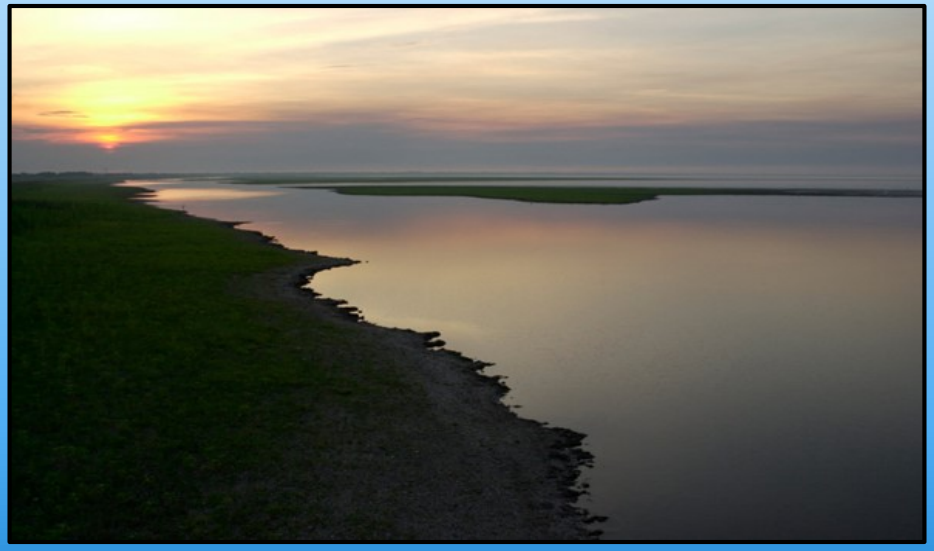
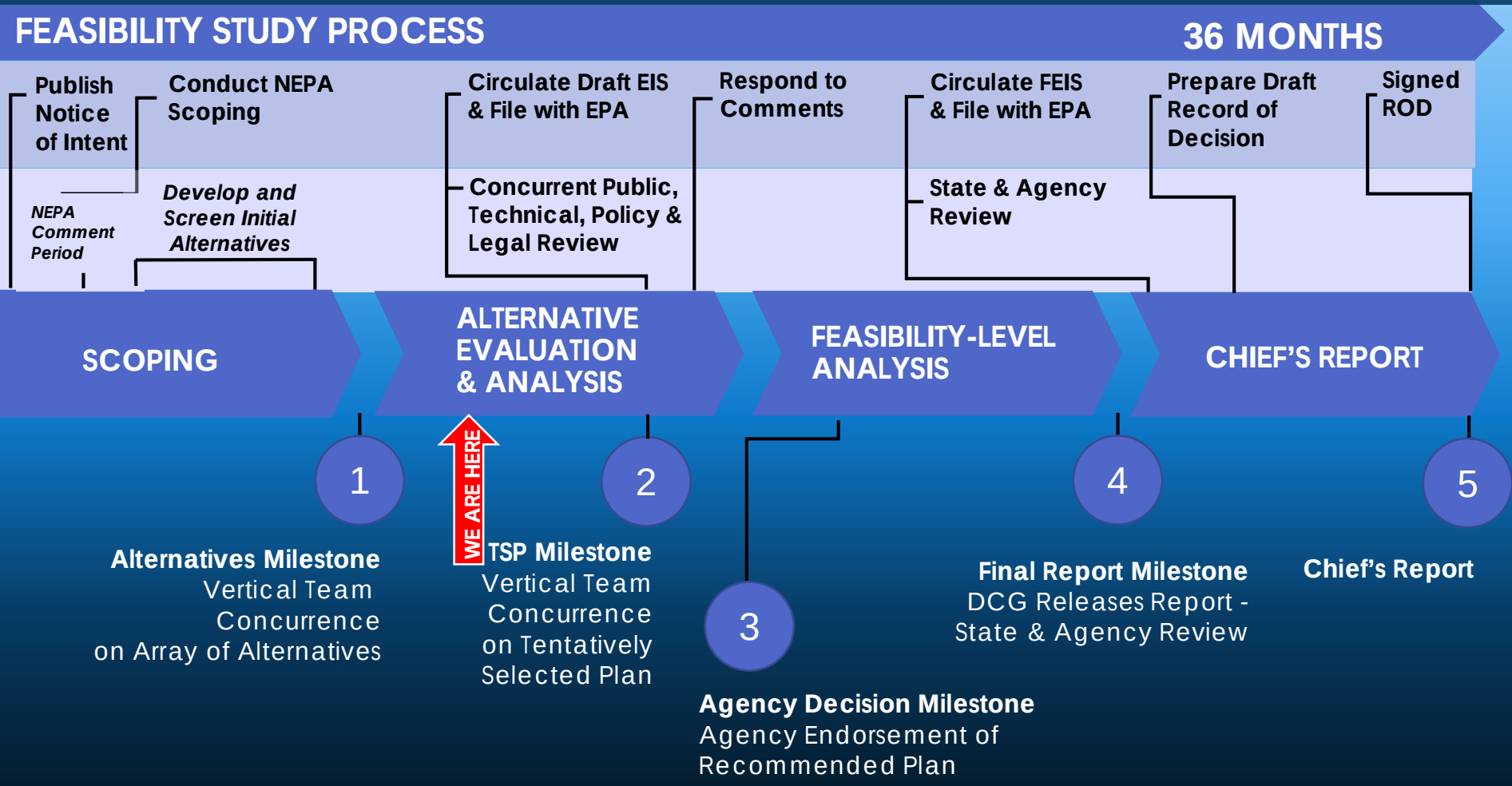


