

**South Florida Water Management District  
Water Protection and Sustainability Trust Fund  
FY2005-2006 Projects**

Project Name	Project Description	Project Cost	Trust Amount	Cost Match Provider
<b>Lake Okeechobee</b>				
Okeechobee County-Master Stormwater Plan	Update and expand Okeechobee County's Stormwater Master Plan in effort to address both flood control and water quality measures. The development and adoption of such a plan, coupled with the parallel development and implementation of a Stormwater Utility, will greatly enhance the County's current stormwater management system and will provide a means to better achieve federal, state, and local water quality objectives.	250,000	100,000	Okeechobee County
Okeechobee County Stormwater Utility Assessment	Development of a Stormwater Utility Rate Feasibility Study to enable Okeechobee County to establish countywide stormwater utility rates. This will provide a funding source to implement Short and Long Term Capital Improvement Projects that will greatly enhance the County's Comprehensive Stormwater Master Plan which will also provide a means to enhance the County's current stormwater infrastructure.	150,000	75,000	Okeechobee County
<b>Subtotal: \$</b>		<b>400,000</b>	<b>\$ 175,000</b>	
<b>Lake Worth Lagoon</b>				
Ocean Ridge Natural Area Restoration	This phase of this multi-year project consists of placing limestone boulders as rip rap, filter cloth and bedding stone to create shoreline protection for mangroves and other shoreline/open water habitat. This will result in improved water quality through reduction of turbidity from shoreline erosion, and stabilization and restoration of scarce shoreline vegetation, mangrove wetlands and maritime hammock uplands. The overall project consists of environmental enhancement, habitat restoration, and creation of public use facilities on a 25 acre nature preserve site adjacent to the southern portion of the Lake Worth Lagoon.			Palm Beach County
C-51 Sediment Transport Monitoring	Continuation of an existing project between Palm Beach County and the USGS. The objectives are to: collect baseline data on sediment loading volumes and constituents that are discharged from C-51 to Lake Worth Lagoon; develop sediment deposition reduction strategies; implement future sediment load reduction through sediment traps and other technologies. This project should provide concurrent data to evaluate the effectiveness of sediment load reduction results from recently constructed water control facilities and pilot projects in the C-51 basin.			Palm Beach County
<b>Subtotal: \$</b>		<b>3,256,500</b>	<b>\$ 500,000</b>	

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<b>Biscayne Bay</b>				
Virginia Key Restoration	Implement restoration and enhancement of 50-acres of disturbed coastal wetlands and associated tidal flushing canals located on Biscayne Bay. Project will include construction of a boardwalk through restored wetland to provide for public access, environmental education and project success monitoring.	1,750,000	875,000	Miami-Dade Dept of Environmental Resource Management
Biscayne Bay Blueway - City of Miami Segment Phase I (coastal paddling trail & habitat improvement)	Shoreline stabilization, restoration of native habitat and enhancement of nearshore zone and installation of canoe/kayak launches with educational materials and navigational signage at two City of Miami waterfront parks along Biscayne Bay: Morningside Park and Margaret Pace Park. District cost share is through Water Protection and Sustainability Trust funds which are proposed to be used for design, environmental education and public access components of the project, while the City's cost share will consist of education, access and restoration tasks for this project.	630,000	325,000	City of Miami
Biscayne Bay Submerged Aquatic Vegetation Water Quality Monitoring	Collect and analyze water quality and epibenthic habitat data in Biscayne Bay.	425,000	200,000	Miami-Dade Dept of Environmental Resource Management
Biscayne Bay Water Quality Model Associated Project	Develop a comprehensive water quality modeling and management-accessible decision support tool that can, in general, track and predict the distribution and concentration of substances in Biscayne Bay waters (particulate and dissolved, nutrients, suspended sediments, sewage indicators, metals and organics).	250,000	125,000	Miami-Dade Dept of Environmental Resource Management
South-Central Biscayne Bay Hypersalinity Analysis	Investigate the cause or causes of the hypersalinity events observed in south-central Biscayne Bay.	569,785	250,000	US Geological Survey
Miami-Dade Dept of Environmental Resource Mgmt Basin 21 Retrofit	Improve stormwater drainage in the Miami River Basin by constructing an upgraded drainage and treatment system to reduce widespread flooding and improve water quality of stormwater discharged to the Miami River.	1,650,000	800,000	Miami-Dade Dept of Environmental Resource Management
<b>Subtotal: \$</b>		<b>5,274,785</b>	<b>\$ 2,575,000</b>	

