

Sub-regional Source Control Projects Update

*11th Annual Public Meeting on the Long-Term
Plan for Achieving Water Quality Goals for
Everglades Protection Area Tributary Basins*

February 26, 2014

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Outline Topics

- 1. Project Goals**
- 2. Planning Concepts**
- 3. Available Data Toolbox**
- 4. Status of Areas Prioritized**
- 5. Remaining Strategy**

Key Projects Construction Schedule

Storage and Treatment Facilities (2012-2024)

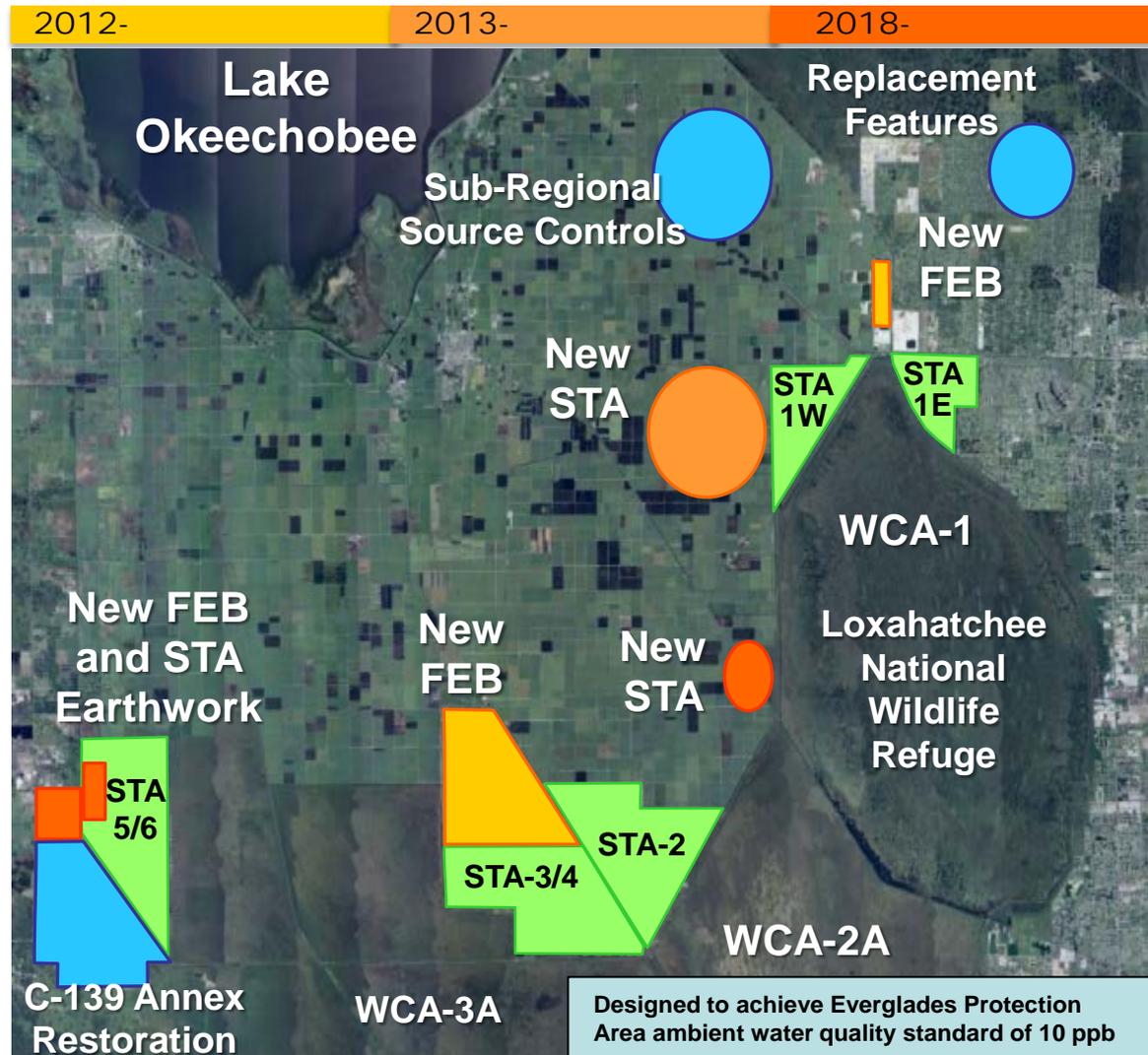
- 6,500 acres of Stormwater Treatment Area (STA)
- 110,000 acre-feet of shallow storage (Flow Equalization Basins)
- 800 acres of earthwork within existing STAs to maximize effective treatment area