Lake Okeechobee

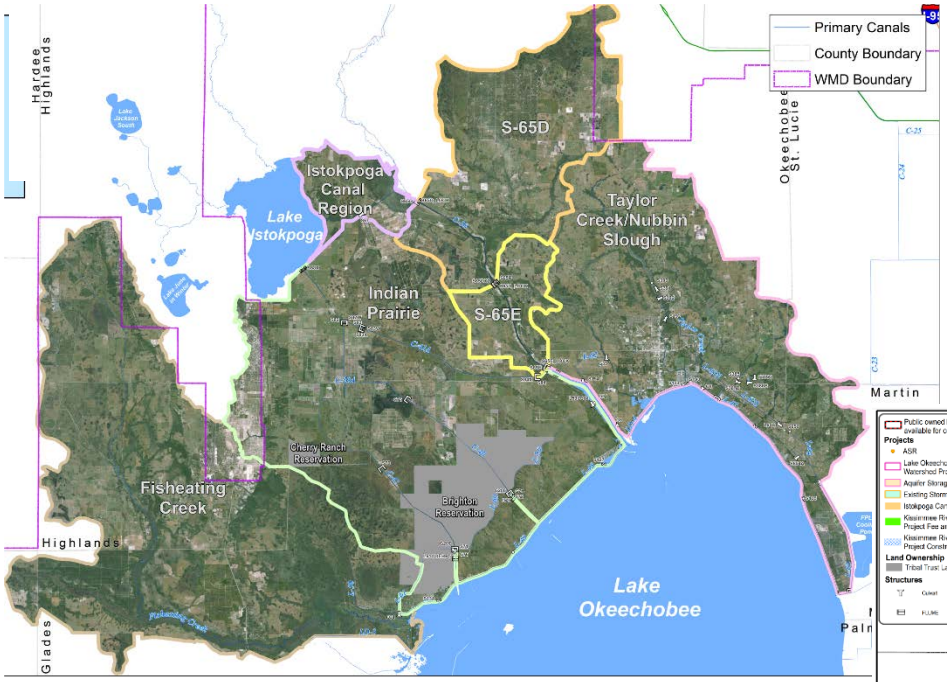
Lake Okeechobee Watershed Project

Matt Morrison, Federal Policy Chief
Everglades Policy and Coordination Division
Governing Board Meeting
April 13, 2017

