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# POLLUTION RECOVERY FUND PROJECTS AWARDED BY YEAR



## CONTENTS

2023 ..... 2

2020 ..... 3

2017 ..... 5

2016 ..... 6

2015 ..... 7

2014 ..... 8

2013 ..... 9

2009 ..... 10

2008 ..... 11

2007 ..... 13

2006 ..... 14

2005 ..... 16

2004 ..... 17

## **Lake Magdalene Grass Carp Barrier**

Lake Magdalene Special Taxing District was awarded \$20,258.72 to install a grass carp barrier on Lake Magdalene. The lake will be stocked with grass carp to control nuisance vegetation. The project includes the design, professional services, and construction of the carp barrier at Haven Bend.

## **Agriculture Pesticide Collection**

Hillsborough County Extension Service was awarded \$48,000 to collect and properly dispose of agricultural pesticides that cannot or should not be used. Pesticides will be collected from farms throughout Hillsborough County. The collection will occur at the County contracted Hazardous Waste Collection Provider site.

## **River Hills Nature Trail**

RHC Master Association, Inc. was awarded \$11,869.50 to remove invasive species of vegetation and replant native species of plants along the River Hills Nature Trail. The trail consists of 4.2 miles of trails over a 250-acre tract of land that borders the Alafia River.

## **Invasive Species Removal along Hillsborough River, Hillsborough Bay, & Old Tampa Bay**

The City of Tampa was awarded \$50,000 to contract with landscape contractors to remove invasive species at seven project locations which include parks and trails along the Hillsborough River, Hillsborough Bay, and Old Tampa Bay. The locations are within River Boulevard Park, Temple Crest Park, River Tower Park, Skyway Trail, Bobby Hicks Pond, Davis Island Severn Avenue, and Gasden Park/MacDill Trail Greenway.

## **Impact of Indigenous *E. coli* on Microbial Water Quality**

The University of South Florida was awarded \$50,000 to develop methods to discriminate between *E. coli* from recent pollution events and indigenous *E. coli* populations in streams. The project aims to terminate identified pollution sources and will also identify sewage and animal fecal pollution by microbial source tracking (MST).

## **Reed Park Stormwater Restoration Project**

Sea & Shoreline LLC was awarded \$49,621 to install native submerged aquatic vegetation (*Ruppia maritima* and *Vallisneria americana*) in the Hillsborough River around Reed Park in Tampa as a method of green stormwater infrastructure. 2,900 mechanical planting units will be planted on 3-foot centers throughout the project. 100 peat pot planting units will be planted in groups of 5 under 20 GrowSAV Herbivory Exclusions Devices.

## **MacDill AFB Mangrove Restoration**

Ecosphere Restoration Institute was awarded \$50,000 to restore saltern communities and mangrove forests on the southern tip of MacDill Air Force Base by removing existing mosquito ditching through hydro-blasting. The restoration of the 3 acres of mangrove habitat will help filter untreated run-off and improve sheet flow through 23 acres of mangrove forest.

## **2D Island Living Shoreline Creation Project**

Tampa Bay Watch, Inc. was awarded \$49,560 to install 8,382 square feet of new oyster reefs along the eastern shoreline of 2D Island in Tampa Bay. The creation of oyster reefs will help restore lost habitat in the bay, promoting aquatic vegetation and wildlife diversity. The oyster reefs will also aid in the reduction of erosion along the eastern shoreline of the island and improve water quality through natural biological filtration.

## **Monitoring Microplastic Pollution in Tampa Bay**

Eckerd College, Inc. was awarded \$49,450 to establish a definitive baseline of spatial and seasonal patterns of microplastic pollution load in Tampa Bay. The monitoring project will assess spatial and temporal trends in microplastic concentration within the surface waters of Tampa Bay, identify microplastic accumulation zones in Tampa Bay, assess year-to-year increases or decreases in microplastic concentrations, and examine seasonal or weather-related effects on the quantification of microplastics.

## **Phase 2-Nature Trail Restoration**

Sun City Center Audubon Club/Sun City Center Community Association was awarded \$20,000 to eradicate invasive exotic species and to restore a small creek running through the property. This project restores the remaining 17 acres of a 37-acre property owned by the SCC Community Association.