Sub-Regional Source Controls (2015 – 2020)

Replacement Features

- Phase 1 (2015 – 2020)
- Phase 2 (2019 – 2024)

C-139 Annex Restoration Mitigation Project (2014-2018)



Regional Water Quality Plan

- Supplement regulatory BMP program
- Provide a safety factor for greater assurance phosphorus WQBEL can be achieved
- Control phosphorus discharges upstream of STA-1E and STA-1W (Eastern Flowpath)
- Focus on areas and projects with greatest potential to further improve water quality

Project Planning Concepts

Control phosphorus sources:

- Increased retention
- Reduced runoff rates
- Limiting P transport in runoff
 - Improving canal bank stabilization
 - Adding or improving sediment sumps
 - Managing aquatic vegetation

Considering the “Potential to Improve”

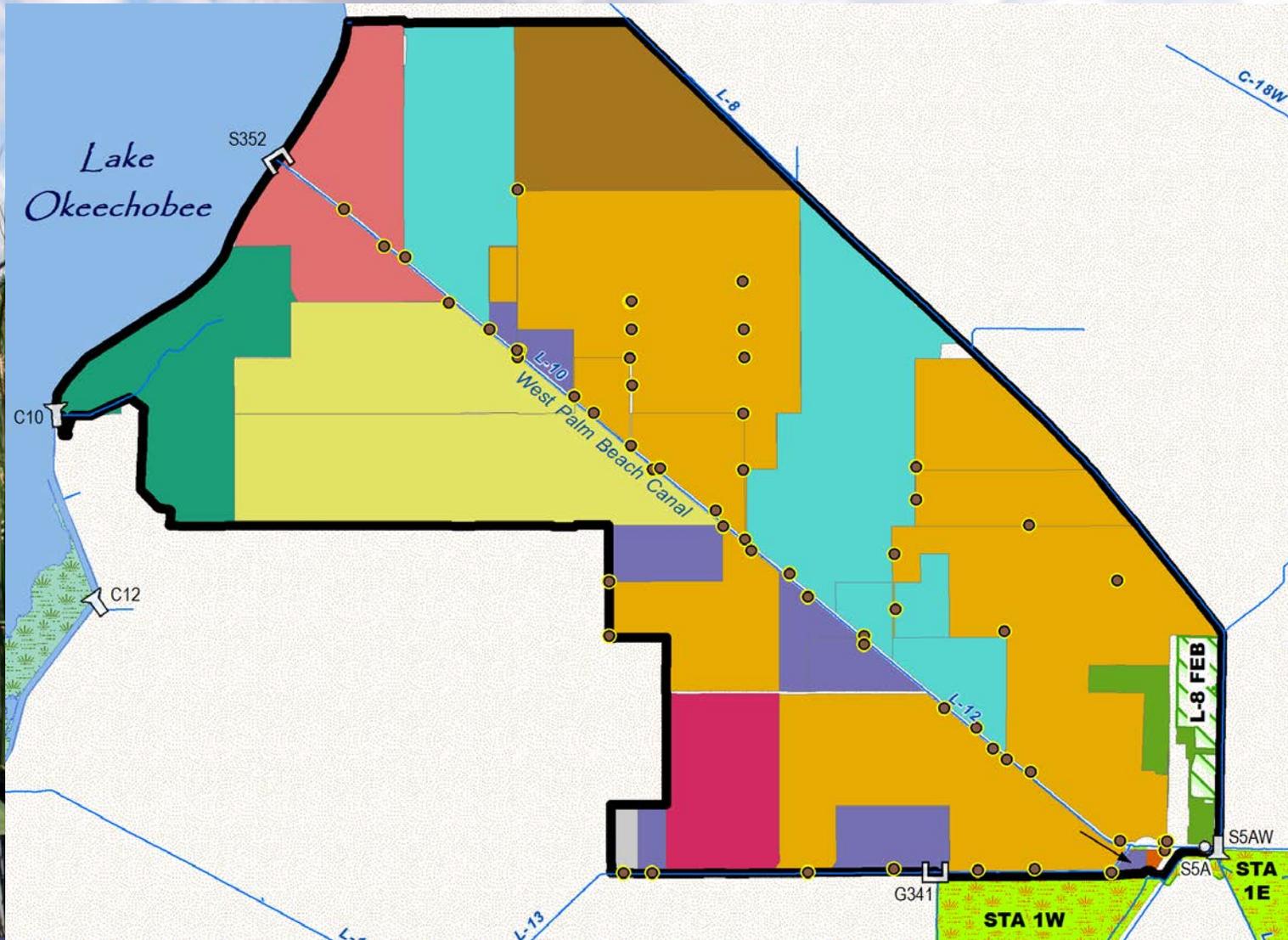
- **Historic phosphorus levels**
- **Proximity and potential impact to STAs**
- **Certainty of reduction**
- **Long-term sustainability**
- **Willing participants**



