

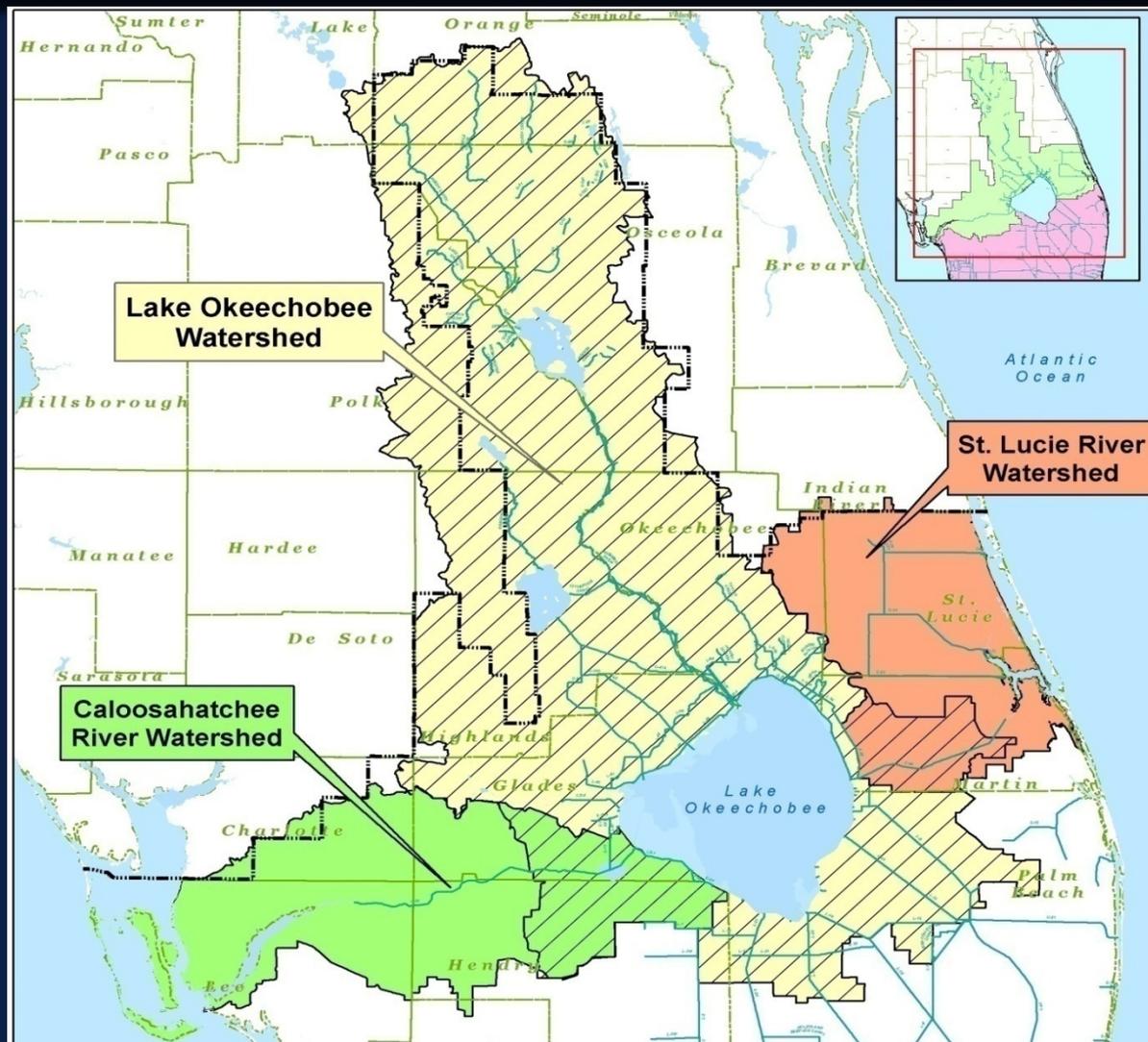
Northern Everglades and Estuaries Protection Program Update

