

Charlotte Harbor Flatwoods Initiative

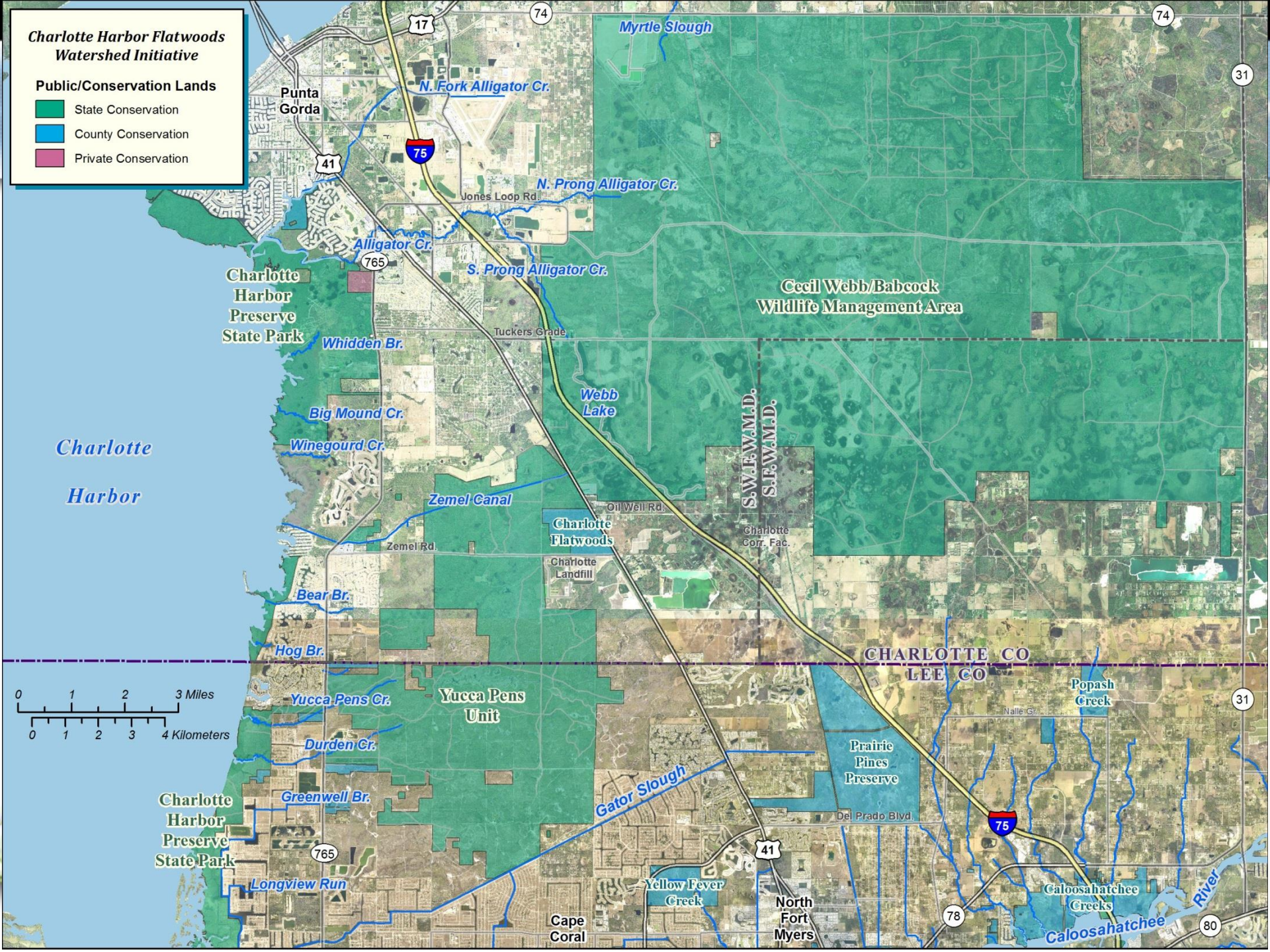
November 2014

Steve Sentes, Everglades Policy and
Coordination

**Charlotte Harbor Flatwoods
Watershed Initiative**

Public/Conservation Lands

- State Conservation
- County Conservation
- Private Conservation

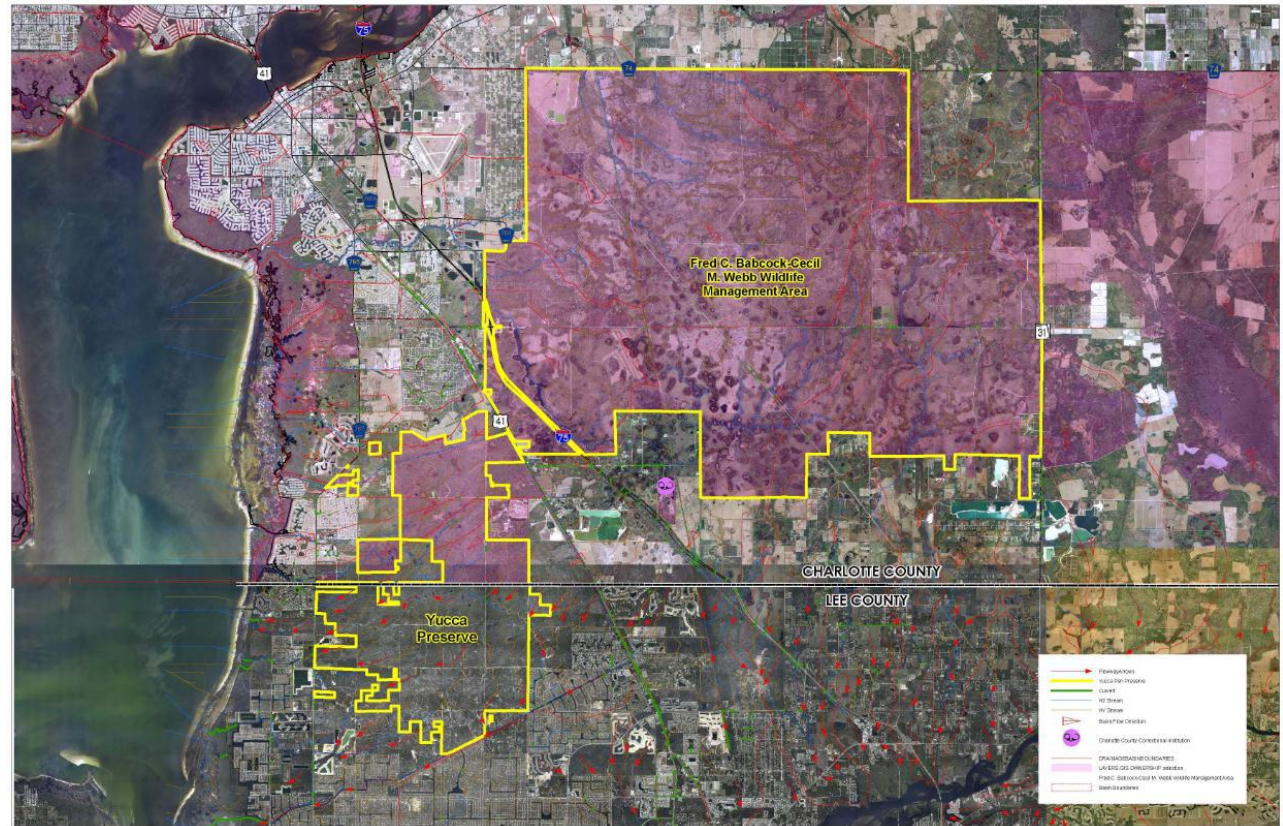


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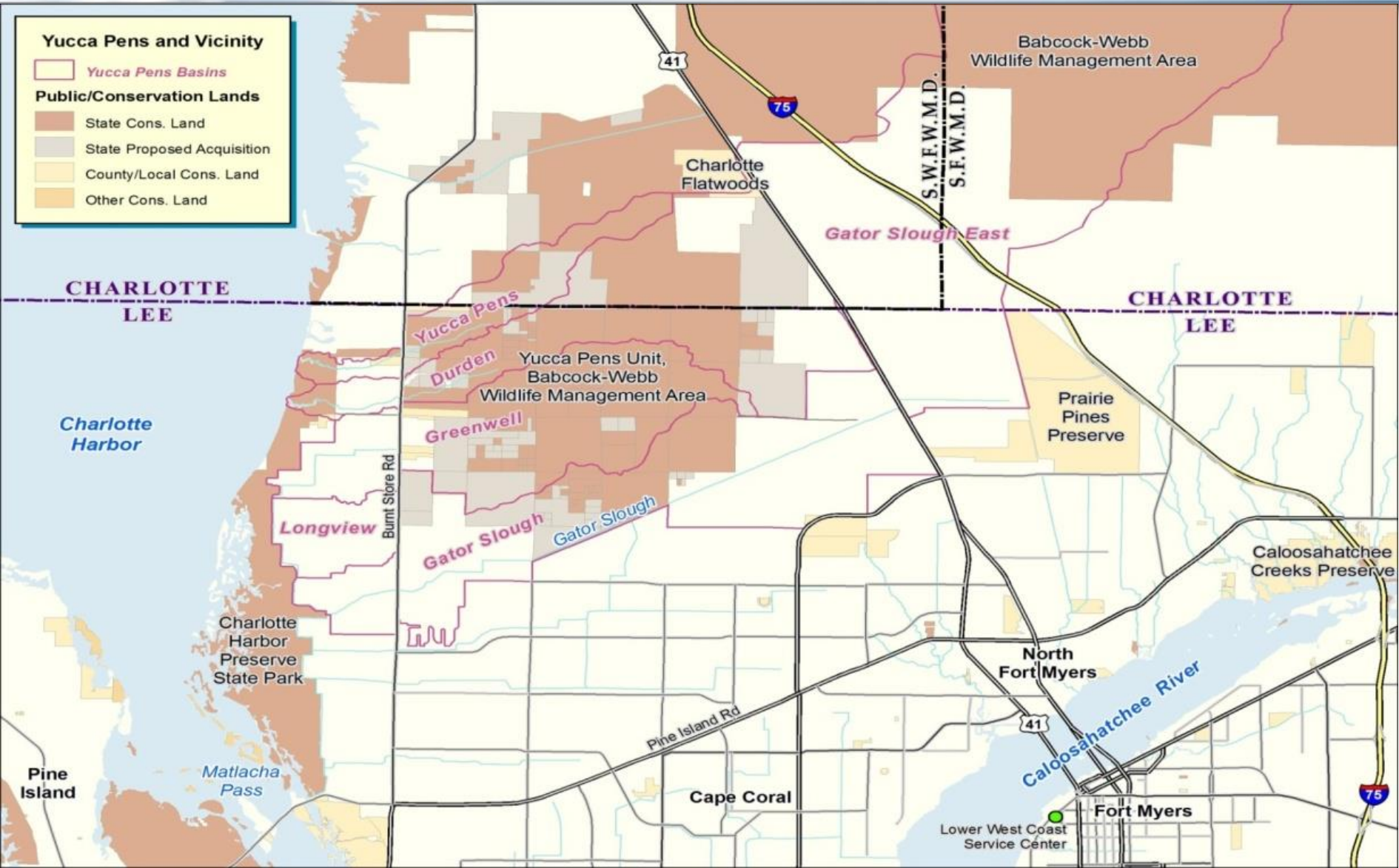
Hydrologic Restoration

Includes five watersheds totaling 90 square miles

- Yucca Pen Creek
- Durden Creek
- Greenwell Branch
- Longview Run
- Gator Slough



Charlotte Harbor Flatwoods Initiative



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Partners/Consensus

South Florida Water Management District

South West Florida Water Management District

Charlotte County

Lee County

City of Cape Coral

Florida Department of Transportation

Florida Department of Environmental Protection

Charlotte Harbor State Park

Charlotte Harbor Aquatic Preserves

Florida Fish and Wildlife Commission

US Fish and Wildlife

US Geological Survey

Charlotte Harbor National Estuary Program

Seminole Gulf Railway

Trust for Public Lands



Charlotte Harbor Flatwoods Initiative

Prior Studies

- Babcock/Webb Water Management Study, 1983
- Lee County Interim Surface Water Management Master Plan, 1990
- South Charlotte, North Lee County, and Babcock/Webb Surface Water Management Conceptual Plan, 2003
- NW Lee County Surface Water Management Plan, 2005
- Matlacha Pass Hydrologic Restoration Project, 2007
- **Yucca Pens Hydrologic Restoration Plan, 2010**

