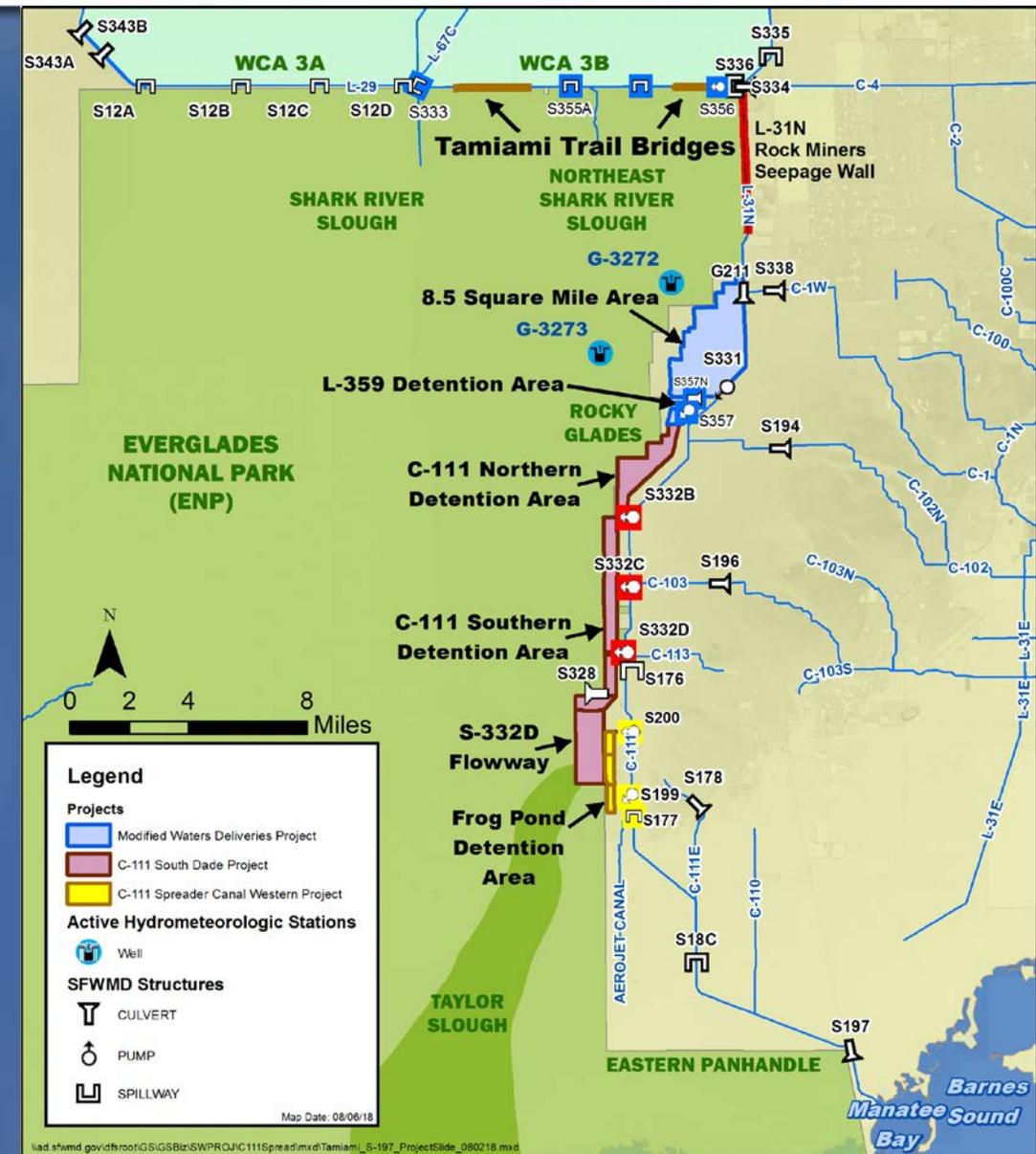


Combined Operational Plan Update

Matt Morrison, Federal Policy Chief
Stuart Van Horn, Bureau Chief, Water Quality
South Florida Water Management District
Water Resources Analysis Coalition
November 1, 2018

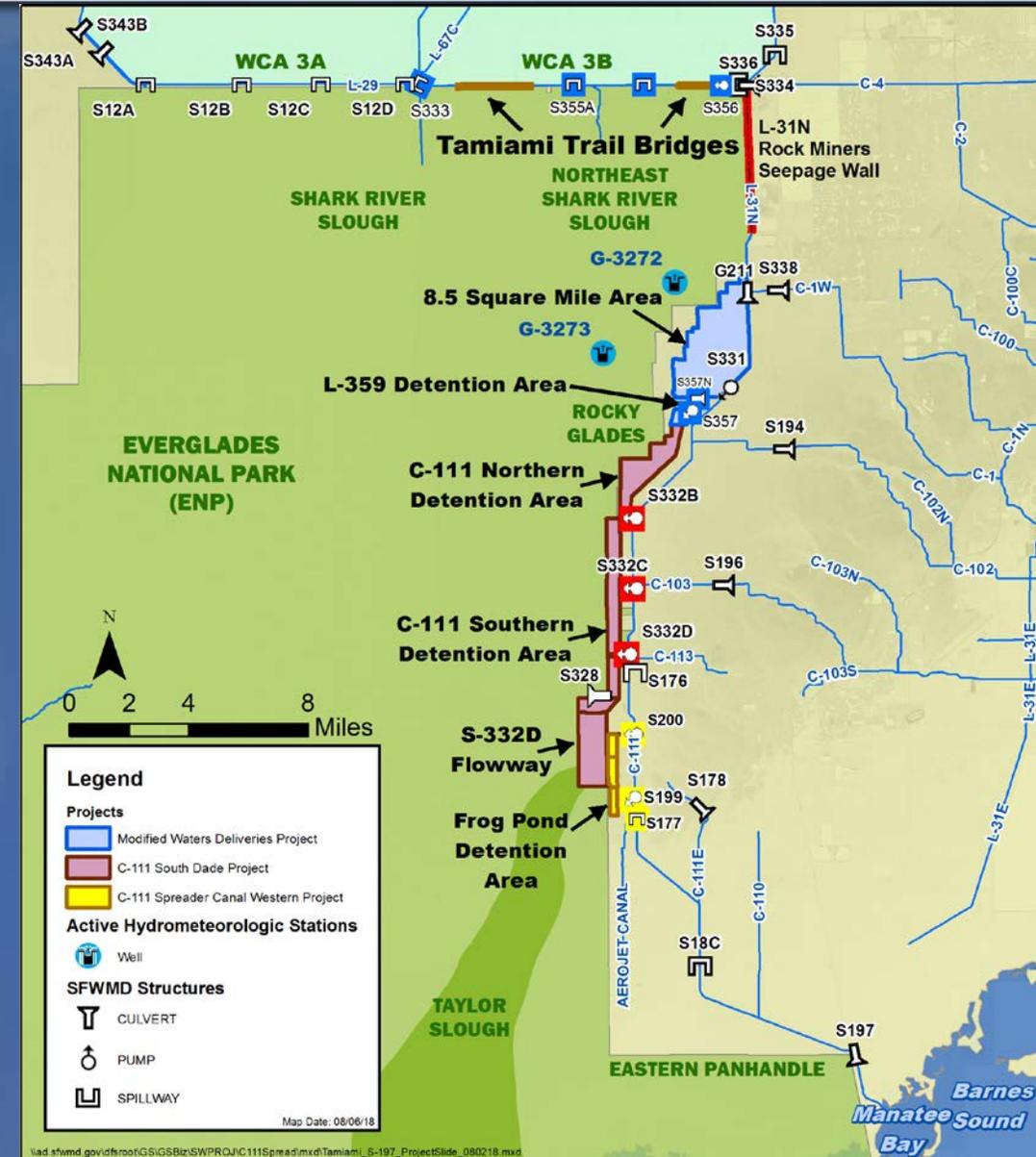
Combined Operational Plan – Project Objectives

