



December 8,  
2005

# South Florida Ecosystem Restoration

restoration  
restoration

consultation with the  
South Florida Ecosystem Restoration Task Force  
Presented by Dennis Duke, U.S. Army Corps of Engineers

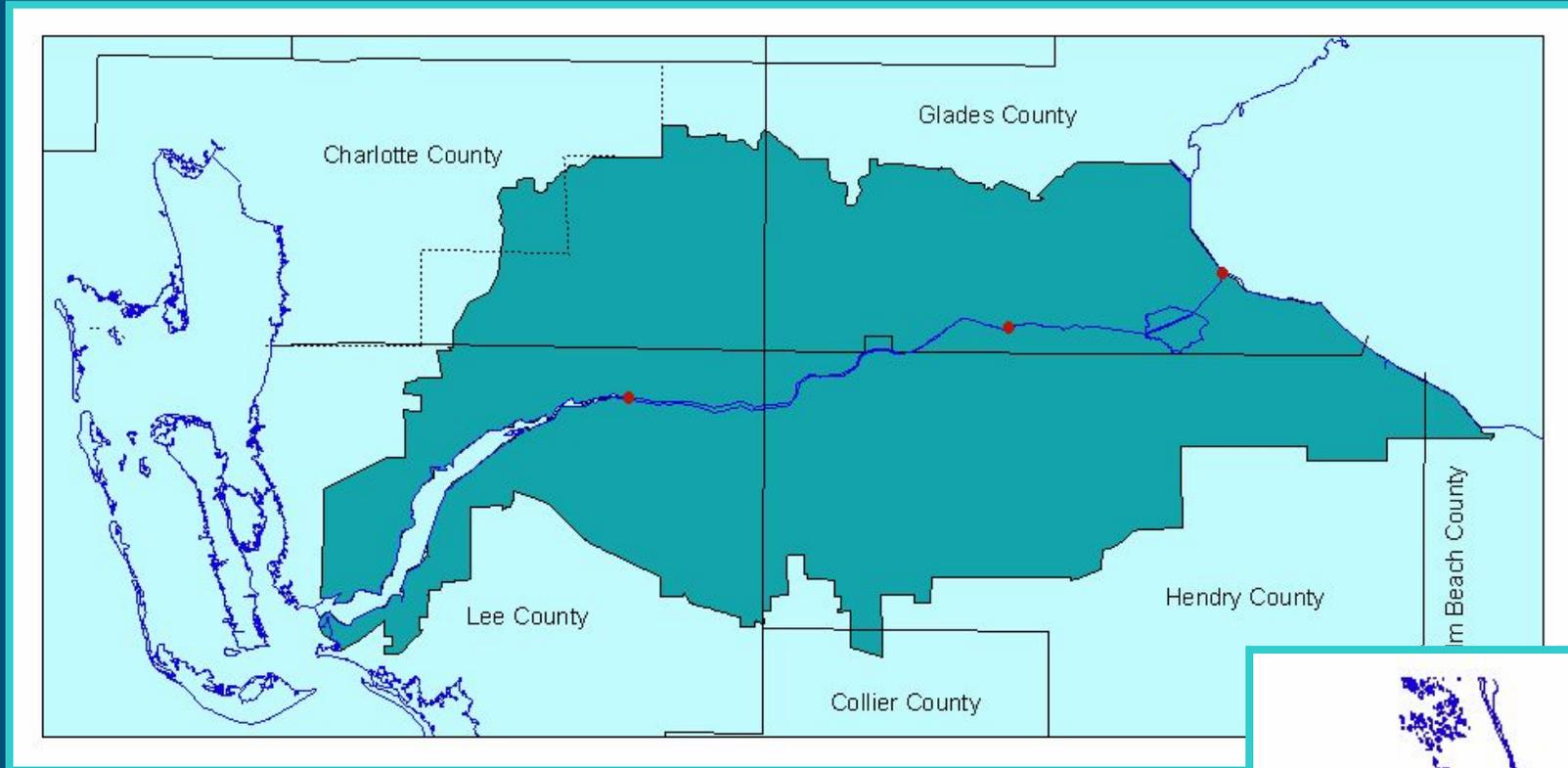
## C-43 Storage Reservoir – Part 1



# C-43 Basin Storage Reservoir Part 1

- Project Purpose: To improve the the timing, quantity, and quality of freshwater flows to the Caloosahatchee River estuary
- Yellow Book Cost: \$201,200,000 (approximately \$132,600,000 attributed to real estate)