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<b>Florida Keys</b>				
White St. Outfall Elimination	Elimination of Stormwater Outfalls on White St. in Key West	2,000,000	1,000,000	City of Key West
Seagrass Outreach Partnership	Outreach partnership to promote protection and restoration of seagrass communities	20,000	10,000	FDEP
Queen Conch & Bahamian Starfish	Education program on endangered queen conch and Bahama starfish species	30,000	15,000	FDEP
Exotic Species Eradication	This is a multiple partner project to rid priority private conservation lands of invasive exotics, thereby removing seed sources that continue to threaten adjacent public lands. Invasive exotic species eradication will improve FL Keys habitat value and overall water quality by preventing shallow root, non-indigenous species to dominate the shoreline. This project will promote the growth of native vegetation that stabilizes the shoreline, decreases turbidity in the water column and ultimately "builds" land. A good example of this type of native vegetation is the red mangrove, Rhizophora mangle.	450,000	225,000	The Nature Conservancy
Coral Ecosystem Mapping	This project will collect and deliver critical topographic elevation and bathymetric seabed depth data in the FL Keys National Marine Sanctuary. The resulting data are intended for use in coral ecosystem conservation and management decision-making, including ecosystem research and characterization. Without these critical data, we do not know the type and extent of benthic communities in the study region. The detection of certain benthic communities (i.e., endangered staghorn and elkhorn coral species) will necessitate a closer look at the nearshore water quality potentially affecting this region. If adjacent water quality problems are identified, these areas may be declared "hotspots" for immediate improvement. Additionally, this data combined with existing water quality monitoring data provide a powerful assessment tool to determine water quality conditions in the region.	500,000	250,000	Florida Fish & Wildlife Conservation Commission
Monroe County Stormwater Management System	This project involves construction of the stormwater portion of road improvements on 17 streets in Big Pine Key Project Area 10. Site work will include construction of new stormwater drainage structures and the repair of existing structures with the goal of eliminating a direct stormwater discharge to the Outstanding Florida Waters of the FL Keys National Marine Sanctuary.	400,000	200,000	Monroe County

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Project Name	Project Description	Project Cost	Trust Amount	Cost Match Provider
<b>Florida Keys (continued)</b>				
Marathon Stormwater Improvements Program	This project is for construction of stormwater improvement projects at various locations in the City of Marathon. The City is committed to constructing quality projects that can be used as templates for similar projects throughout the City. The benefits of a stormwater management system are significant and are central to the water quality objective of the Coastal Watersheds Program. This contract will result in improved water quality in the FL Keys National Marine Sanctuary. Specific deliverables of this contract include an interim report and a final project evaluation report.	200,000	100,000	City of Marathon
FI Keys Seagrass Restoration	This contract meets the Coastal Watershed Program objective of habitat restoration as it restores seagrass beds in the FL Keys that have been negatively impacted by boat propellers. Seagrasses are "alive" and their health is essential for the health of our ecosystem. Boat propellers have seriously damaged thousands of acres of this resource and reduced the quality and productivity of this natural community. Restored seagrass habitat will reduce turbidity, improve overall water quality and restore biological communities to a more natural and productive state.	200,000	100,000	John Pennekamp State Park
FKNMS Water Quality Protection Program	This contract covers the partial costs of special studies related to improving nearshore water quality in Florida Bay and the Florida Keys National Marine Sanctuary. Specific deliverables of this contract include interim and final reports.	200,000	100,000	FK National Marine Sanctuary
<b>Subtotal: \$</b>		<b>4,000,000</b>	<b>\$ 2,000,000</b>	
<b>Estero Bay</b>				
Juvenile Fish Community Monitoring	Expansion of FMRI's Fisheries Independent Monitoring Program to cover Estero Bay, Florida for at least 3 years. Results of this project will be used to set flow targets for the tributaries and salinity targets in the estuary. Contributes to surface water improvement, work occurs on public lands.	90,000	75,000	FI Fish & Wildlife Research Institute
Estero Hydrologic Data Collection	Data collection to support hydrodynamic model.	69,600	34,800	US Geological Survey
Oyster/Fauna Response to Tributary Discharges	Project will examine the influence of tributary discharge and salinity fluctuation on the growth, mortality and disease using reef and caged oysters; study oyster spat settlement on oyster shells deployed at tributary mouths; and investigate the role of oyster reefs as essential fish habitat and determine whether the condition of individual oysters affects overall habitat suitability. Oysters filter water improving quality of water entering Estero Bay. Work occurs on public lands.	85,989	75,970	FL Gulf Coast University