- Improve water deliveries by changing the timing, location, and volume of water delivered to Everglades National Park - Shark River Slough
- Improve hydrologic conditions in the Taylor Slough, Rocky Glades, eastern Panhandle of Everglades National Park
- Protect ecological values associated with WCA 3A and Everglades National Park
- Minimize damaging freshwater flows to Manatee Bay and Barnes Sound through the S-197 structure



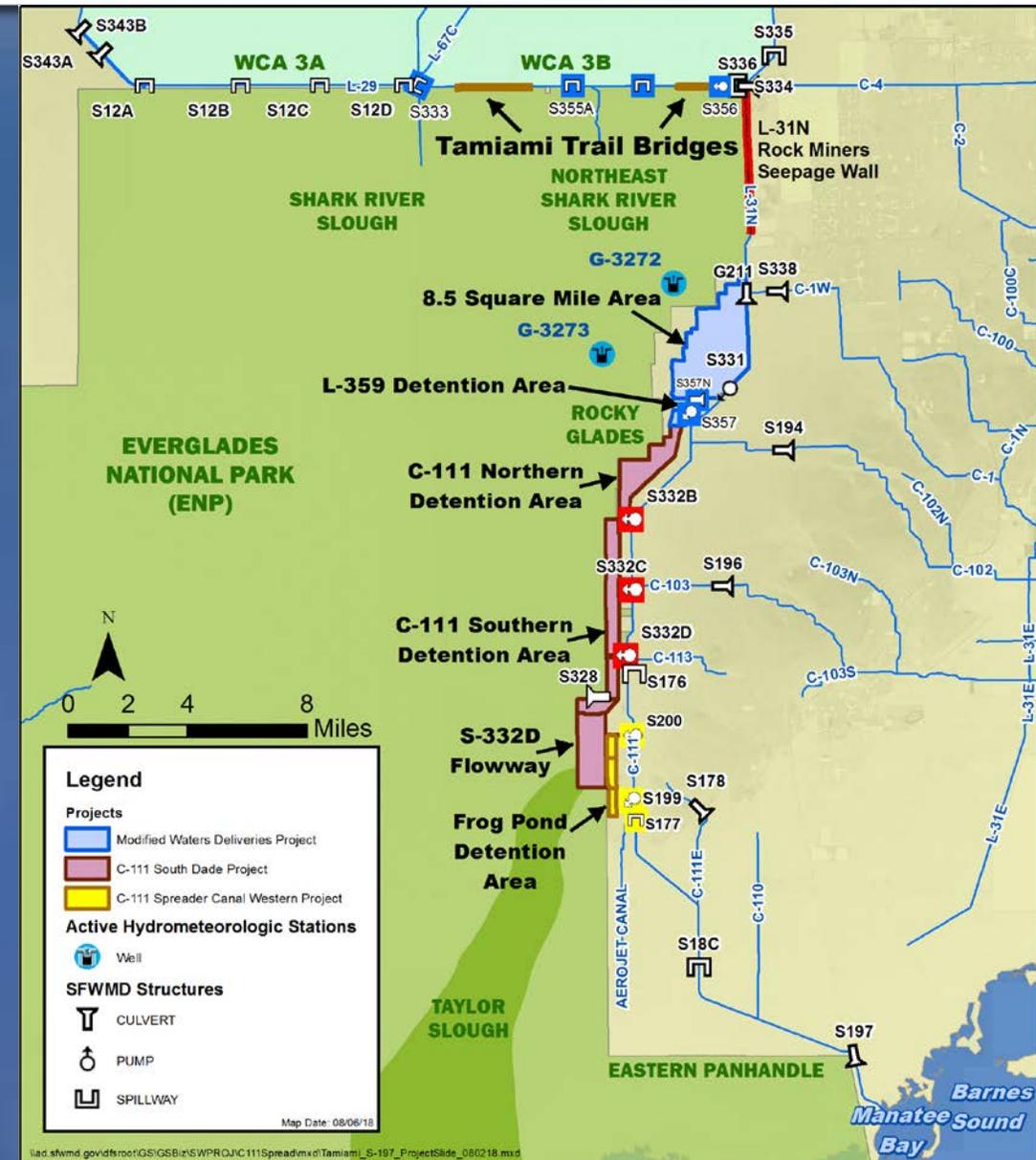
Combined Operational Plan - Project Scope

- Modify the Rainfall Plan to convey water from WCA 3A to Everglades National Park
- Raise the maximum operating limit in the L-29 canal to 8.5 feet NGVD
- Operate pump station S-356 to manage canal stages when water is sent to Shark River Slough
- Deliver water to Taylor Slough, including operating the S-328 consistent with the SFWMD Florida Bay Initiative
- Modify operation of the C&SF structures in the South Dade Conveyance System while maintaining flood protection (including S-197)



Combined Operational Plan – Current Status

- Round 1 Alternatives
 - Evaluation complete (Alt K, Alt L, and Alt N)
- Round 2 Alternatives
 - Alternatives identified (Alt N2 and Alt O)
 - Regional modeling complete
 - Evaluation by Project Delivery Team under way
- Additional Round 2 sensitivity model runs will be conducted to understand options that:
 - Meet Biological Opinion requirements
 - Provide flood protection to South Dade
 - Improve timing and distribution of flows to Biscayne Bay