# C-43 Basin Map



**Caloosahatchee Basin**



# Objectives

- Improve the quantity and timing of freshwater flows to the Caloosahatchee Estuary by capturing runoff from the Caloosahatchee Basin and Lake Okeechobee for release when necessary
- Improve salinity balance in the Caloosahatchee Estuary for estuarine organisms.
- Improve water quality in the Caloosahatchee Estuary by reducing nutrient inflows from the freshwater Caloosahatchee Basin
- Improve the spatial extent and functional quality of habitat for estuarine biota

# Objectives (continued)

- Increase plant and animal diversity and abundance, particularly increasing the spatial extent of SAV
- Conserve and protect water resources to ensure sustainability of economic and natural resources
- Provide adequate availability of ground and surface water for environmental resources while protecting existing legal sources of water for agricultural and urban uses
- Provide recreational, tourism, and environmental education opportunities

# Future Conditions

- More people
- More impervious surfaces
- More irrigated cropland
- Greater water demands
- Loss of natural areas
- Habitat fragmentation



# C-43 Basin Storage Reservoir – Part 1

## Plan Formulation

- Potential reservoir sites were identified by the PDT with input from the public and stakeholders
- 20 sites were carried forward for further screening using the following siting criteria
  - Gate Criteria: a first look at the suitability of a potential site
  - General Criteria: applied to more suitable land parcels for further evaluation to determine those parcels which best fit the overall plan for the project



# Estimated Storage Volumes for C-43 Alternatives

Features	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7
<b>Storage Reservoirs</b>							
C-43 West Storage Reservoir	170,000 ac-ft				170,000 ac-ft	170,000 ac-ft	170,000 ac-ft
P3E (Flaghole) Reservoir		30,320 ac-ft			30,320 ac-ft		30,320 ac-ft
P2E Reservoir			21,520 ac-ft			21,520 ac-ft	21,520 ac-ft
D-Duda Reservoir			21,490 ac-ft			21,490 ac-ft	21,490 ac-ft
River Groves				12,080 ac-ft			12,080 ac-ft
<b>Sub-totals Storage Reservoir Volumes</b>							
Available Volume	170,000 ac-ft	30,320 ac-ft	43,010 ac-ft	12,080 ac-ft	200,320 ac-ft	213,010 ac-ft	255,410 ac-ft
<b>Natural Storage</b>							
Lake Hicpochee			0 ac-ft	0 ac-ft		0 ac-ft	0 ac-ft
<b>Total Available Volume (Storage Reservoir + Natural Storage)</b>							
Available Volume	170,000 ac-ft	30,320 ac-ft	52,670 ac-ft	12,080 ac-ft	200,320 ac-ft	213,010 ac-ft	255,410 ac-ft