## **Metagenomic Screening of Multidrug Resistant Bacteria in Wastewater Vessels for Nanoremediation**

The University of South Florida was awarded \$50,000 to study the potential for pathogens in wastewater treatment plant (WWTP) reclaimed water sources contemplated for potable water reuse. The project will then apply appropriate treatment technology to reduce, remove, or inactivate those pathogens to acceptable water quality standards protective of public health and the environment. The findings will be used by utility departments, regulators, and policy makers as they consider various reuse options for WWTP effluent.

## **Ignacio Haya Park Living Shoreline Phase II**

The City of Tampa Parks and Recreation Department was awarded \$50,000 for the second phase of the Ignacio Haya Park – Living Shoreline Project. The primary goals will improve water quality by creating a biological treatment system to remove nutrients and slow down flows in the existing ditch, stabilizing the shoreline to reduce sediment pollution, and restoring the associated wetland vegetation. This project constructs littoral shelves to address a stormwater ditch near West South Avenue that currently flows from the adjacent residential area directly into the Hillsborough River. Portions of the existing drainage ditch will be expanded to create approximately 0.09 acres of additional wetland. Improvements to the water quality and wetland habitat will support a continued diversity of wildlife species.

### **New Methods to Enhance Fecal Source Detection in Water Bodies by Microbial Source Tracking**

The University of South Florida was awarded \$50,000 to detect sewage and other fecal pollution in Hillsborough County water bodies. The source of fecal pollution is frequently not obvious, and may result from slow leaks or small discharges rather than sewage line breaks. USF will pinpoint contamination sources in water bodies of interest to EPC and Hillsborough County.

### **MacDill AFB Saltern Restoration Project**

Ecosphere Restoration Institute was awarded \$37,000 for the design and permitting element of the western sector of MacDill's mangrove/saltern restoration project. Saltern communities have been designated as critically imperiled habitat. These saltern communities were impacted by mosquito ditching practices performed prior to MacDill's ownership of the peninsula. This practice consisted of dredging ditches through the mangroves and into the saltern areas. Removing the ditch segments that currently bisect the saltern communities will allow for natural flooding during monthly high tide events thus restoring the feeding areas for wading birds.

### **FWC - Living Shoreline Demo Site**

The Florida Fish and Wildlife Conservation Commission was awarded \$42,000 to construct five living shoreline treatments, erect educational signage and install geoweb material at FWC's Suncoast Youth Conservation Center in Apollo Beach. The five example treatments will employ best practices in living shoreline and seawall enhancement designs so the public can see first-hand what nature-based shoreline solutions look like. In addition, the resultant design sketches (plan view and cross sections) will be offered to waterfront property owners to create a nature-based design for their location.

### **Enhancing Florida Friendly Landscaping**

UF/IFAS Extension Hillsborough County was awarded \$8,600 to increase awareness and practice adoption of commercial horticulture professionals and new county residents of the Hillsborough County Fertilizer Use and Landscape Management Rule resulting in protection of water resources. This project will provide a reference brochure for professionals that covers state licensing requirements for professional fertilizer applicators, the route to certification, fertilizer application and landscape management rules, how to calculate slow-release fertilizer content and how much fertilizer to apply, and a quick reference guide for fertilizer applications. Brochures will be provided to all professional applicators applying for a Green Industries Best Management Practices vehicle decal. A laminated fact sheet for professionals, homeowner associations and residents will contain similar information targeted primarily for homeowner use and as a reference guide.

## **Ignacio Haya Park – Living Shoreline Project**

Ecosphere Restoration Institute was awarded \$47,000 to restore the section of the Hillsborough River shoreline at Ignacio Haya Park in the City of Tampa. This shoreline is eroded due to boat wakes, and during tide events the exposed banks add sediment loads to the water column. By stabilizing the bank via a Living Shoreline feature the sediment loads will be eliminated. This project will also improve water quality by creating a biological treatment system to remove nutrients.