Data - Farm Level

- **Farm (basin-ID) discharge data:**
 - Phosphorus (TP) Concentration
 - Flow
 - TP Unit Area Load
 - Total TP Load
- **Structure data submitted by permittees**
- **Load computed and stored in RegDB**
- **Annual summaries reported by District**

S-5A Works of the District Permits



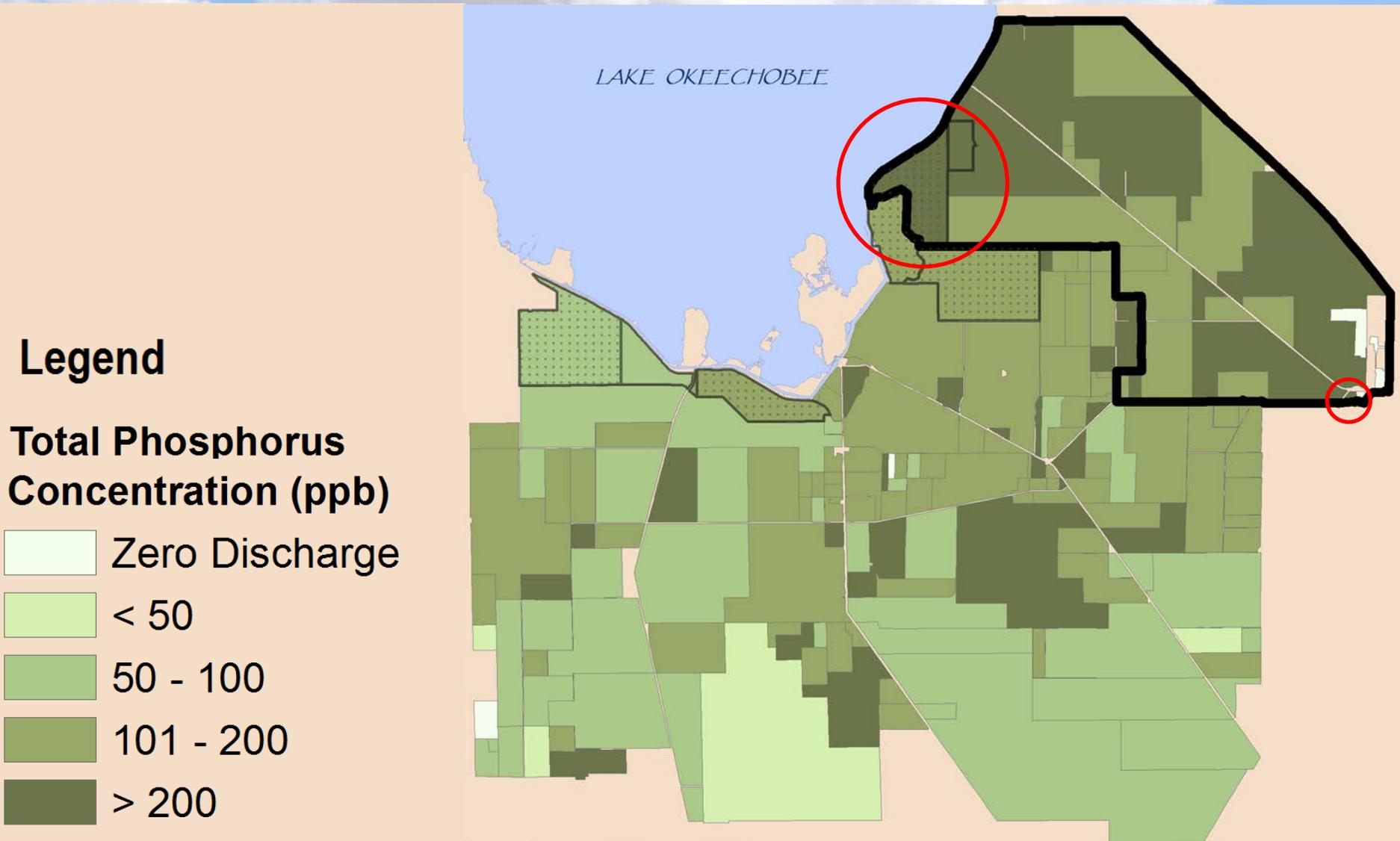
Data - West Palm Beach Canal

- **Structures S352 and S5A**
- **In-canal between S352 and S5A (EAAP)**
 - Flow measurement (3 sites)
 - Water quality sampling (7 sites)
 - TPO₄, OPO₄, TDP, in-situ
