



Northern Everglades and Estuaries Protection Program

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South Florida Ecosystem Restoration Task Force
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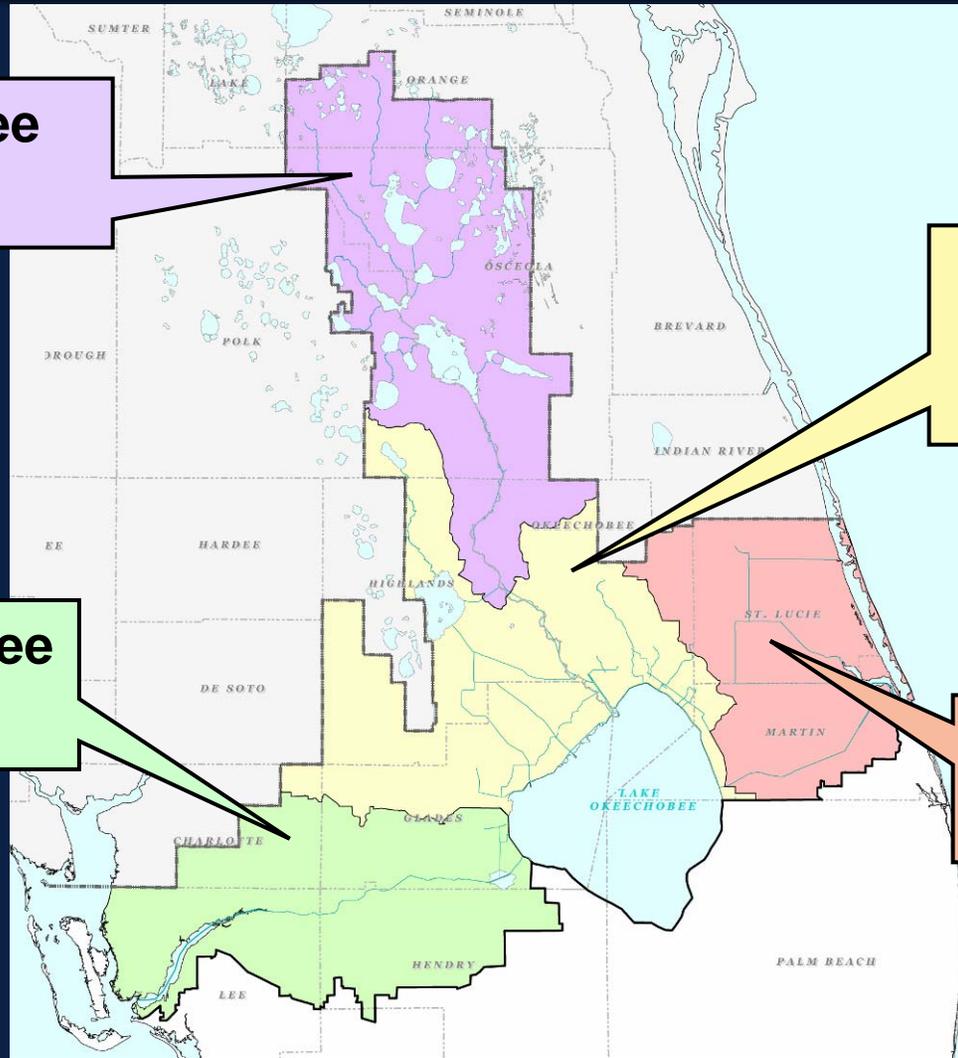
Northern Everglades and Estuaries Protection Program

**Kissimmee
Region**

**Lake
Okeechobee
Region**

**Caloosahatchee
Region**

**St Lucie
Region**





Northern Everglades and Estuaries 2007 Legislation - Senate Bill 392

- **Recognizes that Lake Okeechobee, Caloosahatchee, and St. Lucie Watersheds are critical water resources of the state**
- **Expands the use of the Save Our Everglades Trust Fund for Northern Everglades restoration**
- **Extends the Save Our Everglades Trust Fund through 2020**