## **MacDill AFB Living Shoreline Creation Project**

Tampa Bay Watch, Inc. was awarded \$49,324.25 to install approximately 2,065 linear feet of oyster reef along the eastern shoreline of MacDill AFB. This project is designed to improve environmental habitat and water quality conditions in Hillsborough Bay by providing a source of natural biological water filtration that will create a more hospitable environment for aquatic plant recruitment and ultimately lead to an increase in diversity of wildlife.

## **Invasive Tree Removal from Audubon's Bird Island, Green Key, and Whiskey Stump Key Sanctuaries**

Audubon Florida was awarded \$50,000 to remove invasive leadtree and Brazilian pepper trees from the Audubon sanctuary islands in Tampa Bay and replant the areas with native coastal maritime forest species. Planting native trees will improve habitat for nesting birds and migrating songbirds in this important rookery.

## **Small Farms for Clean Water: Compost Education to Encourage Sustainable Manure Management**

The University of Florida was awarded \$15,750 to promote best management practices for manure composting on small horse farms in Hillsborough County. This project will develop short videos for social media dissemination and create an online clearinghouse of factsheets and tips for sustainable small farm management, with the overall goal of reducing nutrient and bacteria loads to Hillsborough County water bodies.

## **Hillsborough Trash Free Waters**

Keep Tampa Bay Beautiful was awarded \$20,000.00 to install a kayak/canoe launch at Reed Park in the City of Tampa. The launch will provide better access to the Hillsborough River for river cleanup events, litter prevention education, and will be open for public use. Grant funds will also be used to purchase gloves for volunteers to use during cleanup events, and for storm drain inlet educational projects.

## **Hillsborough River Pollution Prevention Project**

Keep Tampa Bay Beautiful was awarded \$45,000 to reduce the amount of litter and debris entering the Hillsborough River through educational programs and community involvement targeting underserved communities located along the river. Areas in greater need of litter prevention, education, and outreach will be identified through volunteer cleanup events, and activities will be organized to encourage residents to remove land-based litter before it enters the waterway and becomes aquatic pollution. Technological innovations including SeaBins and WaterGoats will be utilized to increase awareness of the role pollution plays in aesthetic blight, increased flooding risks, economic impacts, water quality issues, and possible human health risks.

## **Restoration of Nature Trail Property**

Sun City Center Audubon Club was awarded \$20,000 to eradicate invasive exotic species within a 15-acre tract owned by the Sun City Center Community Association and the adjoining storm water conveyance owned by Hillsborough County that connects Cypress Creek and North Lake.

## **Bahia Beach Invasive Species Management**

Hillsborough County Conservation and Environmental Lands Management was awarded \$31,500 to remove highly invasive species from important ecological communities, including mangrove forests, coastal hydric hammock and salt barrens in the Bahia Beach area. The project will also construct a public exhibit for seasonal display in the on-site kiosk.

## **The Florida Aquarium Storm Water Trail Refurbishment**

The Florida Aquarium Inc. was awarded \$15,000 to replace the signage surrounding the Storm Water Trail with new, updated signs. The fresh new signage will draw more visitors to read the signage and educate themselves on the dangers of runoff pollution and what they can do to help. The placement of the signage is along the walkway to the entrance of the building and will be highly visible to each visitor that parks in the Aquarium lot and walks to the front entrance.

## **Watershed Investigations**

The Florida Aquarium was awarded \$55,477 to provide support to five Hillsborough County Title I schools to participate in the curriculum at the Florida Center for Technology and Conservation. This site in Apollo Beach features diverse watershed habitats and provides hands-on, minds-on exploration of the health of Tampa Bay and Gulf of Mexico. Watershed Investigations will introduce students to local watersheds, climate change, and the role they can play in protecting our water resources. Activities and curriculum will align with state science standards for the year. This program inspires bright, intelligent students, who would not otherwise have this opportunity, to become our future environmental advocates and to learn of the importance of protecting our natural resources in the State of Florida.

## **Agriculture Pesticide Collection**

Hillsborough County Economic Development was awarded \$40,000 to collect and properly dispose of agricultural pesticides that cannot, or should no longer be used. Pesticides will be collected from farms throughout Hillsborough County. The collection will occur at the County contracted Hazardous Waste Collection Provider site.