Combined Operational Plan

Water Supply Identified Risks and Uncertainties

- When increasing water flows to Everglades National Park, WCA 3A stages decrease. There is a potential increased risk to water supplies for urban and agriculture users

Flood Protection

- When increasing water flows in Everglades National Park, seepage to the east increases. There is a potential increased risk to flood protection for urban and agricultural areas

Compliance with Federal Consent Decree

- Increased risk of exceeding Appendix A Shark River Slough Compliance Formula despite low phosphorus levels from the EAA and STAs
- FDEP regulatory permit constraints in operating infrastructure to move water south into ENP

Combined Operational Plan

Identified Risks and Uncertainties

Compliance with Federal Consent Decree

- Detailed evaluation of compliance with Federal Consent Decree is not being conducted on the alternatives during plan formulation - deferred to the preferred alternative in February 2019
- High risk and high potential that operations will be limited or constrained based upon inability to comply with the Federal Consent Decree
 - Current federal proposals to hold back water
 - Inconsistent with fundamental restoration process
 - Increased risk in not meeting project objectives and constraints

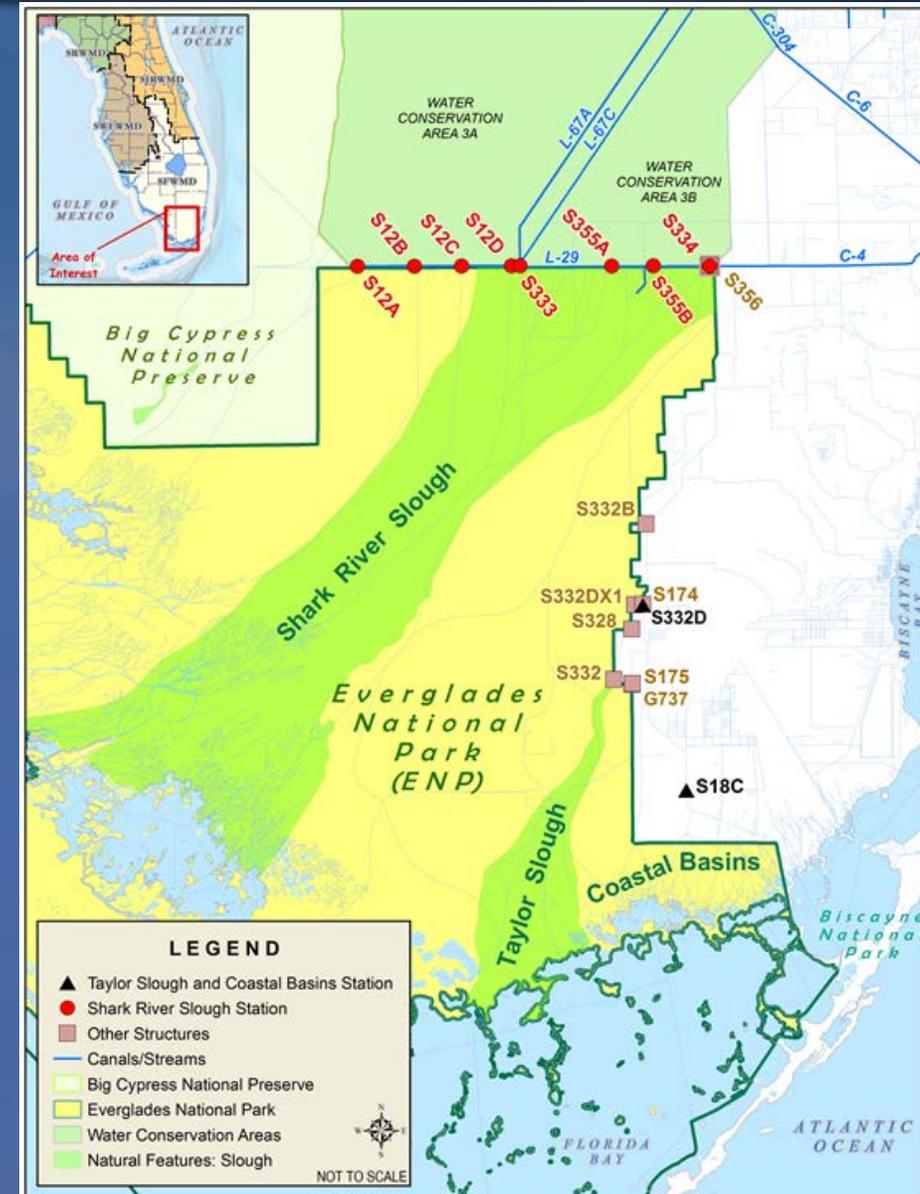
Combined Operational Plan

COP Adaptive Management Sub-team

- Appendix A water quality compliance evaluation (Shark River Slough or SRS)
- Analysis re-affirms and builds upon previous work for ERTP and CEPP
- Analysis shows WCA3A stage conditions are driving TP levels in SRS inflow

Technical Oversight Committee Quarterly Meeting October 30th

- USACE Presentation on COP
- Water quality not a constraint, but can be used to rank alternatives



