



INTRODUCTION



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- Welcome to the 2nd PDT meeting of 2017 for the Lake Okeechobee Watershed Project
- Attendance – CERP Team and Public
- Housekeeping Items:
 - Please keep phones on mute unless you are talking
 - Please state your name and who you are representing before making a statement or asking a question
 - REMINDER: This is a CERP PDT meeting and follows FACA Requirements as outlined in CGM 011.02. A Public Comment period has been established at the end of our agenda.
- Agenda Overview



AGENDA



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- | | |
|---|----------------------|
| 1. Introduction (Tim Gysan, USACE) | 9:00 – 9:10 |
| 2. 90-day Look Ahead (Tim Gysan, USACE) | 9:10 – 9:20 |
| 3. Sub-team Updates | 9:20 – 10:40 |
| a) Model results access using FTP/DASR (Clay Brown, SFWMD) | |
| b) Locations of Alternative Components (Lisa Aley, USACE) | |
| c) Reservoir/ASR Intake Conceptual Design (Matt Alexander, SFWMD) | |
| d) Deep Injection Well WRAC Summary (Bob Verrastro, SFWMD) | |
| e) Wetland Sites Flyover (Andy Rodusky, SFWMD) | |
| 4. Public Comment Period | 10:40 – 10:55 |
| 5. Closing remarks and Adjourn | 10:55 – 11:00 |

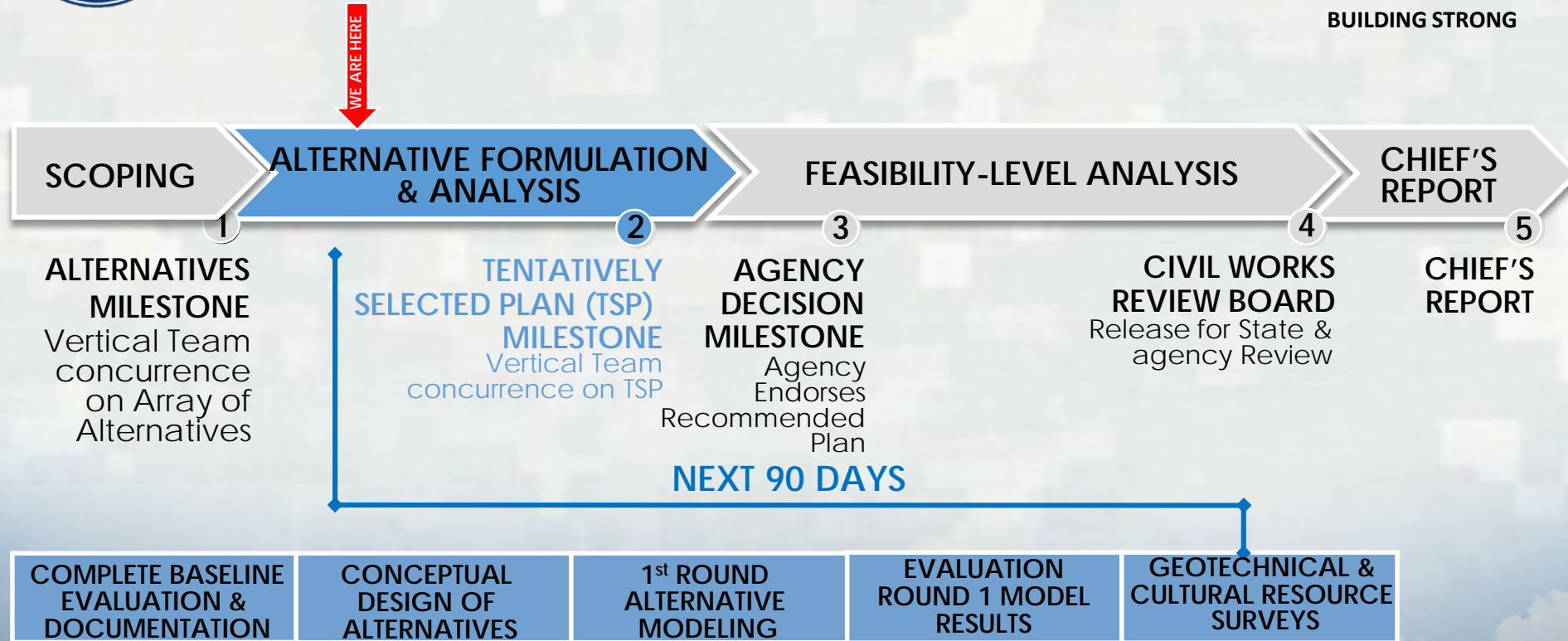




90 DAY LOOK AHEAD



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PLAN FORMULATION UPDATE



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Plan Formulation Sub-Team Tasks

1. Alternatives development
2. SMART Planning Memorandum (3x3x3 Compliance)
3. Potential water supply objective addition
4. Tribal consultation (Seminole Tribe of Florida and Miccosukee Tribe of Indians)



PRELIMINARY ARRAY OF ALTERNATIVES



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Alternative	Reservoir Component		ASR Component	DIW Component	Compatible Wetland Components
	Reservoir (s)	Storage Capacity (acre-feet)	# of ASR wells (assuming 5mgd capacity)	# of DIWs (assuming 15mgd capacity)	
1. No Action					
2. Maximize public lands	K05 and Istokpoga Canal	~285,000	60-100	30-150	Kissimmee River Paradise Run
3. Large reservoir storage	K-05 and K-42	TBD	60-100	30-150	all wetland sites compatible
4. High spatial array of reservoirs	K-42, I-01 and Istokpoga Canal	TBD	60-100	30-150	Kissimmee River Paradise Run Lake O West



PRELIMINARY ARRAY OF ALTERNATIVES



Alternative 2

Reservoirs (Blue)

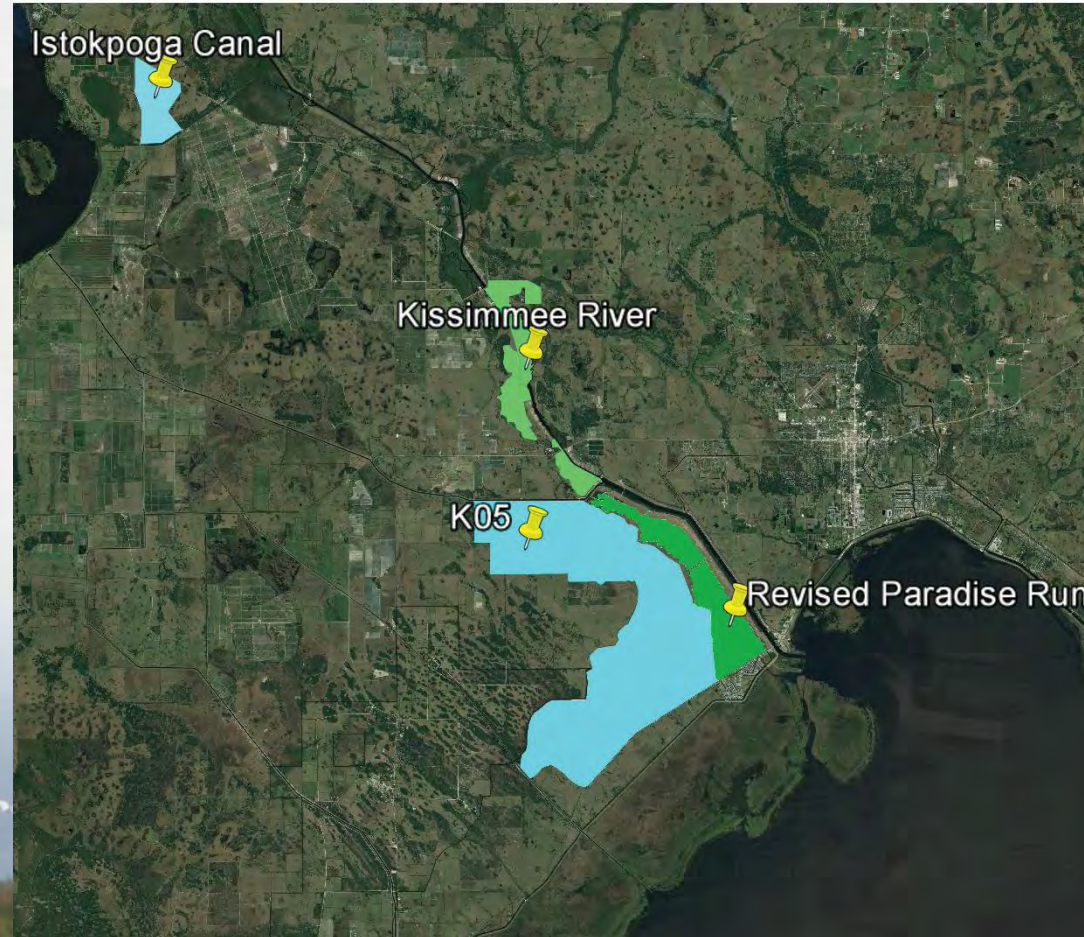
- K05 (~20,000 acres)
- Istokpoga Canal (~2,500 acres)

Compatible Wetlands (Green)

- Kissimmee River (~3,300 acres)
- Paradise Run (~4,000 acres)

Justification

- Maximizes use of public lands in project area





PRELIMINARY ARRAY OF ALTERNATIVES



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Alternative 3

Reservoirs (Blue)