February 24, 2010

WRAC Lake Okeechobee Committee Meeting
Pinar Balci, Ph.D. – Section Lead
Federal and State Policy Division



The Northern Everglades





Lake Okeechobee Protection Plan (LOPP) Update

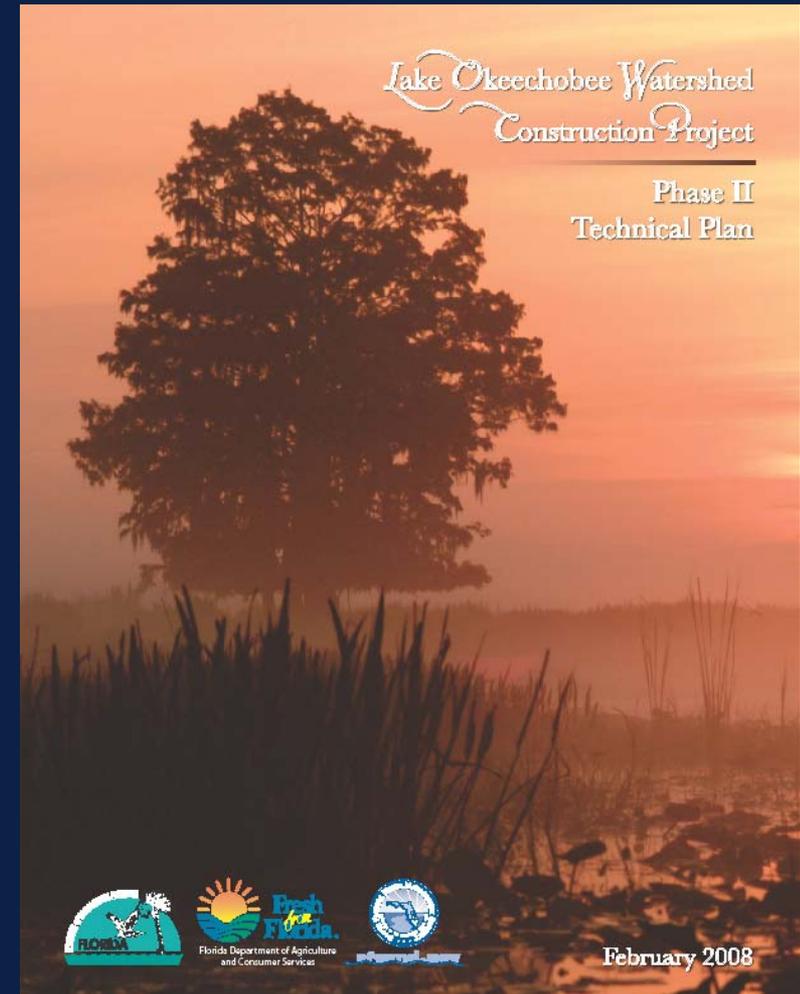


- I. Pollutant Control Program**
- II. Construction Project**
- III. Research and Water Quality Monitoring Program**



Lake Okeechobee Protection Plan Update

- **Lake Okeechobee Phase II Technical Plan was delivered to Legislature on February 1, 2008**
- **Three- year plan update due in early 2011**
- **Currently developing LOPP update outline and schedule**
 - **Draft LOPP update to Lake Okeechobee WRAC - Fall 2010**





Pollutant Control Program

- **Implementation of agricultural and urban Best Management Practices (BMPs)**
- **Revisions to regulatory programs**
 - **Environmental Resource Permit (ERP) Program**
 - **Statewide Stormwater Rule - Water Quality, Florida Department of Environmental Protection (FDEP)**
 - **Northern Everglades ERP Basin Rule - Water Quality (SFWMD)**
 - **Chapter 40E-61 Source Control Program - Water Quality (SFWMD)**