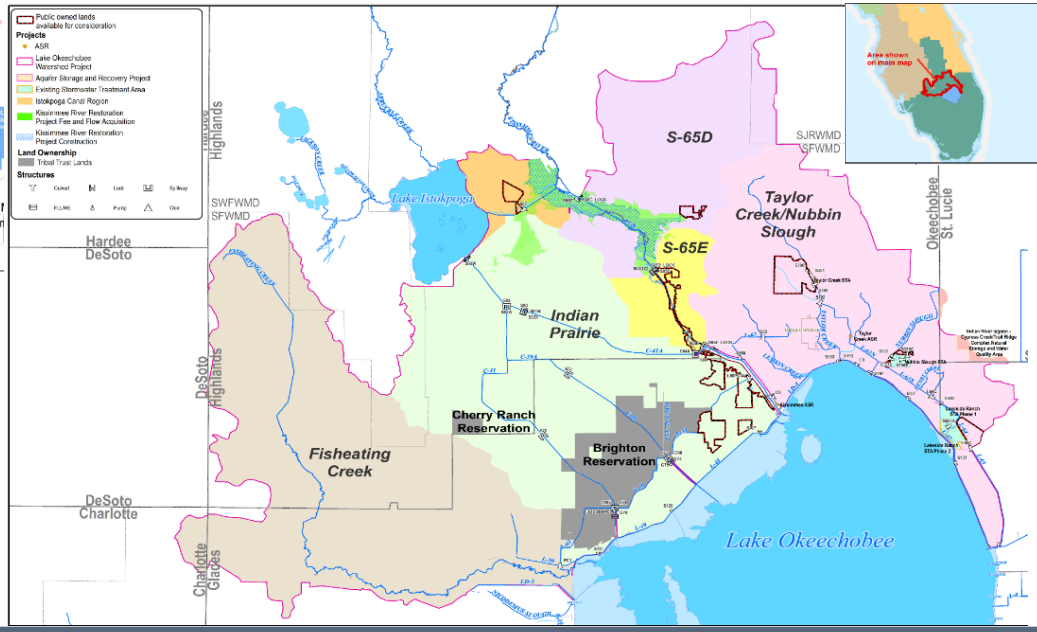
Project Planning Study Schedule



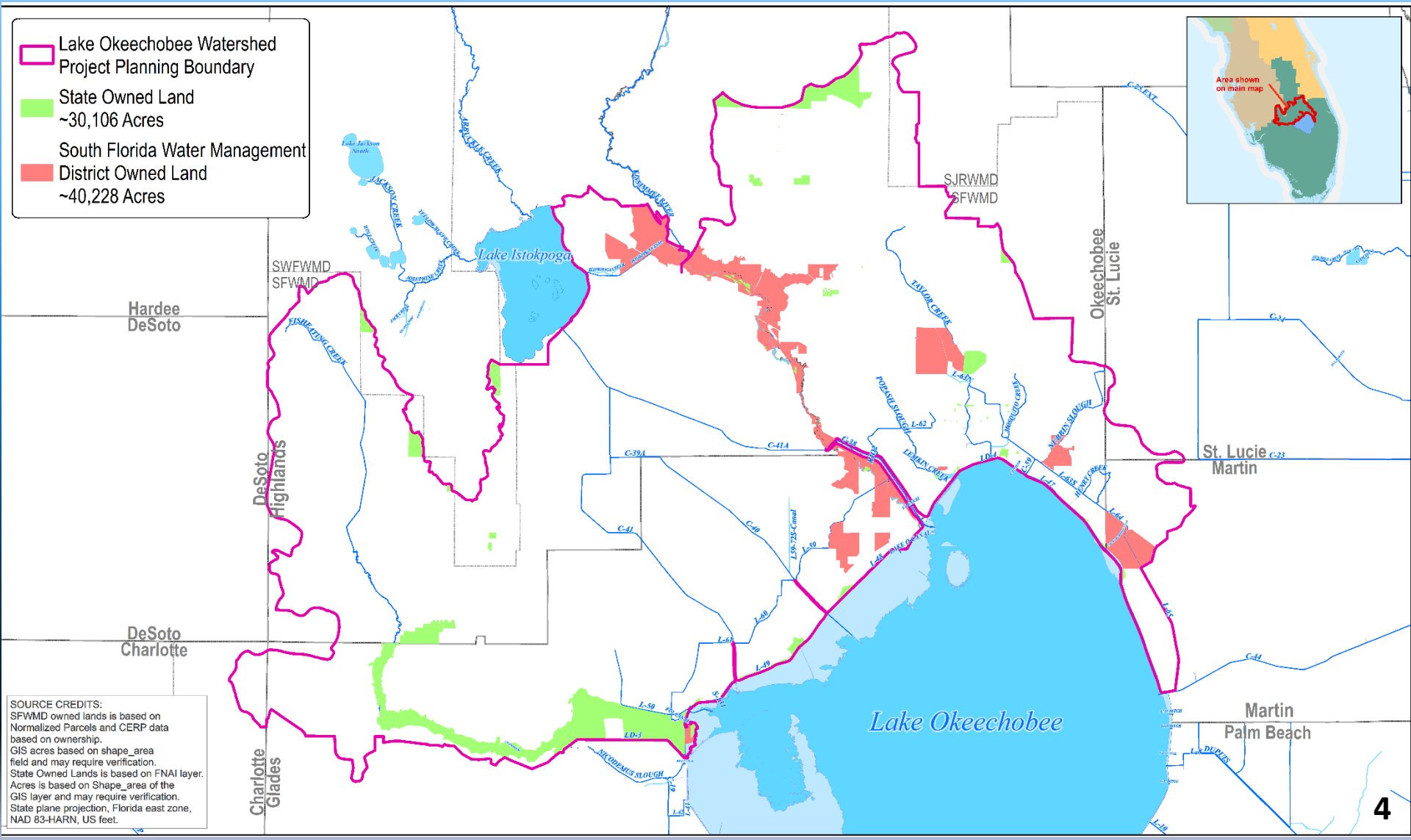
Lake Okeechobee Watershed Project Study Area



- ~950,000 acres
- Historically dominated by wetlands
- Current land use include:
  - Agriculture
  - Natural/Open Land and Water
  - Urban/Infrastructure



District and State Owned Lands in Planning Boundary



Lake Okeechobee Watershed Project Study Scope

- Increase water storage capacity in the watershed, resulting in improved Lake Okeechobee water levels
- Improve the quantity and timing of discharges to the St. Lucie and Caloosahatchee estuaries which adversely affect salinity and estuarine biota
- Restore/create habitat to increase the spatial extent and functionality of wetlands
- Improve existing and future water supply

Lake Okeechobee Watershed Project Components Under Consideration

- Above Ground Storage
- Aquifer Storage and Recovery (ASR)
- Wetland and Floodplain Restoration
- Deep Well Injection