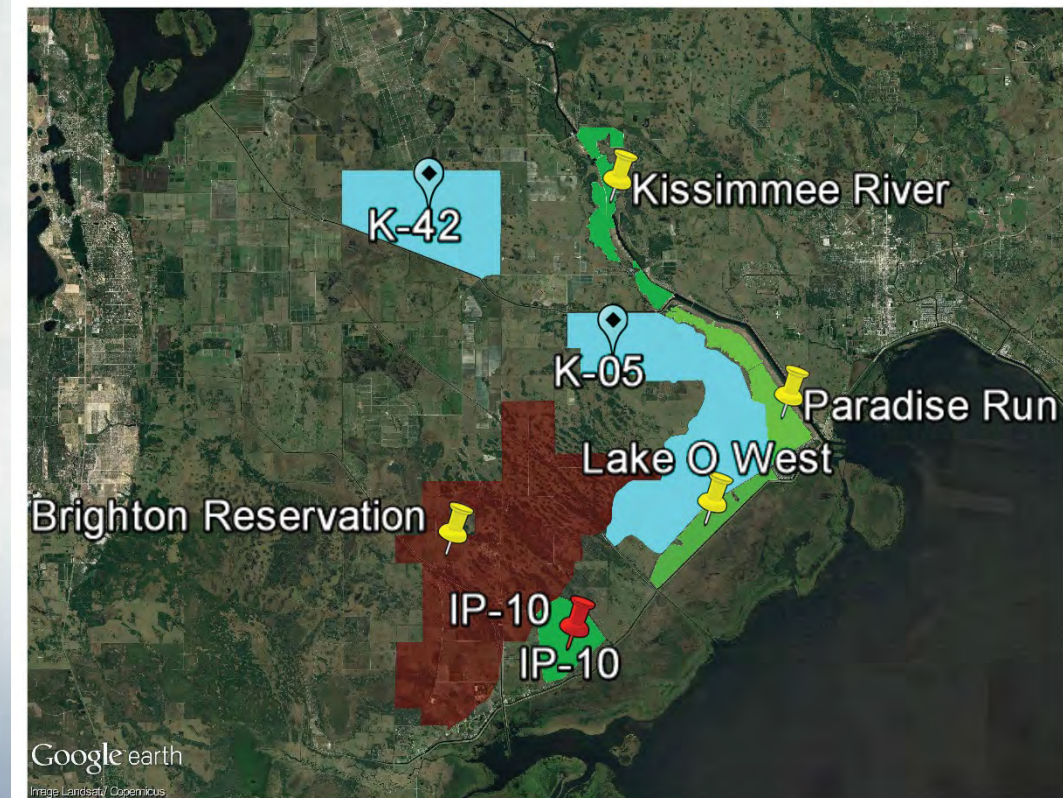
- K05 (~20,000 acres)
- K42 (~12,000 acres)

Compatible Wetlands (Green)

- Kissimmee River (~3,300 acres)
- Paradise Run (~4,000 acres)
- Lake O West (~2,800 acres)
- IP-10 (~3,500 acres)

Justification

- Combines 2 largest reservoirs to provide maximum storage in the most cost-effective way





PRELIMINARY ARRAY OF ALTERNATIVES



Alternative 4

Reservoirs (Blue)

- K42 (~12,000 acres)
- I-01 (~10,000 acres)
- Istokpoga Canal (~2,500 acres)

Compatible Wetlands (Green)

- Kissimmee River (~3,300 acres)
- Paradise Run (~4,000 acres)
- Lake O West (~2,800 acres)


Justification

- Provides a greater spatial array of reservoirs
- Reduces risk of having K05 in all alternatives






SMART PLANNING COMPLIANCE CONSIDERATIONS

HIGH RISK ITEMS AND COSTS FOR CONSIDERED COURSE OF ACTIONS



HIGH RISK ITEM (Consequence)	LOWEST RISK COA (Current Scope)	REDUCED RISK COA (Current Scope)	3x3x3 COMPLIANT HIGHER RISK COA (Reduced Scope)
LIMITED CULTURAL RESOURCES DATA (Reformulation)	Probability Model Validation Surveys in Publicly and Privately Owned Lands	Probability Model Validation Surveys in Publicly Owned Lands ONLY	Use probability model for analysis
LIMITED SUB-SRUFACE DATA (Redesign, Project performance risk)	Additional soil borings, seepage and foundations analysis for high-hazard impoundment in Publicly and Privately Owned Lands, groundwater modeling	Additional soil borings, seepage and foundations analysis for high-hazard impoundment in Publicly Owned Lands ONLY, groundwater modeling	Minimal desktop analysis using existing sub-surface data
TRIBAL/PUBLIC/ STAKEHOLDER COORDINATION (Unsupported Plan)	Additional in-person tribal consultation meetings, 3 public meetings throughout study area for draft EIS release and 2 workshops prior to TSP	Limited in-person tribal consult meetings, 3 public meetings throughout study area for draft EIS release and 1 workshop prior to TSP	Minimum tribal consult meetings, all-virtual PDTs, 1 scoping meeting at kickoff and after release of draft EIS

Risk Levels:  Low  Medium  High



Potential LOWP Water Supply Objective



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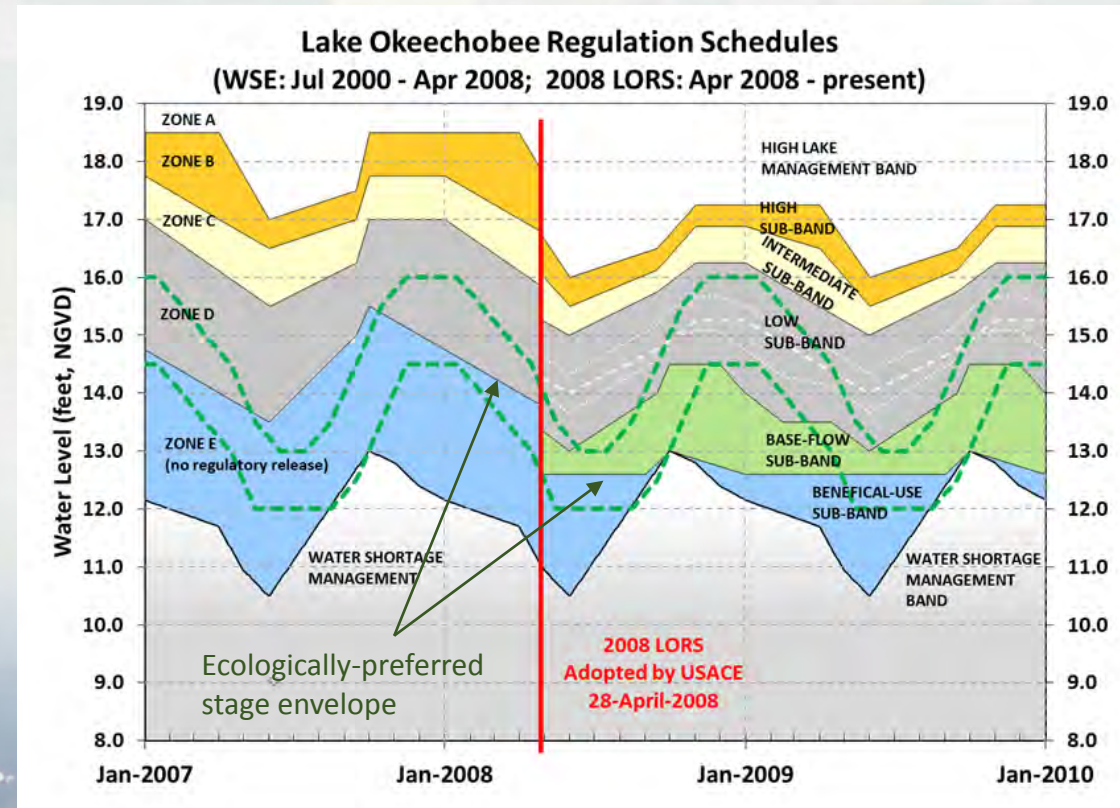
On February 10th, the Jacksonville District held an In-Progress Review (IPR) with the USACE vertical team to discuss the potential inclusion of a water supply objective in LOWP:

- Increase water supply availability for existing permitted water users of Lake Okeechobee

The water supply objective was not endorsed at this meeting and the vertical team requested additional information.

Next Steps:

- Follow-up IPR to discuss authorities, modeling strategy, and benefits/tradeoff assessment strategy





Reservoir/ASR Intake Conceptual Design



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Matt Alexander, SFWMD



Trusted Partners Delivering Value Today for a Better Tomorrow

Istokpoga Canal Reservoir



➤ Reservoir:

Area = 2,020 acres

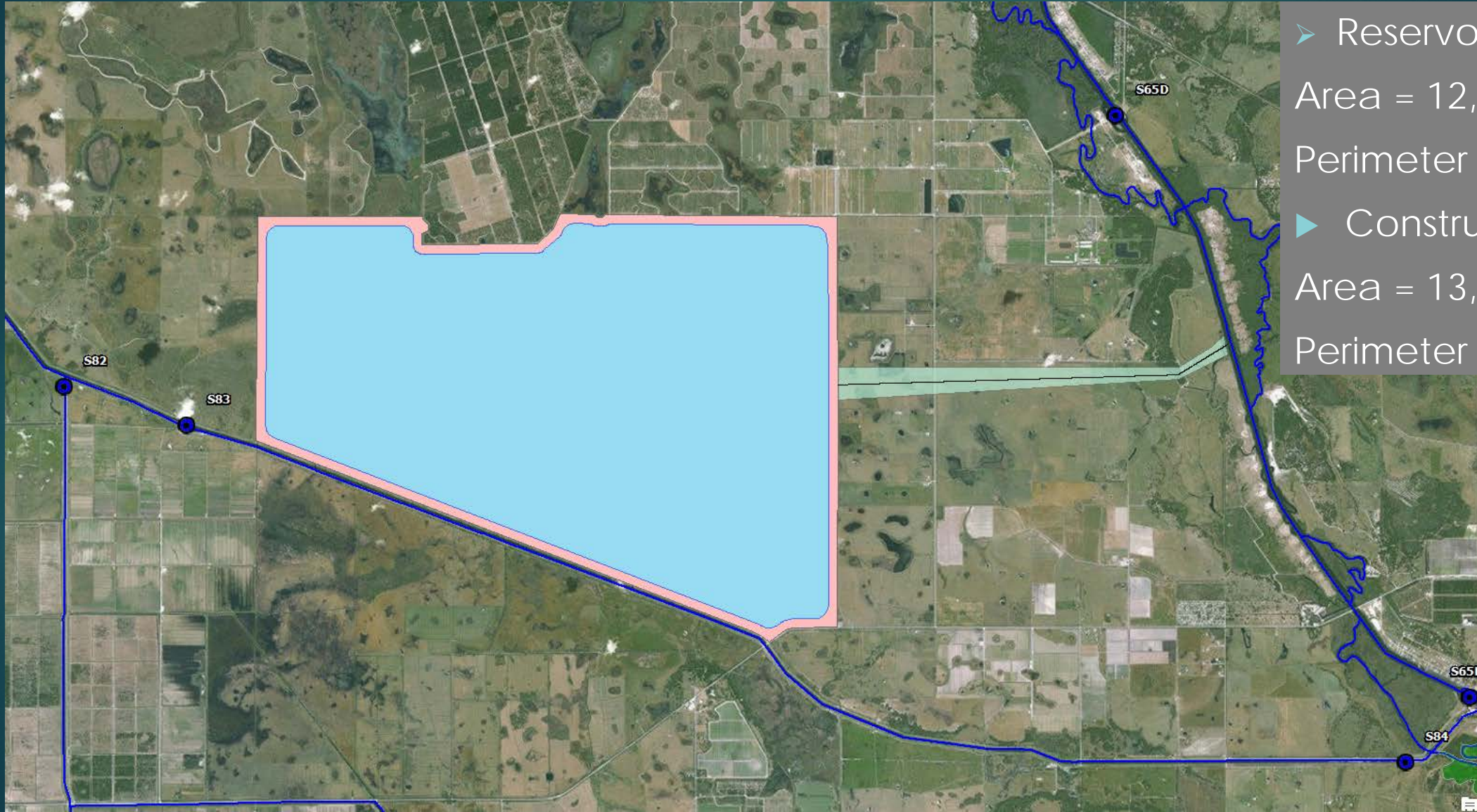
Perimeter = 39,811 ft

▶ Construction Area:

Area = 2,543 acres

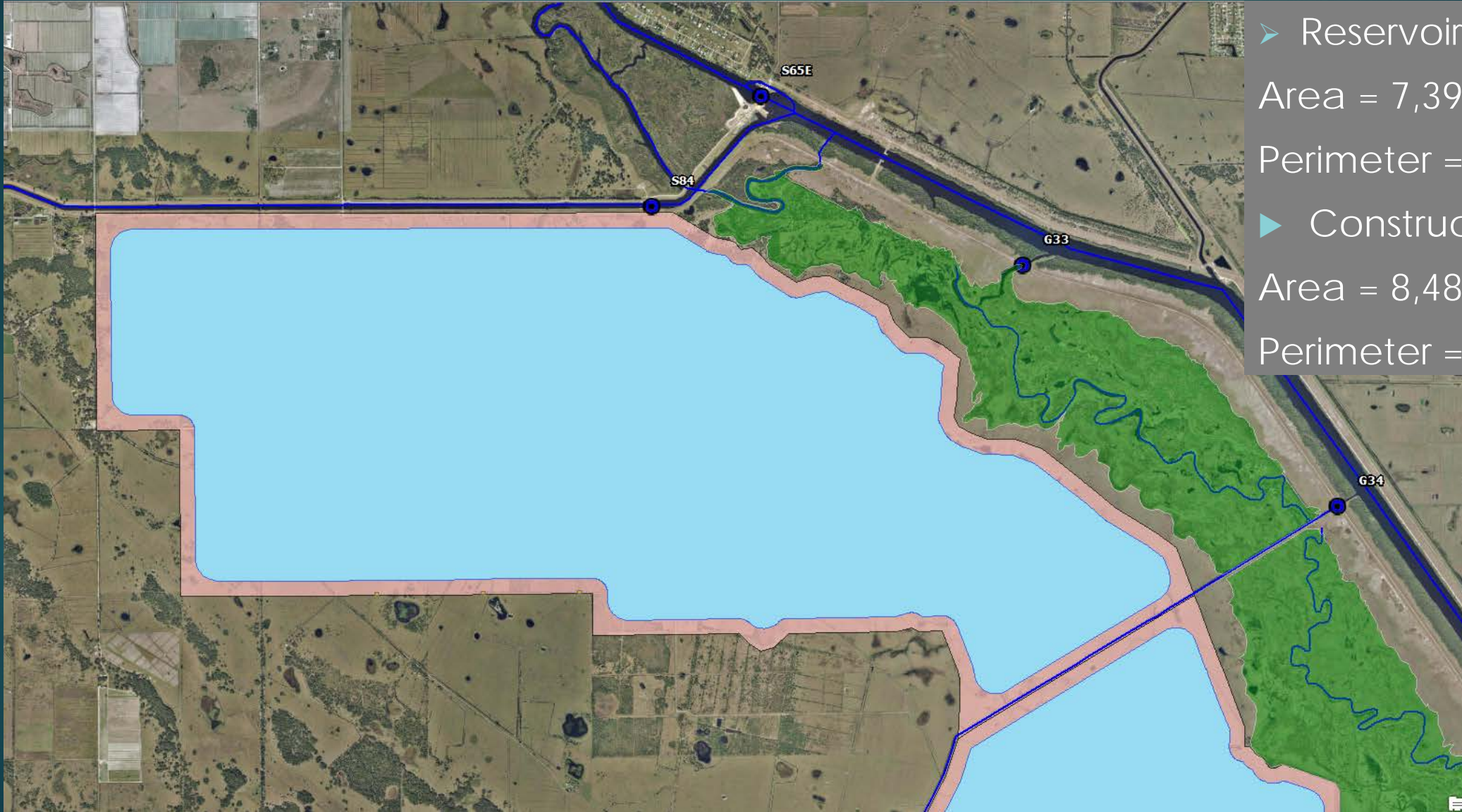
Perimeter = 46,465 ft

K-42 Reservoir



- Reservoir:
Area = 12,187 acres
Perimeter = 98,224 ft
- Construction Area:
Area = 13,379 acres
Perimeter = 104,531 ft

K-05N Reservoir



➤ Reservoir:

Area = 7,395 acres

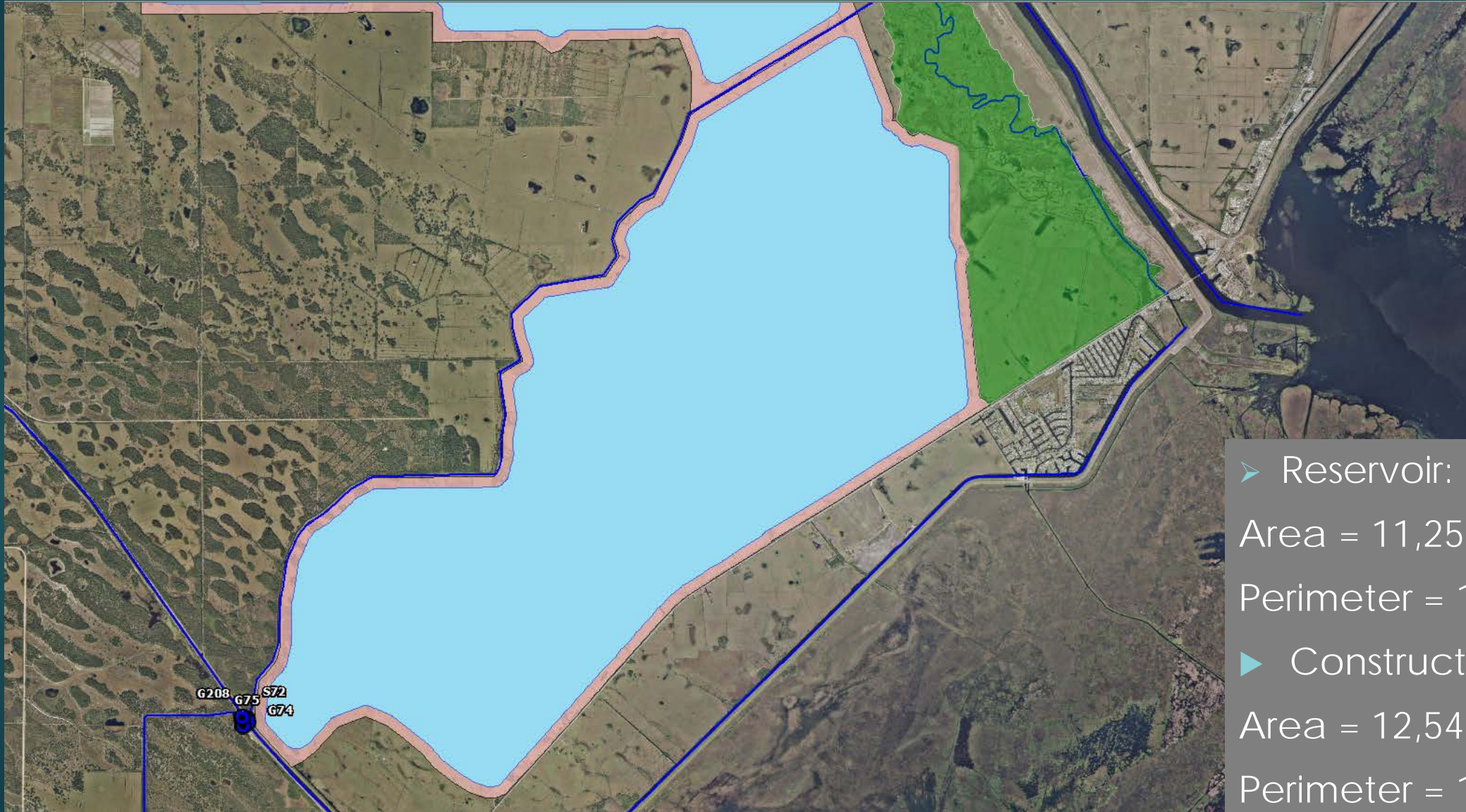
Perimeter = 88,142 ft

▶ Construction Area:

Area = 8,486 acres

Perimeter = 95,836 ft

K-05S Reservoir



➤ Reservoir:

Area = 11,257 acres

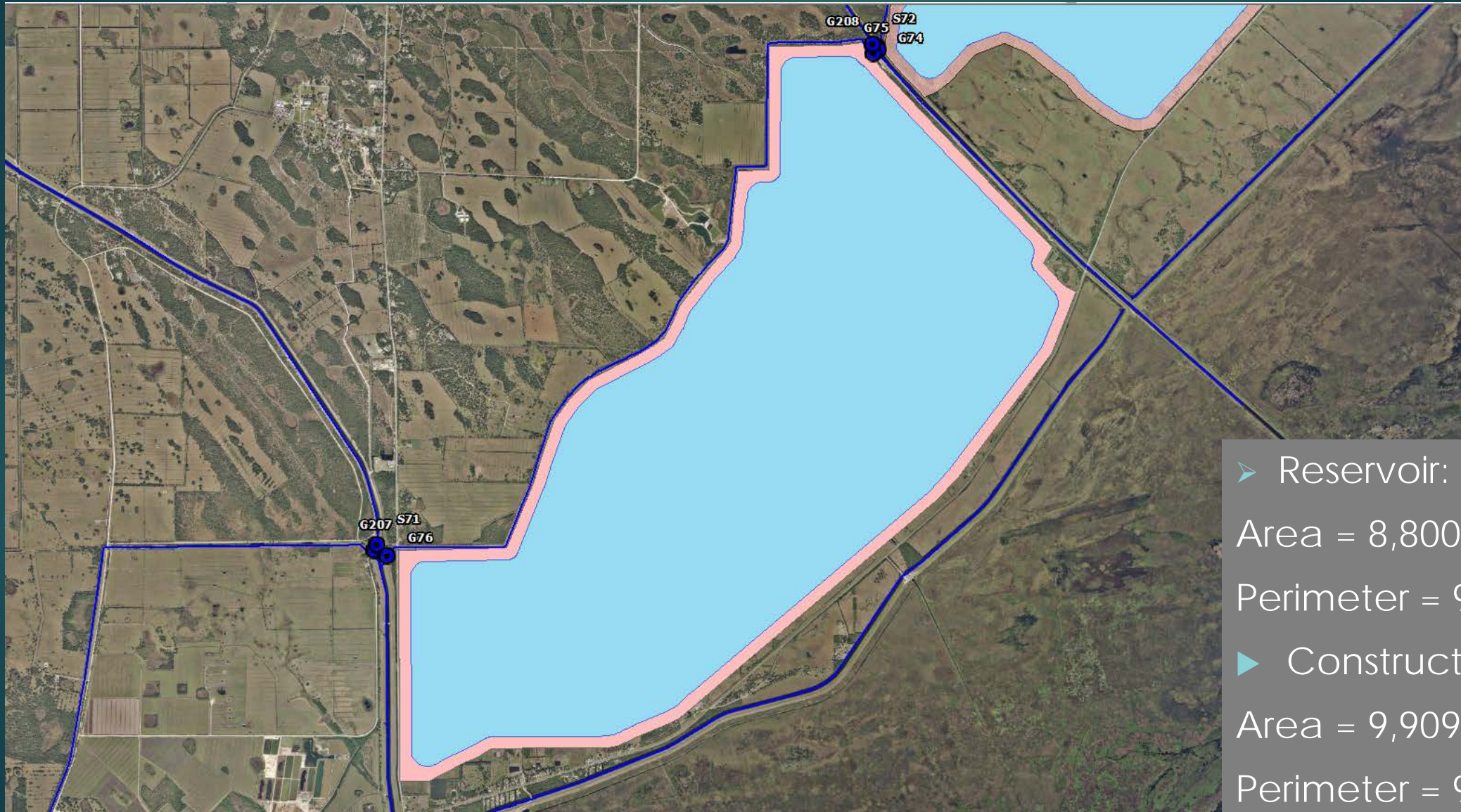
Perimeter = 108,499 ft

➤ Construction Area:

Area = 12,548 acres

Perimeter = 113,882 ft

I-01 Reservoir



➤ Reservoir:

Area = 8,800 acres

Perimeter = 91,472 ft

▶ Construction Area:

Area = 9,909 acres

Perimeter = 97,486 ft

Sunrise on the Kissimmee River north of
Lake Okeechobee



Options for Reducing Damaging Discharges to the Estuaries

Aquifer Storage and Recovery and Deep Injection Wells

Bob Verrastro, Lead Hydrogeologist, Water Supply Bureau
Matt Morrison, Federal Policy Chief, Everglades Policy and Coordination

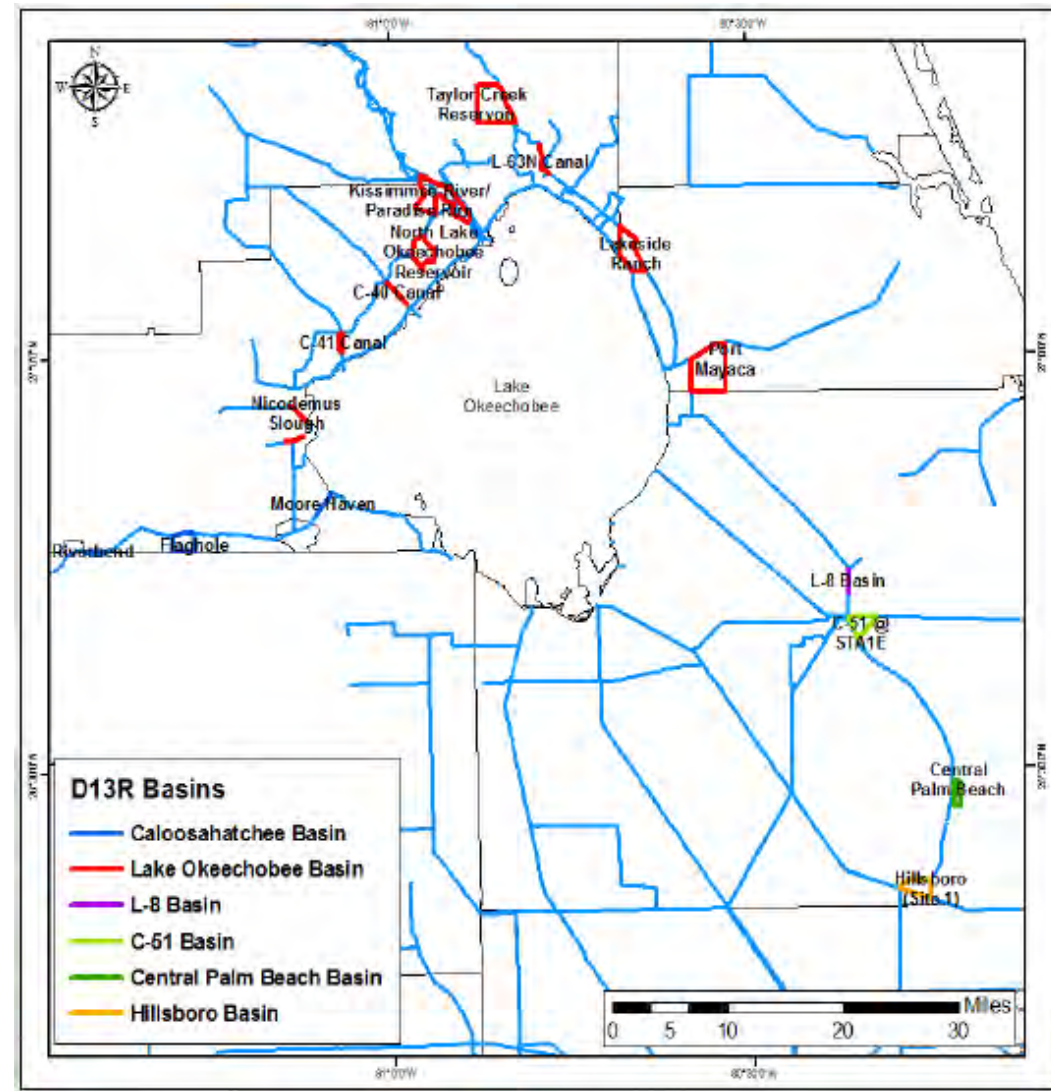
ASR Regional Study Groundwater Model

➤ Constraints included:

- Limited to state-owned locations
- Rock fracturing
- Upconing
- Lateral salt water intrusion
- Effects to existing users
- Maintaining artesian conditions