Pollutant Control Program

- **Environmental Resource Permit (ERP) Program**
 - **Statewide Stormwater Rule - Water Quality (FDEP)**
 - Rule development workshops - March 2010
 - Rule adoption scheduled for July 2010
 - **Northern Everglades ERP Basin Rule - Water Quantity (SFWMD)**
 - Developing draft guidance document with technical methodology previously procured from consultant
 - Can move forward with rule adoption by August 2011 if necessary



Pollutant Control Program

- **Chapter 40E-61 Source Control Program - Water Quality (SFWMD)**
 - **Lake Okeechobee (phosphorus)**
 - **Program already exists**
 - **Being expanded to encompass larger geographic area and incorporate new refinements consistent with NEEPP legislation including adoption of collective performance measures**
 - **Rule adoption anticipated in Spring 2011 because of staff vacancies**

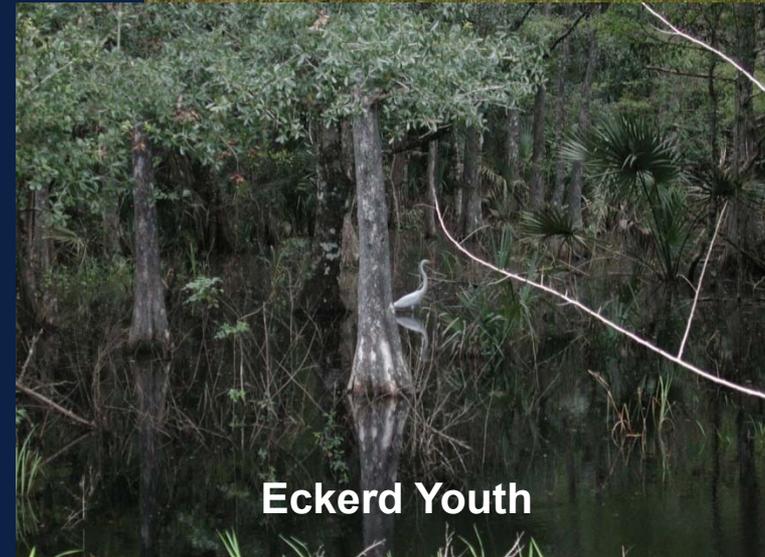
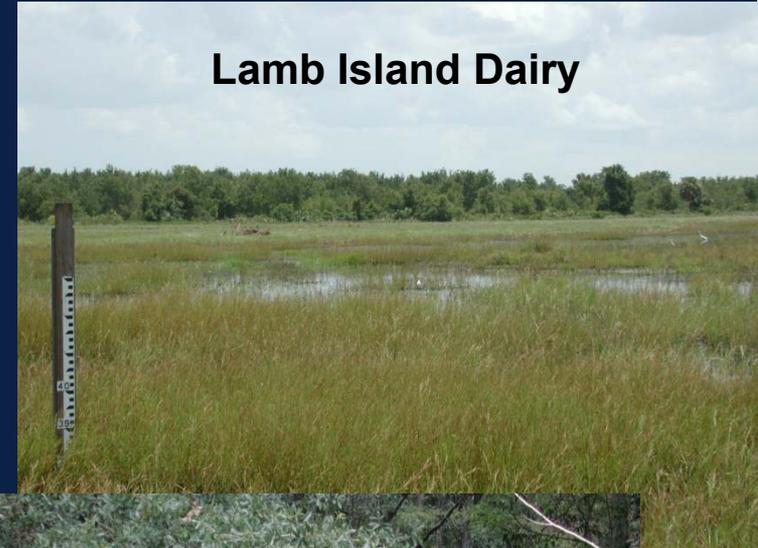


Pollutant Control Program

SFWMD Phosphorus Control Projects

- Dairy Best Available Technology (Dairy BATs)
- Former Dairy Remediation Projects
- Wetland BMP Research & Restoration Projects
- Permeable Reactive Barrier