 - Weekly; June - October 2008
 - Bi-weekly; Nov. 2012 - Sept. 2015
- **Sediment Investigation (UF-IFAS)**
 - 9 sites; June 2010 and November 2010

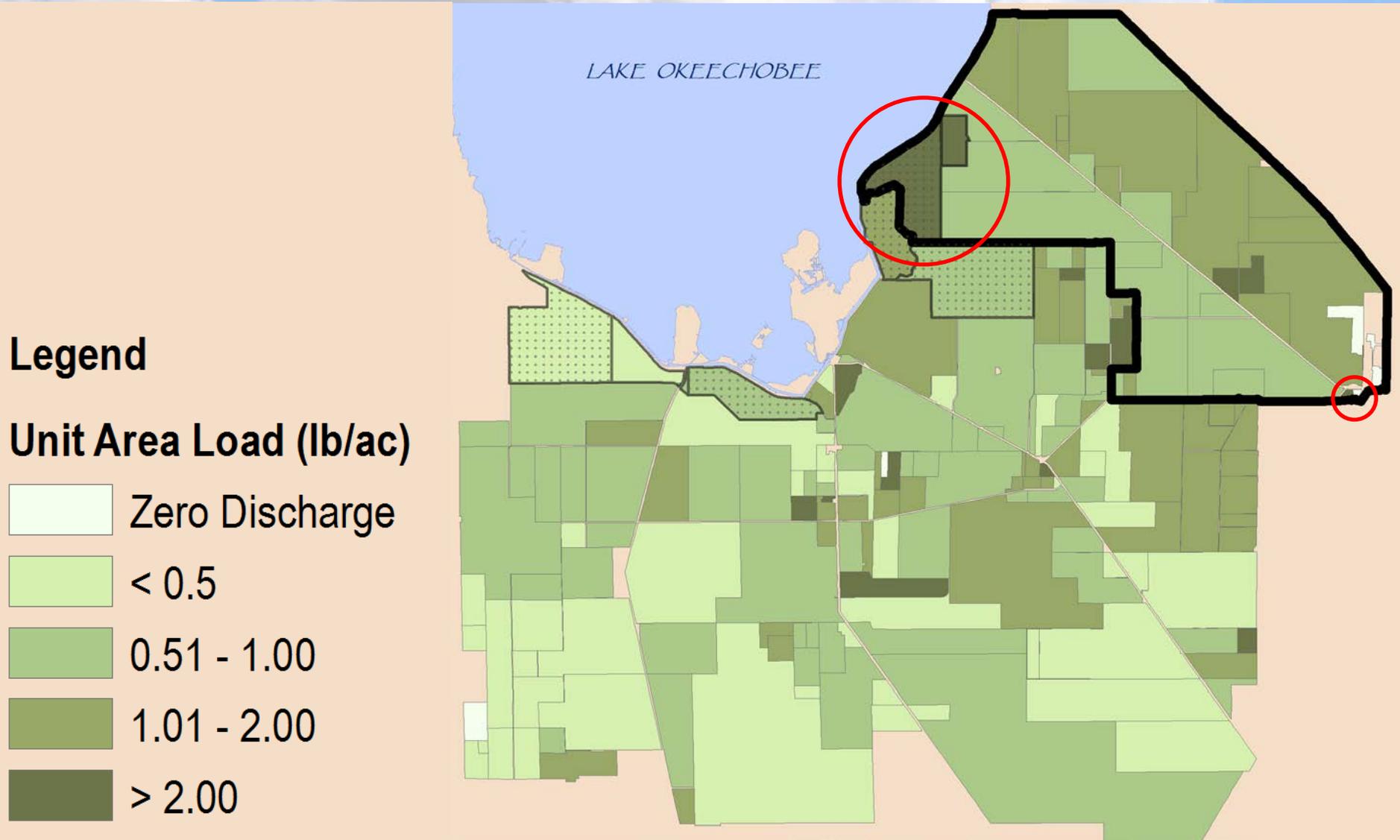
Potential Areas to Consider

- **East Beach Water Control District (EBWCD)**
 - Diversion from Lake to EAA S5A
 - Concentrations and UAL
 - Historical investigations of TP levels
- **Lease north of STA1W**
 - Flow and UAL
- **Farms between WPB and L-8 Canals**
 - Elevation change and muck loss challenges
 - Concentration and UAL

