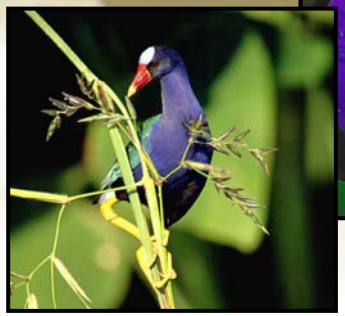
SOUTH FLORIDA WATER MANAGEMENT DISTRICT



South Florida Ecosystem Restoration Working Group

Kenneth G. Ammon, P.E.
Assistant Deputy Executive Director

April 2005

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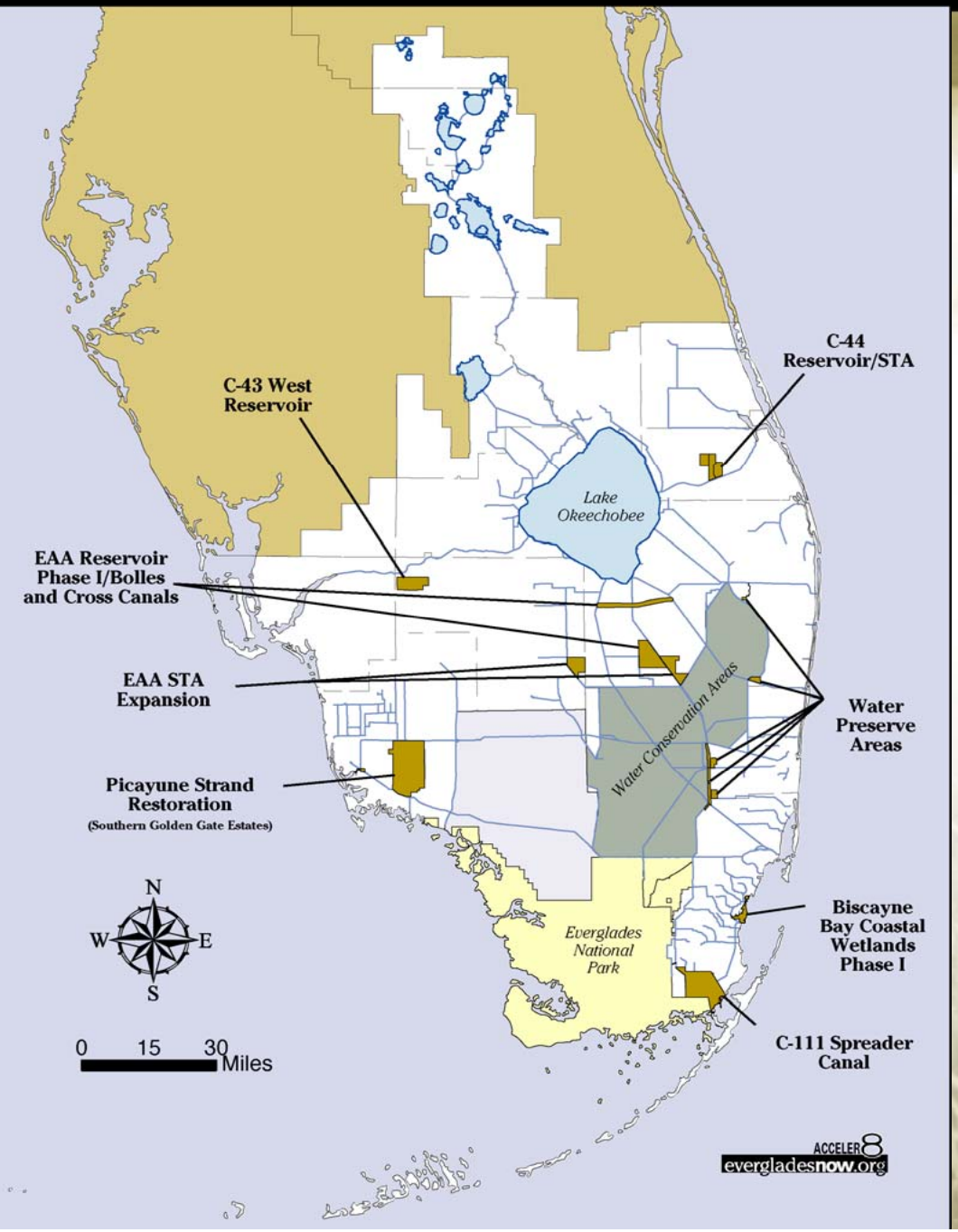

