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## Summary Highlights of Caloosahatchee River Watershed Protection Plan Update - 2012

*In response to 2007 state legislation creating the Northern Everglades and Estuaries Protection Program, the South Florida Water Management District (SFWMD), Florida Department of Environmental Protection (FDEP) and Florida Department of Agriculture and Consumer Services (FDACS) – in cooperation with Lee County and other affected municipalities and area stakeholders – developed and submitted the Caloosahatchee River Watershed Protection Plan in January 2009. The coordinating agencies evaluated various alternatives using best available tools and scientific information at the time to identify science-based and technologically feasible options for improving ecosystem health in the Caloosahatchee River Watershed. The plan must be reviewed and updated every three years. As part of the ongoing effort to consolidate state mandated reporting, the complete update document is included in the comprehensive South Florida Environmental Report to be submitted to the Florida Legislature in March 2012.*

The health of the Caloosahatchee Estuary has been affected for decades by many factors including natural system alterations, population growth, leaky septic tanks and the timing and quantity of freshwater discharges from both Lake Okeechobee and the Caloosahatchee Watershed, which have a direct effect on the salinity balance and water quality within the estuary. Given the diverse and complex challenges facing the estuary, a continued integrated approach is required at the source, local, sub-regional, and regional levels to achieve the nutrient load reductions – primarily nitrogen – required by the state's Total Maximum Daily Load (TMDL) program and to meet desirable salinity ranges for the estuary.

The 2012 Caloosahatchee River Watershed Protection Plan Update focuses on the coordinating agencies' progress since 2009 toward meeting the plan's integrated, multi-phased goals. It also defines current and proposed nutrient reduction storage projects and programs that will require funding for implementation and identifies the lead agencies responsible for implementation.

### **Significant Achievements To-Date**

Approximately \$31.4 million in State and SFWMD funds have been invested to implement protection plan activities and projects. In addition, \$100 million has been invested towards the Comprehensive Everglades Restoration Plan (CERP)

Caloosahatchee River (C-43) West Basin Reservoir project. Key progress includes:

- ✓ FDEP adoption of a total nitrogen (TN) TMDL target for the Caloosahatchee Estuary in 2009.
- ✓ The FDEP has initiated development of a Basin Management Action Plan (BMAP) for the Tidal Caloosahatchee Watershed and is continuing to work collaboratively with stakeholders on its development and identification of projects to meet the adopted nutrient TMDLs.
- ✓ Continued cost-share investments by the State, the SFWMD and local county/municipalities in support of more than 80 local water quality improvement projects since 2004.
- ✓ Jointly purchased (State, SFWMD and Lee County) 1,773 acres of land to construct a water quality treatment and nitrogen removal testing facility.

- ✓ Shallow, dispersed surface water storage/retention on private, public and tribal lands in the Northern Everglades has expanded to 131,539 acre-feet, of which 5,625 acre-feet are located in the Caloosahatchee Watershed.
- ✓ Conducted key technical review and data evaluation activities for a future regulatory nutrient source control program in the Caloosahatchee River Watershed.
- ✓ Rule revisions were adopted, effective August 2010, to improve application and management of Class B biosolids and enhance distribution and marketing of Class AA biosolids. By 2013, no Class B biosolids application will be permitted in the Northern Everglades watersheds without an FDEP-approved nutrient balance.
- ✓ To date, the SFWMD has invested \$100 million to purchase land, construct/monitor test cells and complete project design of the Caloosahatchee River (C-43) West Basin Storage Reservoir. The reservoir is awaiting federal authorization and funding for construction.
- ✓ Updated the SFWMD's Adaptive Protocols for Lake Okeechobee operations to guide agency recommendations to the U.S. Army Corps of Engineers on lake management. The revised guidance document works within the operational flexibility of the regulation schedule to improve environmentally beneficial lake releases to the Caloosahatchee River and Estuary during the dry season.

### ***Highlights of 2012 Plan Update***

Consistent with the legislative requirement, the plan is comprised of three components: a Construction Project, a Pollutant Control Program and a Research and Water Quality Monitoring Program. The Construction Project and Pollutant Control Program include water quality projects, along with agricultural and urban best management practices (BMPs), to maximize nutrient loading reductions to meet the TMDL target established for the Caloosahatchee Estuary. The Construction Project also includes water storage projects for improving the quantity, timing, and distribution of water delivered to the estuary and for re-establishing salinity regimes suitable for maintaining a healthy, naturally diverse and well-balanced estuarine ecosystem. The Research and Water Quality Monitoring Plan describes the current state of knowledge regarding hydrology, water quality and aquatic habitat, and provides a platform for evaluating plan performance and goals based on measured data and model results.

