Summary Highlights of
St. Lucie 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 Martin and St. Lucie counties and other affected municipalities and area stakeholders – developed and submitted the St. Lucie 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 St. Lucie 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 St. Lucie 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 St. Lucie River 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 phosphorus and nitrogen load reductions required by the state's Total Maximum Daily Load (TMDL) program and to meet desirable salinity ranges for the estuary.

The 2012 St. Lucie 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 and storage projects and programs that will require funding for implementation and identifies the lead agencies responsible for implementation.

Significant Achievements To-Date

Approximately $5.9 million in State and SFWMD funds have been invested to implement protection plan activities and projects since 2007. In addition, $488.4 million has been invested toward the Comprehensive Everglades Restoration Plan (CERP) Indian River Lagoon - South project. Key progress includes:

- ✓ FDEP adoption of nutrient TMDL targets (nitrogen and phosphorus) for the St. Lucie Estuary in 2009.
- ✓ The FDEP has initiated development of a Basin Management Action Plan (BMAP) for the St. Lucie River watershed and is continuing to work collaboratively with stakeholders on its development and identification of projects to help meet the adopted nutrient TMDLs.
- ✓ Continued cost-share investments by the State, SFWMD and local county/municipalities in support of 49 local water quality improvement projects in the watershed since 2004.
- ✓ 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 7,117 acre-feet are located in the St. Lucie River Watershed.

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- ✓ Conducted key technical review and data evaluation activities for a future regulatory nutrient source control program in the St. Lucie 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 demonstration.
- ✓ The U.S. Army Corps of Engineers began construction on the regional C-44 (St. Lucie River) Reservoir and Stormwater Treatment Area, a component of the Comprehensive Everglades Restoration Plan (CERP). As local sponsor, the SFWMD has invested $229 million toward the project.
- ✓ Martin County and SFWMD approved the Lake Point Restoration Project. This public-private partnership project, located on 2,000 acres of land in the C-44 sub-watershed, will help treat and store water from the C-44 Canal, including water released from Lake Okeechobee.
- ✓ Six continuous flow-through Hybrid Wetland Treatment Technology systems are operational in the Northern Everglades, including one in the St. Lucie River Watershed. This is proving to be effective in reducing concentrations of phosphorus in surface waters.

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 Total Maximum Daily Load targets established for the St. Lucie River 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 Total Phosphorus (TP) and Total Nitrogen (TN) TMDL targets, near-term (2012-2014) planned efforts include:

- Continue technical activities for establishing collective performance measures required for source control program development in the St. Lucie River Watershed.
- Initiate rule development to amend Chapter 40E-61, F.A.C., to implement the regulatory source control program in the St. Lucie 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 194,000 acres, or 52 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 St. Lucie River Watershed in collaboration with stakeholders.
- Continue implementation of federal (National Pollutant Discharge Elimination System) and state-level (Environmental Resource Permit) water quality and resource protection permit programs.
- Continue design of the Lake Point Restoration Project and construction on the CERP C-44 (St. Lucie) Reservoir/STA Project, both of which will provide storage and treatment.

- Commence/continue construction of local water quality projects (stormwater/wastewater retrofits and restoration projects).
- 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.

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 200,000 acre-feet in the St. Lucie River Watershed. Near-term (2012-2014) planned efforts include:

- 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 storage until the large regional projects are built. Specific near-term projects include C-23/24 complex and the Allapattah Flats properties.
- Continue to support initial construction on the C-44 Reservoir/STA project by the U.S. Army Corps of Engineers. A total of 50,600 acre-feet will ultimately be provided by the project.

Estimated nutrient load reductions

Based on the 1996–2005 period of record, nutrient loadings from the watershed to the estuary were 267 metric tons/year for phosphorus and 1,191 metric tons/year for nitrogen (excluding Lake Okeechobee discharges). Sub-watershed level analyses showed that the highest loadings of TP originate in the C-23 Sub-watershed, followed by the C-24 Sub-watershed. TN loading is highest in the C-24 Sub-watershed, followed by the C-23 and the C-44 Sub-watersheds.

While actions and projects included in the updated protection plan are estimated to reduce watershed nitrogen and phosphorus loading to the estuary both by 43 percent, additional measures will be needed to meet the TMDL target concentrations. The BMAP effort, in collaboration with local stakeholders, will identify a more comprehensive list of water quality projects and refine load reductions. To ultimately help meet the adopted nutrient TMDLs, the additional strategies identified through this process will be included in future plan updates.