Everglades Restoration Accelerated Projects

- C-43 (Caloosahatchee River) West Reservoir
- EAA Reservoir Phase I/Boles & Cross Canals
- EAA Stormwater Treatment Area Expansion
- Picayune Strand (Southern Golden Gate Estates) Restoration
- C-44 (St. Lucie Canal) Reservoir / STA
- Water Preserve Areas
- Biscayne Bay Coastal Wetlands Phase I
- C-111 Spreader Canal

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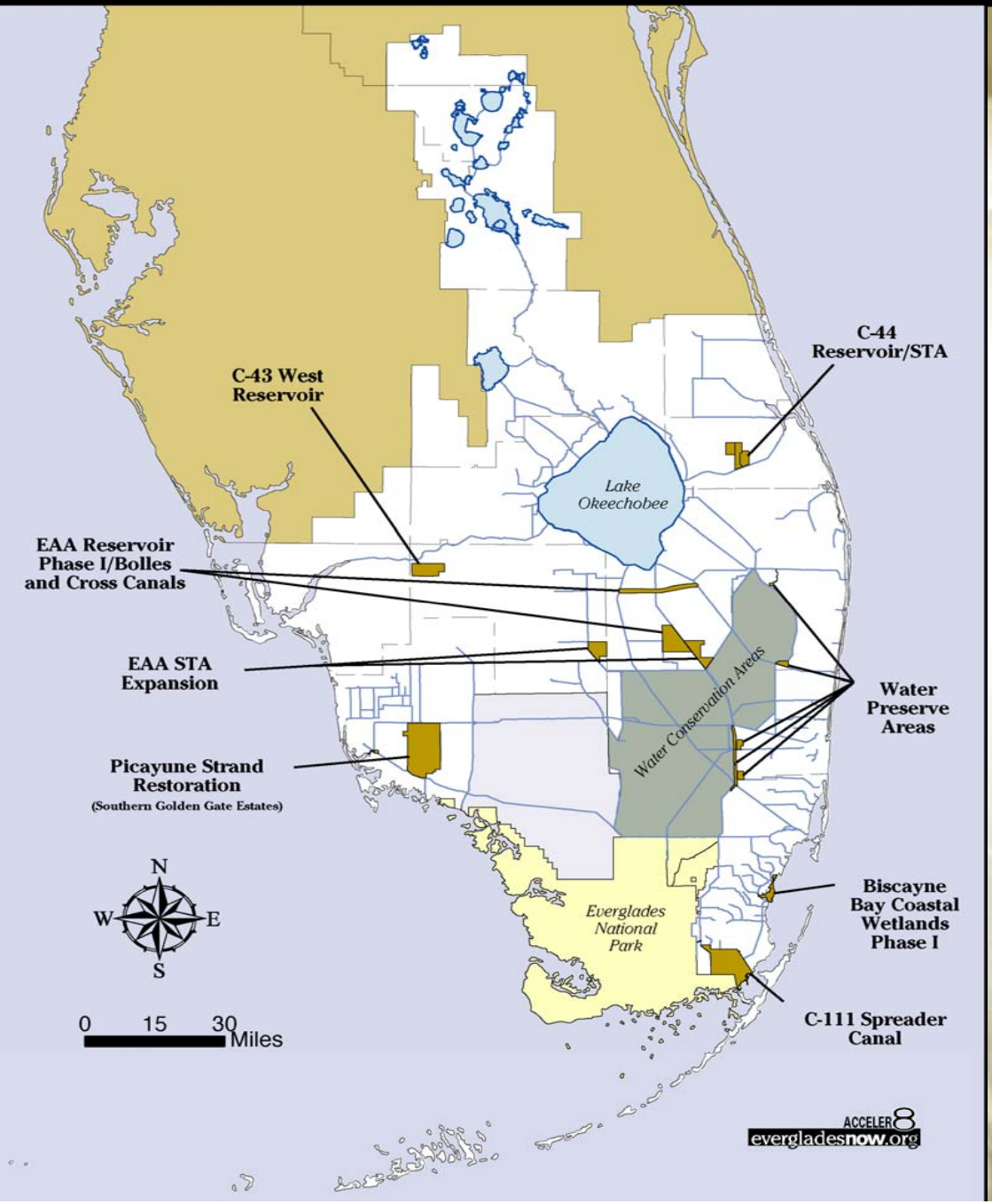
2nd Quarter Activity Status

- Executed $4.9 million in General Engineering Services work orders
- Completed Initial Review and Data Collection on two projects
- Survey underway for five projects
- Geotechnical underway for six projects
- Submitted Pre-Final Basis of Design Report (BODR) for C-43 Reservoir
- Conducted five public meetings on C-43 BODR
- Started construction of EAA Reservoir Test Cells
- Submitted Pre-Final BODR for EAA STA Compartment B – Cell 4