➤ About 130 (not 333) ASR wells possible: 80 at Lake Okeechobee

➤ Model did not consider alternative locations



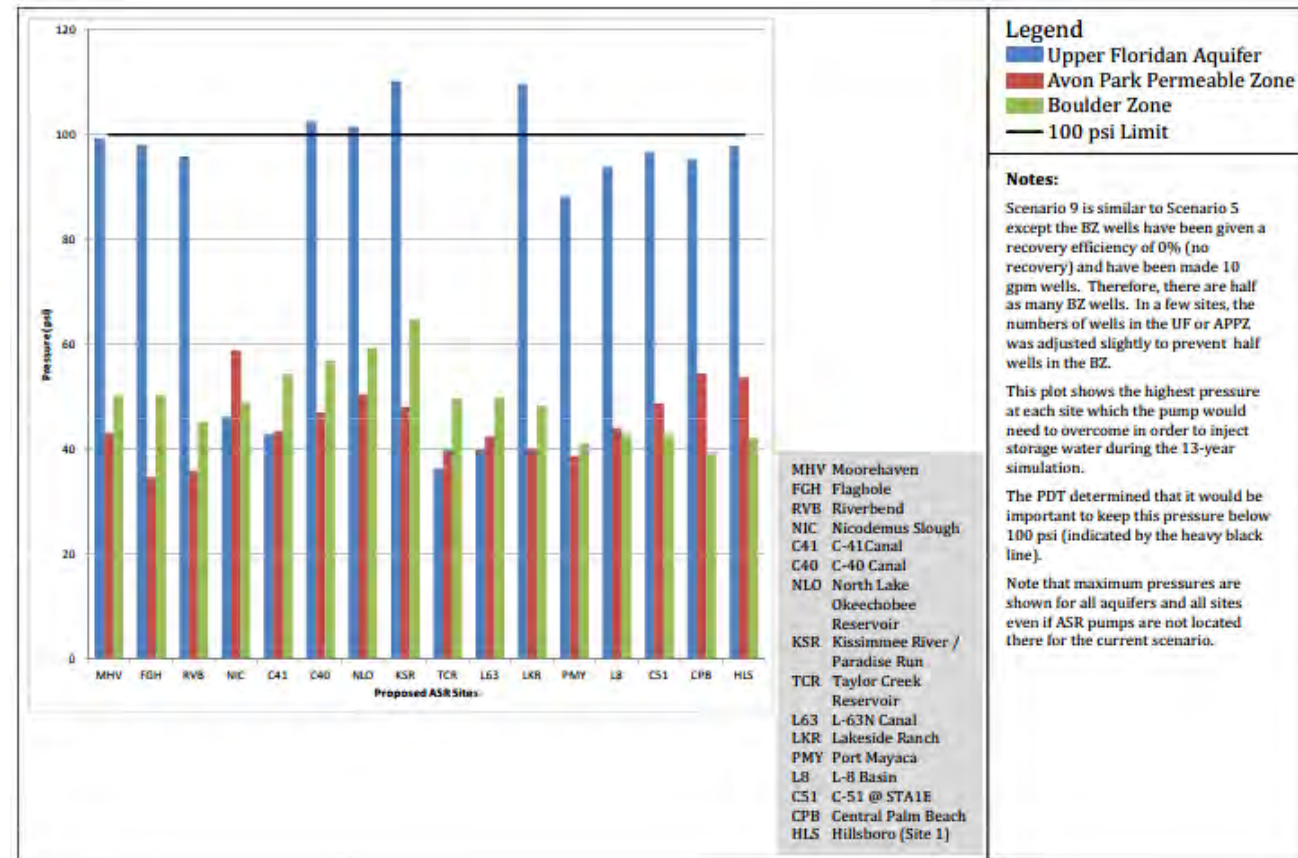
ASR Regional Study Groundwater Model - Boulder Zone Analysis

➤ Simulated 200 wells recharging the Boulder Zone

- 1 billion gallons per day capacity
- To provide benefits reduced by having fewer ASR wells

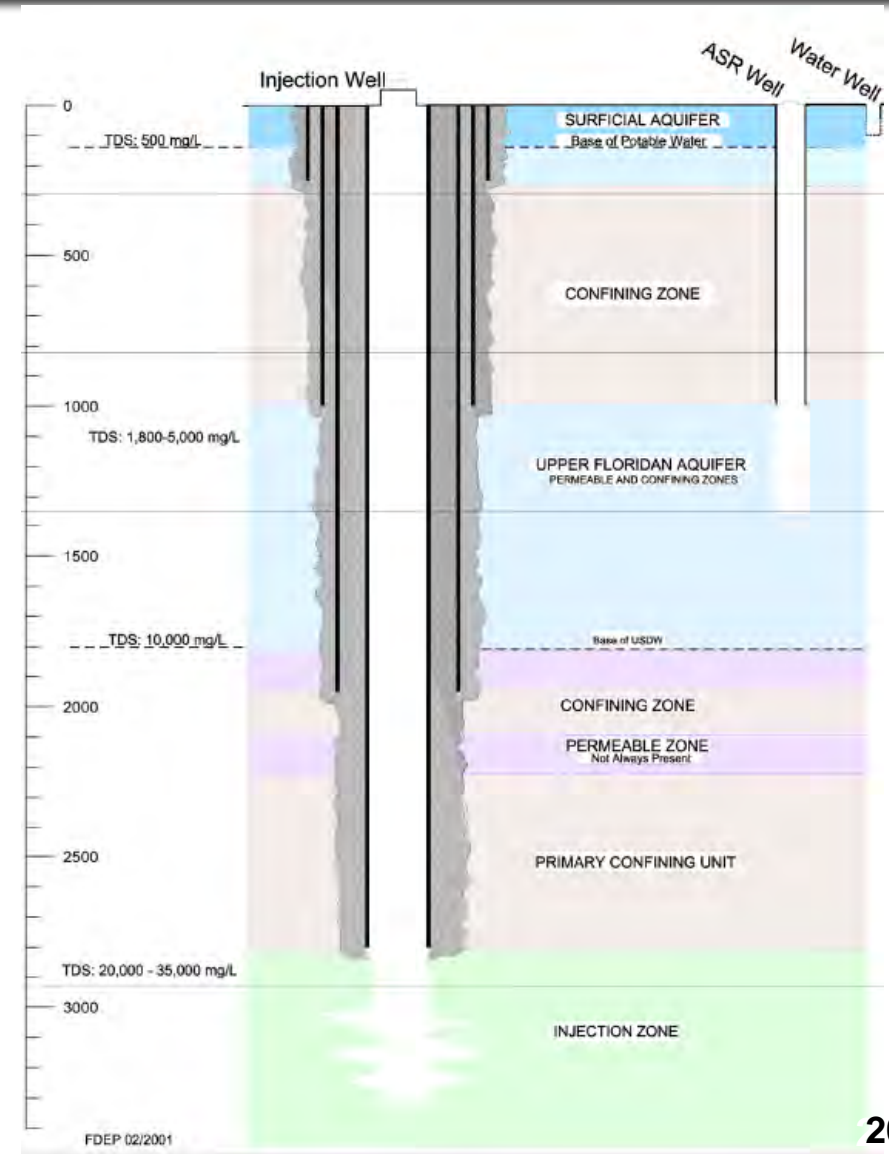
➤ Recharge pressures remained low in overlying zones

➤ No recovery - just injection



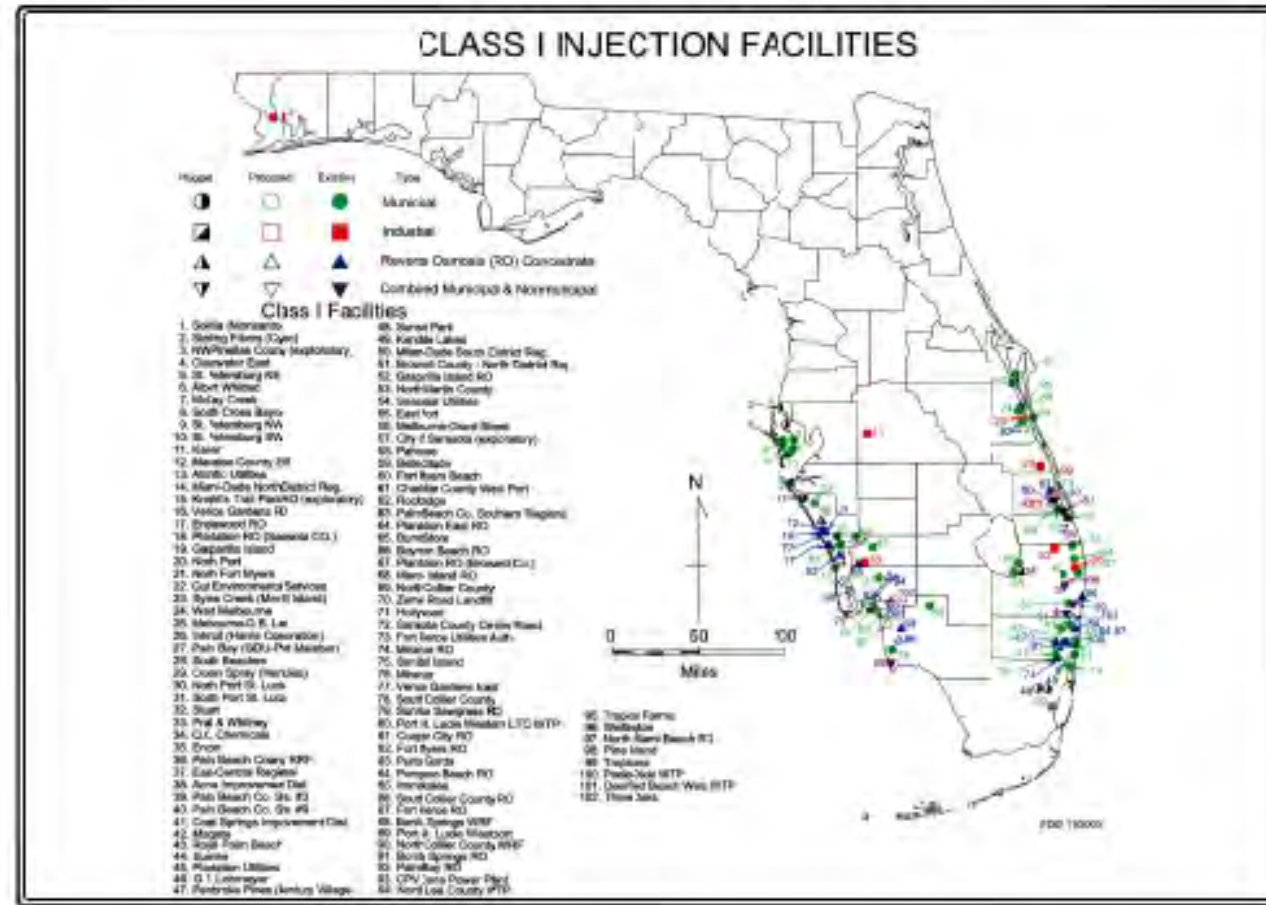
Boulder Zone Injection Wells

- Simple design
- No land acquisition/cultural resources
- Higher capacities (30 cfs) relative to ASR (8 cfs)
- Permitting is straightforward
- Can be built in advance of large reservoirs
- Can assist in estuary and dike protection
- Injected water is not recovered