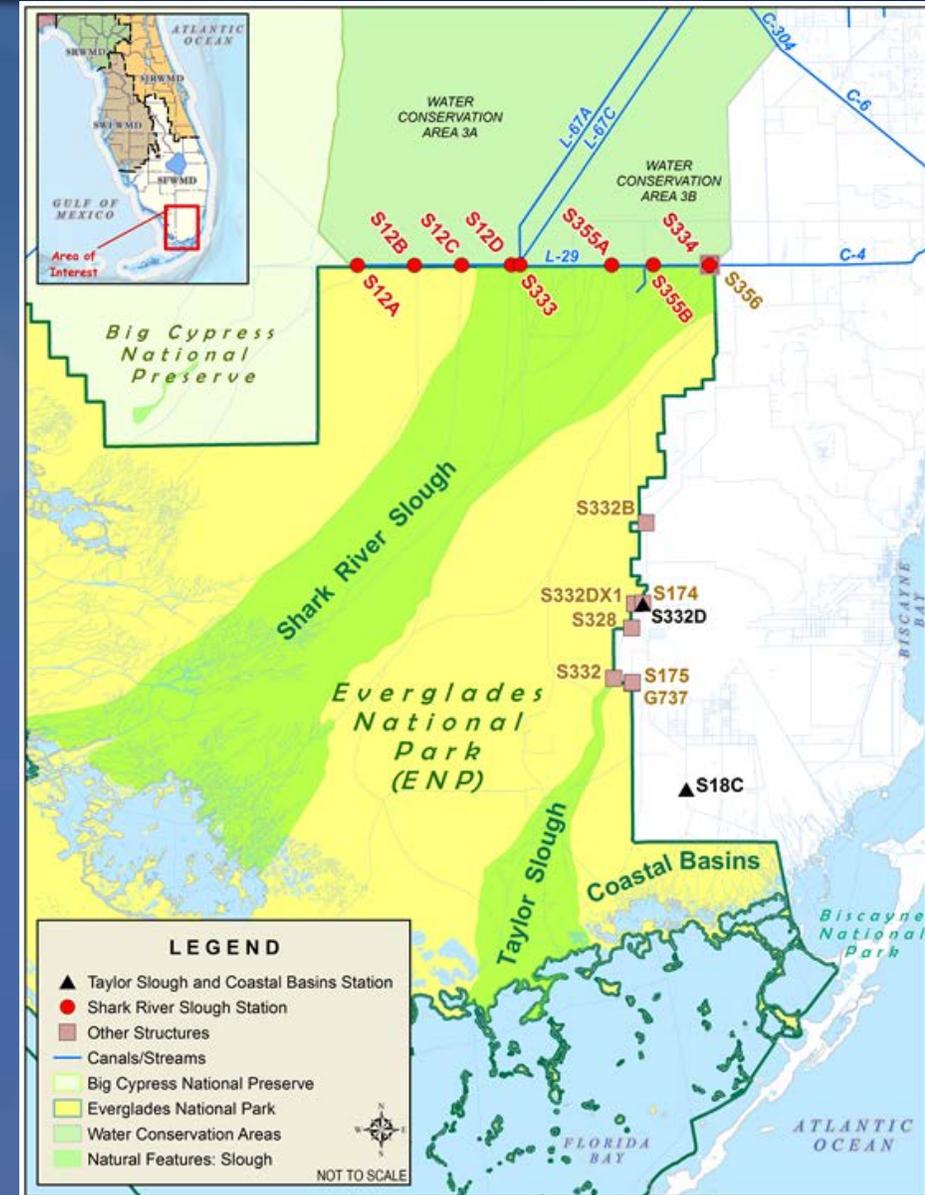
Combined Operational Plan

Technical Oversight Committee Authority

The Consent Decree establishes a Technical Oversight Committee with 5 principal members representing the parties to the Settlement Agreement

"The [TOC] will plan, review and recommend all research, monitoring and compliance, conducted pursuant to the terms of this agreement, and will consider technical advice and assistance for each activity as necessary from the appropriate agencies and from other state and federal agencies and consultants. The TOC will make technically based recommendations by consensus approach; when a technically based recommendation cannot be reached by consensus, a 4 out of 5 majority, the impasse will be reported back to the Parties for mediation"

(1995 Consent Decree paragraph 18, page 26-27, Exhibit B)