Initial Array of Alternatives

1ST ROUND OF MODELING

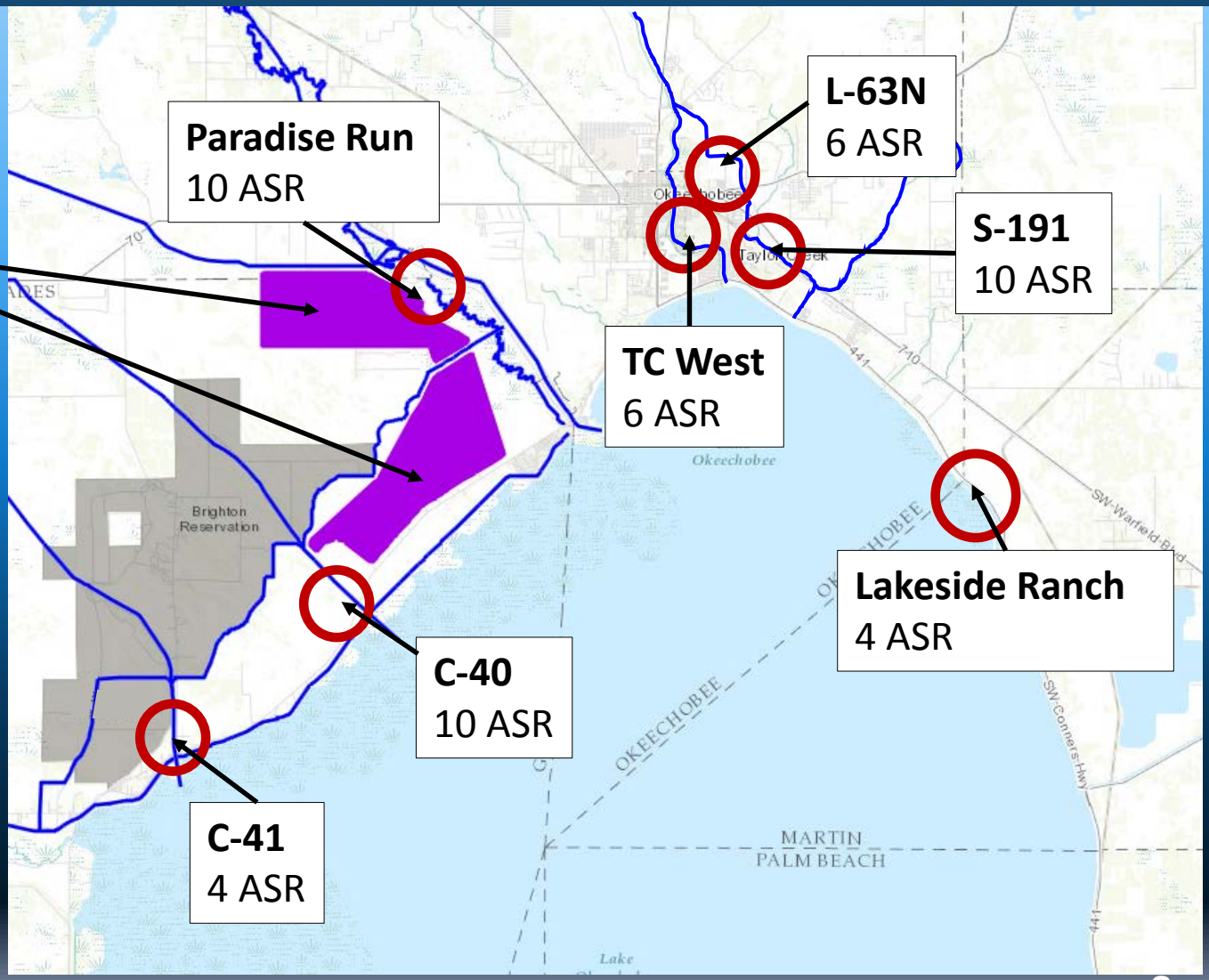
2ND ROUND OF MODELING

Alternative	Reservoir Component		ASR Component	DIW Component	Wetland Components
	Reservoir(s)	Storage Capacity (acre-feet)	# of ASR wells (5 mgd capacity)	# of DIWs (15 mgd capacity)	
No Action (FWO)					
Alternative 1 (ALT1)	**K05 (North and South)**	**258K**	**110**	30-90	Kissimmee River Paradise Run
Alternative 2 (ALT2)	**K05 (North and South) and K42**	**408K**	**110**	0	Kissimmee River Paradise Run Lake O West IP10
Alternative 2b (ALT2b)	K05 North and K42	264K	110	30-90	Kissimmee River Paradise Run Lake O West IP10
Alternative 3 (ALT3)	**K42 and I01**	**254K**	**112**	30-90	Kissimmee River Paradise Run Lake O West

