

Biscayne Bay Coastal Wetlands Update

**Governing Board
Workshop**

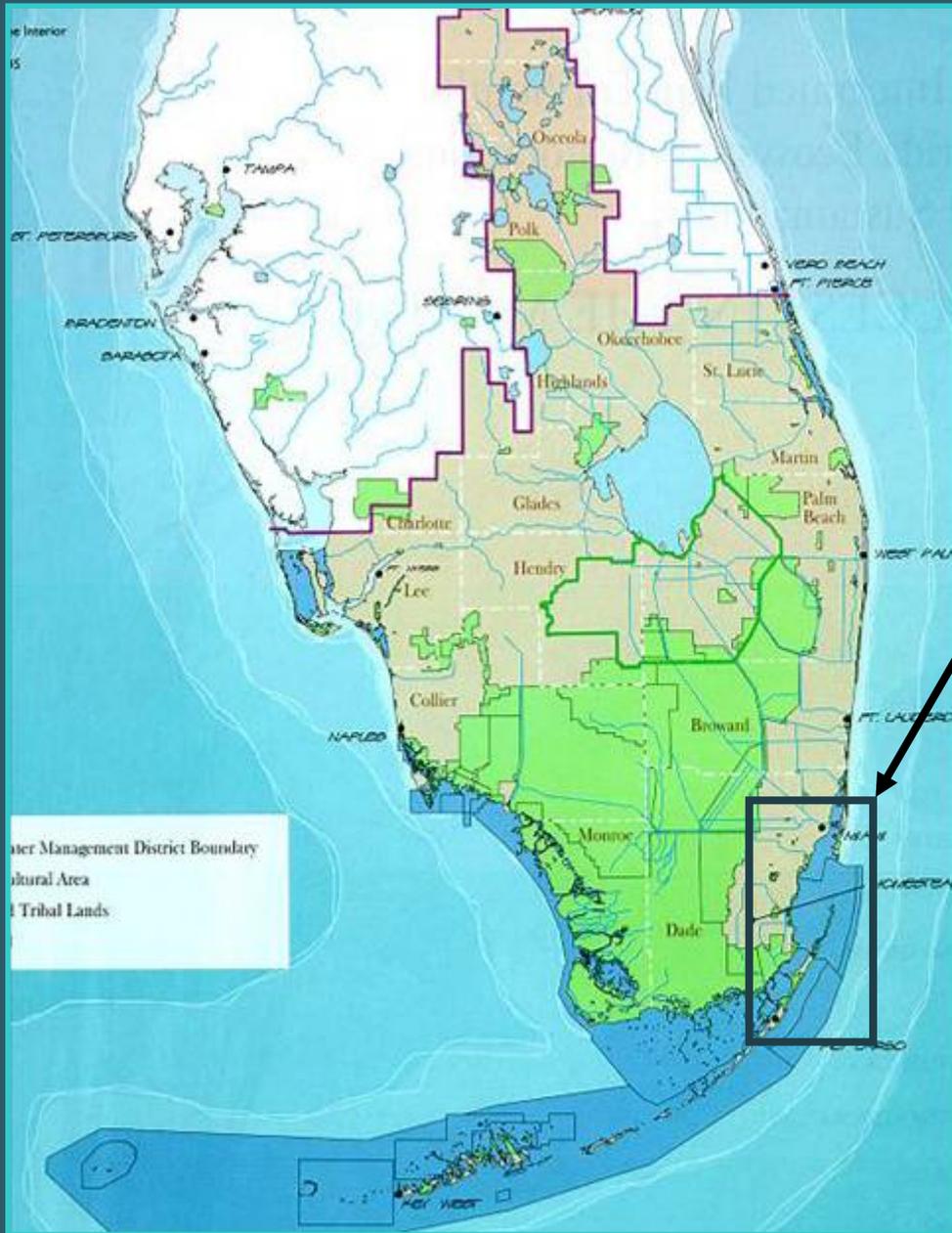
April 9, 2009

**Kenneth G. Ammon, P.E.
Deputy Executive Director
Everglades Restoration Resource Area**



Presentation Overview

- Biscayne Bay Coastal Wetlands Project
 - Project Objectives
 - Two Project Implementation Reports (PIR) Approach
 - Alternative O features
 - Project Status



Biscayne Bay Coastal Wetlands Project Area

Chronology of Biscayne Bay Coastal Wetlands Project

- **July 2002 - Initiated Planning**
- **Oct 2004 - Acceler8 Design for BBCW Initiated – Governor Seeking Early Benefits**
- **April 2005 - Rough Order Plan Comparisons**
- **Aug 2007 – Tentatively Selected Plan (TSP) Identified - Includes Acceler8 Components**
- **Nov 2007 – National Research Council Recommends Incremental Adaptive Restoration to Expedite Restoration - Split Project Implementation into Phases**

Current Status Biscayne Bay Coastal Wetlands Project

- **Jan 2008 – US Army Corps of Engineers Headquarters approves 2-PIRs for BBCW**
- **Feb 2009 – Initial Draft PIR-1 complete/receives internal review**
- **May 2009 – Publish PIR-1 Draft in Federal Register**
- **Feb 2010 – USACE Civil Works Review/Record of Decision PIR-1**
- **PIR-2 Completion sometime after 2020 - TBD**

Project Objectives

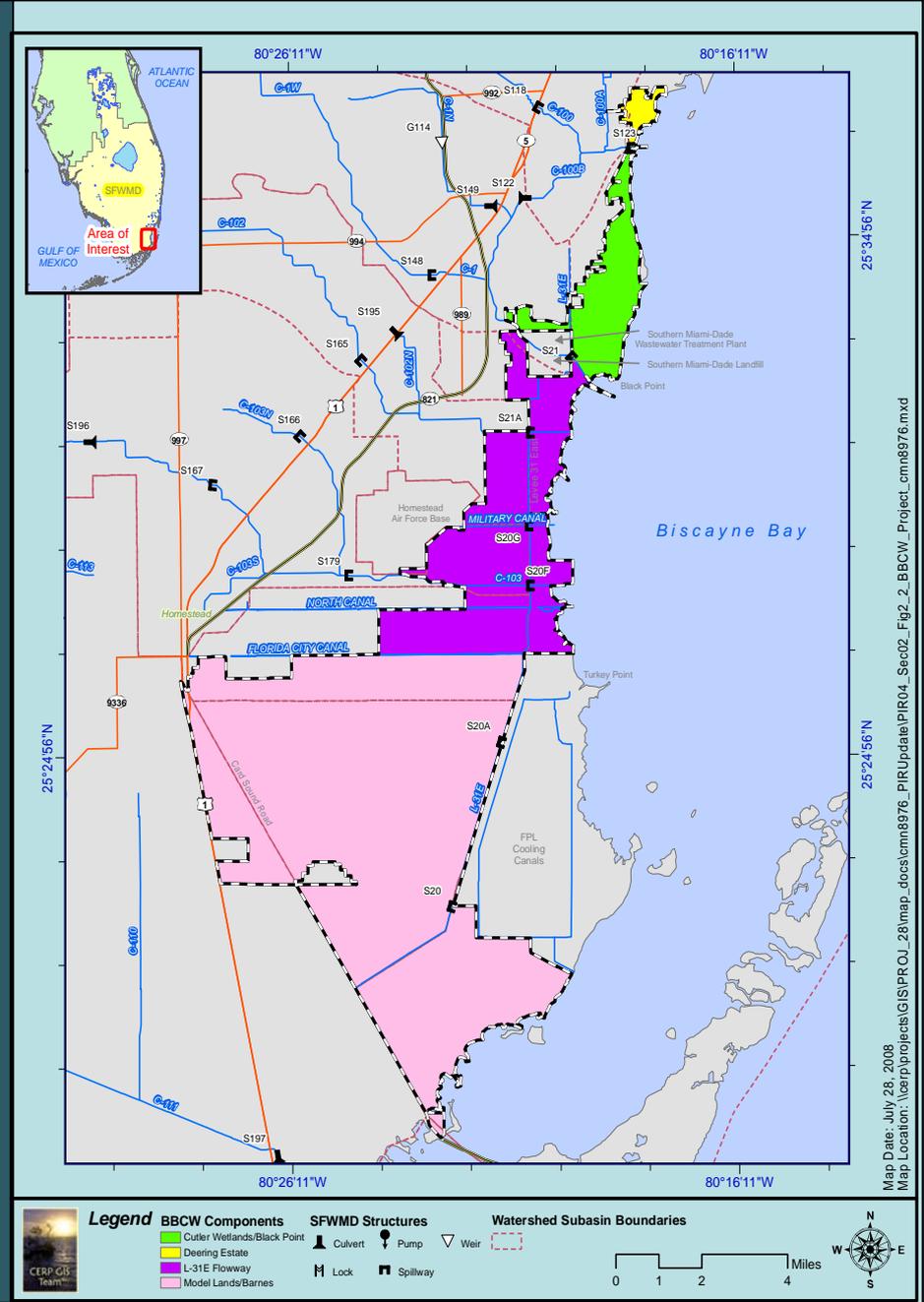
- Reestablish productive **nursery habitat** along the shoreline
- Redistribute **freshwater flow** to minimize point source discharges to improve freshwater and estuarine habitat
- Enhance and improve **quantity, quality, timing and distribution of freshwater** to the Bay and National Park
- Preserve and restore **spatial extent** of coastal wetlands
- Restore nearshore and tidal wetland **salinity regimes**
- Contribute towards providing restoration compatible **recreational opportunities**