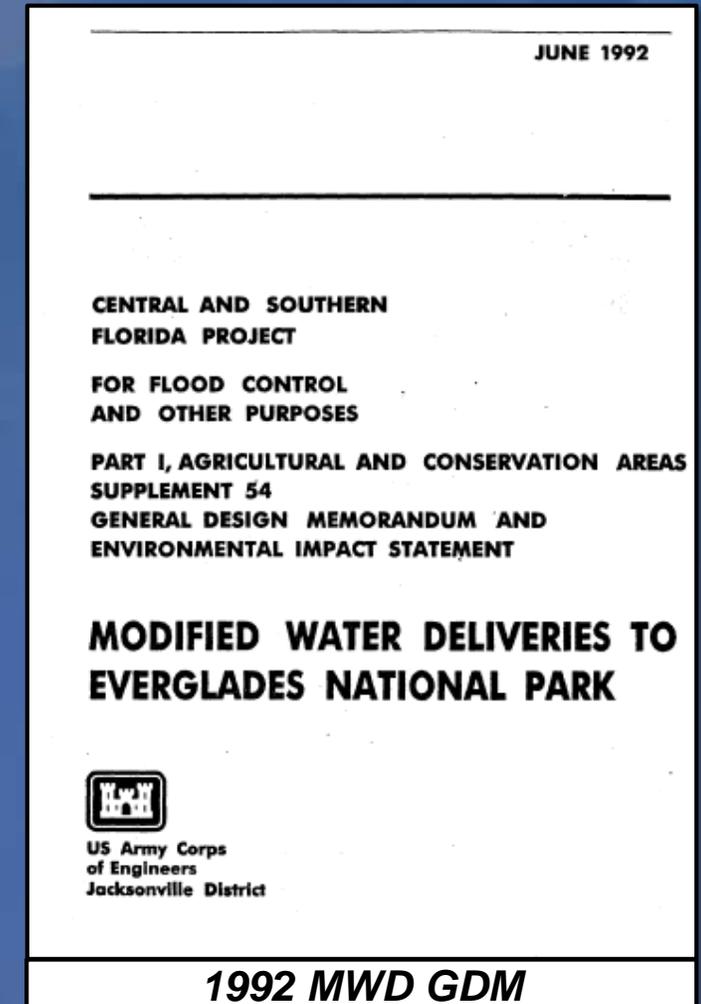


Combined Operational Plan

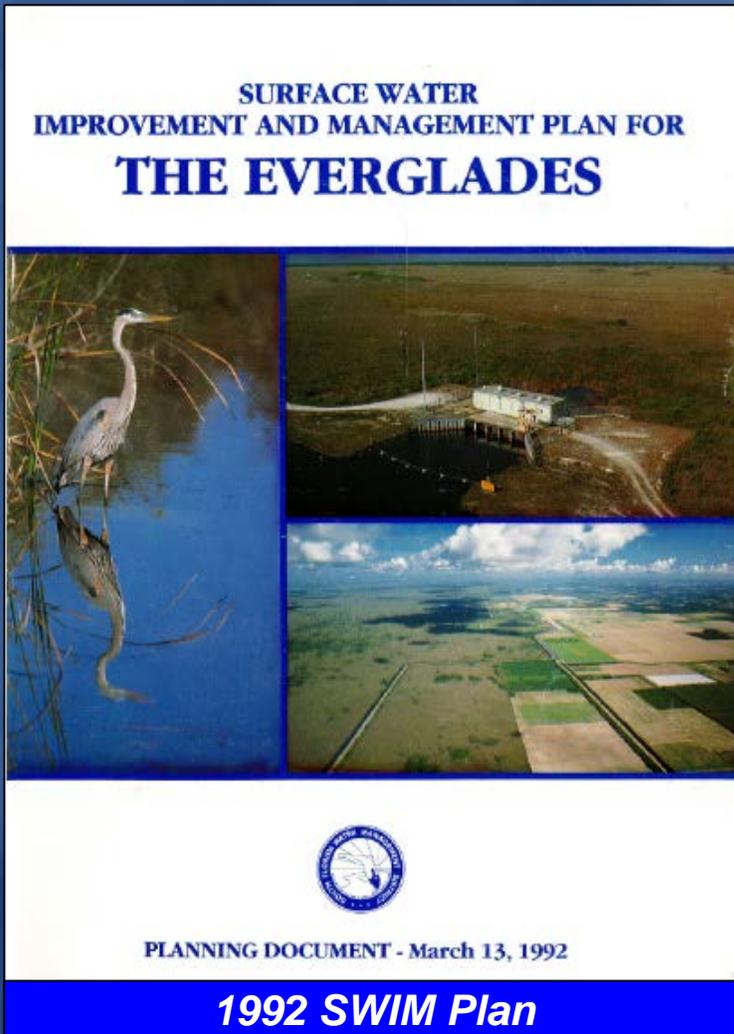
Federal Responsibility

- “The Corps agrees to cooperate in the modification of its regulation of the Central and Southern Florida Project in order to support the objectives set forth in this Agreement.”
- “New structures to be designed and constructed by the Corps shall be designed and constructed in a manner consistent with this Agreement.”
- “Future projects designed by the United States which affect the Park or Refuge shall consider the environmental and water quality commitments set forth in this Agreement.”

*(1995 Consent Decree paragraph 15A, page 25, Exhibit B,
and re-emphasized by Moreno 1995)*



Combined Operational Plan



Two Major Consent Decree Assumptions for Improvement of Phosphorus Levels Into SRS

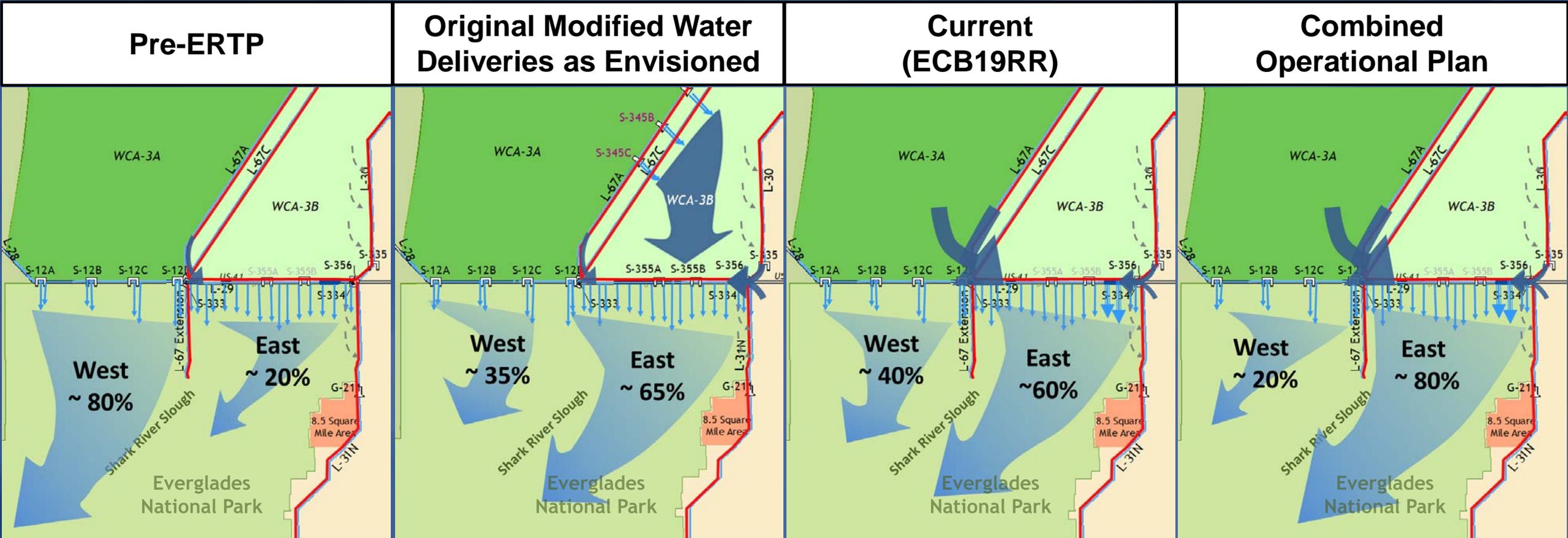
- Upstream, implement EAA controls to reduce phosphorus inputs to the Water Conservation Areas
- Downstream, send majority of water via marsh sheet-flow into SRS and minimize or eliminate discharge through S333 (1992 MDW GDM)

Present and Future Reality

- EAA phosphorus inputs to WCA3A have been abated
- Original Modified Water Deliveries Project not completed: Significant S333 discharge and less reliance on marsh sheet-flow into SRS

Combined Operational Plan

Assumption 2 (Downstream)