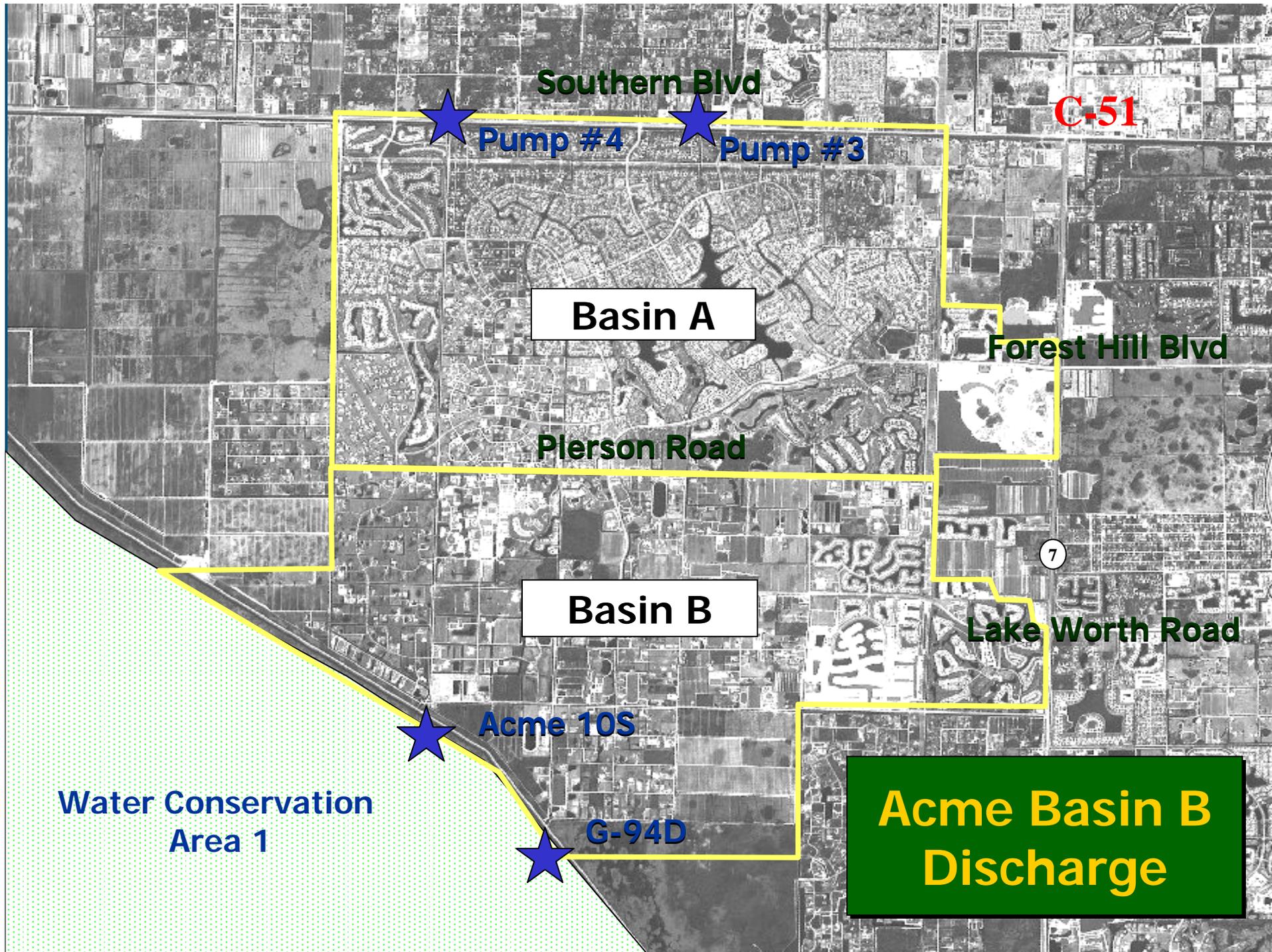
# C-43 Basin Storage Reservoir – Part 1

## Project Status

- Tentatively Selected Plan – April 2006
- Alternative Formulation Briefing – May 2006
- Draft Project Implementation Report (PIR) – November 2007
- PIR Complete -May 2007