Alternative O- Conceptual Plan

- Selected as the preferred plan based on regional environmental benefits, costs and other considerations
 - Best plan meeting the required project objectives
 - Identifies overall project footprint and necessary lands consistent with future needs
 - Incorporates the expedited construction proposed by the State (Woodley Memo) that provides early benefits
 - Infrastructure has capacity to use new future water (waste water reuse or other sources)
 - Improves connectivity to southern Everglades
 - Provides interconnectivity to regional recreation

Biscayne Bay Coastal Wetlands Project Restoration Regions

- Deering Estate
- Cutler Flowway/Wetlands
- L-31E Wetlands
- Model Lands

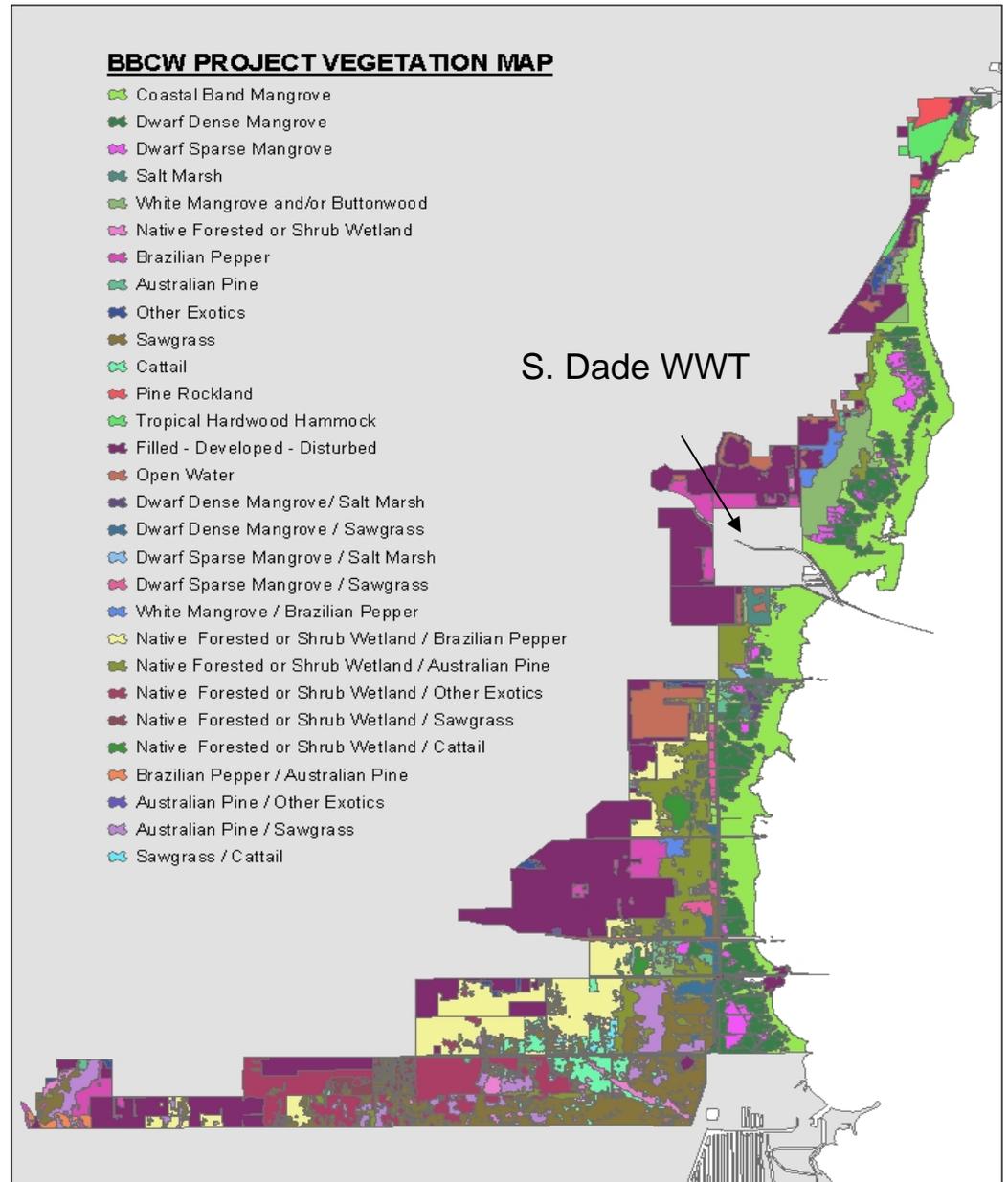


How Are Project Benefits Derived?

- Hydrologic improvements to coastal wetlands based on preliminary model analysis
 - Improve quality of partially drained wetlands by adding water
 - Improve salinity in tidal creeks to provide nursery habitat for juvenile fish and shellfish

Vegetation Cover in the BBCW Project

- Mangrove
- Salt Marsh
- Tropical Hammocks
- Sawgrass/Shrub Wetlands



Alternative O Restoration Plan

Major Features

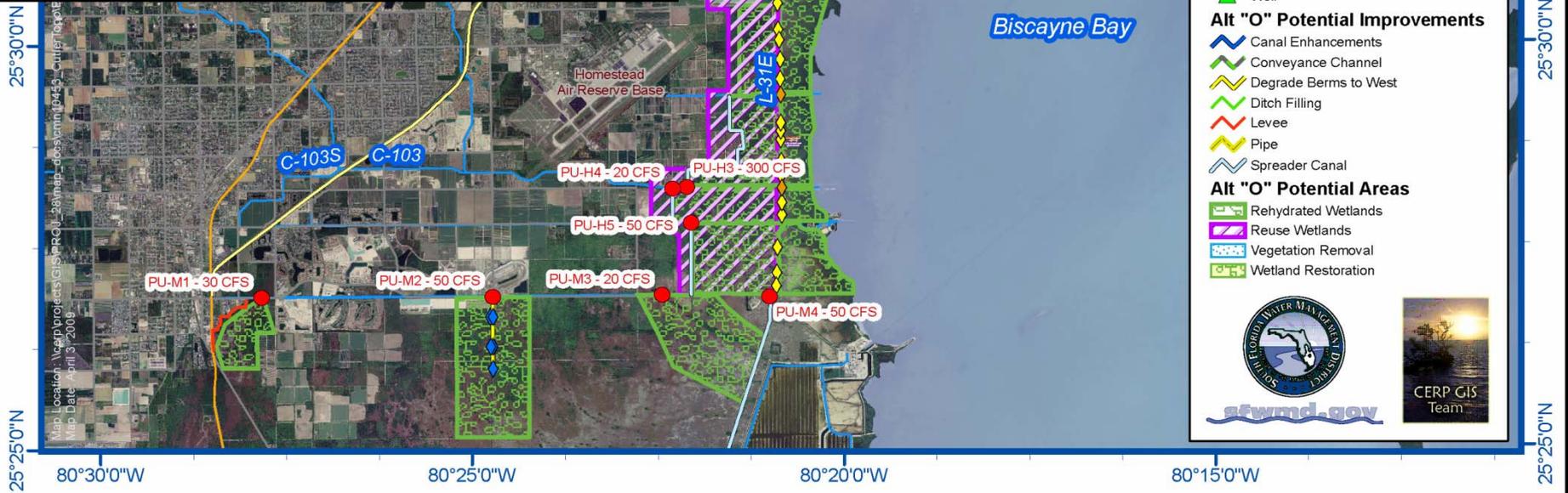
Canal discharge redistribution

- 13 Pump Stations
- 4,700 feet of piping
- 7 miles of spreader canals
- 5 miles of levees