Lamb Island Dairy

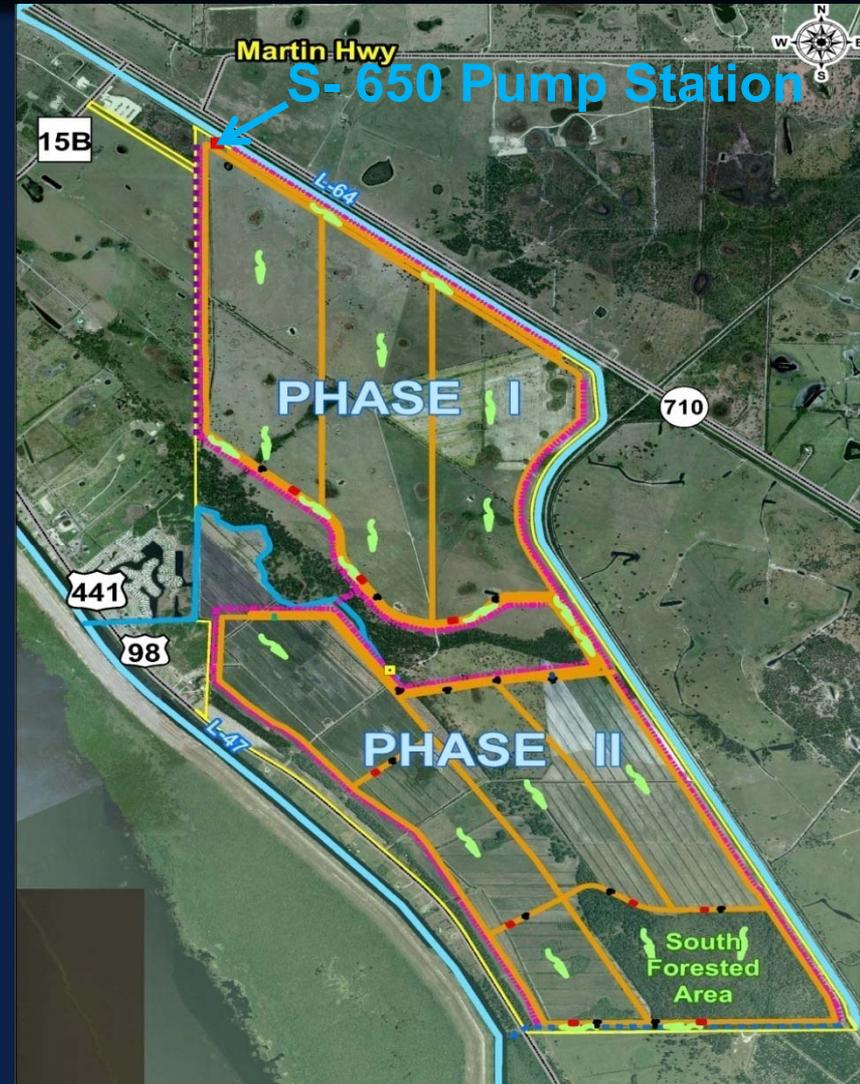


Eckerd Youth



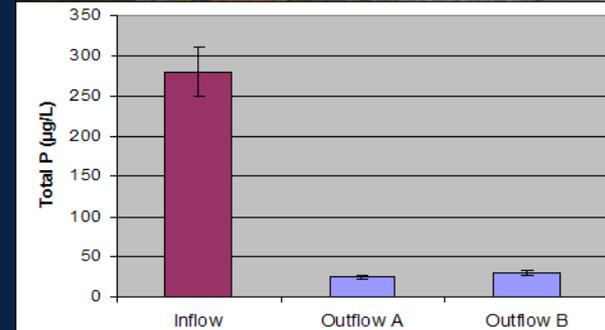
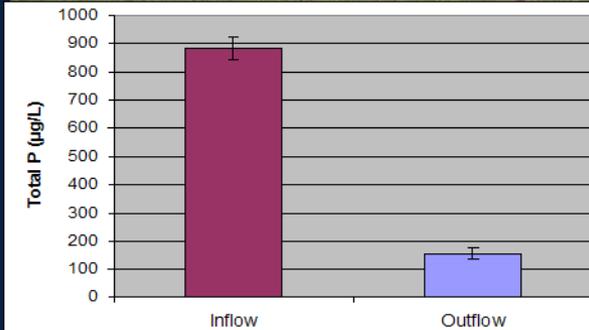
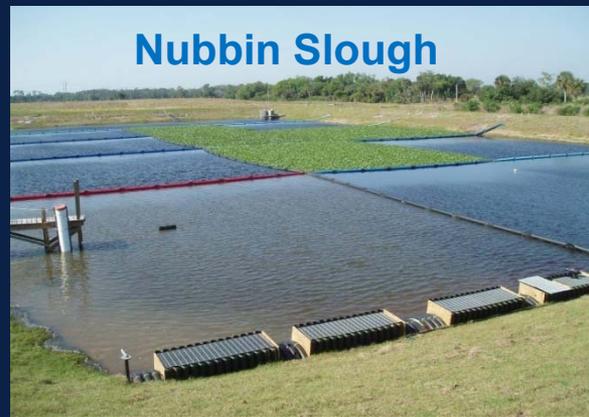
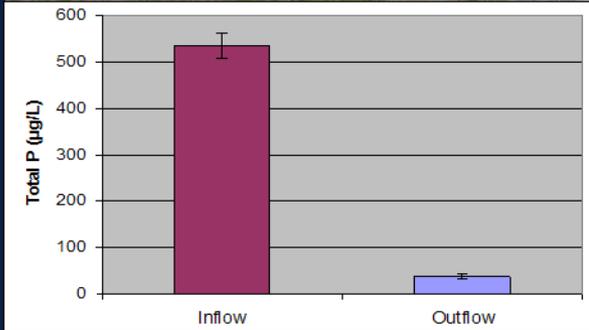
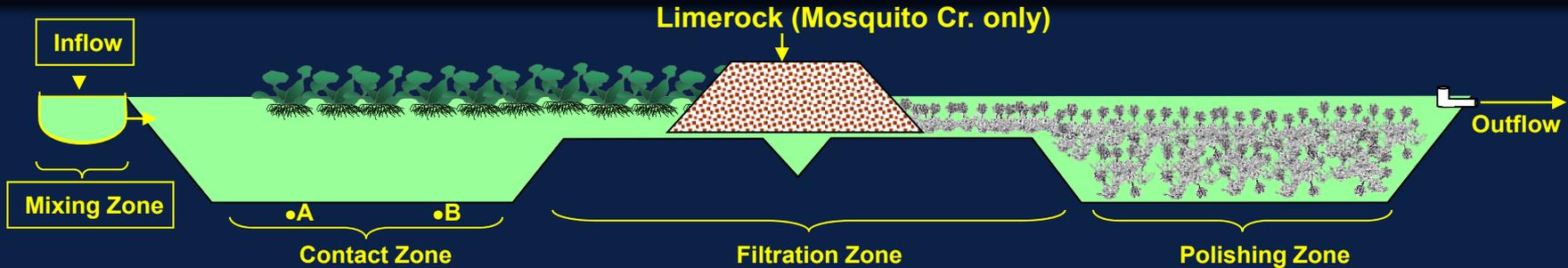
Construction Project - Okeechobee Lakeside Ranch STA

- Project is designed in two phases
 - Phase 1: STA-North, S-650 pump station and canal improvements
 - STA-North construction underway
 - S-650 construction will be issued in March
 - Phase 2: STA-South and S-191A pump station
 - STA-South pre-final design review in April 2010
 - S191A - intermediate design ongoing