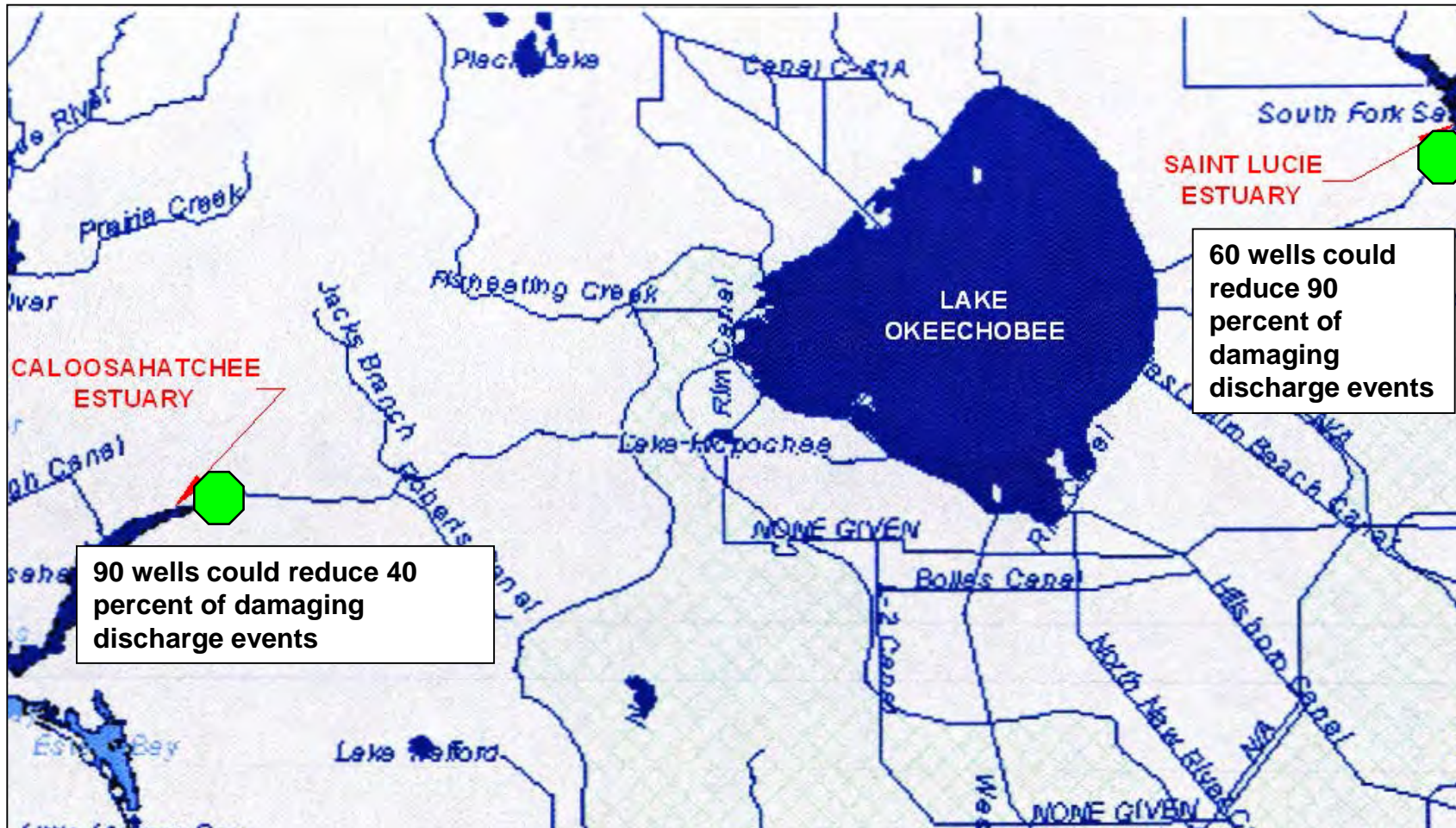


Where are Boulder Zone Injection wells used?

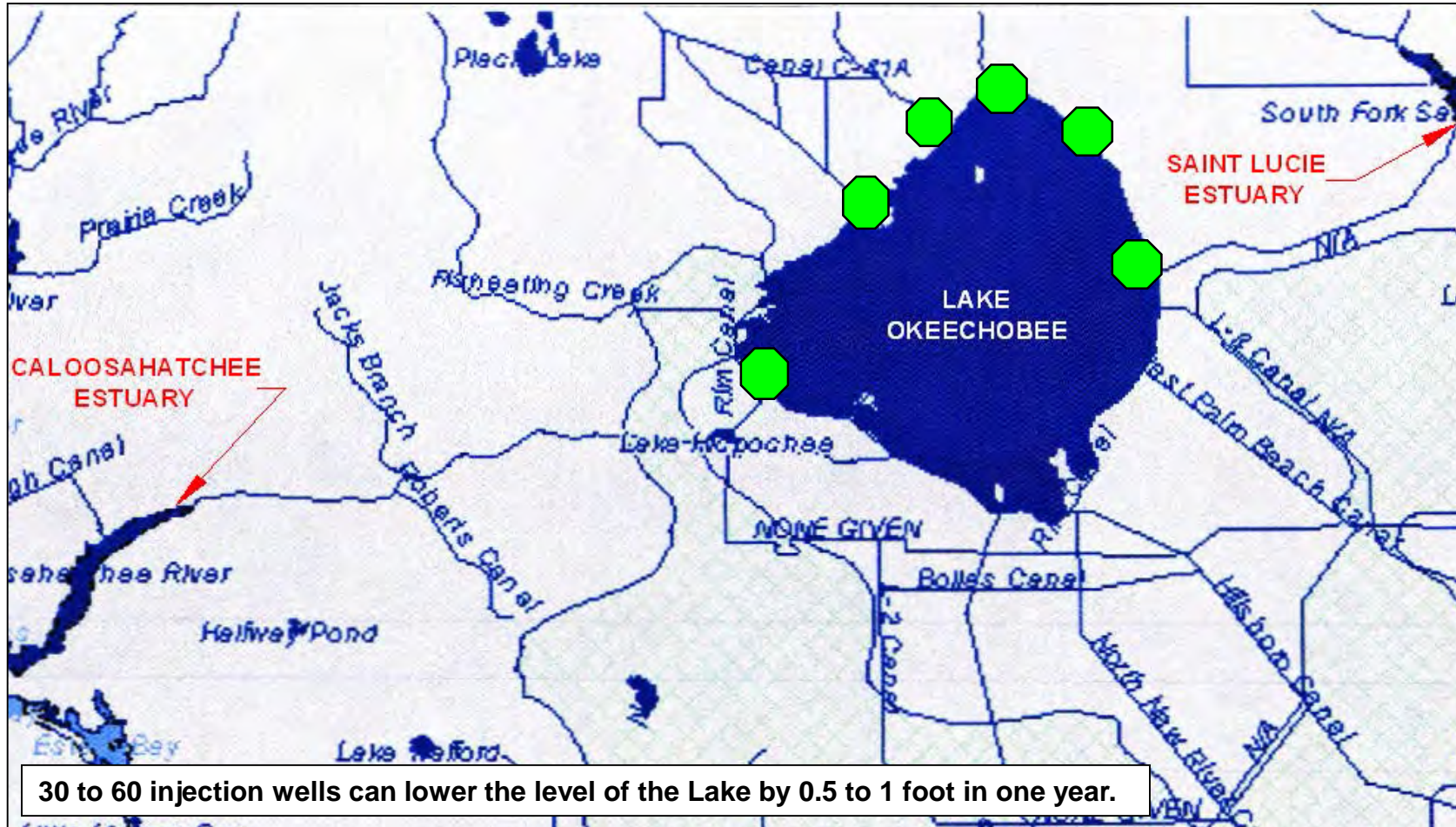
- 180 Class I wells in operation in Florida
- Mostly used for wastewater disposal
- Identified in 2015 UF Water Institute Study



LOER DIW Study: Reducing "Instantaneous" discharges at the estuaries



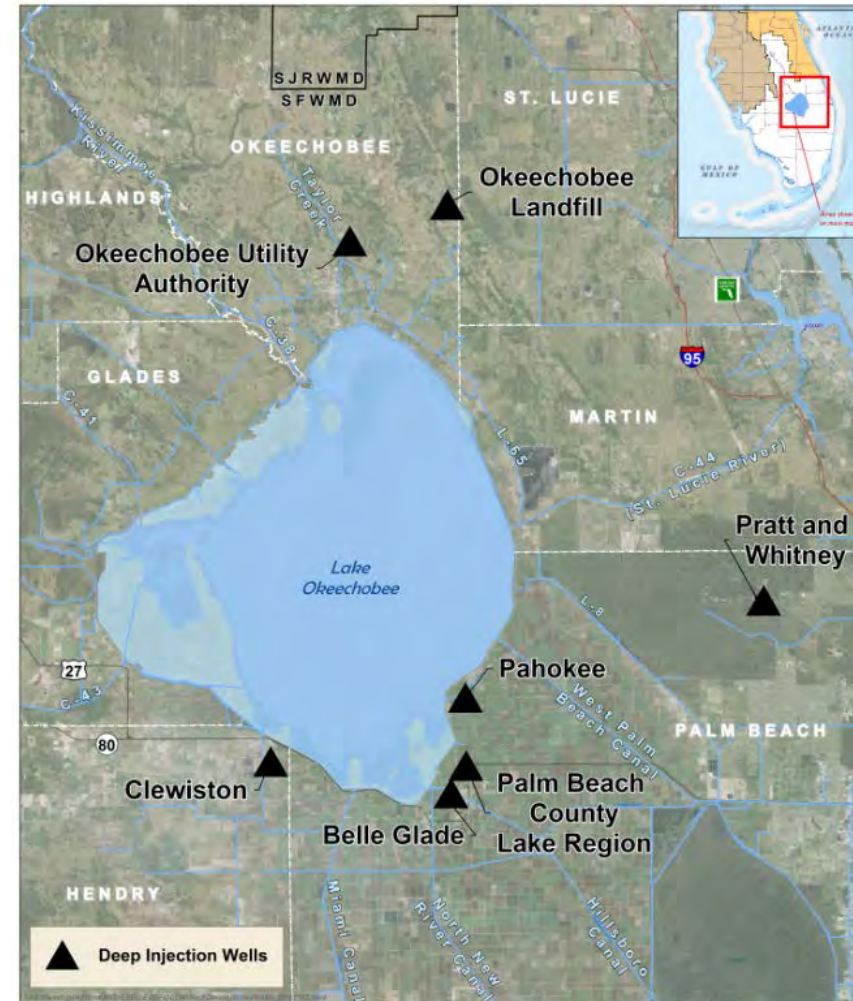
Injection Wells for Lake Okechobee Level Control