Flow ways

- 10,134 acres of land

Project cost \$586,000,000



Two PIR Approach

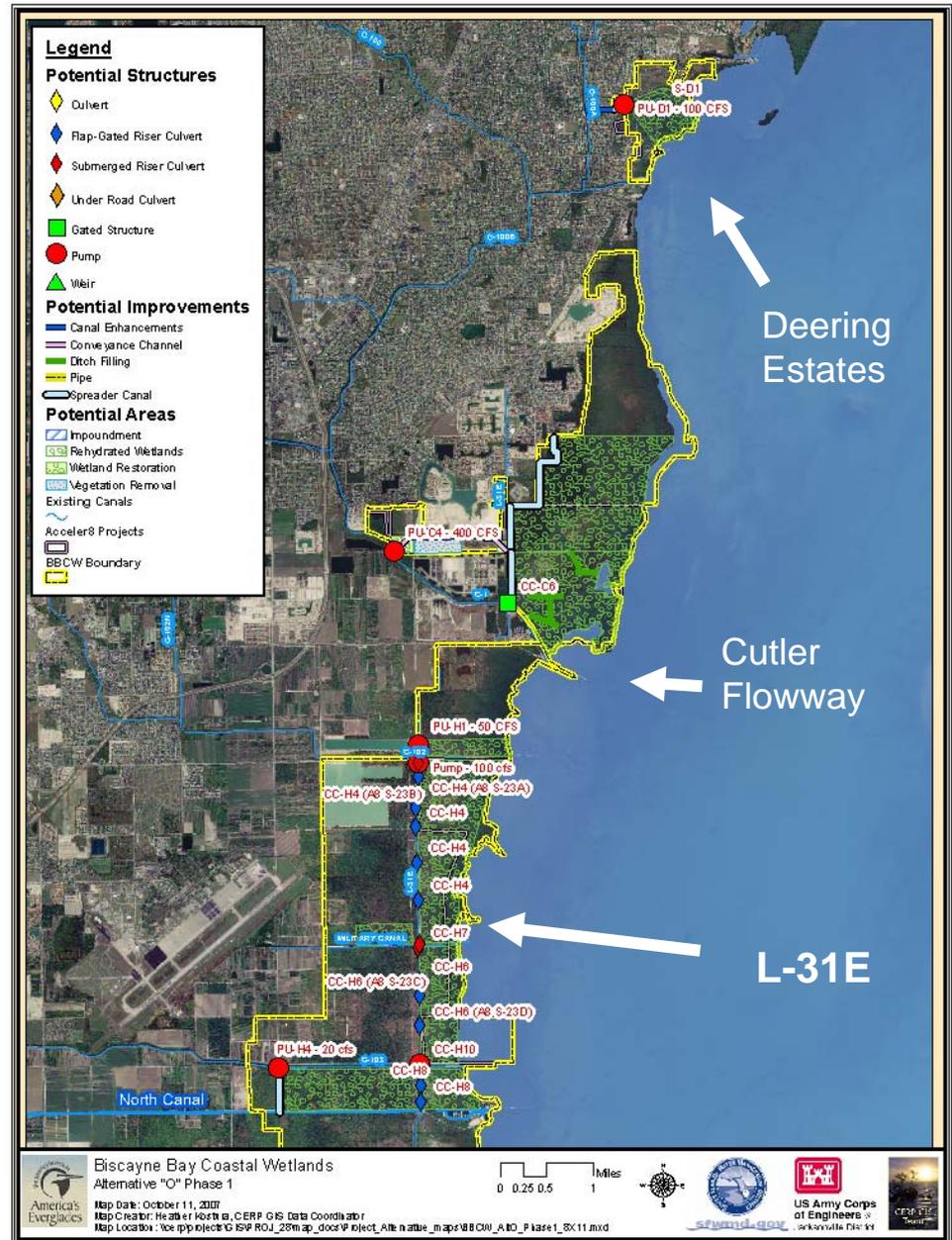
- Began as a Single Large Plan – scope refined
 - Expedite for early benefits
 - Make use of existing available water
- PIR #1
 - Identifies Alternative O as the overall environmentally preferred/conceptual watershed plan
 - Includes more detailed planning for first project phase
- PIR #2
 - Would contain additional analysis and information for second increment of project – makes use of future water

PIR #I – TSP

Subset of Alt O

- All Deering Estate features
- Cutler Flowway features
- Some L-31E features
- 4,594 acres of land

