

**RESTORE Act Ecosystem Restoration Project Proposals
for consideration in the Gulf Coast Ecosystem Restoration Council's Comprehensive Plan
2012**

Contact Information: Roland Ottolini	Date of Submittal: 1/07/2013
Name of Project: North Fort Myers Surface Water Master Plan	Org and Rank: 10
Background: The Caloosahatchee River runs from Lake Okeechobee through a series of locks to San Carlos Bay. It has both fresh and marine segments: the freshwater segment extends for over 40 miles from Lake Okeechobee to the Franklin Lock and Dam (S-79). The marine segment, which is referred to as the Caloosahatchee Estuary or Tidal Caloosahatchee, extends for about 25 miles from the Franklin Lock and Dam (Control Structure S-79) to Shell Point, adjacent to San Carlos Bay, with Pine Island Sound to the northwest and Estero Bay to the southeast. The Caloosahatchee Estuary receives freshwater input from S-79 and from various tributaries and canal systems that discharge directly to the estuary downstream of S-79. North Fort Myers is part of the Tidal Caloosahatchee tributaries watershed that drains into the tidal portion of the Caloosahatchee system—excluding the watersheds that contribute flows to the estuary at S-79. Lee County Division of Natural Resources contracted with AECOM to develop the North Fort Myers Surface Water Master Plan in 2011. The purpose of the study is to map existing storm water conveyance and control structures and identify surface water storage opportunities. In addition to identifying the water quantity aspects of the project, a water quality model was applied to each of the watersheds to investigate the water quality aspects of the watershed based on existing and future land use conditions. Upon review of the results, Best Management Practices (BMPs) were developed for the watersheds that exceeded the limits of the LOS criteria established by the Florida Department of Environmental Protection. The study area includes 21 watersheds between US 41 and SR 31 which are located in and around the focus area. Six (6) of the watersheds were studied in lesser detail to provide tailwater and basin transfer conditions for the remaining fifteen (15) basins. The detailed analysis concentrated on the portions of those watersheds in Lee County from the Charlotte County line south to the Caloosahatchee River. However, because almost half of the total 120 square miles of those watersheds lie within Charlotte County, the study had to recognize and attempt to quantify the southerly flows to Lee County from the Charlotte County area. North Fort Myers has historically experienced frequent flooding in the vicinity of the creeks and low lying areas due to construction of many structures, such as roads, dikes/berms, bridges, houses, etc. in the study area, many of which did not have permits. These structures have blocked or diverting historic flow patterns. The combination of natural hydrologic conditions and human intervention pose unique challenges in effective surface water management in the North Fort Myers area. Project Description: Fifteen (15) watersheds were modeled with an existing condition model and a future condition model. The remaining six (6) watersheds were used to provide tailwater and basin transfer information to the modeled watersheds using today's land use designations for	

the existing condition compared to the future condition represented by the designated land use for the year 2030.

The water quality modeling was based on land use designations conducted on each of the watersheds using the Harvey Harper Methodology (HHM). This method was developed for the Florida Department of Environmental Protection (FDEP) under FDEP Contract No. SO108 and is titled Evaluation of Current Stormwater Design Criteria within the State of Florida dated June 2007 and prepared by Harvey H. Harper, PhD, PE and David M. Baker, PE. This model tested for Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Phosphorus (TP), Total Kjeldahl Nitrogen (TKN), Lead (Pb), Copper (Cu), and Zinc (Zn). The following watersheds did not meet the county's criteria based on Florida Department of Environmental Protection (FDEP) Rule 62-302.530.

- Yellow Fever Creek – East Branch – BOD
- Marsh Point Creek – BOD and Copper

Proposed Projects

The proposed projects presented in this report include conveyance improvements such as re-grading and widening ditches or swales, and creation of storage facilities such as ponds. The following table lists the watershed, improvement identification number, type of improvement, location, and approximate probable cost estimate. More details for each of the projects in the table below can be found in Appendix C of the North Fort Myers Surface Water Master Plan.

Table A.1. Study Area Proposed Projects

Watershed	Improvement Identification	Type of Improvement	Location	Preliminary Opinion of Probable Cost
Yellow Fever Creek - East Branch	YFCEB BMP	Wet Detention Pond	Within the Watershed (Not Specific)	\$11,113,500
Marsh Point	Marsh Point BMP	Wet Detention Pond	Within the Watershed (Not Specific)	\$5,845,700
Chapel Branch	Chapel 1A	Raise Road	Leetana Road	\$5,413,500

	Chapel 1B	Dry Retention	North of Leetana Road	
Bayshore Creek	Bayshore 1	Dry Retention	South of Nalle Grade and East of D&L Ranch Drive	\$5,698,100
Stroud Creek	Stroud 1A	Adding Two Culverts	Skis Road	\$4,376,100
	Stroud 1B	Dry Retention	North of Skis Road and East of Ethel Drive	
	Stroud 1C	Raise Road	Skis Road	

Project Location: Caloosahatchee Watershed							
Responsible Party: Lee County				Partners: SFWMD			
NEP: CHNEP		Project Cost: \$32,446,900			Dollars Needed: \$26,000,000		
Start: 2013				Completion: 2020			
Status of Project Design and Permitting: Feasibility study complete, design/permitting pending.							
What Date or Year could Construction Feasibly Begin: 2015							
Your Proposed Timing of Funding (given permits, phasing, staging, etc.)							
FY	12/13	13/14	14/15	15/16	16/17	17/18	Total
Quantify Environmental Results and How to Measure Them: Water quality improvement by nutrient load reduction. Can be evaluated through the BMAP water quality monitoring program.							
Economic Benefits (including ecosystem services): Improved water quality, improved fisheries and rookery habitats.							
Estimated number of Jobs Created or Preserved: 360							
How much Habitat will be restored and conserved?: 40 square miles							
Quantify pollutant reductions: 15,500 kg/yr TP, 179,866 kg/yr TKN							
What living coastal/marine resources will be improved and by how much?: Tidal Caloosahatchee, San Carlos Bay, Pine Island Sound and Matlacha Pass.							
How will community resilience be enhanced? Improved freshwater wetland habitat in the current landscape will prolong the period of habitability in the tributaries of the Caloosahatchee as climate change and sea level rise occur. Habitat improvements due to restored historical flows							

will also mitigate the current effects of degradation on fisheries and improve the period of time these fisheries can be sustained during the onset of sea level rise.

Additional Justification: Lee County has entered into a Basin Management Action Plan (BMAP) with the Florida Department of Environmental Protection in 2012. The BMAP was promulgated due to TMDLs for total nitrogen in the Tidal Caloosahatchee. The County is required to restore and protect water quality under this watershed restoration plan. In addition, the Tidal Caloosahatchee is part of a system that has been designated an Estuary of National Significance as well as discharging into State Aquatic Preserve and National Wildlife Refuges.

Add any photos or maps that explain project: North Fort Myers Surface Water Master Plan



study area. (below)