Existing Wells

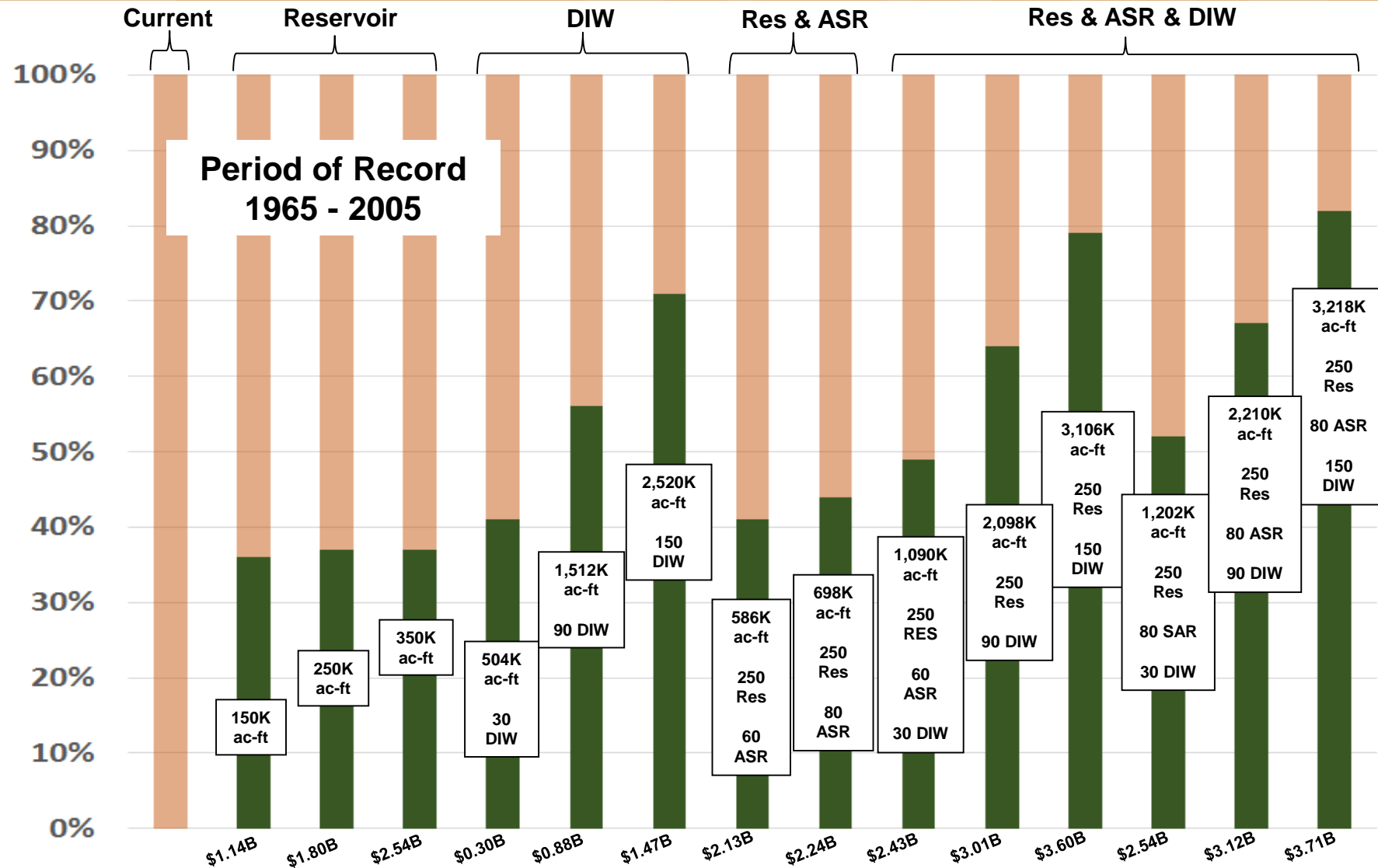


ASR Projects



Deep Injection Systems

Reduction in Lake Okeechobee "Flow Volumes" to the Estuaries



Note: Not all Lake Okeechobee discharges to the Estuaries are damaging. At times, low flows can be beneficial.

ASR/DIW Locations

Lake Okeechobee Watershed Restoration Project

R.T. Verrastro, P.G.

Themes for Subsurface Options

Estuary Discharge Minimization

MooreHaven
Port Mayaca

STA Storage Enhancement

Taylor Creek STA
Nubbin Slough STA
Lakeside Ranch STA

Lake Level Control

C-40 Canal Reach
C-41 Canal Reach
Kissimmee ASR System
S-191 Reach
Taylor Creek/L-63N Canal