## **Determining Sources and Risk of Fecal Pollution in Tampa Bay Tributaries**

The University of South Florida was awarded \$50,000 to study the dominant sources of fecal pollution in several Hillsborough County water bodies using microbial source tracking (MST). Samples will be tested for bacterial and viral pathogens, and risks to human health from recreation in these water bodies will be calculated using risk assessment tools.

## **Trash Free Waters**

Keep Tampa Bay Beautiful was awarded \$30,000 to enhance litter and debris abatement projects by purchasing materials for land and water based cleanups. Materials include waders, water gloves, long reach grabbers, nets, grappling hooks, buckets, and other tools essential to removing litter. The project will also create a litter removal web application and update the Keep Tampa Bay Beautiful website to simplify volunteer registration and data tracking.

## **Tampa Bay Dredged Hole Habitat Assessment**

The Tampa Bay Estuary Program was awarded \$35,880.00 to assess the current ecological value of an identified polluted area that was recently restored through the strategic filling of a dredged hole in McKay Bay. This project fits into a larger effort to study 10 dredged holes in Tampa Bay to assess their current ecological value and to make management recommendations for future restoration or protection.

## **McKay Bay South Oyster Reef Community Construction Project**

Tampa Bay Watch, Inc. was awarded \$48,010.00 to install approximately 3,500 linear feet of new oyster shell bars and 4 circular oyster beds along the southwestern shoreline of McKay Bay. The project's goal is to create a greater surface area for settling oyster larvae, create habitat niches for other benthic organisms, and improve long-term water quality conditions through natural biological filtration services that oyster provide. The project will also benefit the Tampa Bay community by promoting environmental stewardship while offering hands-on opportunities to participate in Tampa Bay habitat restoration activities.

## **Little Manatee River SAV Restoration Project**

Sea & Shoreline LLC was awarded \$45,832.00 to enhance aquatic habitat in the Little Manatee River by restoring submerged aquatic vegetation and measuring the effectiveness of two unique planting methods. Tape grass (*Vallisneria americana*) will be reintroduced into the river through GrowSAV Herbivory Exclusion Cages and mechanical planting. Data collected will be used to determine the effectiveness of the two planting technologies.

## **East Lake Watershed Education and Rookery Restoration Project**

East Lake Park Homeowners Civic Club Inc. were awarded \$5,011 to hold workshops designed to educate those who live, work and attend high school within the East Lake Watershed regarding ways to lessen human impacts on freshwater resources, and abate nutrient loading caused by water fowl at East Lake through the construction of floating islands with suspended aquatic plant roots to increase the absorption of harmful nutrients in the water column.

## **Rock Ponds Wetland Restoration Project**

Tampa Bay Watch, Inc. were awarded \$50,000 to create critical coastal wetlands that will restore essential fish and wildlife habitat, and aid in the improvement of water quality from pollution due to urban and agricultural runoff. Tampa Bay Watch will partner with schools in their Bay Grasses in Classes program (BGIC) to provide plants and student volunteers to plant salt marsh plugs at designated sites. The main goal for the Rock Ponds Wetland Restoration Project is to increase the abundance of a healthy native salt marsh and create a beneficial ecosystem for biodiversity.

## **Agriculture Pesticide Collection and Education Day**

Hillsborough County Economic Development and UF/IFAS Extension Service were awarded \$24,241 to collect and properly dispose of agricultural pesticides that cannot or should no longer be used. Pesticides will be collected from farms throughout Hillsborough County. The collection will occur at the County contracted Hazardous Waste Collection Provider site.



## **Erosion Control/Oysterbar Habitat Creation Phase 2**

Audubon Florida was awarded \$50,000 to create an oyster bar on the south side of Bird Island to control erosion of the bird sanctuary islands and control pollution by providing substrate for oysters that will filter water and promote growth of salt marsh grass and mangrove vegetation.

## **A Public Private Partnership to Educate and Safely Manage Mercury Containing Items**

Covanta Hillsborough Inc. and Hillsborough County Public Utilities were awarded \$5,000 to produce promotional PSAs to encourage Hillsborough County Residents to safely dispose of mercury containing devices to reduce amount of mercury entering the environment. Gift cards will be given to residents turning in mercury containing devices, purchased through Covanta matching-funds.