\$127,980,000



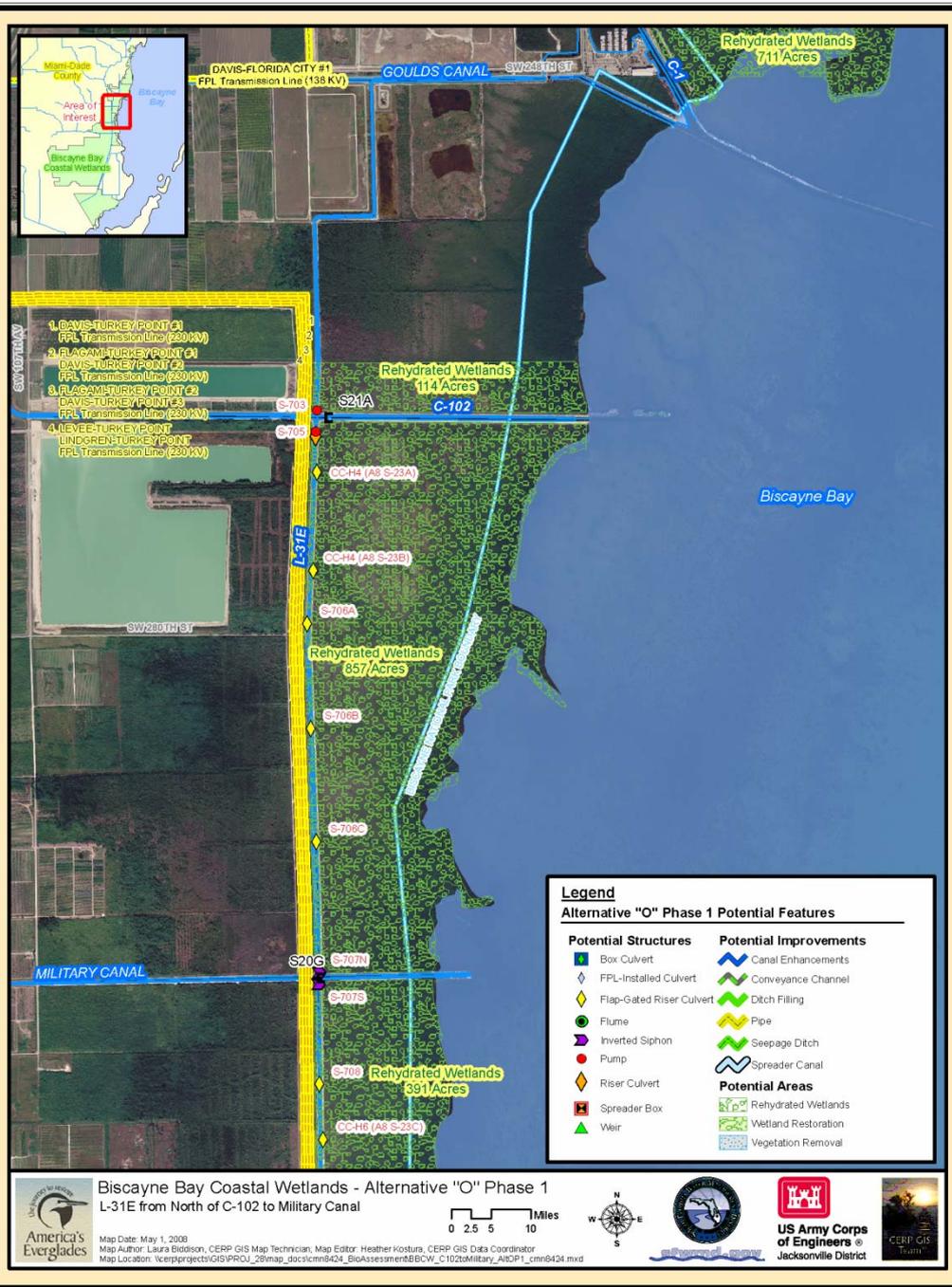
Phase 1 Alternative O Implementation

Deering Estate



Phase 1 Alternative O Implementation

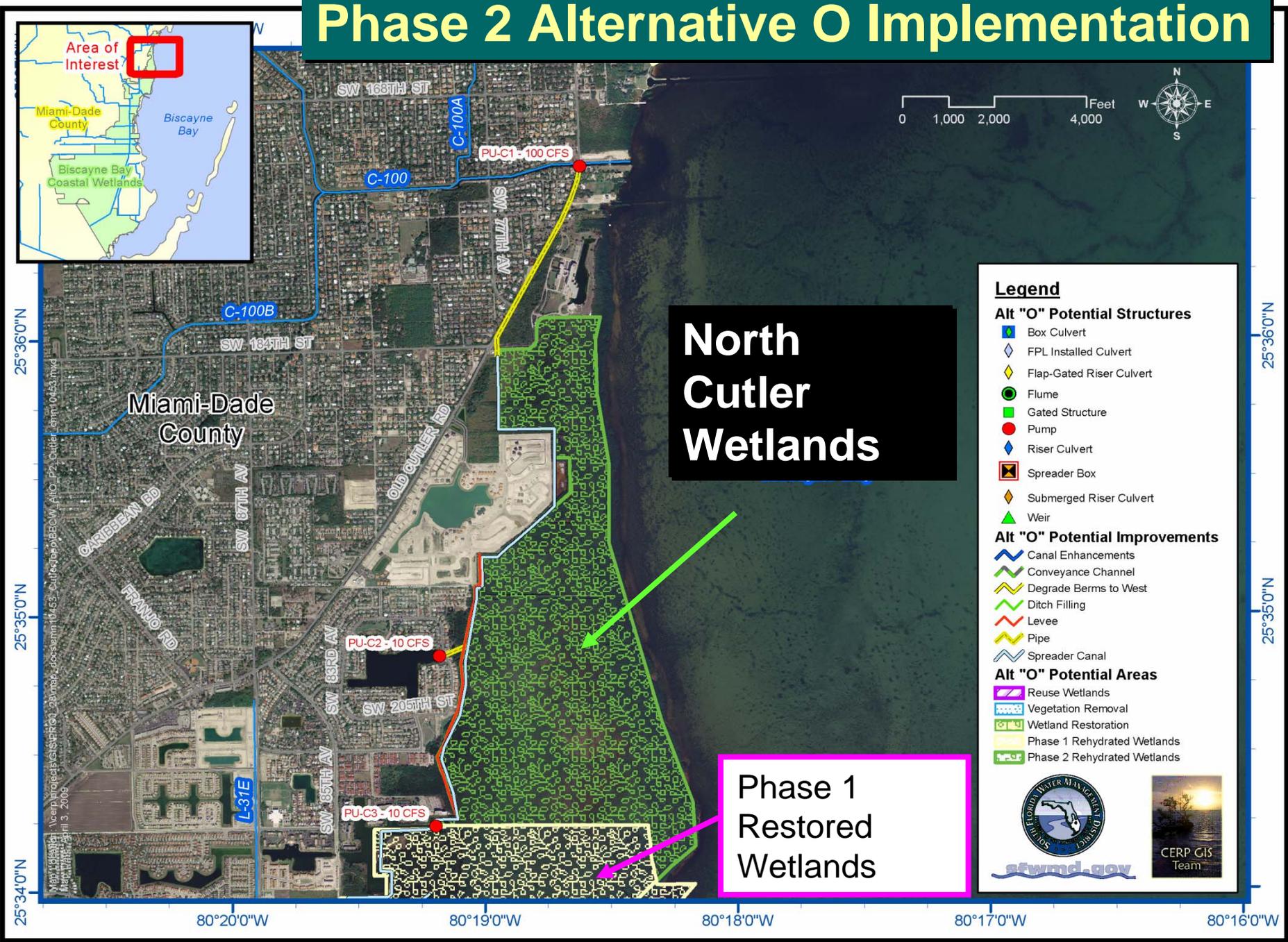
L-31E Flowway



Biscayne Bay Coastal Wetlands - Alternative "O" Phase 1
L-31E from North of C-102 to Military Canal

Map Date: May 1, 2008
 Map Author: Laura Blodson, CERP GIS Map Technician, Map Editor: Heather Kostura, CERP GIS Data Coordinator
 Map Location: \\cerp\projects\GIS\PRCU_20\map_docs\mbr624_Biscayneswmm8BIBCW_C102MMilitary_A4D31_cmr8424.mxd

Phase 2 Alternative O Implementation



**North
Cutler
Wetlands**

**Phase 1
Restored
Wetlands**

Legend

Alt "O" Potential Structures

- Box Culvert
- FPL Installed Culvert
- Flap-Gated Riser Culvert
- Flume
- Gated Structure
- Pump
- Riser Culvert
- Spreader Box
- Submerged Riser Culvert
- Weir

Alt "O" Potential Improvements

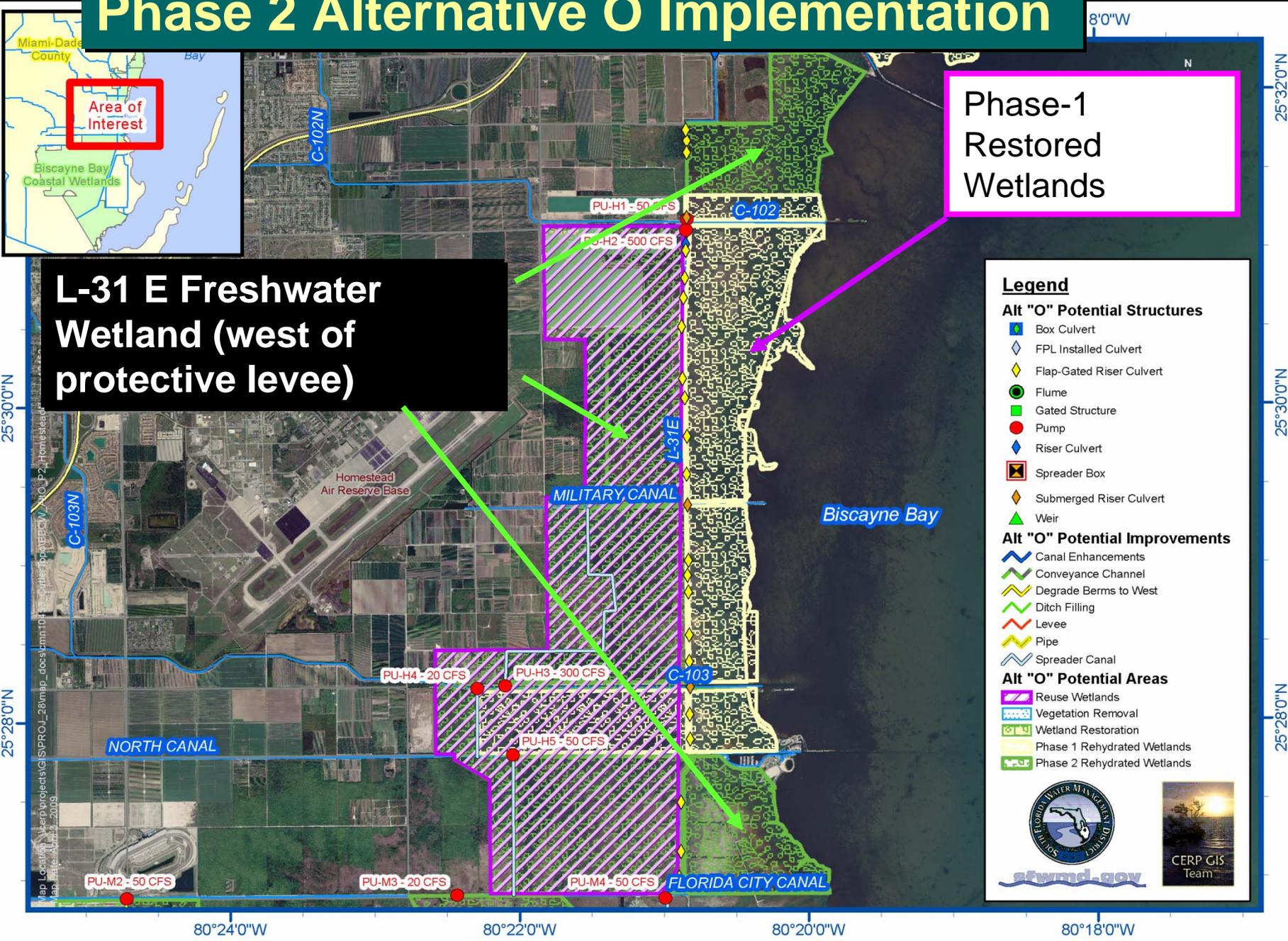
- Canal Enhancements
- Conveyance Channel
- Degrade Berms to West
- Ditch Filling
- Levee
- Pipe
- Spreader Canal