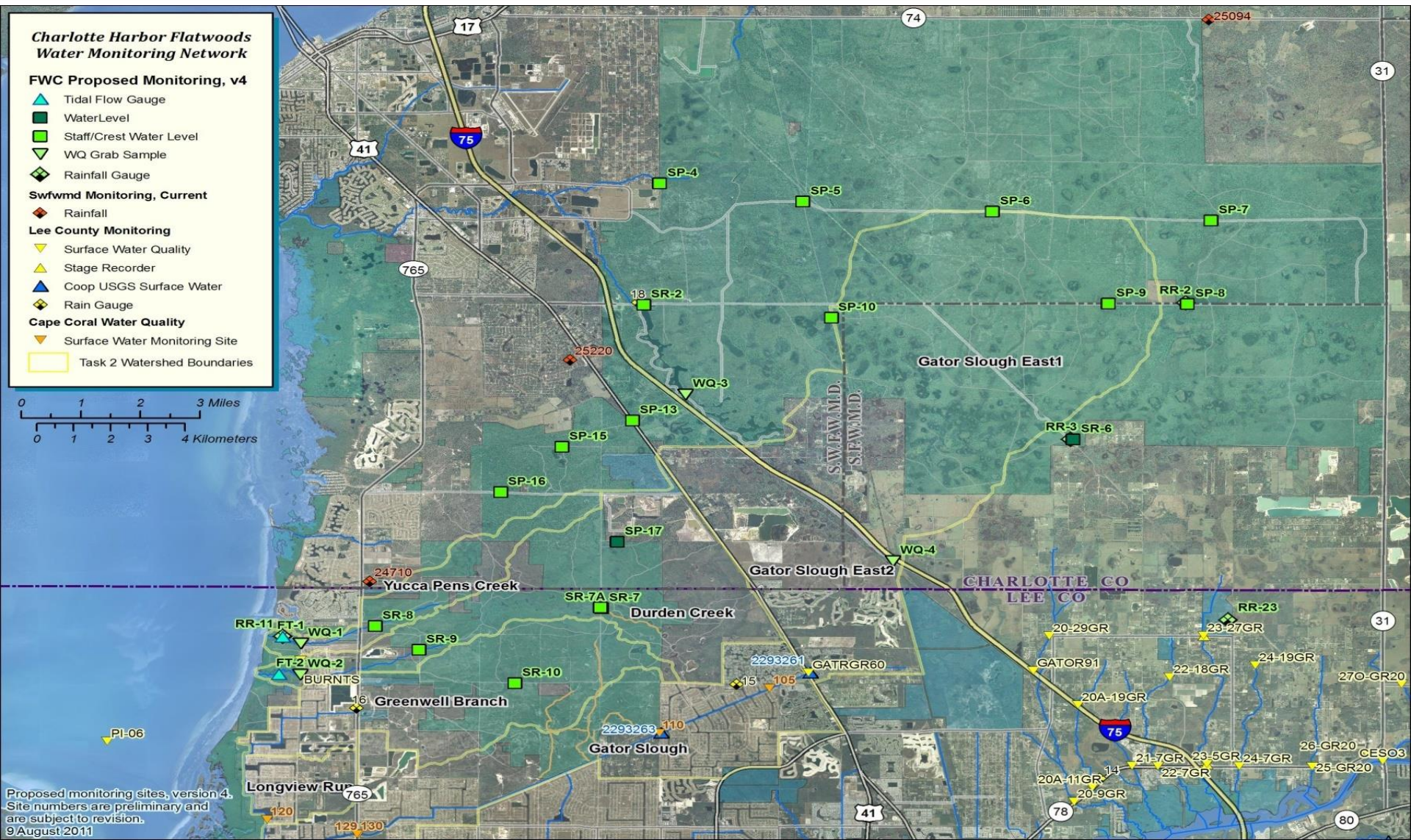


Project Objectives

- Sheet flow Restoration
- Restore more natural flows to Charlotte Harbor
- Water quality Improvement
- Reduce flooding and improve hydro-periods
- Ground water recharge
- Reduce high water levels/flooding
- Enhancement of fish and wildlife habitat