## Acme Basin B

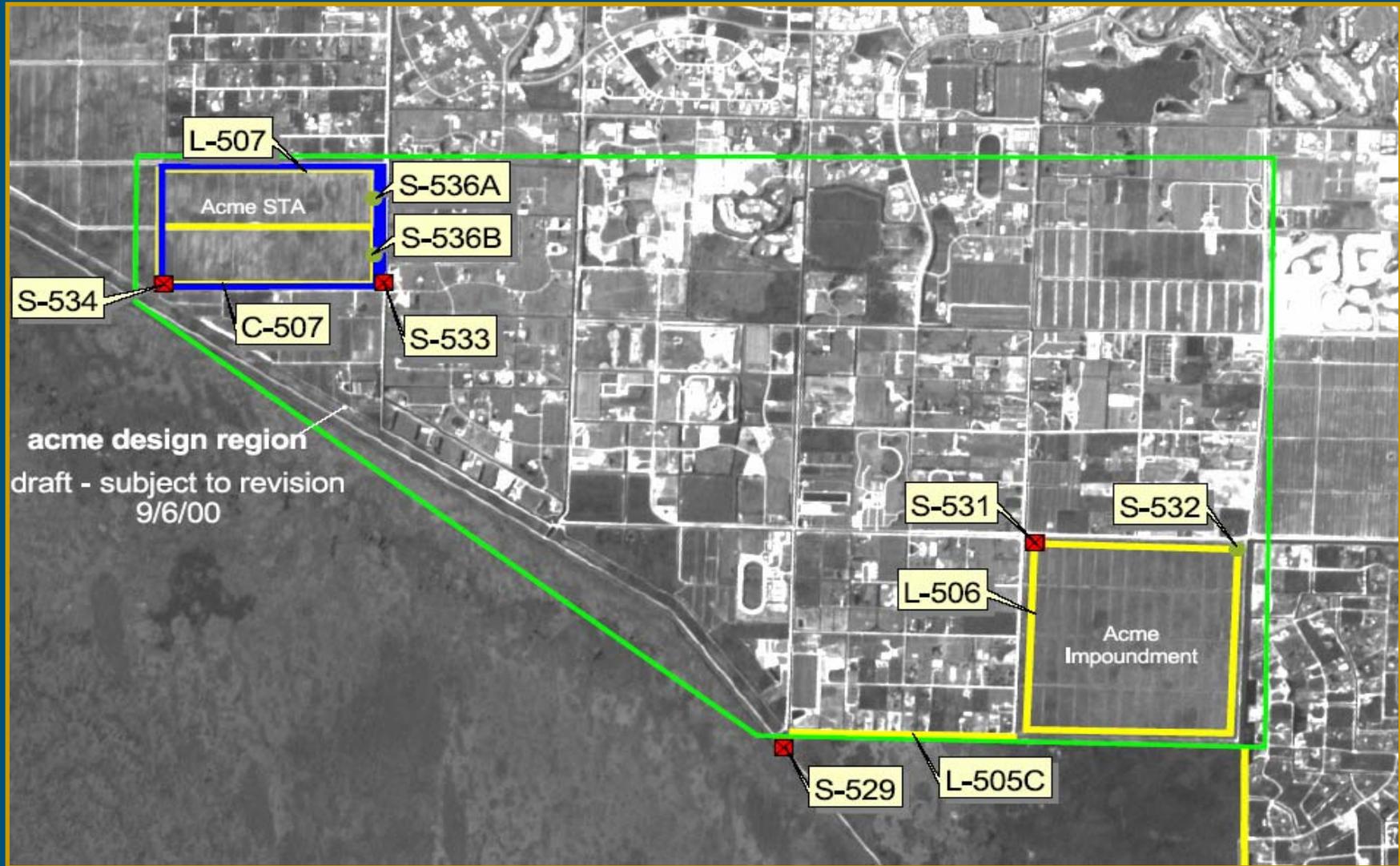




# Project Objectives

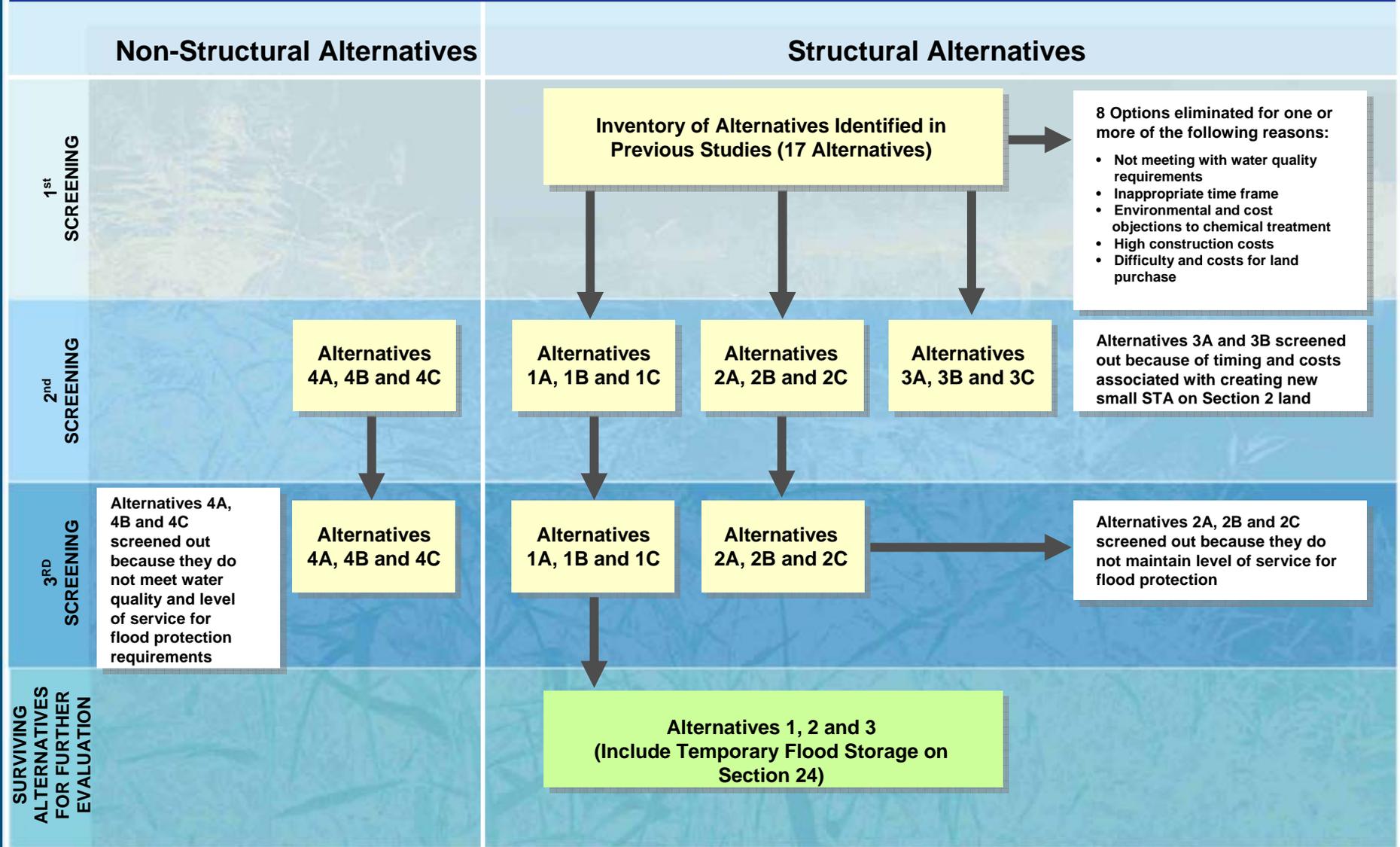
- Increase spatial extent of protected natural areas
- Provide water to the Arthur R. Marshall Loxahatchee National Wildlife Refuge and Everglades National Park (natural system)
- Reduce amount of water lost to tide
- Reduce amount of water withdrawn from Lake Okeechobee