Alternative 1

K05 Reservoir
- 17,230 acres
- 15’ max depth
- 258K Ac-ft storage

110 ASR
- 5 MGD capacity each
- 60 ASR co-located with K05 Reservoir
- 50 ASR distributed



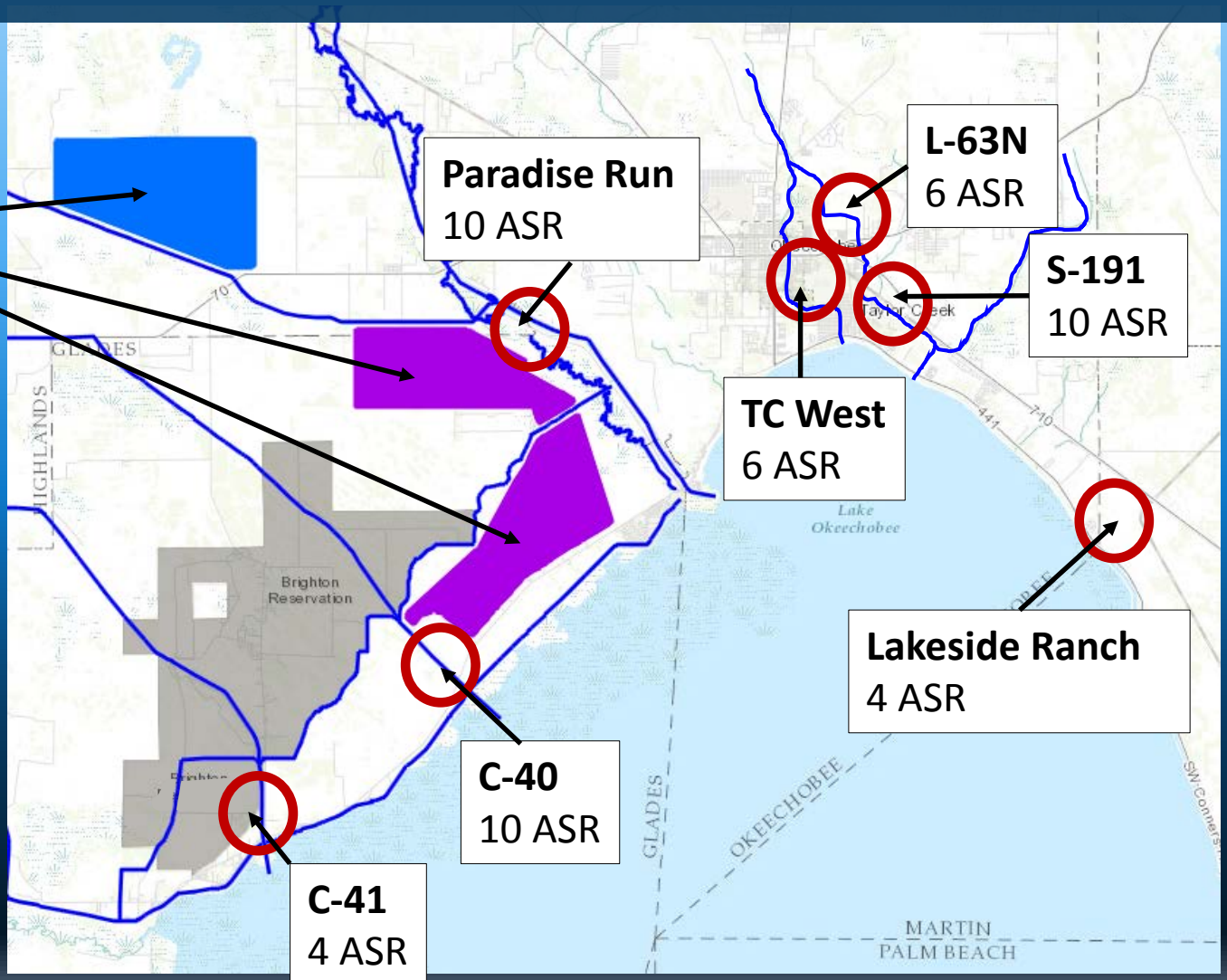