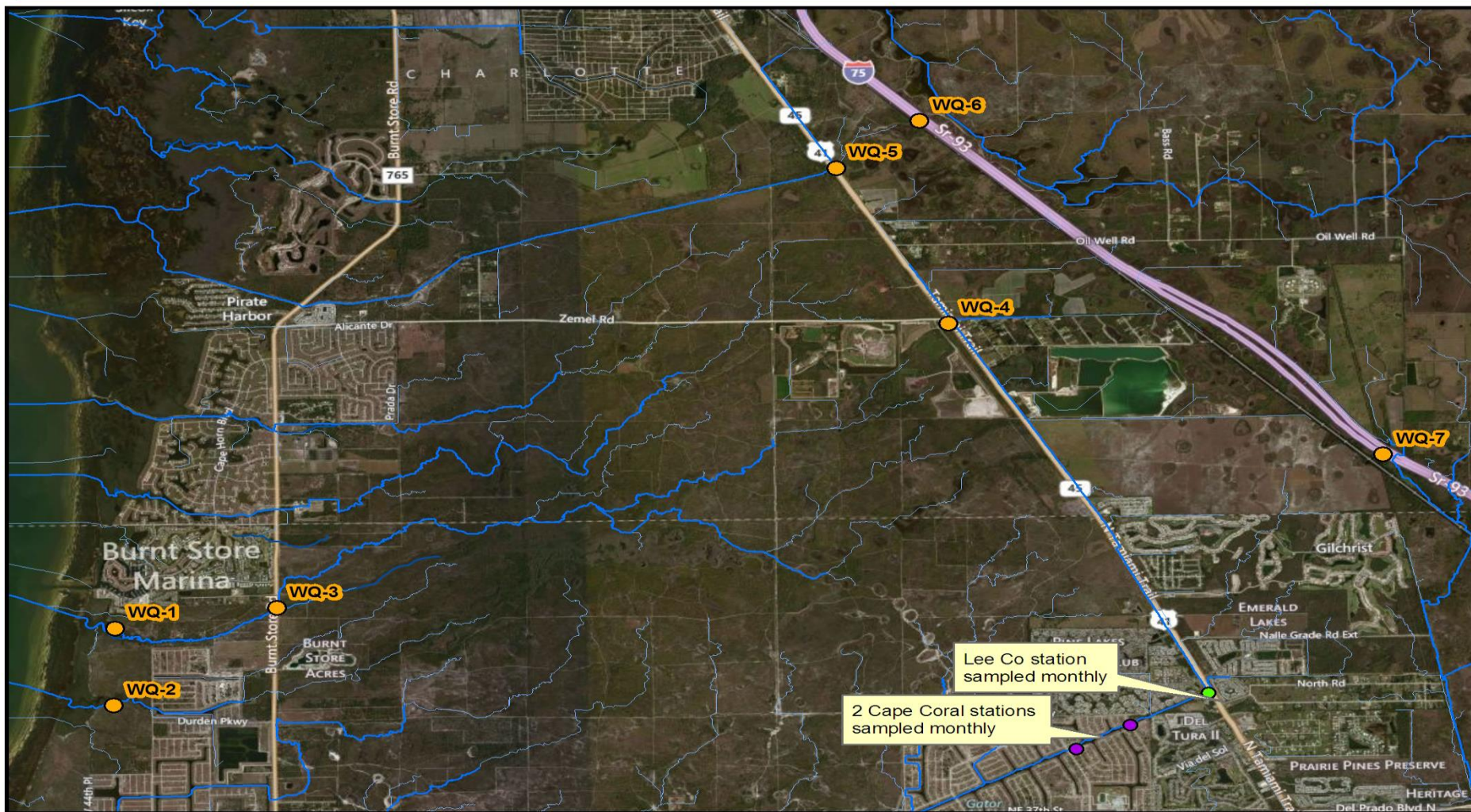
Charlotte Harbor Flatwoods Initiative Monitoring Network



Charlotte Flatwoods Initiative Monitoring



FDEP Sampling Stations - Final



Map created by FDEP's South District. Disclaimer: This map is intended for display purposes only and is subject to change. FDEP makes no warranty for the accuracy and completeness of this information.