## **Pilot Project for Outfall Water Quality in Lake Magdalene Pre & Post Testing**

The Lake Magdalene Special Dependent District was awarded \$50,000 to designate a stormwater runoff outfall into Lake Magdalene as a pilot site to study the effects of treating this outfall with specific technology for effectively controlling pollution. When this is successful, more outfalls will receive the same treatment until the lake's pollution control activity is minimized.

**Basis of Review for Borrow Pit Applications**

HSW Engineering, Inc. was awarded \$68,160 to sample borrow pits within Hillsborough County that have been identified as having adversely altered the hydrology of nearby wetland communities. The purpose of this study is to identify hydrologic and drainage criteria that will help strengthen the review by local building and environmental permitting agencies, and to educate persons on how to more soundly develop borrow pits without adversely impacting the environment.

**Effects of Restoration on Use of Habitat by Neo-Tropical Migratory Song Birds**

Quest Ecology, Inc. was awarded \$84,801 to restore native plant species and monitor avian utilization at the project location site at Cockroach Bay in Hillsborough County. This project identifies returning individual birds, measures the length of time an individual may stay at a migratory stopover, and determines if multiple habitat types are being utilized by the same species.

**Artificial Wetland Cell**

The Logan Gate Village Special Dependent Tax District was awarded \$5500 to create 20 artificial wetland cells in the form of 32 square foot floating vegetative islands to create wetland areas on the surface of a pond.

**Pilot Project for Outfall Water Quality in Lake Magdalene**

The Lake Magdalene Special Dependent District was awarded \$92,000 to identify points of entry/outfalls to Lake Magdalene and control the pollutants running through them. This project intends to help isolate lake areas with identified problematic, ecological imbalances, give an overall picture of how the management of the lake is responding to the implementation of the first year of the lake management plan, and continuing water quality sampling to help the Special District compare how the lake management plan impacts the baseline numbers taken before the plan was implemented.

**East Lake Watershed: A Student-led Action Plan to Improve Water Quality**

Suncoast Earth Force was awarded \$46,300 for students to develop an East Lake Watershed Action Plan based on management plans for this area, water quality data from an array of scientific organizations, and both water quality data and land use analysis that students have collected over an entire year. This project allows students to gain scientific knowledge, including the basics of watershed management from professional scientists, experience in communicating effectively with homeowners, business owners, and water management professionals, and the leadership skills required to coordinate diverse groups of students and analyze scientific data.

**Green House Gas Inventory for the Hillsborough County Government**

EPC's Air Management Division was awarded \$75,000 to create a Hillsborough County government greenhouse gas (GHG) inventory that assesses the total amount of GHG emissions caused directly and indirectly by the Hillsborough County government. The results of this project are essential for addressing past, present, and future climate change, to understand emissions sources, develop state climate change action plans, and implement policies and programs to reduce GHG emissions.

**McKay Bay Sediment Quality Action Plan Development**

The Tampa Bay Estuary Program was awarded \$55,000 to refine the spatial extent, volume, and potential sources of sediment contamination in the McKay Bay estuary using a phased sampling approach, and develop a detailed action plan to address the existing sediment contamination present in this area based upon the refined assessment.

**Agricultural Pesticide Collection and Education Day 2008**

Hillsborough County was awarded \$24,000 to collect banned, canceled, or suspended pesticides with the potential risk to human health that farmers may still have in storage as they await the availability of affordable disposal options. Long-term storage of these pesticides can pose unnecessary risks to employees, surrounding communities, and the environment, especially through ground and surface water contamination. Proper disposal can be costly and a regulatory burden for small farmers and other pesticide users. This program offers an opportunity to avoid these formidable barriers and to promote safe and environmentally sound pesticide use, handling, and disposal.

**Wetland Restoration Potentials on County-owned Lands**

Environment and Health, Integrated Inc. was awarded \$120,000 to identify readily restorable isolated wetland systems on county-owned lands, rank these systems, and begin a program for the restoration of the top five ranked sites. A subordinate environmental objective of this project is to provide an accounting of the increase in wetland acreage and improvements in wetland quality.