Construction Project - Okeechobee Hybrid Wetland Treatment Technology





Construction Project

Fisheating Creek Feasibility Study

- **Feasibility study has two phases**
 - **Phase I: Included investigation of available information and work plan development - completed in March 2009**
 - **Phase II: Includes alternative formulation, evaluation and selection; compilation of results and report - began May 2009**
 - **Current activities**
 - **Refinement of Phase II Technical Plan targets for storage and water quality based on additional data**
 - **Refining Watershed Assessment Model (WAM) simulations for pre-drainage and existing**
 - **Next steps**
 - **Identify proposed features**
 - **Complete alternative evaluations and selection of preferred alternative**



Construction Project

Taylor Creek Site Feasibility Study

- Taylor Creek sub-watershed contributes disproportionately high phosphorus loads to Lake Okeechobee relative to its flow contribution
- Objective: Identify water quality/storage options within Taylor Creek/Grassy Island property to assist with meeting the proposed objectives of the Lake Okeechobee Phase II Technical Plan.



Construction Project Chemical Treatment Study

- **Identify chemical treatment technologies appropriate for use in Northern Everglades to reduce TP loads in stormwater runoff**
- **Phase I: Literature review was completed in July 2009**
 - **Summarizes latest information on chemical treatment methods and potential Northern Everglades applications**
- **Phase II: Site identification for a large-scale facility - ongoing**
 - **Site identification analyses and conceptual design**



Construction Project

Dispersed Water Management and Treatment

Three Approaches Used	Performance or Status
Easements - USDA Wetland Reserve & Reserved Rights Pilot Programs	<u>Good progress.</u> State of Florida received ~\$75 million for easement programs in 2009. District has requested special funding program
Payment For Services - Florida Ranchlands Environmental Services Program	<u>Good progress.</u> Six water storage pilot projects retained 4,200 ac-ft of water with a P reduction of 1.5 metric tons (mt). A WQ treatment pilot project removed 3.3 mt of P
Cost Share - Alternative Water Storage/ Disposal	<u>Good progress.</u> Federal funding for NRCS cost-share still available, reduced state funding
Dispersed Storage & Treatment Program Development	To date, all programs provide ~ 120,000 ac-ft. of storage. Pursuing remaining issues (T & E species, price discovery, etc.) for program solicitation



Construction Project

Dispersed Water Management and Treatment

- **Progress on Outstanding Issues:**
 - **Regulatory certainty and clarity entering, executing and exiting a Payment for Environmental Services (PES) contract**
 - **T & E Safe Harbor**
 - **USDA NRCS and US FWS Consultation Matrix**
 - **Draft of MOU between NRCS and SFWMD describing roles & responsibilities for implementing Consultation Matrix in a PES program**
 - **US ACOE drafting a General Permit**
 - **End of 2010 FRESP will deliver a PES program design ready for implementation**



Research and Water Quality Monitoring

- Lake Okeechobee (LO) in-Lake Assessment Projects
- Sub-basin Monitoring Network (USGS)
- Exotics and Nuisance Species Control
- LO Water Quality Model
- LO Environment Model





Caloosahatchee and St. Lucie River Watershed Protection Plans Update

- I. Pollutant Control Program**
- II. Construction Project**
- III. Research and Water Quality Monitoring Program**



Pollutant Control Program

- **Implementation of agricultural and urban BMPs**
- **Revisions to regulatory programs**
 - **Environmental Resource Permit (ERP) Program**
 - **Statewide Stormwater Rule - Water Quality (FDEP)**
 - **Northern Everglades ERP Basin Rule- Water Quantity (SFWMD)**
- **District's Source Control Program Regulatory Rule (Chapter 40E-61)**
 - **No existing program; new program and rule development required**
 - **Rule adoption anticipated in Fall 2012**



Construction Project – Caloosahatchee C-43 Water Quality Treatment and Testing Facility

- **Objective: Develop, design and build a testing facility to provide total nitrogen treatment**
 - **Site assessments and topographic surveys complete**
 - **Technologies review and plan development under way**