Alt "O" Potential Areas

- Reuse Wetlands
- Vegetation Removal
- Wetland Restoration
- Phase 1 Rehydrated Wetlands
- Phase 2 Rehydrated Wetlands

sfwmd.gov

Phase 2 Alternative O Implementation



Phase-1
Restored
Wetlands

L-31 E Freshwater
Wetland (west of
protective levee)

Legend

Alt "O" Potential Structures

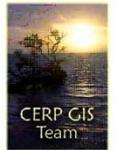
- Box Culvert
- FPL Installed Culvert
- Flap-Gated Riser Culvert
- Flume
- Gated Structure
- Pump
- Riser Culvert
- Spreader Box
- Submerged Riser Culvert
- Weir

Alt "O" Potential Improvements

- Canal Enhancements
- Conveyance Channel
- Degrade Berms to West
- Ditch Filling
- Levee
- Pipe
- Spreader Canal

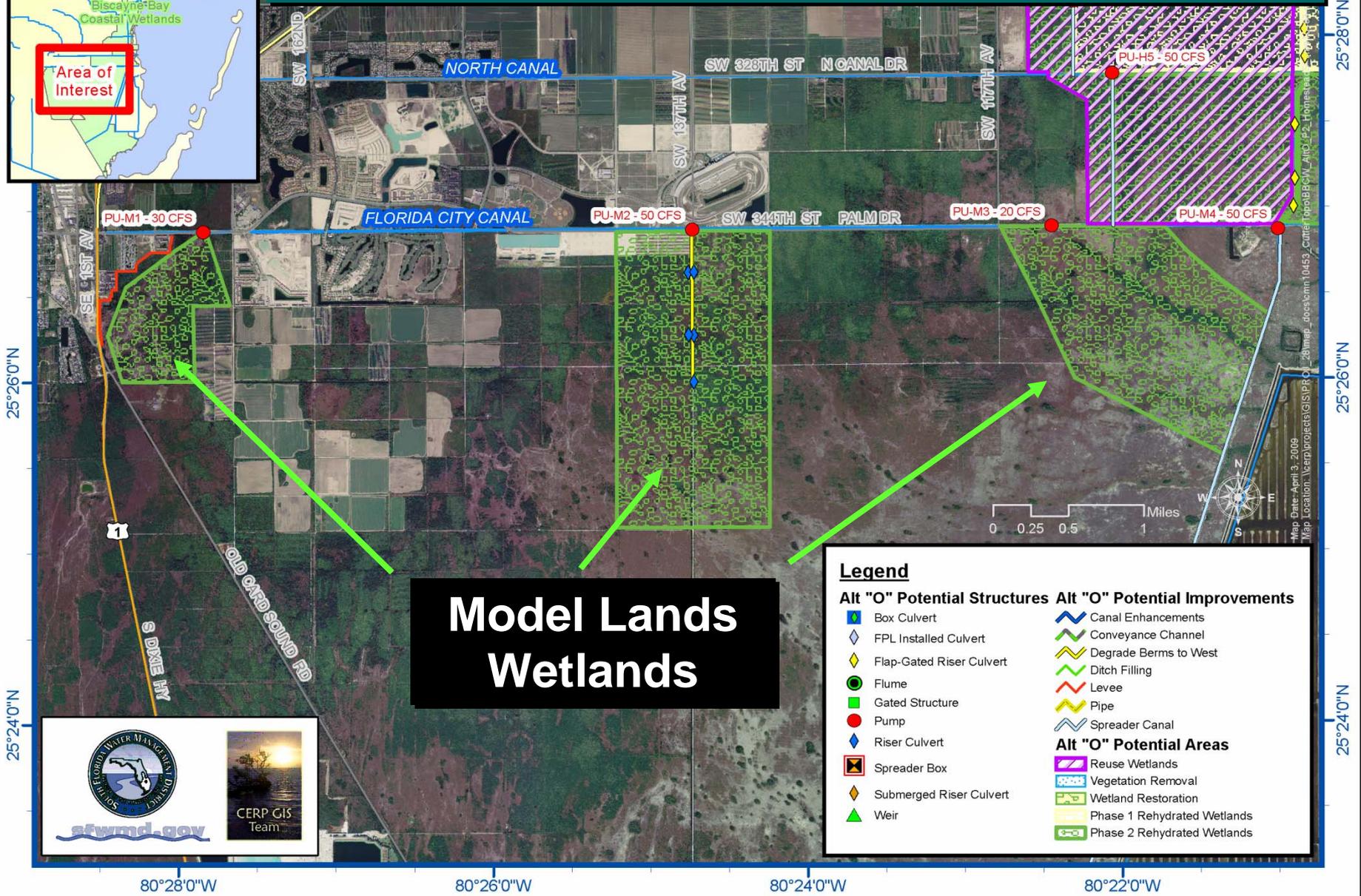
Alt "O" Potential Areas

- Reuse Wetlands
- Vegetation Removal
- Wetland Restoration
- Phase 1 Rehydrated Wetlands
- Phase 2 Rehydrated Wetlands



sfwmd.gov

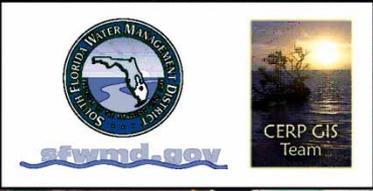
Map Location: \\erp\projects\GIS\PROJ_28\map_docs\m104...
Map Date: April 3, 2009

Phase 2 Alternative O Implementation



**Model Lands
Wetlands**

Legend	
Alt "O" Potential Structures	Alt "O" Potential Improvements
Box Culvert	Canal Enhancements
FPL Installed Culvert	Conveyance Channel
Flap-Gated Riser Culvert	Degrade Berms to West
Flume	Ditch Filling
Gated Structure	Levee
Pump	Pipe
Riser Culvert	Spreader Canal
Spreader Box	Alt "O" Potential Areas
Submerged Riser Culvert	Reuse Wetlands
Weir	Vegetation Removal
	Wetland Restoration
	Phase 1 Rehydrated Wetlands
	Phase 2 Rehydrated Wetlands



Map Date: April 3, 2009
Map Location: \\cwp\projects\GIS\PER_O_20\map_docs\m10453_Culer\Topic\B/CW_AltO_P2_1001.mxd

