective is from a high angle, looking down on the landscape. A white rectangular box is superimposed over the center of the image, containing bold black text.

**90% of Everglades Marshes
at or below 10 ppb**