Average Annual Flow
450,000 ac-ft

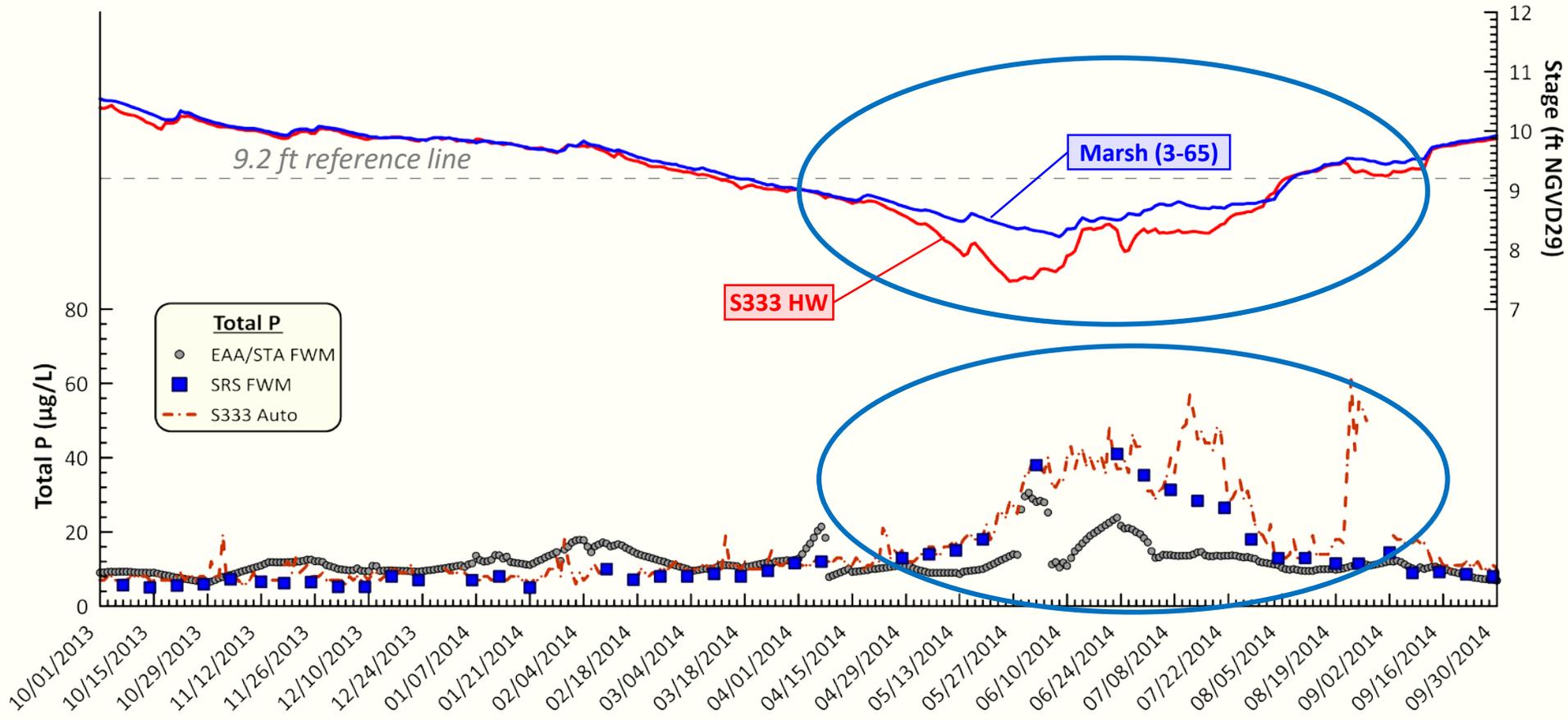
Average Annual Flow
571,000 ac-ft

Average Annual Flow
698,000-750,000 ac-ft

Combined Operational Plan

Phosphorus Comparison Under Assumptions 1 & 2

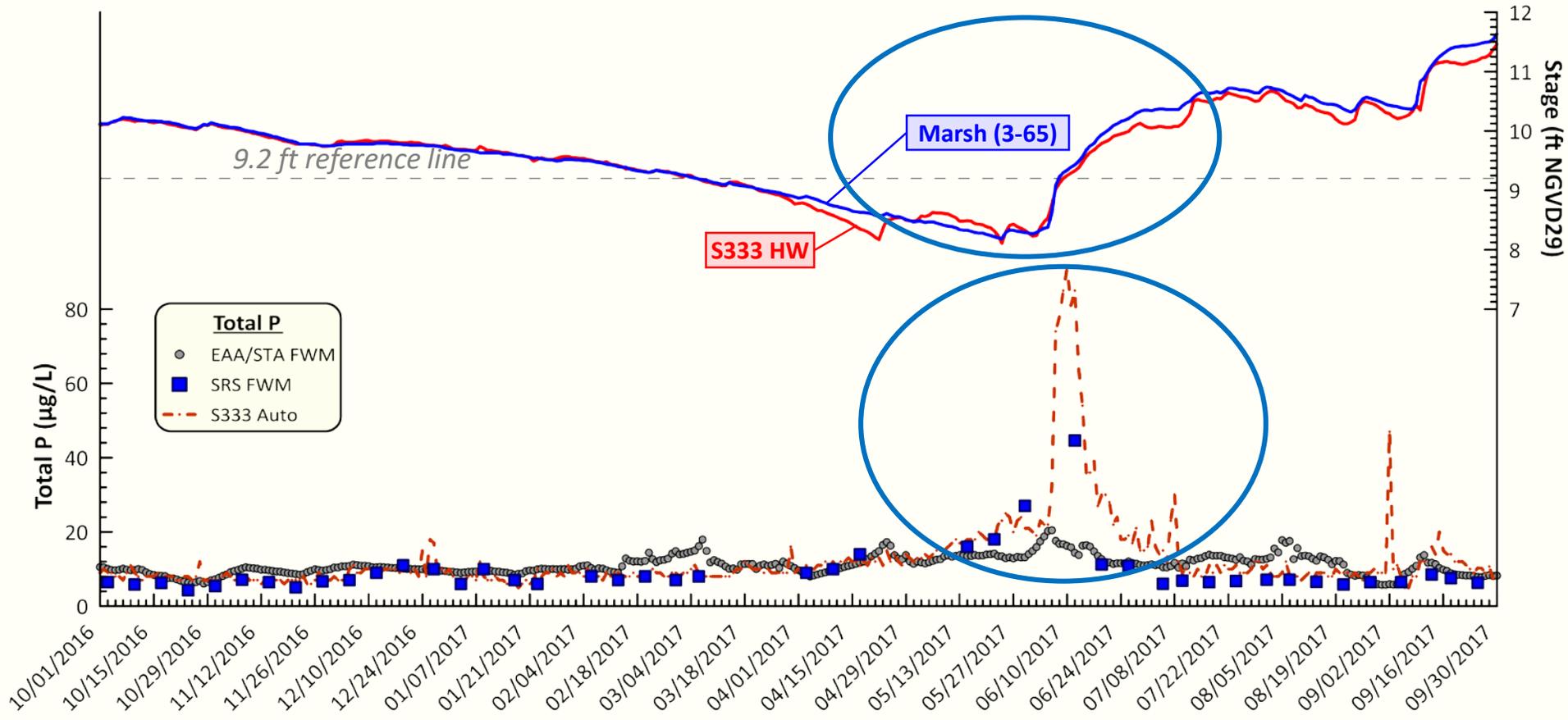