0 0.5 1 2 Miles

Before Yucca Pens Project Completion Photo



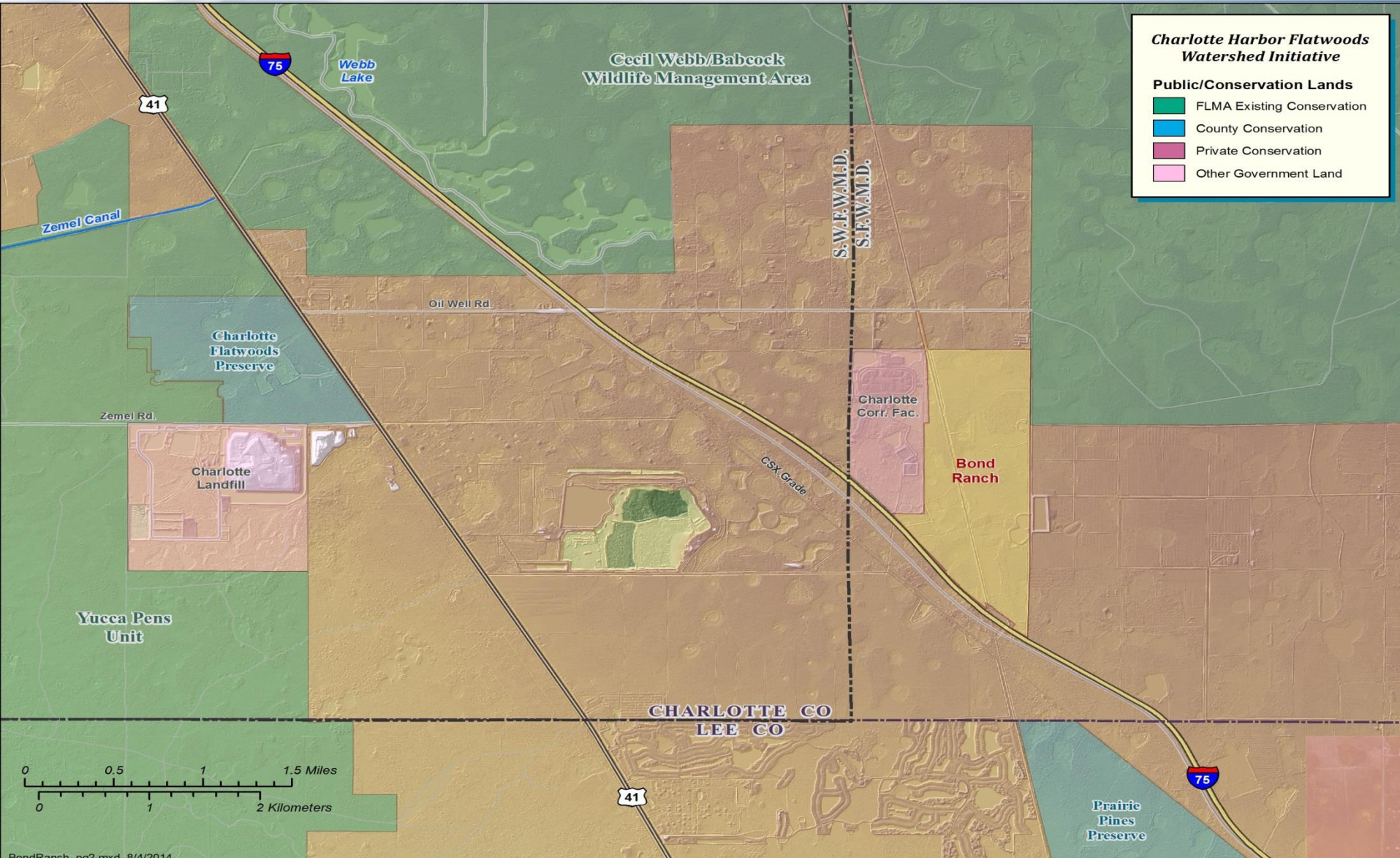
After Photo: Dispersed Water Management

Ditch Plugging

- Establish shallow water across the landscape
- Slow velocities
- Improve water quality and create retention
- Reduce off-site flows
- Improve hydro-periods



Benefits of Bond Ranch Acquisition



Why is the Land Acquisition a Critical Component?

- Location, location, location:
 - The Bond farm prevents natural flows from Babcock/Webb WMA west to Yucca Pens and tidal waters
 - The result is damaged oak hammocks in Babcock/Webb
 - Restoration of natural westward flows is much more difficult and expensive without the acquisition
- Converting a portion of the Bond Farm to a water storage area reduces nutrient loads to the C-43 Estuary and Charlotte Harbor. Reductions:
 - Total Phosphorus load reduced by 10,345 Kg/yr
 - Total Nitrogen load reduced by 41,400 Kg/yr



Why is the Bond Farm a Critical Component, continued?