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<b>Estero Bay (Continued)</b>				
Freshwater Inflow and Tributary Fauna	Study will evaluate the nursery function of Estero Bay and the role of freshwater inflow in maintaining this function. Results used to establish freshwater inflow and salinity targets. Contributes to surface water improvement, work occurs on public lands.	60,000	60,000	
Technical Support Services for GIS	Provide GIS support of watershed projects.	3,538	3,538	SFWMD
Six Mile Cypress Slough	Develop a predictive ecological and hydrological model and determine ecological restoration projects needed.	99,692	99,692	Lee County
Evapotranspiration Data Analysis	Perform analysis of Corkscrew evapotranspiration data for use in	170,000	70,000	SFWMD
Estero Bay Nutrient Assessment	Develop a relative nutrient load assessment model for evaluating alternatives for protecting and enhancing water quality.	94,000	94,000	
Bonita Springs Stormwater Retrofit-Nevada St	Construct Nevada Street stormwater improvements to mitigate flooding and improve water quality.	195,000	90,000	City of Bonita Springs
Lycopodium Control	Remove exotic vegetation in CREW.	280,000	30,000	SFWMD
Shoreline Mapping	This project will map the shoreline of the tributaries to identify transition zones between freshwater and saltwater estuarine systems. Help to identify flows that maintain these two aquatic systems. Contributes to surface water improvement, occurs on public lands.	100,000	75,000	FL Gulf Coast University
Estero Bay Hydrodynamic Model	Calibration and verification of hydrodynamic model to support hydrologic targets in future Water Quality model.	40,000	40,000	
Oyster Restoration Estero Bay	Restore oyster reef in Estero Bay by providing substrate. Program is community volunteer based. Oysters filter water improving water clarity.	20,000	20,000	
Ten Mile Filter Marsh	Perform monitoring of Ten Mile Filter Marsh Phase I and develop conceptual design for Phase II.	425,000	42,000	SFWMD and Lee County
Nutrient Management Partnership	Construct stormwater water quality treatment improvement.	5,000	5,000	Johnson Engineering
Imperial Bonita States Stormwater Mgmt Improvements	Stormwater management system improvements in Imperial Bonita Estates to mitigate flooding and improve water quality.	85,000	85,000	City of Bonita Springs
Riverside Depot Park Water Quality Improvements	Construction of dry detention, two water control structures and swale improvements at the Riverside and Depot Park.	400,000	100,000	City of Bonita Springs
<b>Subtotal: \$</b>		<b>2,222,819</b>	<b>\$</b>	<b>1,000,000</b>