Northern Everglades and Estuaries Specific Requirements



- **Builds upon existing restoration plans**
- **Technical plan to identify water quality treatment projects and water storage requirements for the Lake Okeechobee watershed by February 1, 2008**
- **Caloosahatchee and St. Lucie Rivers Watershed Protection Plans to identify water quality and storage projects by January 1, 2009**



Technical/Public Participation

- Numerous opportunities provided for stakeholder/public involvement and input throughout plan development process
 - Meeting Presentations
 - Briefings and Updates
 - Website
- Coordination with other resource agencies, counties & municipalities





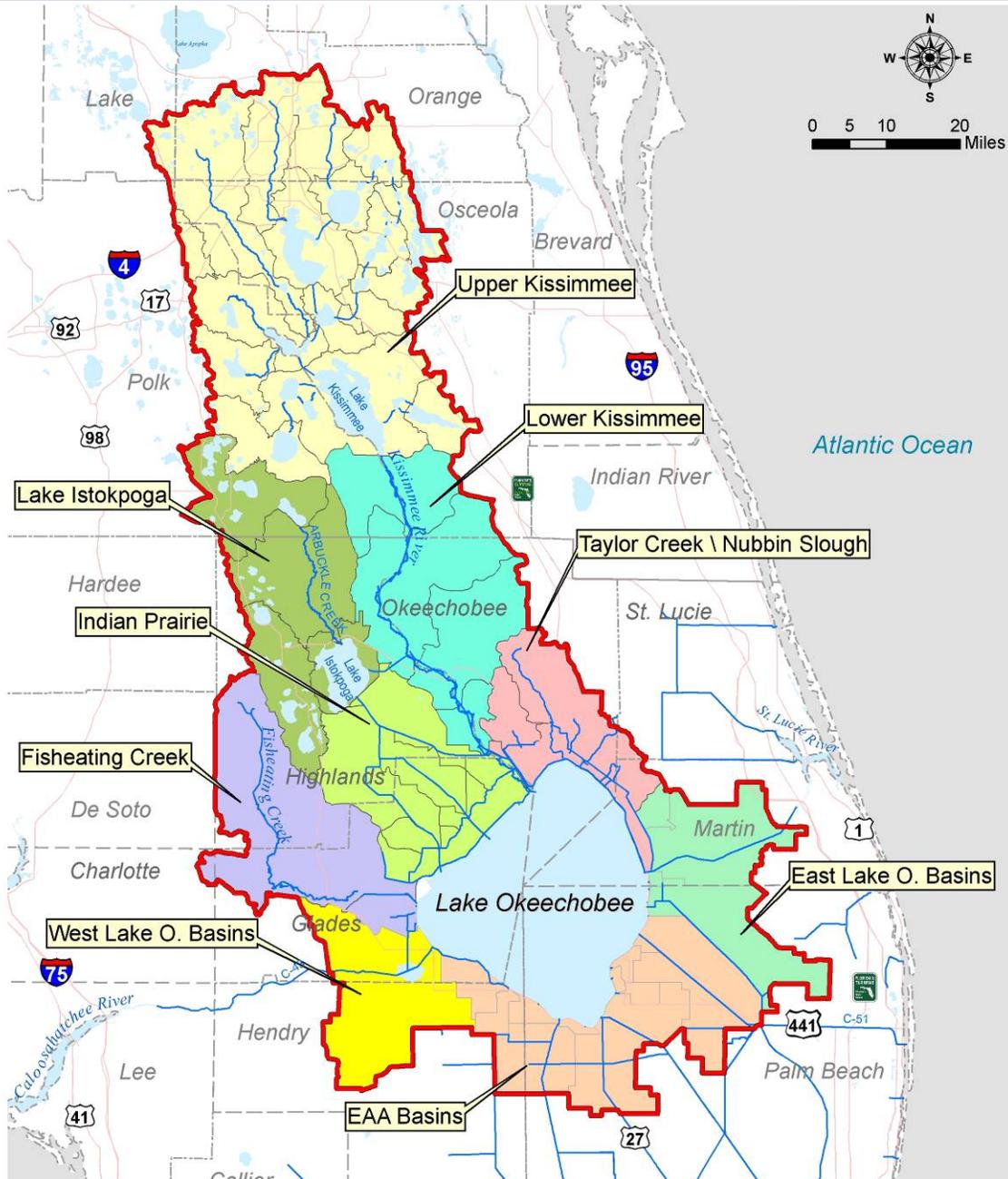
Lake Okeechobee Watershed Construction Project
Phase II Technical Plan