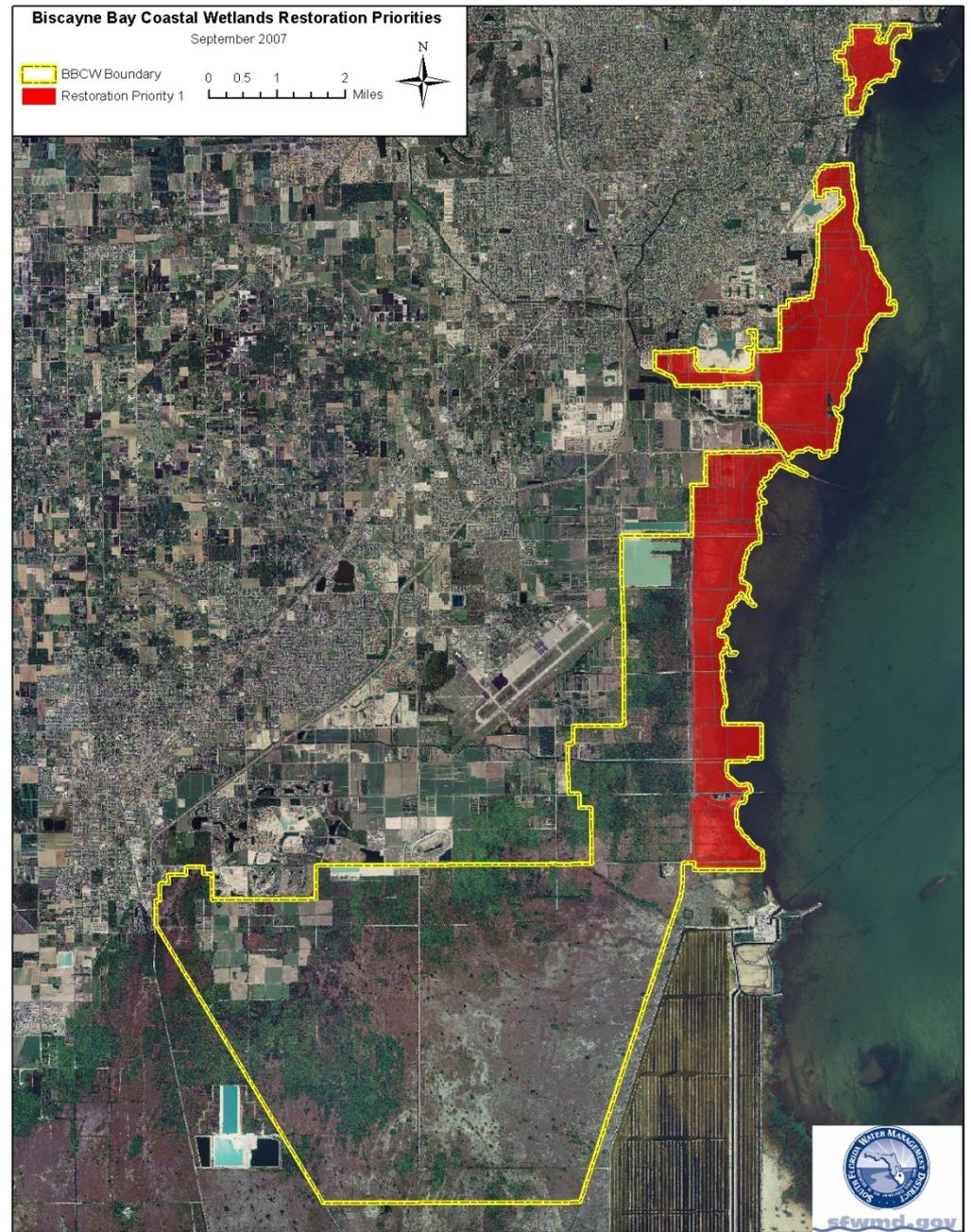
Priority Lands for the BBCW Restoration

Sept 2007

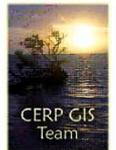
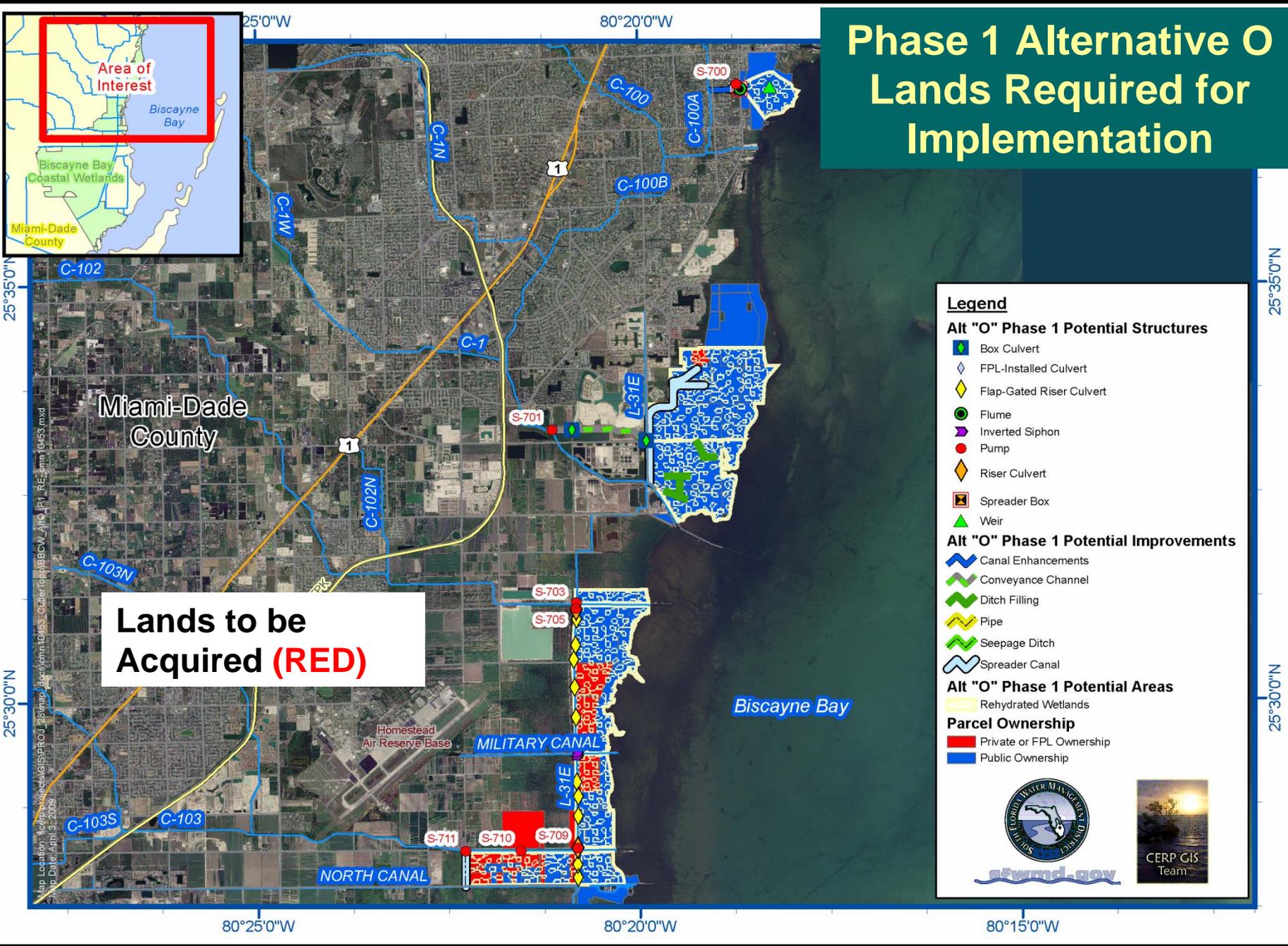
Designate Critical
Lands for Project