- Cost of nutrient reduction if a wetland treatment system would be used: \$3,500,000
- The storage facility will store 2,400 acre-feet of water during the wet season
- Cost of to construct an equivalent water storage facility: \$4,000,000
- Stored water will be directed to Yucca Pens WMA at the right time. Result:
 - improved wetland function in Yucca Pens
 - Improved habitat for quail in Babcock/Webb



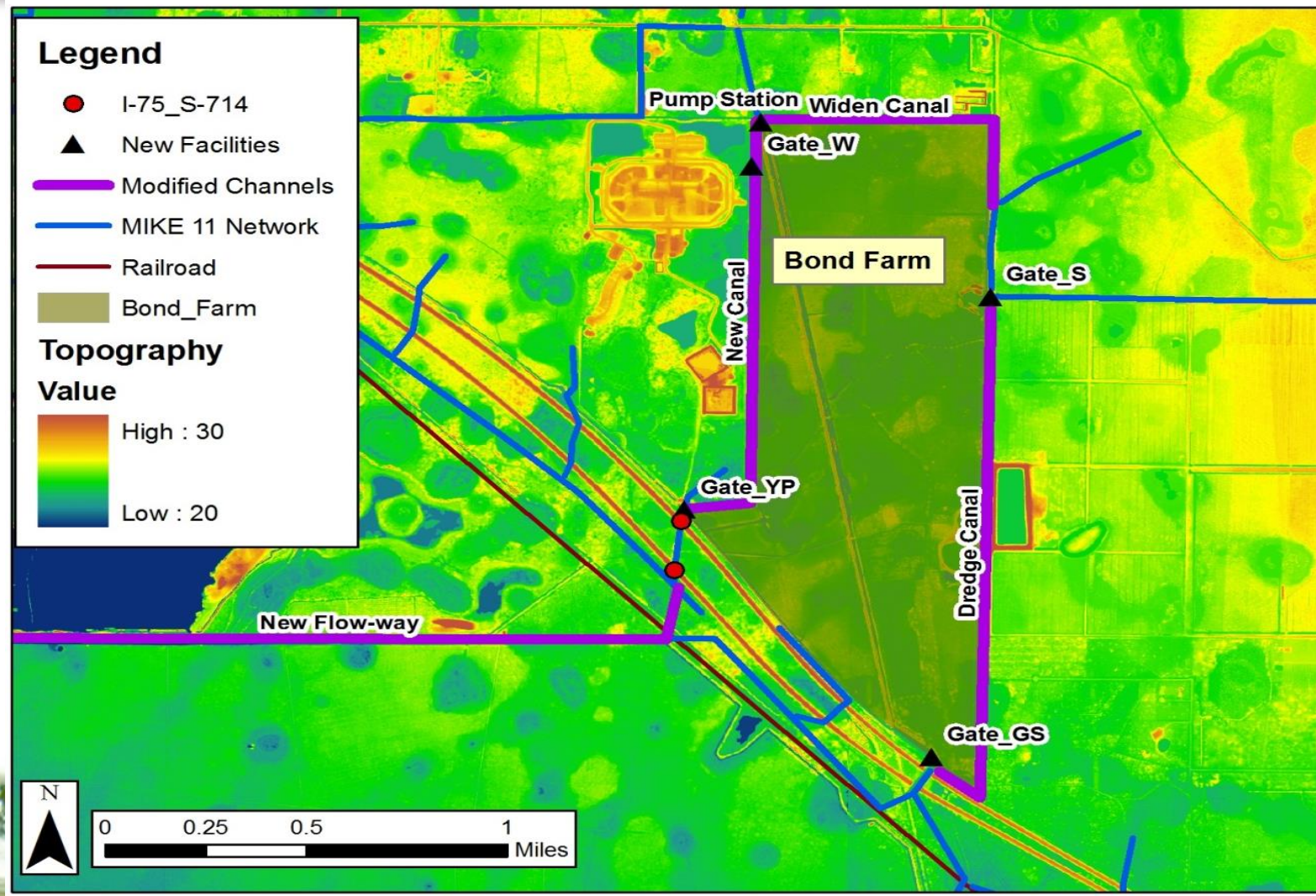
Why is the Bond Farm a Critical Component, continued?