Example 1: Federal Water Year 2014



Combined Operational Plan

Phosphorus Comparison Under Assumptions 1 & 2

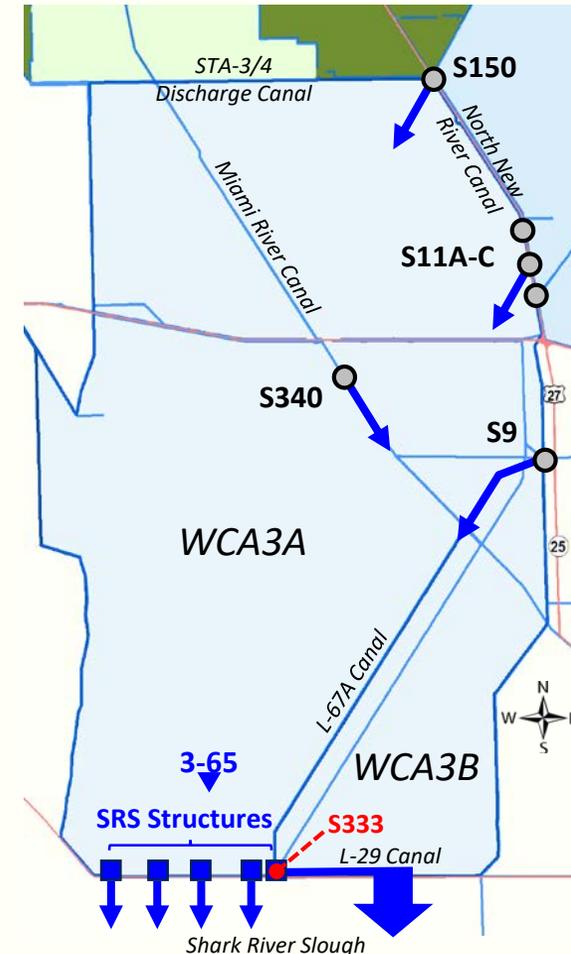
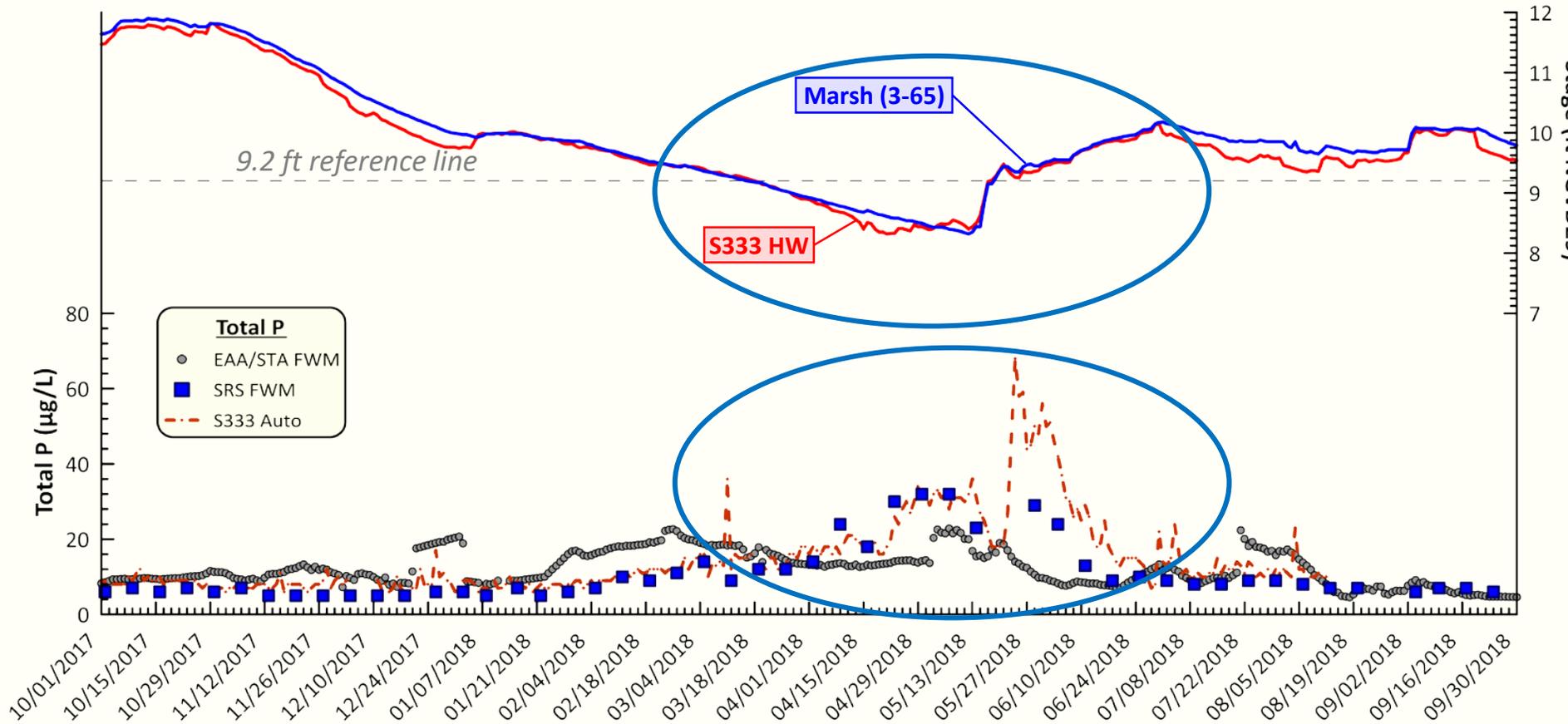
Example 2: Federal Water Year 2017