**MiniFarms Best Management Practices Implementation Program**

The Florida Department of Agriculture and Consumer Services was awarded \$50,000 to provide a percentage of financial aid to eligible growers/producers for BMP implementation to reduce and improve the quantity and quality of off-site discharges. The BMP effort is focused on achieving environmental goals in partnership with growers and local governmental agencies through the Hillsborough Soil and Water Conservation District

**MacDill Phase 2 Seagrass Transplanting Project**

Tampa Bay Watch, Inc. was awarded \$79,196 for the second phase of a highly successful seagrass transplanting program. This project intends to enhance and restore seagrass in areas of Hillsborough Bay where they have existed historically, evaluate the concept that historically present offshore seagrass meadows were instrumental in maintaining prominent stable long-shore sandbars in Tampa Bay, and encourage greater stewardship of Tampa Bay natural resources by providing hands-on educational experiences for community and student volunteers.

**Great American Clean Up and International Coastal Clean Up 2009**

Keep Hillsborough County Beautiful, Inc. was awarded \$12,830 to raise public awareness about litter in our communities, educate volunteers about the impacts of litter on us, our environment and the animals that depend on it for survival, restore natural habitats, and protect wildlife from injury or death by being entangled in or ingesting trash and other debris.

### **East Bay High School Agriscience, Food, & Natural Resources Department Environmental Stewardship Program**

The School District of Hillsborough County was awarded \$2275 to educate students about soil, water, and wildlife, along with pollution control methods, and how agriculture plays a role in environmental issues. This project allows students to harvest, propagate, grow out and plant smooth cordgrass for environmental restoration projects, monitor and maintain plant health and water quality, gain awareness of environmental issues, regulations and governmental agencies, and learn the importance of environmental stewardship and taking part in their community.

### **Site Assessment and Removal of Two 55-gallon Drums of Contaminated Soil**

Miley's Radiator Shop was awarded \$25,000 for the site assessment of both soils and groundwater to determine if the site is contaminated and if so, the extent of such contamination. EPC collected and analyzed a sample of the drum solids and determined that the solids could be hazardous for lead. The Grantee submitted documentation to EPC and a determination of financial hardship was made by the Finance and Accounting Department.

### **Petrol Mart Tank Removal**

EPC's Waste Management Division was awarded \$75,000 to remove five underground storage tanks with associated petroleum discharges at Petrol Mart, Inc. in Plant City, Florida. Contaminants detected at monitoring wells include, but are not limited to, benzene, ethylbenzene, toluene, xylenes (BETX), methyl tert-butyl ether (MTBE), total recoverable petroleum hydrocarbons (TRPHs) and polycyclic aromatic hydrocarbons (PAHs). Due to financial circumstances of the property owner EPC had taken enforcement in the matter and was awarded a judgment to remediate the facility.

## **Australian Pine Removal at EG Simmons Park**

Hillsborough County was awarded \$80,000 to reduce biological pollution at E.G. Simmons Park by removing Australian pine and Brazilian pepper, which are exotic invasive plant species. Reduction of these invasive species will improve public access and enjoyment of the park and enhance habitat for wildlife.

## **Lake Magdalene Management Plan Development and Restoration**

The Lake Magdalene Special Dependent District was awarded \$66,954 to assess the costs, benefits and feasibility of long-term water quality and natural system improvements to the ecosystem of Lake Magdalene. This project will produce a lake management plan for long-term management of the lake ecosystem, control and remove invasive species/plants, identify the point sources and non-point sources discharging into the lake, collect water quality data, rank and prioritize the improvements, and assess the cost/benefit of the retrofit measures in order to help the county to meet the Total Maximum Daily Load (TMDL) objectives in the future as mandated by the state legislation.

## **Invasive Plant Removal on Egmont Key**

Egmont Key Alliance, Inc. was awarded \$133,000 to maintain an optimum balance of foredune, transitional zone and stable dune habitats for birds and native Florida wildlife, while protecting and enhancing existing dune habitats by clearing and controlling exotic plants. This will allow the native plant populations to regenerate and will re-create important foraging areas for birds and mammals.