- Bond storage facility could also provide stormwater treatment for I-75, which reduces the cost of widening from 2 to 3 lanes.
 - Value to FDOT a minimum of \$1,500,000
 - Bond storage facility could polish and treat stormwater from I-75

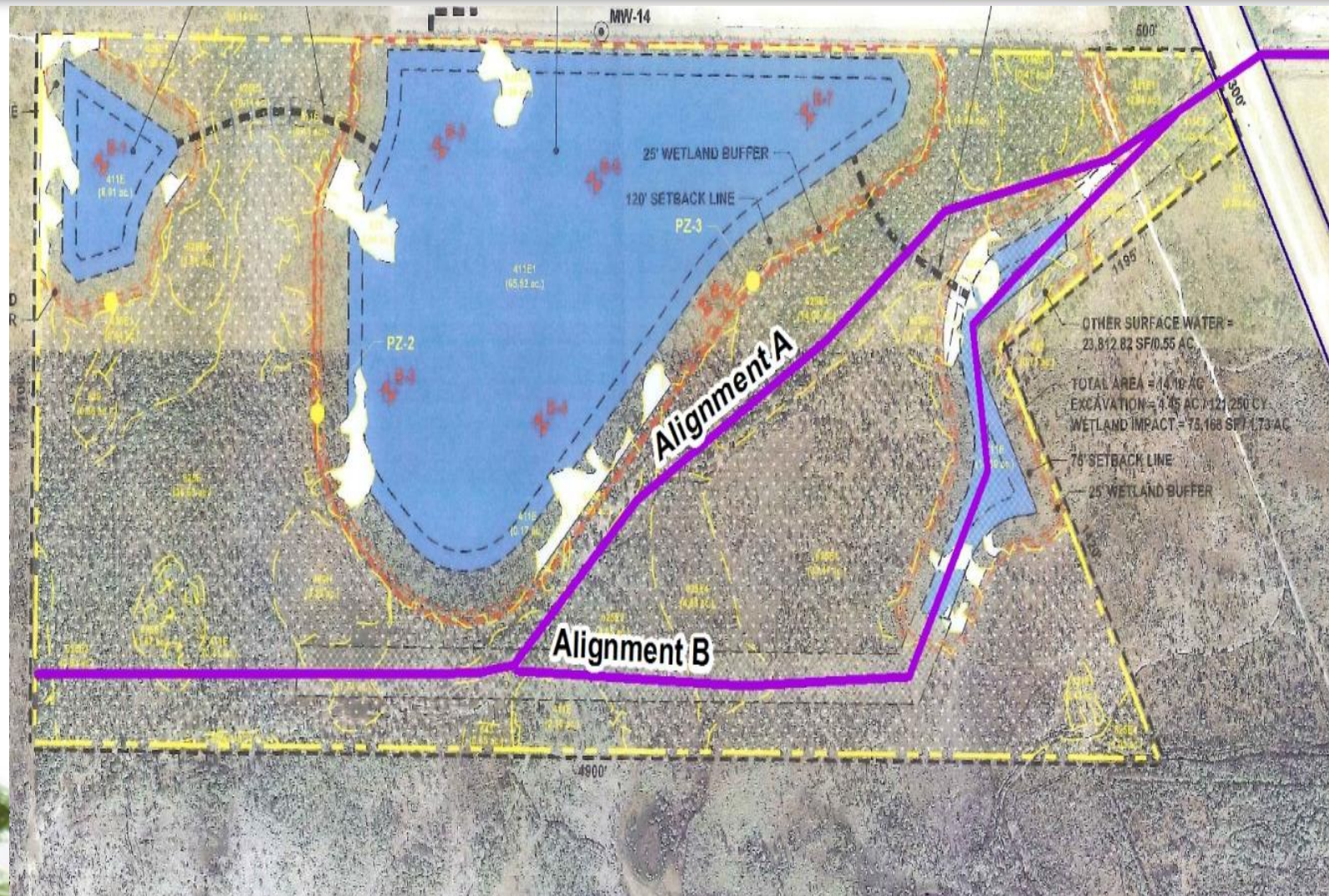
Summary of Economic Benefit:

Economic Benefit	Economic Value
Nutrient Reduction	\$ 3,500,000
Water Storage	\$ 4,000,000
Wetland Mitigation	\$ 2,600,000
Total Value:	\$10,100,000

Conceptual Design for Bond Farm



Innovative Flow-Way Easement



Questions?