Alternative 2

K05 and K42 Reservoirs

- 27,214 acres
- 15’ max depth
- 408K Ac-ft storage

110 ASR

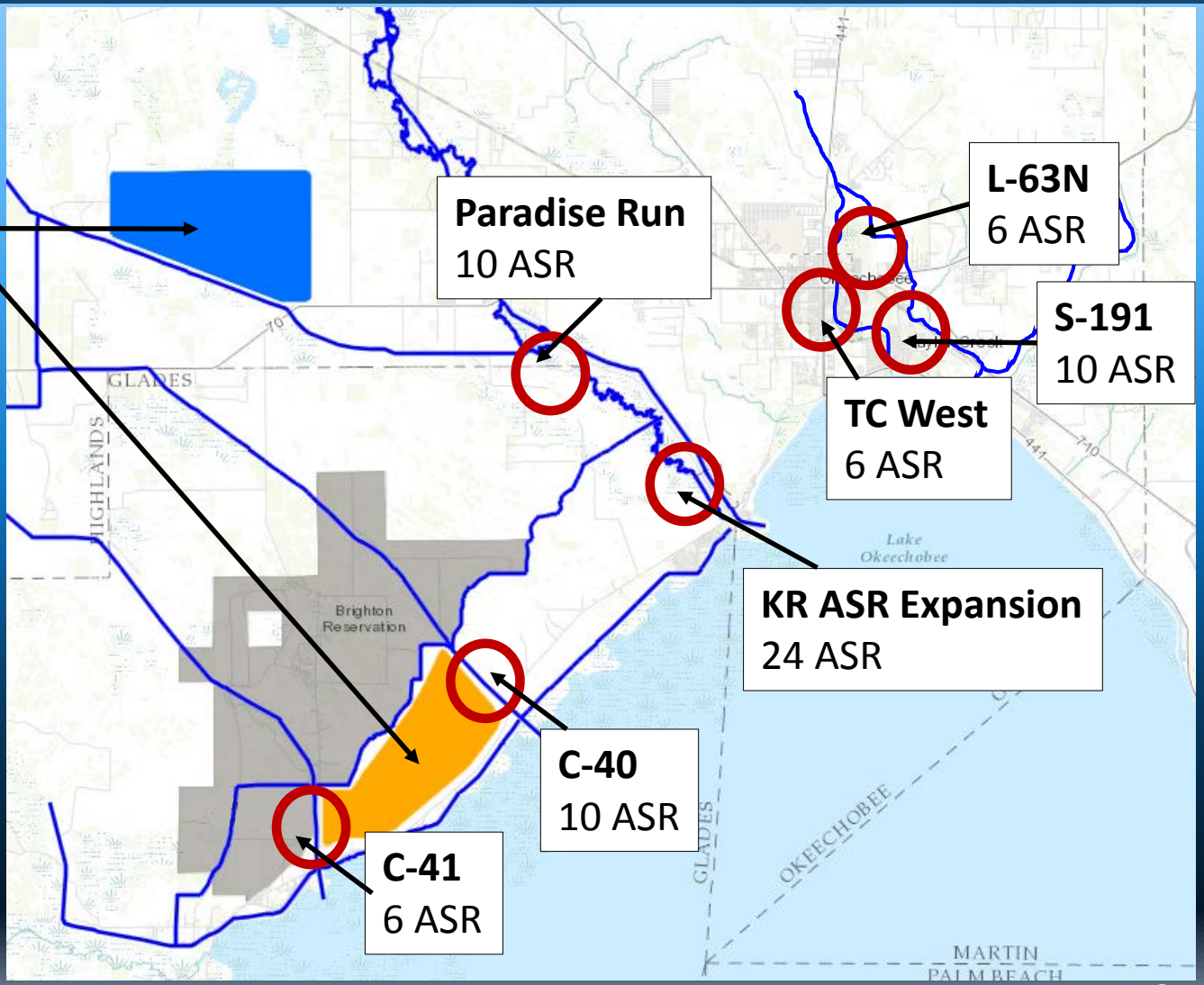
- 5 MGD capacity each
- 60 ASR co-located with K05 Reservoir
- 50 ASR distributed