Lake Okeechobee Technical Plan Schedule

- **Assembled Baseline Information and Alternative Formulation** Summer 2007
- **Draft Plan Released for Public Review** October 2007
- **Final Plan to Governing Board** January 2008
- **Submitted Plan to Legislature** February 1, 2008



Study Area

9 Sub-Watersheds

- Upper Kissimmee
- Lower Kissimmee
- Taylor Creek/Nubbin Slough
- Lake Istokpoga
- Indian Prairie
- Fisheating Creek
- West Lake Okeechobee Basins
- East Lake Okeechobee Basins
- EAA Basins



Lake Okeechobee Technical Plan Requirements

- **Developed by South Florida Water Management District, in cooperation with the Florida Department of Environmental Protection and Florida Department of Agriculture and Consumer Services**
- **Identify facilities to achieve Lake Okeechobee Total Maximum Daily Load**
- **Provide additional measures to increase water storage and reduce excess water levels in lake and discharges to estuaries**
 - **Identify storage goal to achieve desired lake levels and inflow volumes to estuaries while meeting other water related needs**



Key Objectives

- **Meet Lake Okeechobee Total Maximum Daily Loads**
- **Manage Lake Okeechobee water levels within an ecologically desirable range**
- **Meet desirable salinity ranges for the St. Lucie and Caloosahatchee Estuaries**
- **Identify opportunities for alternative surface water supply sources in the watershed**





Plan Formulation and Evaluation

- **Formulation**

- Alternative 1- Common Elements
- Alternative 2- Maximizing Storage
- Alternative 3- Maximizing Water Quality Improvements
- Alternative 4- Optimize Storage and Water Quality Improvements

- **Evaluation**

- Water Quality Performance
 - Phosphorus reduction
- Water Quantity (Storage) Performance
 - Lake Okeechobee Stages
 - St. Lucie and Caloosahatchee Estuary Flows
 - Lake Okeechobee Service Area Water Supply