Combined Operational Plan

Phosphorus Comparison Under Assumptions 1 & 2

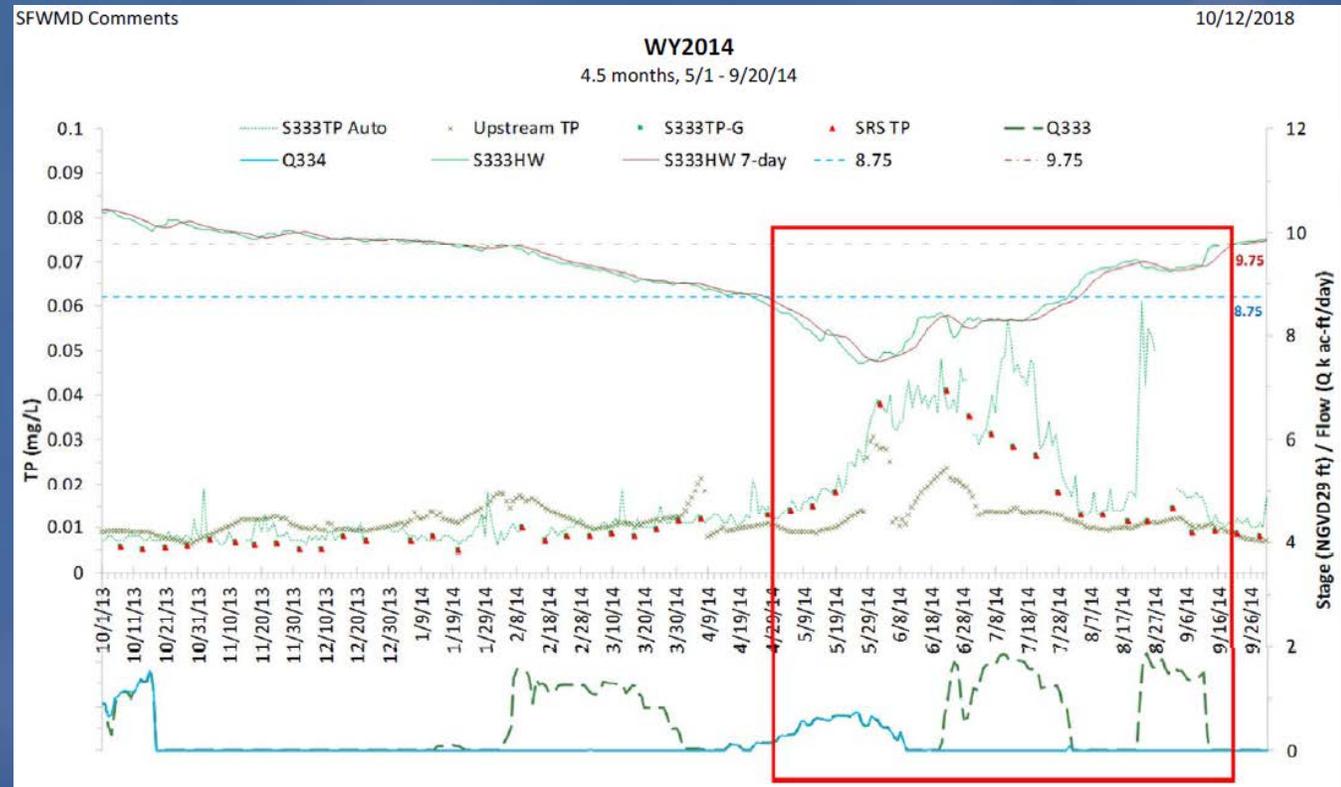
Example 3: Federal Water Year 2018



Combined Operational Plan

Proposal to Regulate Flow to SRS to Reduce TP Levels

- Presented by DOI to Adaptive Management Sub-team
- Prevent discharge from WCA3A to SRS based on stage triggers (cease < 8.75' and resume when > 9.75')
- District concerns include uncertainties related to:
 - Tree island inundation
 - Flood protection
 - Assumed benefits to water quality and ecology
 - Limiting restoration flows south into ENP



Combined Operational Plan

TOC is required to address Exceedances – have limited options

Decision Process

An exceedance of Appendix A is considered a violation unless it is determined to be due to “extraordinary natural phenomena” or “data error”

(1995 Consent Decree Appendix A, page A-4, Exhibit B)



Remedies

...“if the concentration limits and levels are violated, then the State Parties will implement additional remedies, such as any necessary expansion of STAs, more intensive management of STAs, a more stringent EAA regulatory program, or a combination of the above.”

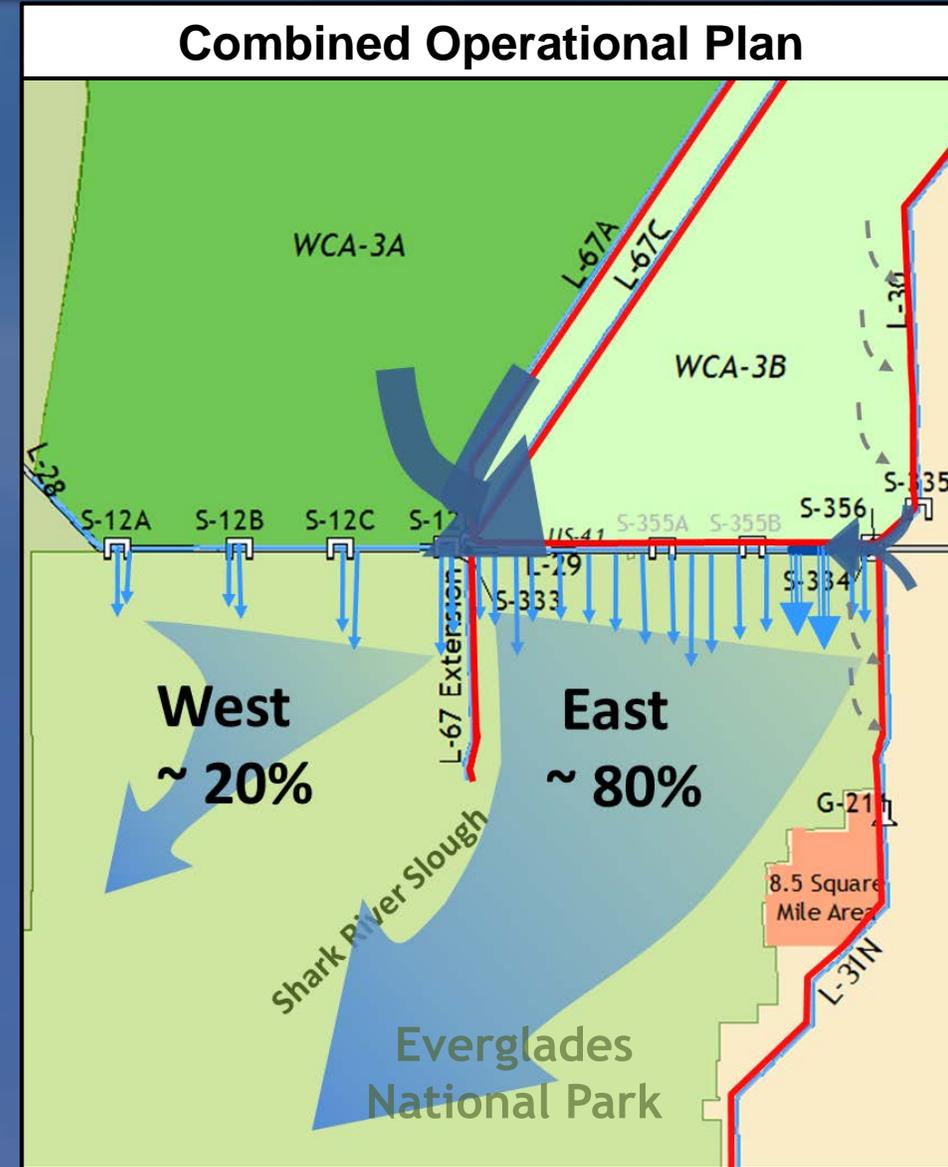
(1995 Consent Decree paragraph 10B, page 14, Exhibit B)

Restoration Implications?

Combined Operational Plan

Shark River Slough Appendix A Compliance Conundrum

- COP water quality evaluation highlights critical information documenting a real-world dilemma for Everglades restoration
- FDEP regulatory constraints prohibit permitted operation of infrastructure to move water south into ENP



Combined Operational Plan

Discussion