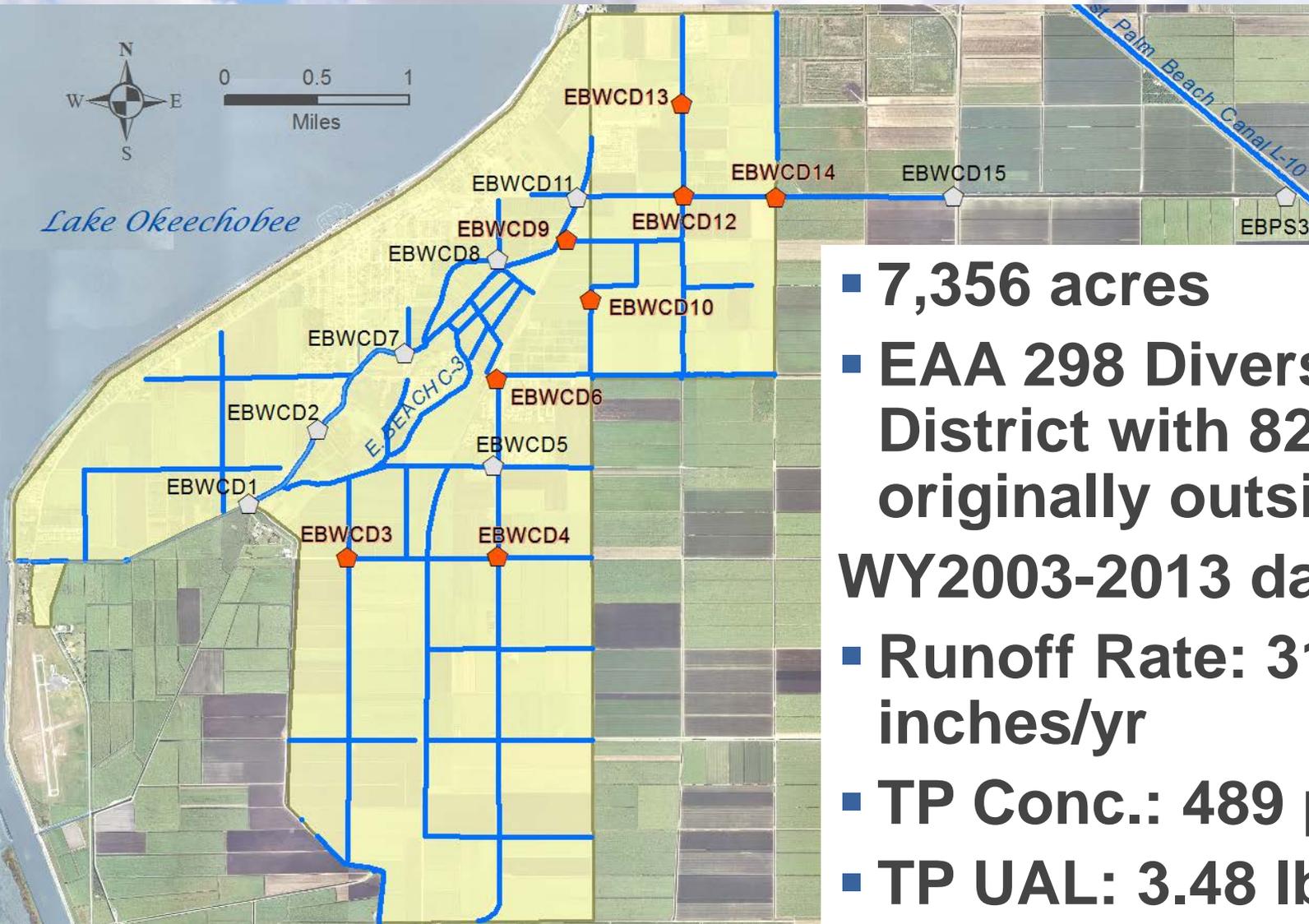
EAA WY2009-2013 Concentrations



EAA WY2009-2013 Unit Area Loads



East Beach Water Control District (EBWCD)