### **Addressing Water Quality**

To reduce nutrient loadings and help meet the TMDL, near-term (2012-2014) highlights of planned efforts include:

- Continue technical activities for establishing collective performance measures required for regulatory source control program development in the Caloosahatchee River Watershed.
- Initiate rule development to amend Chapter 40E-61, F.A.C., to implement the regulatory source control program in the Caloosahatchee River Watershed in coordination with the Governor's Office of Fiscal Accountability and Regulatory Reform.
- Continue to enroll agricultural lands in the BMP program (approximately 209,000 acres, or 44 percent, currently enrolled), identify and fund cost-share programs, conduct implementation assurance activities, adopt/update BMP manuals and evaluate BMP effectiveness as funds are available.
- Continue moving forward with BMAP development for the Tidal Caloosahatchee in collaboration with stakeholders and continue with establishment of TMDL for freshwater portions of the watershed.
- Continue implementation of federal (National Pollutant Discharge Elimination System) and state (Environmental Resource Permit) water quality and resource protection permit programs.

- Support alternative nutrient reduction technologies including hybrid wetland treatment technology, chemical treatment and the investigation of new alternatives such as permeable reactive barriers and nutrient binding materials.
- Conduct research, monitoring and development of tools to track progress toward achieving water quality goals. A key priority is the development of a nutrient budget that includes both the watershed and estuary.
- C-43 Water Quality Treatment and Demonstration Project – Many uncertainties still exist in the treatment of nitrogen. SFWMD and Lee County are moving forward with the conceptual design of a testing facility which is anticipated to generate strategies that could be applied to the Caloosahatchee, as well as other estuaries.
- Spanish Creek/Four Corners Initiative - A collaborative initiative among the SFWMD, Lee and Hendry counties to address conveyance, attenuation and treatment of stormwater runoff from the Spanish Creek and Jacks Branch watersheds using wetland flow-ways.

### **Addressing Water Storage**

Increasing water storage requires a mix of regional and dispersed water management projects (easements, cost-share, payment for services) to help meet the identified storage goal of 400,000 acre-feet in the Caloosahatchee River Watershed. Near-term (2012-2014) highlights include:

- Construction Projects – As part of a five-year plan, the SFWMD has identified \$19 million for designing and constructing facilities that will provide stormwater storage and/or treatment on publicly owned lands within the Caloosahatchee River Watershed. In coordination with stakeholders, several options have been identified and are currently undergoing further evaluation and design.
- Continue to develop and expand dispersed water management retention sites, including the Northern Everglades-Payment for Environmental Services contracting opportunity. With an initial investment of \$7 million, the eight projects selected for funding in the inaugural year total 9,500 acres and collectively will provide 4,800 acre-feet of storage when operational.
- Pursue the concept of “water farming pilots,” which will utilize fallow/out-of-production citrus lands to store water and attenuate nutrients allowing stormwater to be used as an alternative water supply.
- Utilize publicly owned lands for interim water retention until the large regional projects are built. A specific near-term interim project along the Caloosahatchee involves rehabilitation of the existing pump and utilization of the existing water management system components, including the three on-site detention areas.
- Provide opportunities for easements through the federal Wetland Reserve Program. In August 2011, the U.S. Department of Agriculture announced \$100 million in financial assistance to acquire permanent easements from eligible landowners in four counties (Lee, Hendry, Okeechobee and Highlands counties) and assist with wetland restoration on nearly 24,000 acres of agricultural land in the Northern Everglades watersheds. The wetland restoration will reduce the amount of surface water leaving the land, slowing water runoff and lowering the concentration of nutrients entering surface waters including Lake Okeechobee and ultimately the river estuaries.
- Continue to support federal-state efforts to move forward with the CERP C-43 West Basin Reservoir Project. Design, Project Implementation Report and Chief’s Report complete; awaiting Congressional authorization. When fully implemented, this project will help manage basin runoff for meeting estuary needs during the dry season by providing an estimated 170,000 acre-feet of storage.

**Estimated nutrient load reductions**

From 1996–2005, the TN load from the watershed to the estuary was 2,536 metric tons/year (not including loads from Lake Okeechobee). Overall, the highest loadings originate in the West Caloosahatchee Sub-watershed, followed by the Tidal and East Caloosahatchee sub-watersheds. The contribution from the S-4 Sub-watershed is relatively small.

The activities outlined in the plan are estimated to collectively reduce loads below the TMDL adopted for protection of the estuary. The estuary TMDL calls for a TN load reduction of 23 percent and the projects identified in this plan update (if fully implemented) are estimated to achieve an approximate 33 percent TN load reduction. The corresponding load reduction for total phosphorus is estimated to be approximately 37 percent.



The BMAP effort, in collaboration with local stakeholders, will identify a more comprehensive list of water quality projects and refine load reductions. Ultimately, it is anticipated that future updates to the Caloosahatchee River Watershed Protection Plan will adopt these refined load reduction estimates once they are available.