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Project Name	Project Description	Project Cost	Trust Amount	Cost Match Provider
<b>Caloosahatchee River/Estuary</b>				
Fisheries Restoration Study	Looks at the possibilities of stock enhancement in the Caloosahatchee Estuary and the habitat preference of red drum. Identifies areas that require good water quality.	238,774	75,000	Sanibel Captiva Conserv Fund
Blue Crab/Salinity Assessment	Gather data to determine if there is an association between the blue crab fishery landings in the Caloosahatchee River and salinity changes associated with Lake Okeechobee releases. Occurs on public lands, data used for surface water improvement.	89,512	62,284	Sanibel Captiva Conserv Fund
Fisheries Enhancement Program	Funds for this project will be used to support the community based REDstart program by providing training and reference materials for the facility volunteers, and the maintenance of water quality testing equipment, pump filters, tanks as needed.	14,125	7,000	Lee County Parks and Recreation
Four Corners Water Quality Improvements	Analysis of stormwater management improvements for the Four Corners area including final design and permitting.	260,944	260,944	
Hendry County Stormwater Retrofit	Implementation of Surface Water Master Plan--Phase I Airport Sears MSBU.	240,000	120,000	Hendry County
Project Management Support	Provide project management support of watershed projects	80,000	80,000	SFWMD
GIS Technical Support	Provide GIS support of watershed projects	18,000	18,000	
Nutrient Balances Study	Quantify water and nutrient balances in agricultural fields in South Florida.	166,373	70,000	SFWMD and Inst of Food & Ag Sciences
Keep Lee County Beautiful Wtrsh	Funds for this project will be used to support Keep Lee County Beautiful's Coastal Clean-up, Monofilament Madness, and adopt a shoreline programs. Occurs on public lands, contributes to surface water improvement.	25,920	5,500	Keep Lee County Beautiful Inc.
Caloosahatchee Nutrient Study	The purpose of this project is to experimentally determine (1) the concentration at which nutrient become limiting in the Caloosahatchee (2) the nutrient (nitrogen or phosphorus) that can become limiting and (3) the lability of or availability of organic nitrogen to support algal production. Occurs on public lands, data used for water quality improvement.	200,000	100,000	Florida Gulf Coast University
Caloosahatchee River Water Balance & Nutrient Assessment	Develop a relative nutrient load assessment model for evaluating alternatives for protecting and enhancing water quality.	200,000	200,000	
Tributary Restoration/Best Management Practices	Implement water quality improvements in Glades and Hendry Counties including tributary restoration and structural agricultural BMP implementation.	525,790	425,790	TBD <sup>(1)</sup>
LaBelle Stormwater Management Plan Implementation	Implement stormwater system improvements including addition of retention/detention areas in LaBelle.	375,000	125,000	SFWMD
Ft. Myers Stormwater Improvements	Complete stormwater master plan and develop conceptual design for Billy Creek and Carrell Canal improvements.	400,000	200,000	City of Ft. Myers
Cape Coral Stormwater Improvements	Implement water quality improvement retrofits to stormwater catch basins.	600,000	200,000	City of Cape Coral

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<b>Caloosahatchee River/Estuary (continued)</b>				
E-Lee County Caloosahatchee Water Quality Monitoring (Q34)	Random stratified sampling in the Caloosahatchee that supports the CHNEP Water Quality Monitoring Network. Occurs on public lands.	14,764	14,764	
E-Lee County Caloosahatchee Water Quality Monitoring (Q12)	Random stratified sampling in the Caloosahatchee that supports the CHNEP Water Quality Monitoring Network. Occurs on public lands.	17,718	17,718	
Aerial Photo Interpretation	Interpret pre- and post-Hurricane Charley photos for sea grass restoration. Seagrasses are indicators of Estuarine health and water quality.	18,000	18,000	
East County Water Control District (ECWCD) Stormwater Improvements	Surface water infrastructure modifications and stormwater retrofits to existing system to improve water storage capabilities, mitigate flooding, and improve water quality.	1,530,000	500,000	East County Water Control District, Natural Resource Conservation Service , Federal Emergency Management
<b>Subtotal: \$</b>		<b>5,014,920</b>	<b>\$ 2,500,000</b>	
<b>Grand Total: \$</b>		<b>20,169,024</b>	<b>\$ 8,750,000</b>	
<b>Cost match identified as of February 2006 <sup>(1) &amp; (2)</sup>:</b>		<b>56.6%</b>		
<sup>(1)</sup> Total project cost is estimated. Restoration projects will not be required to provide a cost-match because the projects are in areas of				
<sup>(2)</sup> \$100K FEMA, \$400K NRCS. ECWCD's contribution is estimated in excess of \$1,030,000, which includes proceeds from the sale of				