# Restudy Project Design

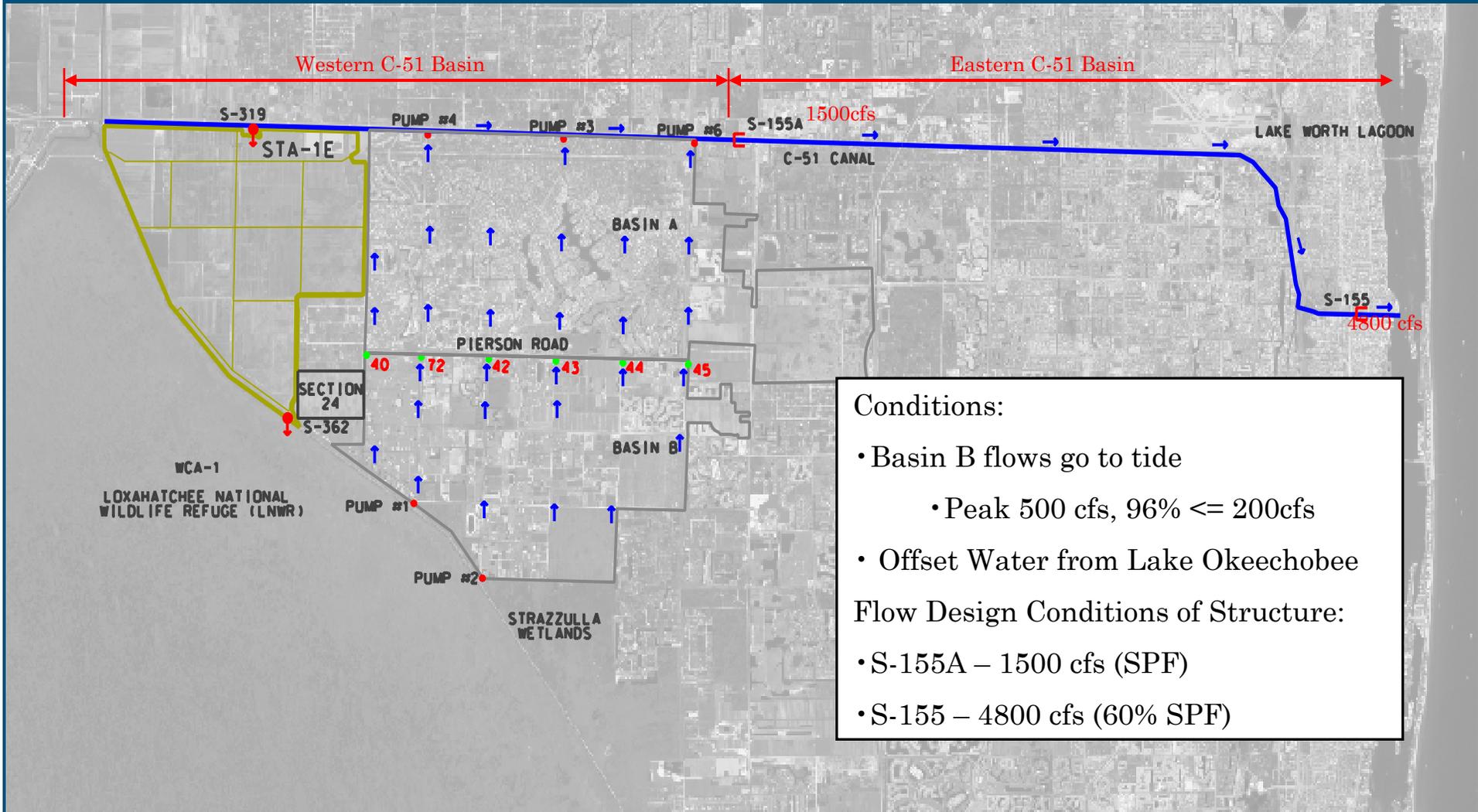


# ACME BASIN DISCHARGE PROJECT

# SCREENING OF ALTERNATIVES



# Acme Basin B Discharge Study Area Future Without Condition



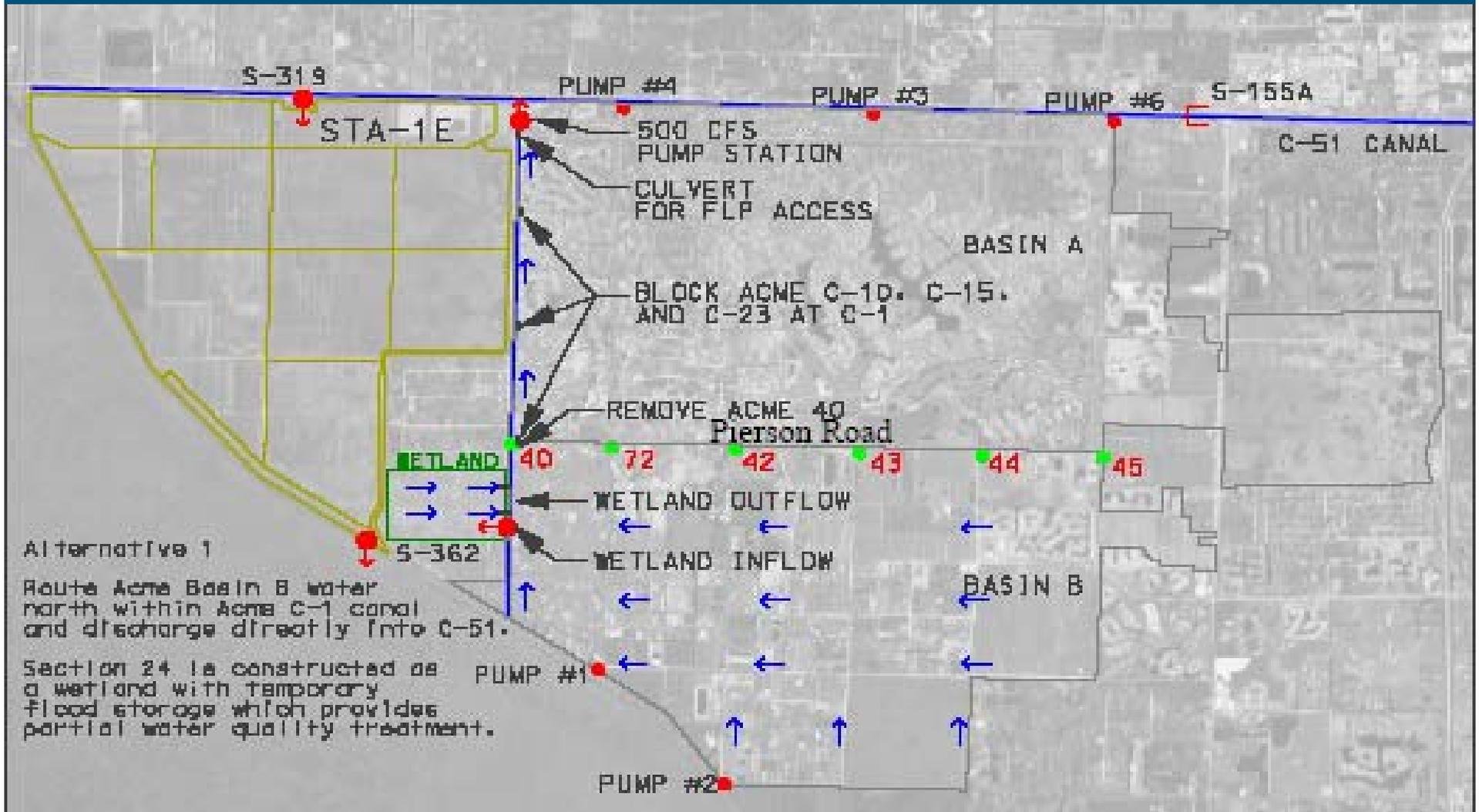
## Conditions:

- Basin B flows go to tide
  - Peak 500 cfs, 96%  $\leq$  200cfs
- Offset Water from Lake Okeechobee

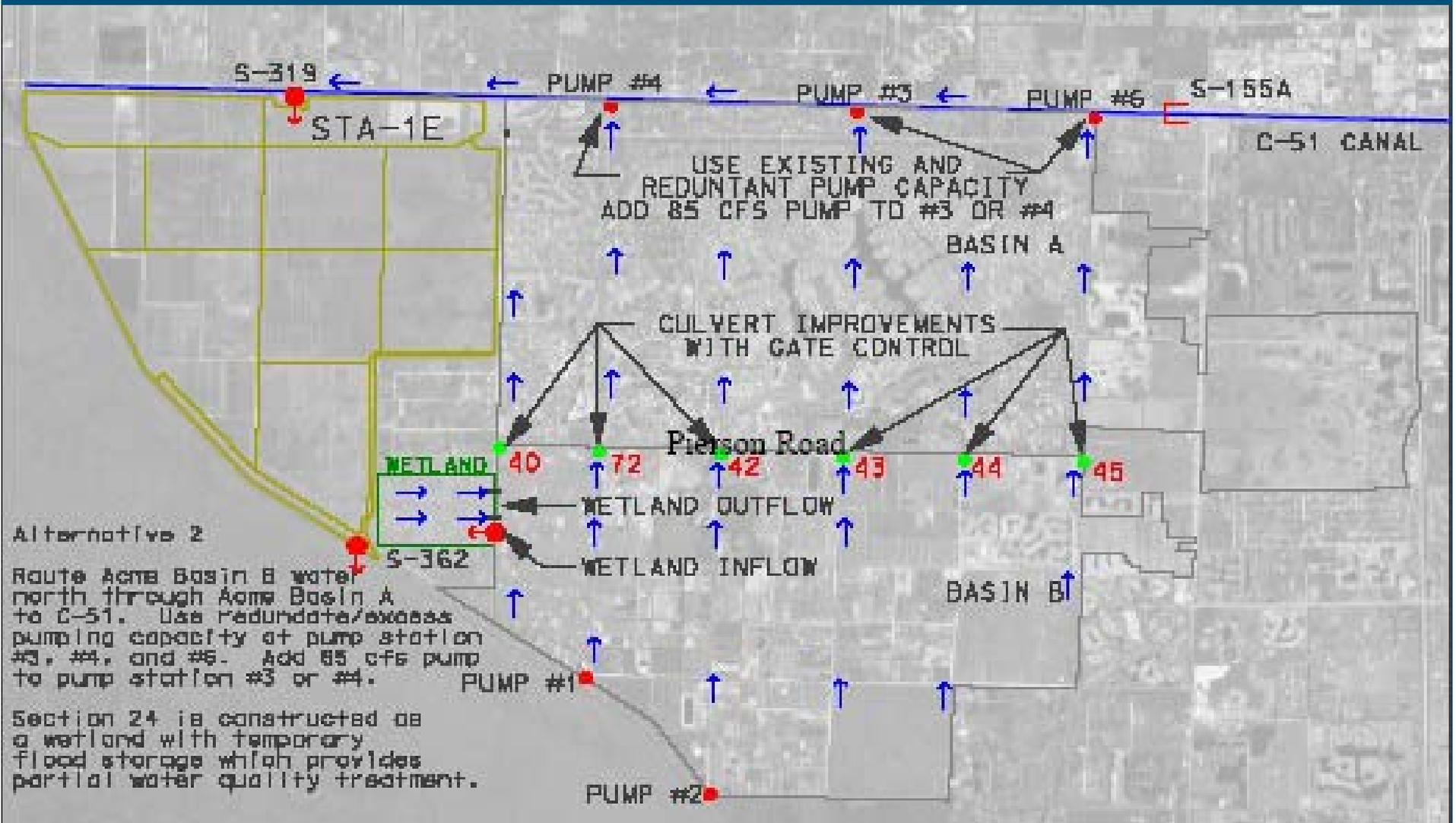
## Flow Design Conditions of Structure:

- S-155A – 1500 cfs (SPF)
- S-155 – 4800 cfs (60% SPF)