Dec 2008

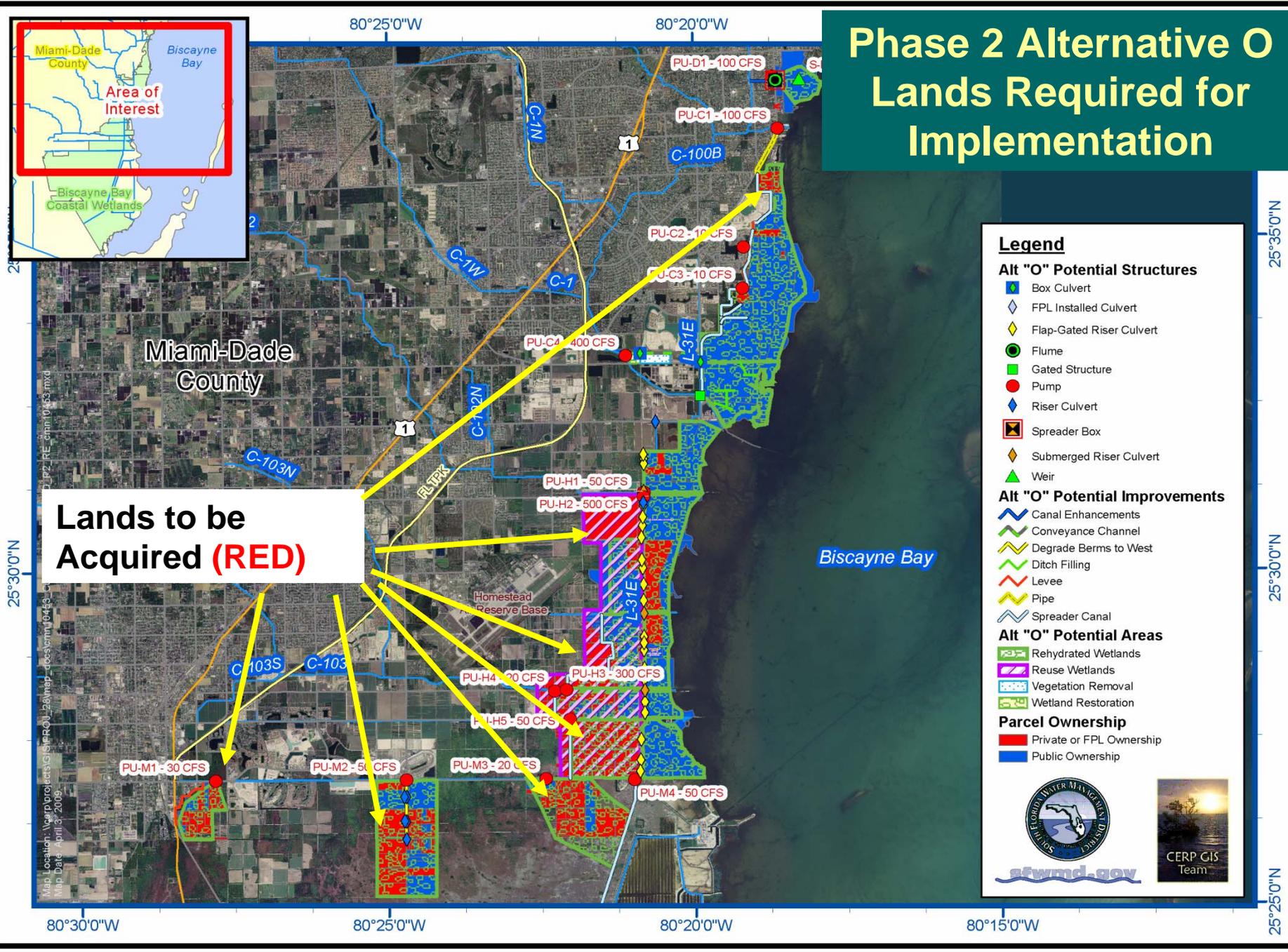
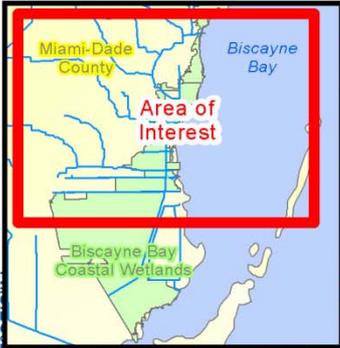
Revert to Case
by Case
Determination for
Permits



Phase 1 Alternative O Lands Required for Implementation



Phase 2 Alternative O Lands Required for Implementation



**Lands to be
Acquired (RED)**

Legend

Alt "O" Potential Structures

- Box Culvert
- FPL Installed Culvert
- Flap-Gated Riser Culvert
- Flume
- Gated Structure
- Pump
- Riser Culvert
- Spreader Box
- Submerged Riser Culvert
- Weir

Alt "O" Potential Improvements

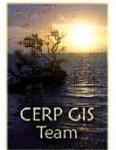
- Canal Enhancements
- Conveyance Channel
- Degrade Berms to West
- Ditch Filling
- Levee
- Pipe
- Spreader Canal

Alt "O" Potential Areas

- Rehydrated Wetlands
- Reuse Wetlands
- Vegetation Removal
- Wetland Restoration

Parcel Ownership

- Private or FPL Ownership
- Public Ownership

sfwmd.gov

80°30'0"W 80°25'0"W 80°20'0"W 80°15'0"W 25°30'0"N 25°30'0"N 25°25'0"N

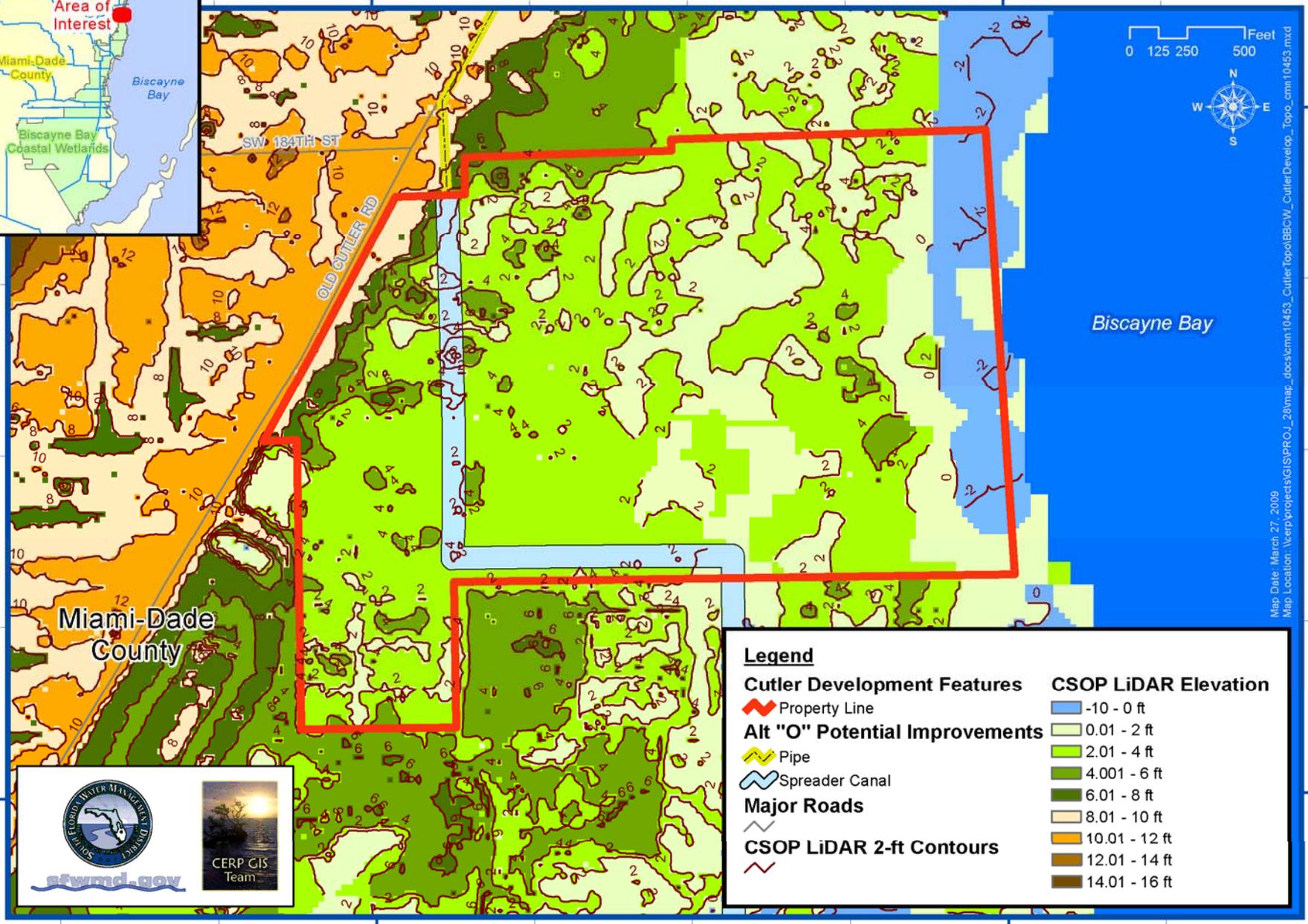


80°19'0"W

80°18'30"W



25°36'0"N



Map Date: March 27, 2009
 Map Location: \\cwp\projects\GIS\PROJ_28\map_docs\mnm10453_Cutler\Topo\BBCW_CutlerDevelop_Topocm10453.mxd

25°35'30"N

25°35'30"N

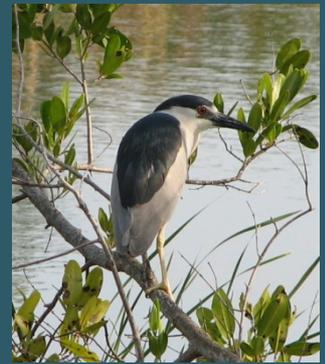
80°19'0"W

80°18'30"W

Legend

Cutler Development Features	CSOP LiDAR Elevation
Property Line	-10 - 0 ft
Alt "O" Potential Improvements	0.01 - 2 ft
Pipe	2.01 - 4 ft
Spreader Canal	4.001 - 6 ft
Major Roads	6.01 - 8 ft
Major Road	8.01 - 10 ft
CSOP LiDAR 2-ft Contours	10.01 - 12 ft
CSOP LiDAR 2-ft Contours	12.01 - 14 ft
	14.01 - 16 ft





Questions?