3rd Quarter Acceler8 Outlook

- Complete EAA Reservoir Test Cell construction
- Finalize BODR for C-43 Reservoir and Cell 4
- Submit Pre-Final BODR for;
  - Acme Basin B Discharge,
  - EAA Reservoir,
  - STA 6 Section 2 and
  - STA 5 Flowway 3
- Begin preliminary design on;
  - STA 6 Section 2 and
  - STA 5 Flowway 3
- Begin BODR on seven projects
- Complete Draft EAA Feasibility Study

Discussion



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ACCELER8 Achieves Restoration Goals Faster

- Reduces excess stormwater deliveries to estuaries
- Provides over half of planned CERP surface water storage
- Earlier improvements to water quality
- Provides greater flood control and water supply management flexibility
- Focuses on CERP projects with Project Implementation Reports (PIR) in progress
- Provides greater opportunities for improved timing / hydropatterns to the natural system

BASIS OF DESIGN REPORT SUMMARY

Purpose of BODR is to provide a platform for consolidation of design concepts that may be presented for technical and stakeholder review with the goal of obtaining comment and ultimate buy-in on the proposed design concept.

Key elements of the C-43 BODR include:

- Site Investigations
- Design Criteria Development
- Hydrologic and Hydraulic Analysis
- Project Layout & Evaluation of Alternatives
- Conceptual Project Features Design
- Develop Opinion of Probable Cost
- Supporting Engineering Analysis

C-43 BASIN STORAGE RESERVOIR PROJECT PURPOSE

- Address the declining health of the Caloosahatchee River estuarine ecosystem by:
  - Improving water deliveries to the estuary through wet and dry season flow management
  - Providing a salinity range that is suitable for a healthy ecosystem that promotes estuarine habitat, fish & wildlife and biological diversity
- After estuarine system and existing user needs are met, any additional water could supply urban & agricultural needs

C-43 RESERVOIR DESIGN CRITERIA

- 170,000 ac-ft above-grade storage reservoir
- Two independently operated storage cells
- Average reservoir water depths
  - 19’ in Cell 1; 16’ in Cell 2
- Zoned embankment (dam) design
- 1,500 cfs pump station
- Gated spillway discharge structures
  - 1,000 cfs for S-1; 500 cfs for S-8

C-43 RESERVOIR DESIGN CRITERIA

- Provisions for ASR right-of-way
- Integrated perimeter drainage & seepage collection canal w/ access roadway
- Operations schedule to optimize flows at S-79 (Franklin Lock)
- Managed flow distribution to tributaries
- Recreational opportunities for reservoir and canals
- Maintain existing flood protection

C-43 RESERVOIR IMPLEMENTATION TIMELINE

• Site Survey & Mapping	Completed
• Geotechnical Investigation and Analysis Report	Mid-2005
• Basis of Design Report	Feb 2005
• Preliminary Engineering	Oct 2005
• Pre-Final Plans & Specifications	2006
• Construction Start	2007
• Construction Completion	2010

PUBLIC COMMENTS / ISSUES

A series of stakeholder meetings were held with environmental, recreational, agriculture/businesses, a local citizen interest group (IMPACT) and local officials. The following are areas of primary concern that were identified:

- Water Quality Improvement Opportunities
- Seepage Issues
- Runoff / Drainage Opportunities
- Clarify Flow Predictions & Assurances
- Hurricane Preparedness & Impacts
- Cost Effectiveness of Project
- Job Creation for Local Area

WRAC Issues Workshop

- Ability to Impound Water at the Site
  - Local history indicates high seepage potential
  - Geotechnical analysis revealed consistent area of heavy clays
  - Preliminary design concept utilizes the clay layer to control seepage
- Embankment Integrity Concerns
  - Acceler8 has enlisted dam design & construction experts to assist in the development of design standards
- Water Quality Concerns
  - Concerns regarding lack of a Stormwater Treatment Area in the facility concept
    - Design intent of the reservoir is not degrade existing water quality
    - STAs will not effectively address Nitrogen issues
    - Address the potential for the reduction of Nitrogen loadings associated with increased detention time in the detailed engineering design phase

WRAC Issues Workshop

- Cost / Benefit
  - Projected construction cost : ~ $300 million,
  - High-end cost for water delivery would be $1.00 per 1000 gallons
  - Reservoir meets the estuary flow target 94% of the time
- Pumping Station Location
  - Concern existed that the PS-1 was picking up flow from the lowest point at the site and did not taking advantage of the natural grade differential across the site.
  - The BODR analysis indicated that based on a 50-year life cycle cost analysis, the single pumping station from the lowest point at the site is approximately $6 million dollars less.
- Public Suggestions
  - Construct temporary test facilities to evaluate the concerns previously stated

Discussion