# Alternative 1

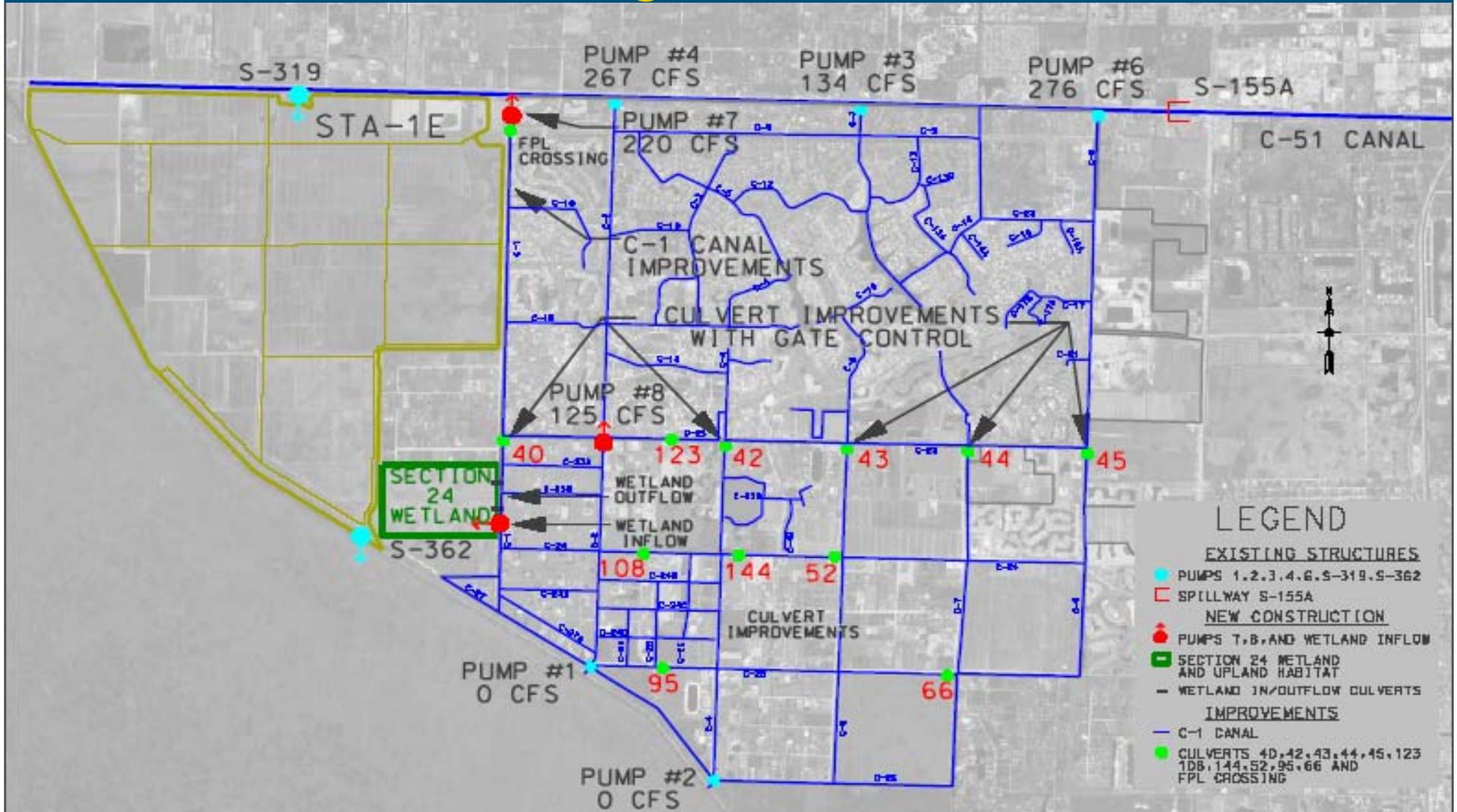


# Alternative 2





# Tentatively Selected Plan





Section 24 (410 acres) design with a high ecological value wetland on acreage available in Section 24, which would contain approximately 37% (~ 153 acres) uplands, 55% (~ 223 acres) littoral zones, and 8% (~ 34 acres) deep fish refugia zones. The wetland would have the capability to temporarily store stormwater in order to attenuate flood stage durations in Acme Basin B. Water would be discharged back into VOW canal system once the flood event stages have receded to a favorable condition.

# Current Phase

## Acme Basin B Discharge Tentatively Selected Plan Beneficial Fish and Wildlife Effects (habitat units)

Constructed Wetland	180
Loxahatchee National Wildlife Refuge	5,581
Lake Worth Lagoon	373

# Status and Major Milestones for Current Phase

## Status:

- Project Management Plan completed Oct 03
- Feasibility Scoping Meeting (FSM) Jan 04
- Identify Alternatives (Refined since FSM) Jun 04
- Alternative Formulation Briefing May 05
- Draft PIR for In-House Review Jul 05
- Draft PIR for Public Review Jan 06
- Final PIR May 06