Benefit Comparisons

Plan	Freshwater Wetland Lift	Tidal Creek Salinity Improvement	Approximate Acres Preserved/Restored
Application	No	No	96
Alt O	Yes	Yes	105
Hybrid	No	Yes	97



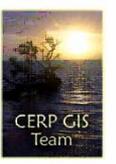
ERP Application Number: 050406-1
 Project Name: Cutler Properties



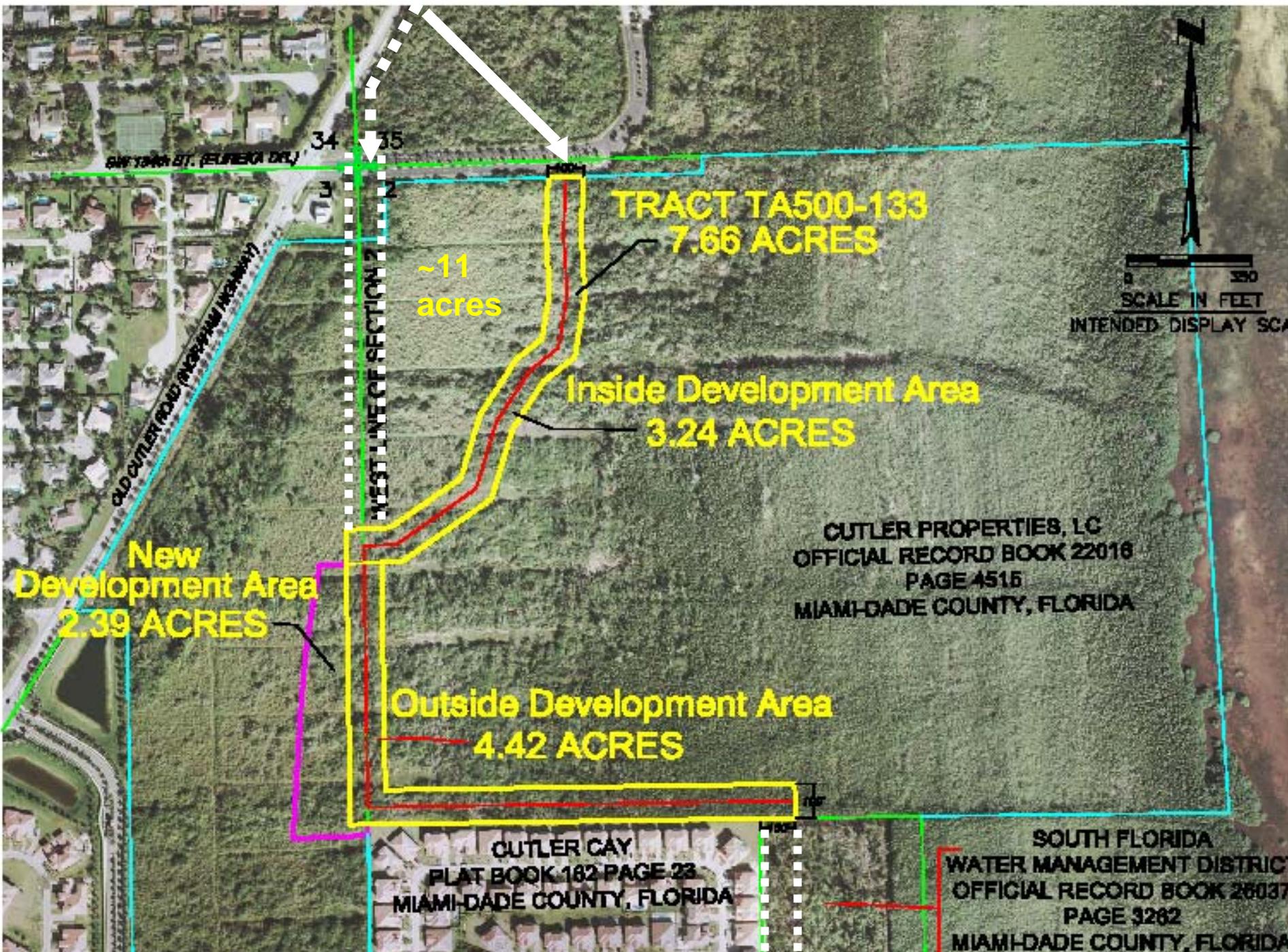
Miami-Dade County

Legend

- Cutler Properties LC**
- Property Line
 - Development Boundary
 - Boundary Between High and Low Quality Wetlands
 - Wetland/Upland Boundary
- Alt "O" Potential Improvements**
- Pipe
 - Spreader Canal
- Major Roads**
- Major Road



Map Date: March 26, 2009
 Map Location: \\cwrp\projects\GIS\PROJ_28\map_docs\cmm10453_Cutler\Topo\BBCW_CutlerDevelop_SiteDetail_cmm10453.mxd



SHY TOWN BT. (EUPHEA DEL)

34 35

**TRACT TA500-133
7.66 ACRES**

**~11
acres**

**Inside Development Area
3.24 ACRES**

0 350
SCALE IN FEET
INTENDED DISPLAY SCALE

**New
Development Area
2.39 ACRES**

**CUTLER PROPERTIES, LC
OFFICIAL RECORD BOOK 22016
PAGE 4515
MIAMI-DADE COUNTY, FLORIDA**

**Outside Development Area
4.42 ACRES**

**CUTLER CAY
FLAT BOOK 182 PAGE 23
MIAMI-DADE COUNTY, FLORIDA**

**SOUTH FLORIDA
WATER MANAGEMENT DISTRICT
OFFICIAL RECORD BOOK 26037
PAGE 3282
MIAMI-DADE COUNTY, FLORIDA**

Proposed Cutler Properties
Development

High Quality
Mangrove
Wetlands ~96 ac.

Wetland Preserve

Biscayne Bay

Uplands ~9 ac.

Low Quality Wetlands ~33 ac.

 CUTLER PROPERTIES - SFWMD APP. NO. 050406-1

 2015 URBAN DEVELOPMENT BOUNDARY

 CERP STUDY AREA

 COUNTY LINE

N

0 200 400 800 1,200 Feet

Map made by: Lynn J. Cox
Map Date: July 27, 2007
Environmental Resource Regulation
Imagery: 2004-2005 DOQQ, Natural Color, 1 mtr

This map is a conceptual tool utilized for project development and implementation only. This map is not self executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property. Any information, including but not limited to maps and data, received from the SFWMD is provided "as is" without any warranty and the SFWMD expressly disclaims all express and implied warranties of merchantability and fitness for a particular purpose. The District does not make any representations regarding the use, or the results of the use, of the information provided to you by the District.



80°19'0"W

80°18'30"W



SW 184TH ST

OLD CUTLER RD

Biscayne Bay

Miami-Dade County

25°35'30"N

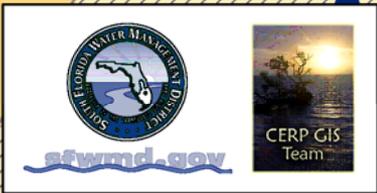
25°36'0"N

25°35'30"N

Map Date: March 26 2009
Map Location: \\cerp\projects\GIS\PROJ_28\map_docs\mnn10453_Cutler\Topo\BBCW_CutlerDevelop_LCDetail_mnn10453.mxd

Legend

Cutler Properties LC		2004-2005 SFWMD Detailed Land Cover	
	Property Line		Med. Density Single Family
	Development Boundary		Med. Density Under Const.
Alt "O" Potential Improvements			Commercial and Services
	Pipe		Upland Shrub and Brushland
	Spreader Canal		Upland Hardwood Forests; 4300
Major Roads			Reservoirs
			Embayments open to Gulf or Ocean
			Mangrove Swamp
			Mixed Wetland Hardwoods



80°19'0"W

80°18'30"W