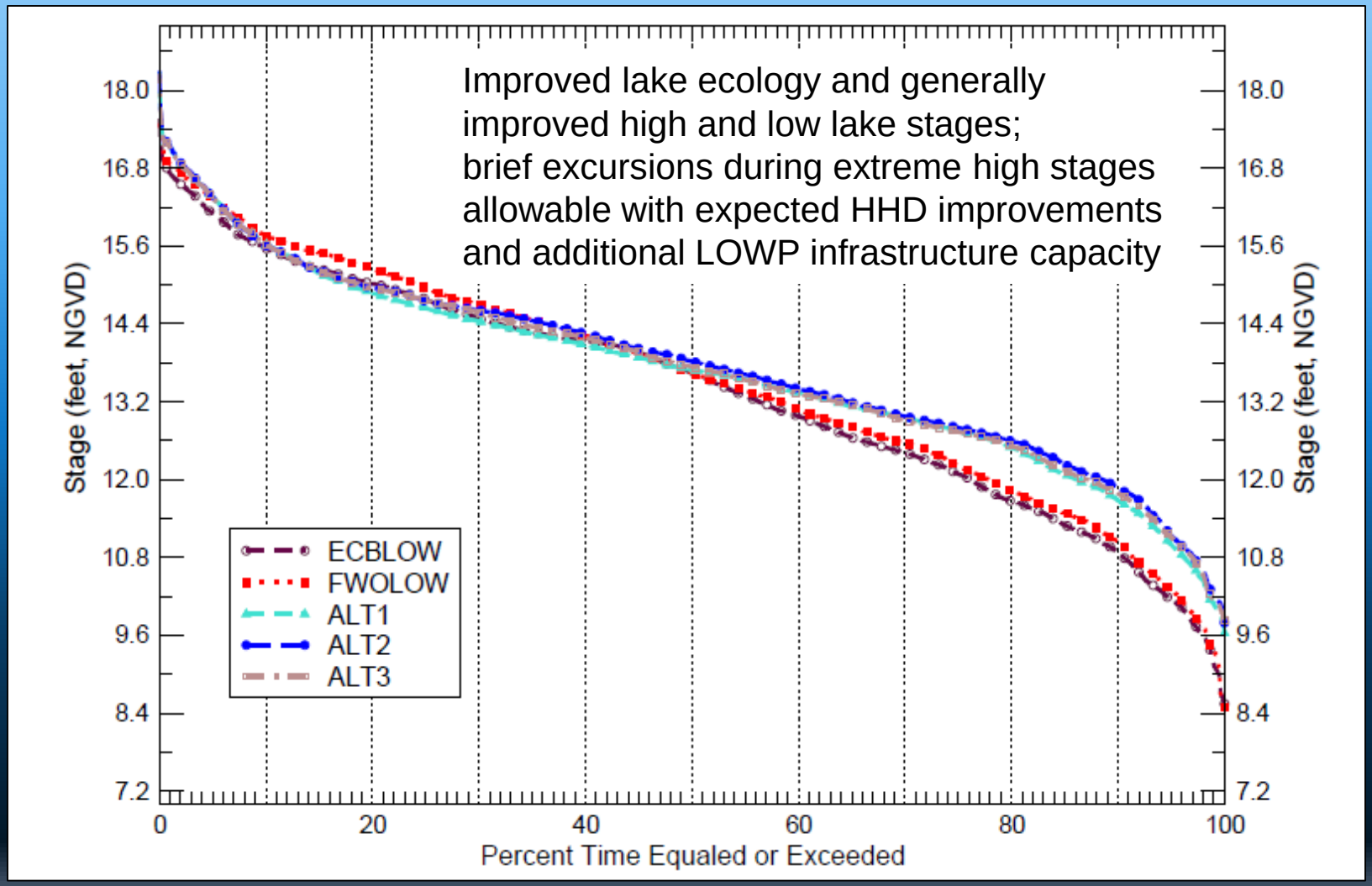
Alternative 3

K42 and I01 Reservoirs
- 16,949 acres
- 15’ max depth
- 254K Ac-ft storage

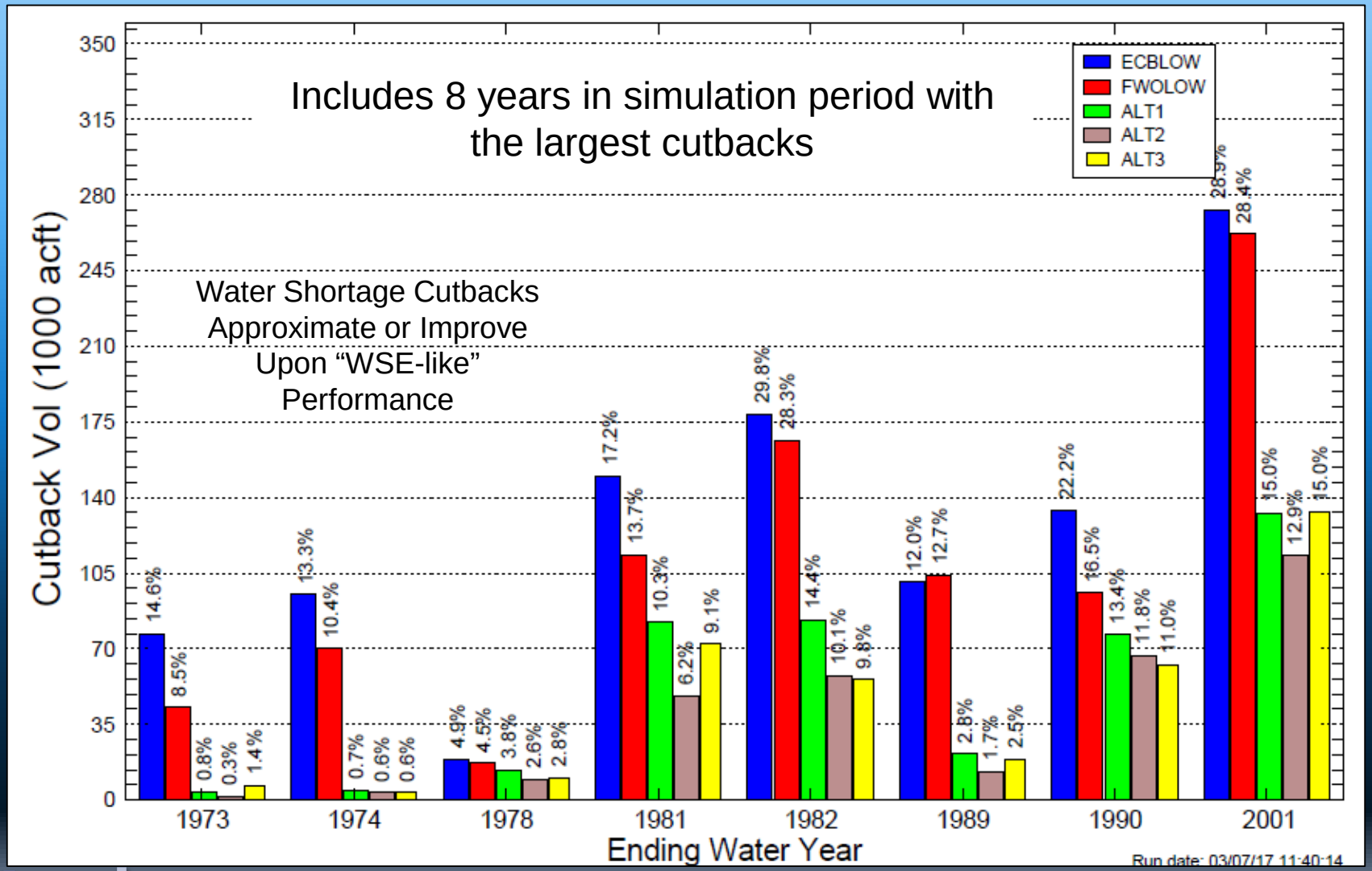
110 ASR
- 5 MGD capacity each
- 40 ASR co-located with I01 Reservoir
- 72 ASR distributed