- 7,356 acres
 - EAA 298 Diversion District with 82% originally outside EAA
- WY2003-2013 data:
- Runoff Rate: 31 inches/yr
 - TP Conc.: 489 ppb
 - TP UAL: 3.48 lbs/ac/yr

EBWCD Background

- Evaluation of historic discharge data
- Coordinated investigation with FDEP
- Synoptic upstream WQ collection
- Coordination with EBWCD
 - Potential solutions identification
 - Implement canal cleaning demonstration project

EBWCD Canal Cleaning Project Demonstration / Implementation

Local Government Agreement (5/24/2013)

District Provides

- \$150,000
- WQ collection and analysis
- Storage of public records and data

EBWCD Provides

- Backhoe, operator, fuel
- Staff and consultant; Pre- and Post- cleaning canal sediment and vegetation data
- Access & coordination

EBWCD Project Status

- ***Completed:***
 - Initiated WQ collection May 2013
 - Existing conditions and plan deliverable
 - Backhoe delivered & funds reimbursed
 - Cleaned 7 miles of canal as of Nov. 2013
- ***Remaining:***
 - Canal cleaning through October 2015
 - WQ monitoring through November 2016
 - Quarterly updates and final report

Lease North of STA-1W



- 120 acres
- 33.5 ac. District lease
86.5 ac. County lease
- Adjacent to STA-1W
- Seepage challenge

WY2003-2013 data:

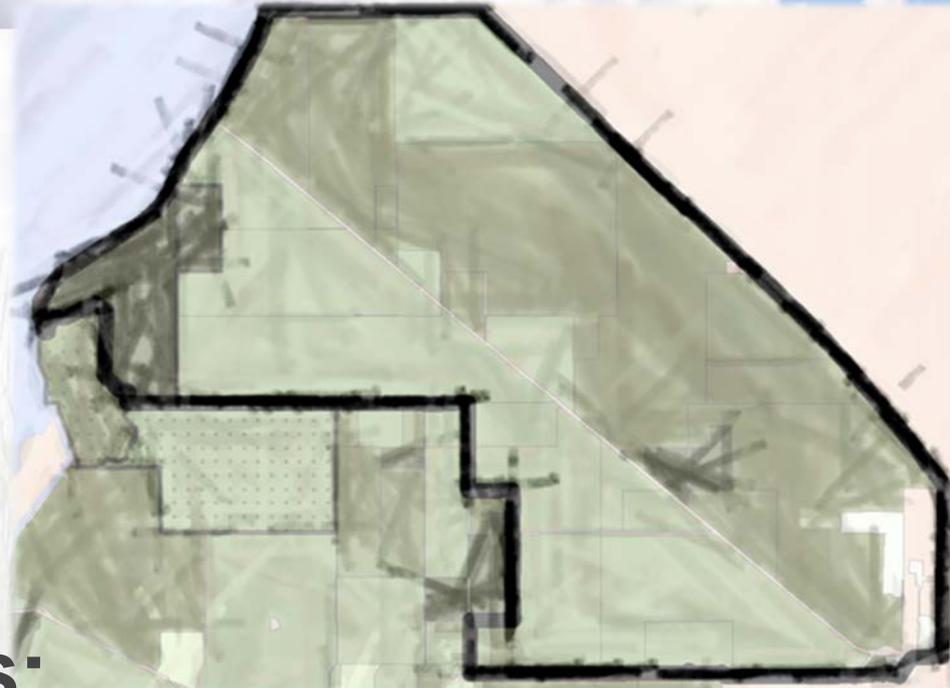
- Runoff > 300 in/yr
- TP Conc: 112 ppb
- TP UAL = 7.74 lbs/ac/yr

Lease North of STA1W Consideration

- **Load Reduction Alternatives**
 - Structural Improvements
 - Operation of STA1W seepage canal
 - Lease Options
- **Structural and Operational not practical**
- **Lease restrictions Feb 2013 - Feb 2014**
- **Allow expiration of lease**
- **Continued coordination with County**

Next Load Reduction Opportunities

- **Considerations:**
 - Phosphorus data
 - Stakeholder input
 - Conservation
 - Sustainability
- **Types of projects:**
 - Structural and operational improvements
 - Innovative technology application
 - Research, implementation, demonstration



Sub-regional Source Controls Summary

- **Safety Factor for Eastern Flowpath**
- **2015-2020 plan; initiated early**
- **Enhance the potential to reduce...**
 - **Implementation and demonstration**
 - **Phased approach**
 - **Adaptive management**
 - **Apply lessons learned**
 - **Reporting and stakeholder involvement**

- **Questions?**
- **Contributions?**

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