Wetland/Floodplain Restoration

Paradise Run

Reservoir Storage Augmentation

Multiple locations to be determined

Concept Names

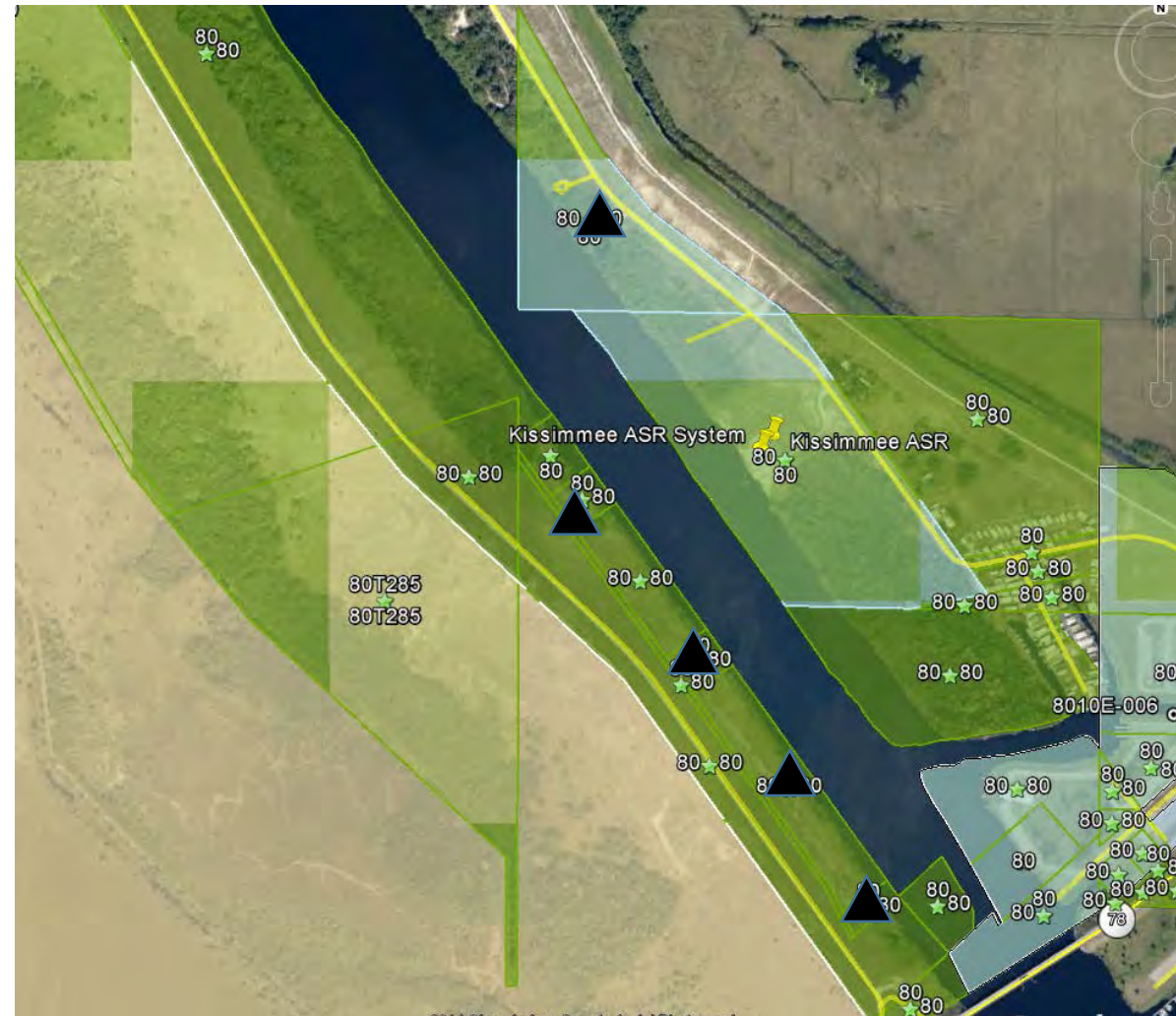


Wetland Restoration + Lake Level Control Paradise Run

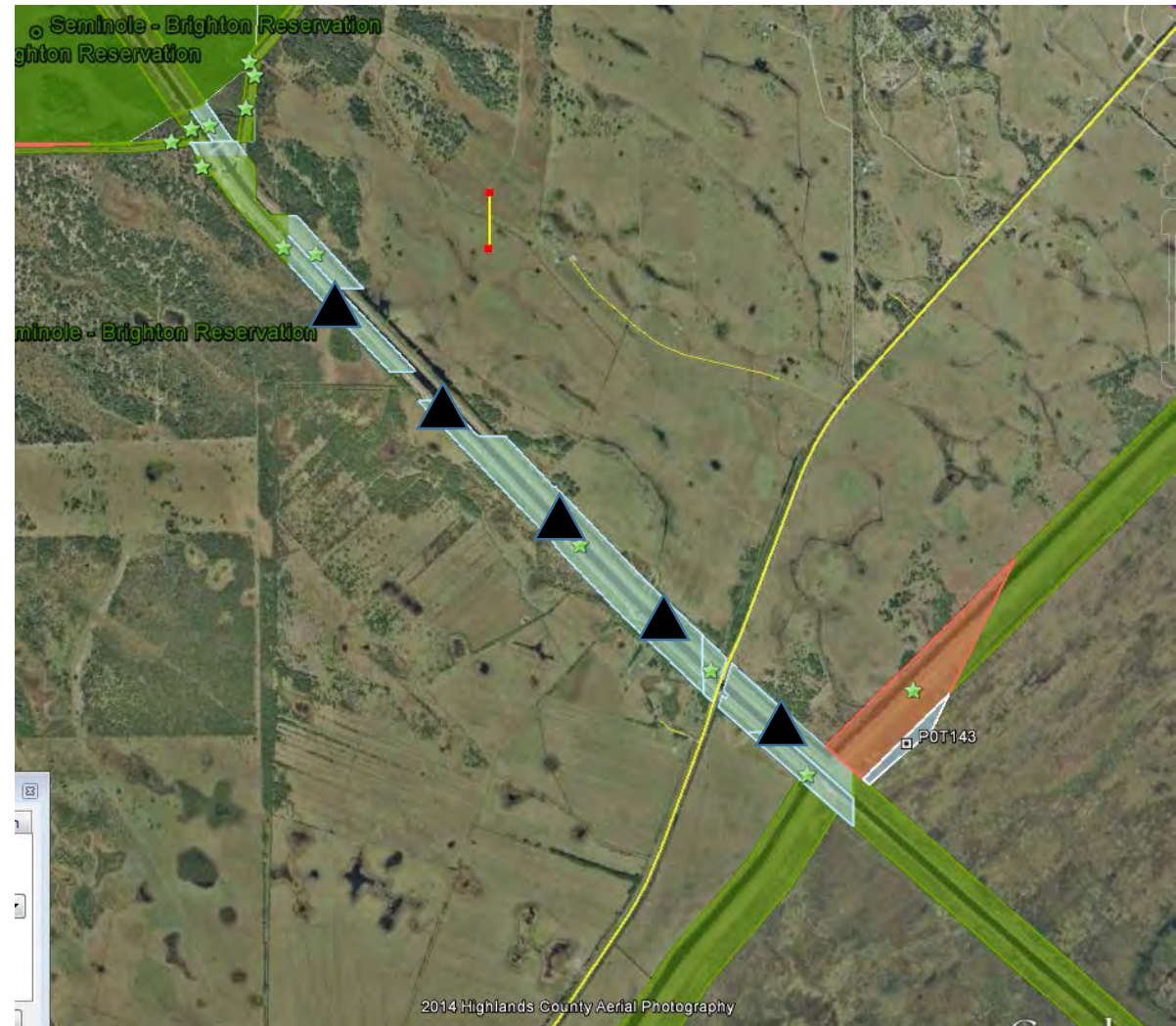
5 ASR well pairs (upper FAS
and APPZ)



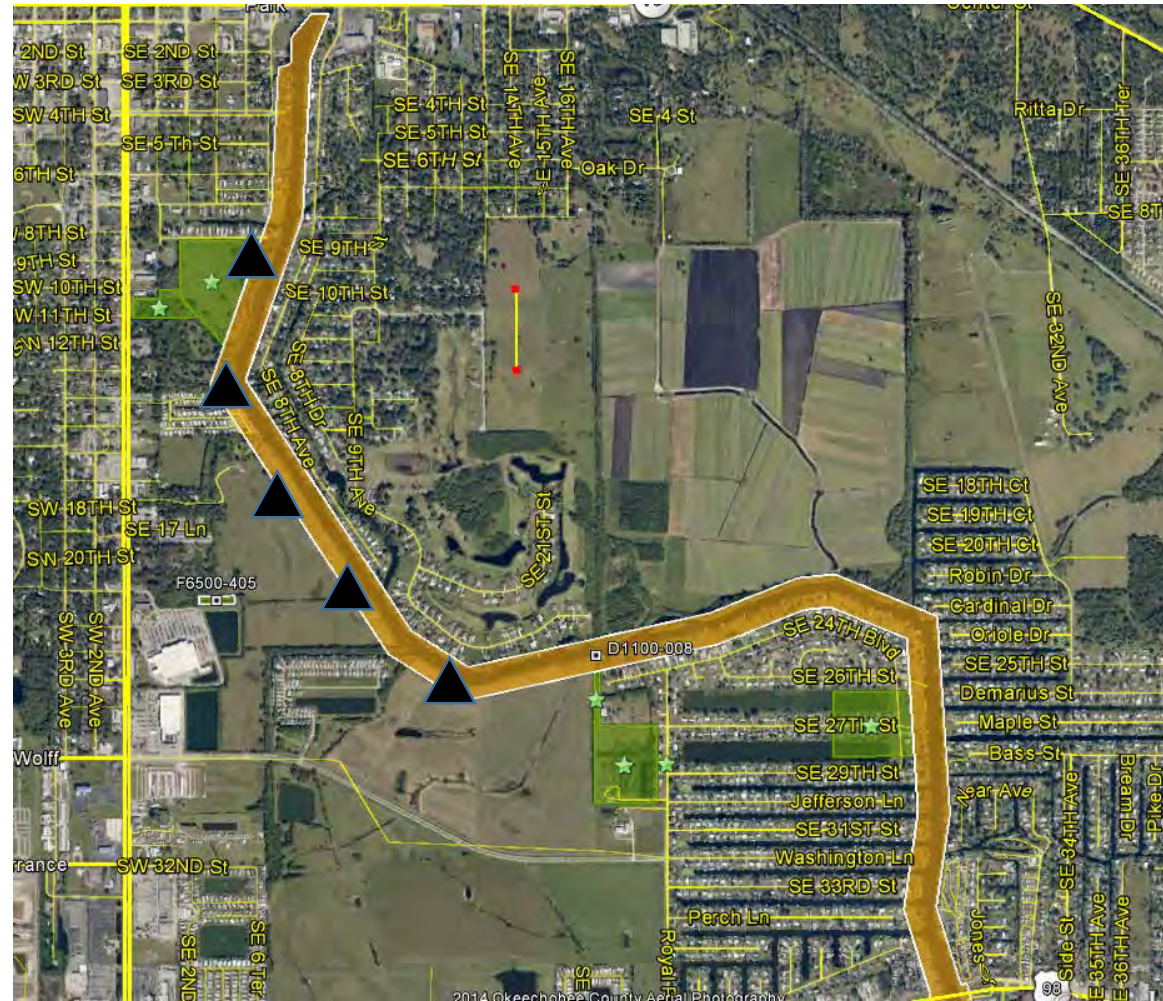
Lake Level Control Kissimmee ASR Expansion



Lake Level Control C-40 Canal



Lake Level Control Taylor Creek West



Lake Level Control C-41 Canal

5 DIWs and/or 3 ASR well pairs

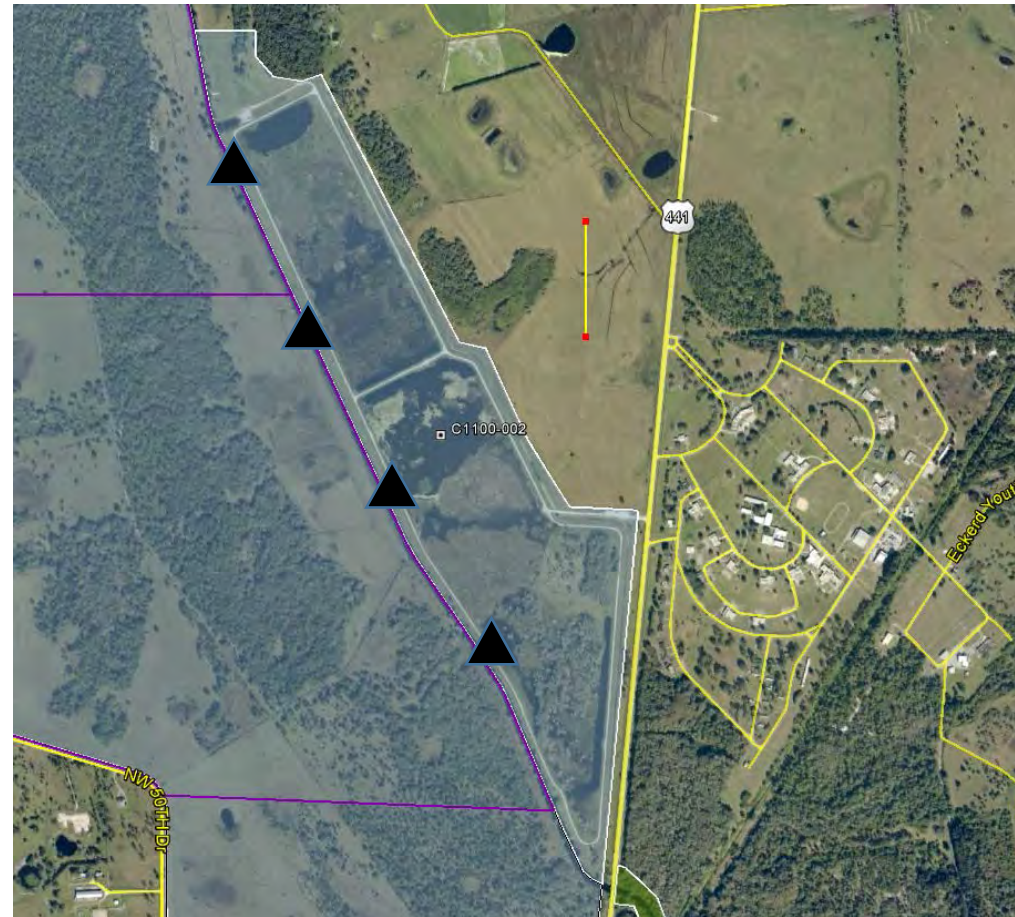


Lake Level Control S-191



STA Augmentation Taylor Creek STA

2 to 4 ASR well pairs





Discussion



WETLAND SITES FLYOVER



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Andy Rodusky, SFWMD



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PUBLIC COMMENT PERIOD



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