Stage Duration Curves for Lake Okeechobee



Water Year (Oct-Sep) LOSA Demand Cutback Volumes



Northern Estuaries Benefits and Costs Summary

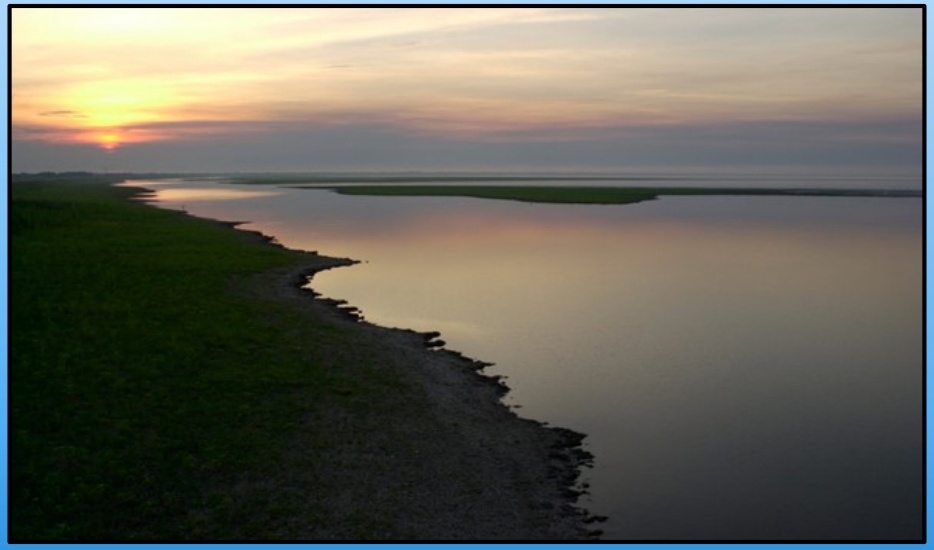
	Average Annual Lake O Regulatory Discharge (kac-ft)	% Estuary Regulatory Flow Reduction (relative to ECB)	Number of Years Lake O Causes a Damaging Event	% Estuary "Years with Impact" Reduction (relative to ECB)	Number of Months Lake O Causes a Damaging Event	% Estuary "Months with Impact" Reduction (relative to ECB)
St Lucie Estuary						
ECB	165		15		31	
FWO	126	24%	11	27%	20	35%
ALT1	82	50%	7	53%	9	71%
ALT2	80	52%	6	60%	10	68%
ALT3	84	49%	7	53%	10	68%
Caloosahatchee Estuary						
ECB	416		18		38	
FWO	257	38%	14	22%	23	39%
ALT1	140	66%	6	67%	9	76%
ALT2	136	67%	5	72%	7	82%
ALT3	139	67%	9	50%	12	68%

Alternatives Rough Order of Magnitude Costs		
ALT1	**ALT2**	**ALT3**
$2,716,000,000	$3,932,000,000	$2,860,000,000

Cost estimates are in 2017 prices and assume 9.2% Pre-Construction, Engineering and Design; 9.6% Supervision and Administration; and 35% Contingency.

Benefits of Northern Storage

- Consistent with the Integrated Delivery Schedule
  - Sequencing provides project planning and implementation timelines such that the beginning of one element coincides with progress or completion of others
  - Maximizes the benefits of all Comprehensive Everglades Restoration Plan efforts
- Water stored north of the lake provides the greatest flexibility for operating the water management system to balance and improve missions of flood control, water supply and natural systems
  - Reduces damaging releases to the Caloosahatchee and St. Lucie estuaries
  - Provides the greatest flexibility for delivering water when and where it is needed for water supply
  - Allows for releases into the Caloosahatchee River and Estuary during the dry season to protect the health of the river and estuary



Lake Okeechobee

Discussion