Construction Project

County Line Ditch/Four Corners Phase I

- Completed several major tasks under Phase I:
 - Installation of monitoring wells and staff gages
 - County Line Ditch (CLD) Clearance south of CR-78 and associated gopher tortoise relocation
 - Topographic surveys to obtain cross sections of CLD and associated infrastructure
- Ongoing efforts:
 - Gathering data from monitoring wells
 - Modeling with the new survey data
 - Alternatives will be compared to improve capacity of CLD to meet appropriate drainage goals
- Future phases dependant on Legislature funding





Construction Project

Powell Creek Algal Turf Scrubber (ATS)

- Evaluate effectiveness of the ATS in treating both freshwater and estuarine waters
- Pilot Project was completed in December 10, 2009
- Fourth Quarter report (Dec 2008 – Dec 2009) provided cumulative results for Qtr 1-4
 - The average % concentration reduction was approximately 19.28% for total phosphorous and 6.67% reduction for total nitrogen
- Next steps - Completion of final report in March 2010





Construction Project

5/5/5 projects with Martin County

- **Manatee Pocket Dredging:** Removal of accumulated muck for water quality and habitat improvement
 - Permit modifications submitted; gopher tortoise relocation completed
 - Mobilization is expected to be completed by Feb 2010
- **Manatee Creek Basin Water Quality Retrofit:** Provides treatment of uncontrolled discharges to the Manatee Pocket from the Manatee Creek
 - Survey, redesign and permits are complete
 - Phase II land acquisition complete; Phase III all essential parcels closed; construction notice to proceed issued



Construction Project

5/5/5 projects with Martin County (Cont.)

- **North River Shores Vacuum Sewer System** - Enhances water quality in the North Fork of the St. Lucie River by eliminating nutrient loading from septic systems
 - Survey and design complete. Construction permits obtained
 - Two staff level workshops held with affected residents
 - Notice to proceed will be issued by March 2010
- **Old Palm City Phase III Water Quality Retrofit** - Improves water quality through developing a neighborhood stormwater quality management system
 - Land acquisition is complete for all required lots
 - Expected to be completed in Summer 2010



C-44 Project

- **Design completed; land acquired**
- **USACE intends to construct C-44 Project under 3 contracts**
 - **Contract 1: Intake Canal, main project access road, Citrus Boulevard related efforts, southern C-133 canal and spillway - Construction start Feb 2011**
 - **Contract 2: Reservoir and pump station - Construction start April 2012**
 - **Contract 3: Stormwater treatment areas - Construction start Oct 2014**
 - **All construction to be complete by March 2017**



C-43 West Basin Reservoir

- **Final Project Implementation Report and Final Design of Reservoir complete**
- **Pre-Partnership Credit Agreement was executed in August 2009**
- **Next Steps:**
 - **Chief of Engineers Report signed March 2010**
 - **Record of Decision signed July 2010**
 - **Submittal to Congress July 2010**
 - **Targeted for inclusion in WRDA 2010/2011**
 - **Tree clearing to remove approximately 6,000 acres of citrus scheduled for 2010**
 - **Construction is currently scheduled to begin in August 2012 pending authorization and appropriation**



Research and WQ Monitoring Program

Research Projects

Research Topics	Project	CRE	SLE
Nutrient Budget	Measurements of Primary Production in CRE and SLE (Contract)	✓	✓
	Groundwater Seepage Studies in SLE and CRE (Contracts) *	✓	✓
Dissolved Oxygen Dynamics	SLE DO Data Analyses (In-House)		✓
	CRE DO Data Collection (In-House)	✓	
Low Salinity Zone	CRE Oligohaline Zone Study (Contract)	✓	
Light Attenuation in San Carlos Bay	CRE Measurements of Colored Organic Matter (In-House)	✓	
Integrated Modeling	SLE Water Quality Model update (In-House)		✓
	SLE Opti6 Model Reconfiguration (In-House)		✓



Questions?

