

ACTION PLAN *Water & Sediment Quality*

SW- 1

Reduce Discharge of Freshwater and Total Suspended Solids

ACTION:

Reduce large volumes of freshwater and suspended sediment discharges through the C-51 Canal.

BACKGROUND:

The purpose of the Loxahatchee River Watershed Restoration Project (*formerly known as North Palm Beach County - Part 1*) is to capture, store and treat excess water that is currently discharged to the LWL and use that water to enhance the Loxahatchee River and Slough and provide for water supplies to the City of West Palm Beach Grassy Waters Preserve. While significant progress has been made on the planning side for this CERP project since 2008, a state-federal initiative to speed up planning for key CERP projects was approved in October 2011. This new initiative re-focused a lot of projects on the Central Everglades Planning Project (CEPP), with a goal to deliver within two years a finalized plan for a suite of restoration projects in the central Everglades, not in the LWL (www.evergladesplan.org). For this reason this AP was revised and updated to reflect this new reality. However several efforts that may benefit the LWL, which are not part of CERP, are still planned.

In 2012, the State of Florida and the U.S. Environmental Protection Agency reached a consensus on new restoration strategies for improving water quality in the Everglades. Under these strategies, SFWMD is implementing a technical plan to complete six projects that will create more than 6,500 acres of new Stormwater Treatment Areas (STAs) and 110,000 acre-feet of additional water storage through construction of flow equalization basins (FEBs). FEBs provide a more steady flow of water to the STAs, helping to maintain desired water levels needed to achieve optimal water quality treatment performance. This flow diversion and water storage that includes the L-8 Reservoir should decrease flow from the C-51 canal, which is still the most significant source of freshwater to the LWL. The SFWMD, LWDD, PBC, Broward County, and affected municipalities are evaluating additional water storage options that may involve the construction of the C-51 Reservoir, for which cost benefit analyses are being conducted. Reducing flow, nutrient and suspended sediment loads to LWL will maximize the potential growth of such valued ecosystem components (VECs) as oysters (*Crassostrea virginica*), and seagrasses (represented by *Halophila decipiens*, *H. johnsonii*, and *Halodule wrightii*). These species are key estuarine components currently present in LWL but impacted by anthropogenic stressors.

STRATEGY:

STEP 1: Quantify reduction of rate and/or volume of freshwater to the LWL from the six projects and new STAs through modeling and share results with LWL stakeholders.

Potential Partners: SFWMD, ERM

STEP 2: Assess sediment loads to the LWL from the C-17, C-51, and C-16 canals and municipal stormwater structures.

Potential Partners: SFWMD, ERM

STEP 3: Utilize deployed in-situ sondes salinity data to establish a correlation with flows and VECs.

Potential Partners: SFWMD, ERM

STEP 4: Perform additional surveys of the C-51 Canal and sediment trap to correlate discharge rates at the S-155 structure and to develop a sediment management plan and maintenance schedule.

Potential Partners: SFWMD, ERM, City of WPB

STEP 5: Conduct a feasibility study to identify and review options for sediment reduction prior to entering the LWL. Options include creation of new sediment traps, canal dredging above the S-155 structure, and stormwater treatment facilities.

Potential Partners: SFWMD, ERM

SCHEDULE:

Steps 1 will be implemented by 2013. Step 2 will be initiated in 2013. Step 3 is currently on-going. Step 4 will be initiated by October 2013. Step 5 will be initiated after the completion of Step 1-4.

COST:

The total cost of the restoration strategies with all its components is estimated to be \$880 million; the proposed Steps 1 through 3 and step 5 is cost for staff time estimated at \$5,000/year. The annual cost for Step 4 is estimated to be \$20,000. A new C-51 dredging/sediment trap project is estimated to be \$3 million.

EXPECTED BENEFITS:

Improve the quality of water released to tide by promoting establishment, maintenance, and sustenance of a healthy, well-balanced assemblage of estuarine flora and fauna. Reservoirs, aquifer storage and recovery units, and storm-water treatment areas (STAs) planned as part of the restoration strategies are expected to reduce loadings of nutrients, solids and contaminants to the LWL.

MONITORING ENVIRONMENTAL RESPONSES:

Monitoring of water quality, salinity, SAV, oyster health in the lagoon, and in the C-51 Canal and at the site of implemented FEBs, will allow an evaluation of this focused approach to improving water quality and TSS in the LWL.

REGULATORY NEEDS:

Permits required by FDEP or SFWMD and USACE.

FUNDING:

Funding for SFWMD restoration strategies is in place. Other sources of funding will be pursued for Step 1 to 5.

POTENTIAL PARTNERS AND FUNDING SOURCES*:

SFWMD, USACE, ERM, FDEP, PBCWU, LWDD, HBOI/FAU and municipalities.

*Listed Agencies have not committed funds and are subject to Agencies' budget approvals