Water Quality- Defining the magnitude of the problem

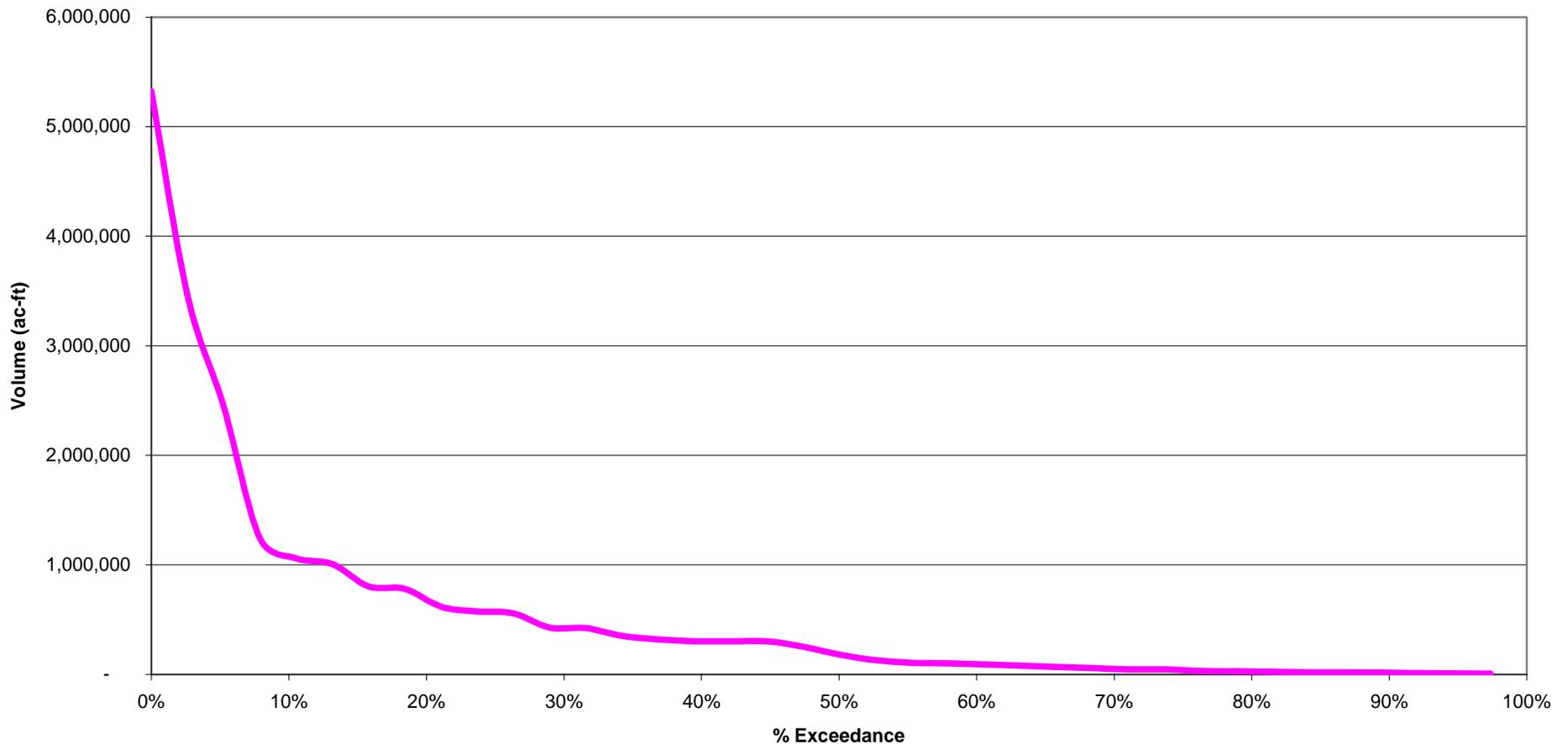


- **Phosphorus Load (Annual Average)**
 - Phosphorus TMDL allows for 105 metric tons from surface water inflows
 - Lake Okeechobee Protection Plan update based on 1991 – 2000 = 433 metric tons
 - Current analysis 1991–2005 = 514 metric tons
- **Based on current analysis, inflows exceed TMDL by 409 metric tons**



Water Quantity- Defining the magnitude of the problem

Lake Okeechobee regulatory releases based upon Restudy 2050 Future Base (1965-2000)





Identification of Plan Best Meeting Legislative Goals

- **Modified version of Alternative 4**
 - **Includes additional water quality projects necessary to meet the Lake Okeechobee TMDL for total phosphorus**
 - **Identifies the range of storage needed (900,000 ac-ft – 1.3 million ac-ft) for lake stage and discharge management**



Basis for Preferred Plan

- Builds upon existing and planned programs and projects
- Emphasizes cost effective local features
- Promotes involvement of private landowners as partners in the restoration program (BMPs, FRESP, alternative water storage projects)
- Minimizes real estate acquisition requirements by maximizing use of state owned lands and promoting storage and treatment on privately owned lands
- Includes select regional projects to complement and build upon local features
- Recognizes need to further optimize and refine plan features



Plan Elements Local Level

- **Source control**
 - **Agricultural BMPs**
 - **Urban BMPs**
 - **Regulatory programs**
- **Land management activities**
- **Alternative water storage projects**
- **Florida Ranchlands and Environmental Services Program**
- **Local government initiatives**





Plan Elements Regional Level



- Reservoir-assisted stormwater treatment areas
- Reservoirs
- Stormwater treatment areas
- Aquifer storage and recovery wells
- Deep injection wells



Additional Plan Elements



- **Managed aquatic plant systems**
- **Hybrid wetland treatment technology**
- **Chemical treatment**
- **Wetland restoration**





Plan Recommendations – Water Quality Improvements



- **42,000 acres treatment wetlands**
- **Innovative “green” nutrient control technologies**
- **1.7 million acres agricultural best management practices**



