South Lee County Watershed Plan Update
Final Recommendations

South Florida Water Management District
&
Lee County

January 20, 2011

BACKGROUND

The South Florida Water Management District (District) and Lee County (County) cost shared and collaborated on a study known as the South Lee County Watershed Plan Update (SLCWP Update). The objective of this update was to verify and validate the findings and material assumptions of the original 1999 SLCWP for the Halfway Creek, Spring Creek, South Branch of the Estero River, and Imperial River region. If conditions changed in these areas that require revisions to the recommendations in the 1999 SLCWP then new recommendations were to be provided.

The SLCWP Update study resulted in a final draft report dated May 14, 2009, titled: South Lee County Watershed Plan Update Work Order C-4600000791 WO01 Final Report. After this draft final report was provided the District and the County considered options for reviewing the study model and amending it to include additional topographic data that was not previously available. However, this option has not been pursued and the draft final report was not finalized. This document serves to finalize the recommendations of the SLCWP Update. This document only addresses the recommendations of the draft final report. All other information regarding the study is included in the deliverables to the study contract (C-4600000791 WO01-R1&R2) that are available from the District on the Lower West Coast Service Center's web site (http://my.sfwmd.gov/portal/pls/portal/portal_apps.repository_lib_pkg.repository_browse?p_keywords=stormwaterslc&p_thumbnails=no).

RECOMMENDATIONS

The following actions are recommended for implementation, in order of decreasing priority:

1) Increasing conveyance in the North Branch Estero River at Rivers Ford Road.

2) Increasing conveyance in the South Branch Estero River at Country Creek Drive near Split Oak Way.

3) Connection of Halfway Creek to the Rapallo Lake west of Via Coconut Point and east of Via Villagio.

4) Improve vegetation maintenance in Halfway Creek east and west of U.S. 41. Vegetation removed east of U.S. 41 should be removed from the flood way and not stacked in "tee-pees". Fallen vegetation and dense brush west of U.S. 41 should be removed and any recently deposited sediment should be removed.

5) Improve conveyance through the emergency by-pass gate and channel from the Brooks to the South Branch Estero River without decreasing groundwater elevations in the vicinity of Three Oaks Parkway and Williams Road.

6) Ensure that accumulated sediments are removed in the culverts under I-75 at Halfway Creek and maintained as required to meet design capacity.

7) Consideration of construction of weirs upstream of I-75 for Halfway Creek and South Branch Estero River to maintain adequate wet and dry season water levels consistent with wetland hydroperiod needs. Additional modeling is needed using more accurate topographic data east of I-75 to determine the invert elevation and the size of the weirs.

8) Construction of up to two 60" diameter culverts under I-75 to Bonita Bill Canal in the Spring Creek watershed. The culverts should either be:

   a) capped with concrete until conveyance improvements downstream have been implemented to a sufficient degree to allow for delivery of storm flows to the Spring Creek watershed, or

   b) controlled by a gate to only allow flows when water levels at the upstream side of the Moriah weir are less than 10.8 ft-NAVD and water depths upstream of the gate are greater than 1.5 feet.

9) Enlargement of culverts downstream of the Old U.S. 41 culverts in the Spring Creek tributary that receive flows from the Moriah weir. The capacity of the downstream culverts at the railroad, FPL crossing, and Cedar Lane should be at least as large as the Old U.S. 41 culverts (two 8' x 4' box culverts).

10) Enlargement of the Countess Lane culverts to be at least as large as the Old U.S. 41 culverts in Spring Creek at the USGS gaging station (two 8' x 4' box culverts).

11) Further evaluation of restoration of flood flow deliveries from the Kehl Canal watershed to wetlands south of Bonita Beach Road and east of I-75 for ultimate conveyance to Cocohatchee Canal. The maximum flood flow deliveries are only necessary for the 25- and 100-year design storm events, and the peak flow is expected to be in the range of 200 cfs. Additional modeling and evaluation is needed to assure that the wetlands south of Bonita Beach Road (east of I-75) and the Cocohatchee Canal can safely receive these flows.