Plan Recommendations – Increased Water Storage



- **Between 900,000 and 1.3 million acre-feet of water storage north of the lake will improve lake levels and coastal discharges**
 - **Alternative water storage projects on public and private lands**
 - **Above-ground reservoirs**
 - **Aquifer Storage and Recovery**



Plan Implementation Strategy

- **Multiple Stages**
 - **Initial Implementation Stage- projects initiated 2008-2010**
 - **Mid Term Implementation Stage- projects initiated 2011-2015**
 - **Long Term Implementation Stage- projects initiated beyond 2015**



Initial Implementation Stage

		Water Quality	Water Quantity
Projects	Agricultural and Urban BMPS and Regulatory Programs	✓	✓
	LOPP Phosphorus Source Control Projects	✓	✓
	Local Government Initiatives	✓	✓
	Florida Ranchlands and Environmental Services Projects	✓	✓
	LOER Alternative Water Storage Projects (Alternative water storage facilities, Paradise Run 10 Well ASR System, Seminole Brighton ASR Pilot, and Taylor Creek ASR Reactivation)	✓	✓
	LOER Stormwater Treatment Areas (Brady Ranch STA, Lemkin Creek Water Quality Treatment Facility)	✓	✓
	CERP ASR Pilots	✓	✓
	CERP Lake Okechobee Watershed Project (Istokpoga STA, Lakeside Ranch STA, Taylor Creek Reservoir, Paradise Run Wetland Restoration)	✓	✓
Technology and Model Refinement	BMP Research and Refinement	✓	✓
	Chemical Treatment Feasibility Study	✓	✓
	Water Quality Model Development	✓	✓
	ASR Feasibility- Pilot Cycle Testing, ASR Regional Study, ASR Optimization Analysis	✓	✓
	Hydrologic Model Refinement	✓	✓



Initial Implementation Stage

- **Non-CERP Cost= \$260-320 Million**
- **CERP Cost= \$1-1.4 Billion**
 - **Costs are in 2007 dollars**
 - **CERP costs are eligible for 50 percent cost share with the federal government**
 - **LOER projects included in CERP cost are eligible for federal cost share, however those funds will be needed in advance of the CERP project from State and SFWMD sources**
 - **Costs do not include dollars that have already been expended to date**
 - **Costs include the full cost to build a project completely even if construction period goes beyond the initial implementation stage**



Mid and Long-Term Implementation Stages

- **Mid-Term Implementation Measures**
 - To be determined based on Technology and Model Refinement Studies and Initial ASR Feasibility
 - Initial Estimates to be provided in 2010 Lake Okeechobee Protection Plan Update

- **Long-Term Implementation Measures**
 - To be determined based on Final ASR Feasibility
 - Estimates to be provided in 2013 Lake Okeechobee Protection Plan Update



Plan Refinement Process

- **Process Development and Engineering**
 - **Model and Technology Refinement**
 - **Existing Technology Refinement**
 - **Innovative Nutrient Control Technology**
 - **Sub-watershed Conceptual Planning**

- **Plan Updates- required every 3 years**



St. Lucie and Caloosahatchee River
Watershed Protection Plans





River Watershed Protection Plans Preliminary Schedule

- **Draft Plan** **Fall 2008**
- **Final Plan to Governing Board** **November 2008**
- **Propose Total Maximum Daily Loads for tidal portions of Caloosahatchee River and Estuary (by DEP)** **December 2008**
- **Submit Plan to Legislature** **January 2009**



River Watershed Protection Plan Requirements

- **Identify geographic extent of watershed**
- **Be coordinated as needed with other protection plans**
- **Be achieved through phased program of implementation**
- **Utilize adopted TMDLs as basis for pollutant load reduction objectives**
- **Include a goal for salinity envelopes and freshwater inflow targets for the estuary**



St. Lucie and Caloosahatchee River Watershed Protection Plans

- **Working teams have been convened for each River Watershed Protection Plan**
- **Teams have generally been meeting on a monthly basis since October**
- **Meetings for Protection Plans, Research and Monitoring Plans, and TMDLs are being coordinated**
- **Dates for meetings are posted on Northern Everglades website**



<https://my.sfwmd.gov/northerneverglades>

Questions