## **Restoration of MOSI Wetland and Upland Habitat**

Museum of Science and Industry, Inc. was awarded \$125,000 to restore 25 acres with the removal of exotic vegetation and, as needed, the placement of native vegetation that can remove pollutants. This project provides a unique opportunity to educate residents of Hillsborough County about stormwater run-off, pollution, methods of pollution control, the benefits of native vegetation, restoration, and what those terms imply.

## **Testing Reduction of TMDL in Surface Water Flow**

Schreuder, Inc. was awarded \$19,694 to document via essential data collection that the urban wetland in the Forest Hills neighborhood in Tampa improves the quality of contaminated surface water runoff from the Curiosity Creek drainage system prior to discharge to the Lower Hillsborough River. This project is the first phase to the successful implementation of the Blue Sink water supply augmentation option for the lower Hillsborough River, designed to ensure that the augmentation (i.e. minimum flow recovery) water is clean and of high quality.

## **Assessing Sources of Indicator Bacteria and Pathogen Presence**

USF was awarded \$101,961 to determine the dominant sources of fecal indicator bacteria (fecal coliforms, Escherichia coli and enterococci) to Lake Carroll in Tampa, Florida, and their relationship to inputs from stormwater and impacts from human sewage.

## **Experimental Land-based Seagrass Nursery**

USF and HCC were awarded \$20,000 to supply transplant material to damaged seagrass beds without impacting natural seagrass beds, and demonstrate restoration techniques to USF and HCC students involved in environmental studies.

## **Seagrass Restoration and Longshore Bar Recovery in Hillsborough Bay**

The Tampa Bay Estuary Program was awarded \$75,000 to restore seagrass to areas where seagrasses have been lost due to decreased water clarity associated with nutrient over-enrichment prior to 1980, and assess the effects that planted seagrasses may have in encouraging reformation of longshore sandbars behind the planted seagrasses.

## **Natures Classroom Phase III**

The Hillsborough Education Foundation was awarded \$188,000 for construction of new animal habitats, restoration of land areas housing old habitats, and the creation of native plant and butterfly gardens at Natures Classroom in Hillsborough County.

## **State of the River**

The Hillsborough River Greenways Task Force was awarded \$4727 to reprint approximately 2000 copies of the *State of the River* brochure, which was a prior project approved and funded with separate PRF funding.

## **Knights PRESERVE**

Knights Elementary School was awarded \$35,253 to study, restore, and preserve a two to three acre wetland area consisting primarily of a swamp and hydric hammock (forested area) and a marsh (un-forested) located on the property of Knights Elementary School in northeastern Hillsborough County.

## **Cotanchobee Fort Brooke Park**

The City of Tampa Parks and Recreation Department was awarded \$100,000 to address pollution entering Garrison Channel and Tampa Bay by treating sheet flow stormwater runoff with scrubber swales as part of the restoration of the shoreline. This included the removal of the existing seawall and re-grading of the shoreline to a natural edge away from the water, stabilized by wetland plantings.

## **Analysis of Fecal Indicator Bacteria Causing Beach Closures**

The Hillsborough County Health Department and USF were awarded \$125,000 to aid resource managers in determining the source(s) (biological and physical) of bacterial pollution, and assessing the risk posed to human health at beaches by elevated indicator bacteria levels.

## **Pollution Monitoring Application Pilot Project**

The USF Florida Center for Community Design and Research was awarded \$45,150 to contribute toward alleviating pollution by making the public more aware of pollution recovery efforts such as Total Maximum Daily Load (TMDL), National Pollutant Discharge Elimination System (NPDES)

and Comprehensive Conservation and Management Plan (CCMP) related efforts, and to improve the productivity of pollution management professionals by greatly reducing the time required to acquire and visualize critical water resources data.

#### **Industrial Facilities Stormwater Inspection Program**

USF was awarded \$28,885 to identify pollution sources, which may currently go undetected, by existing National Pollutant Discharge Elimination System (NPDES) and Small Quantity Generator (SQG) initiatives.

#### **Agricultural Pesticide Collection and Education Day**

Hillsborough County, through its Economic Development Department and Solid Waste Department, was awarded \$24,000 to provide farmers a safe and economical way to dispose of their cancelled, suspended and unusable pesticides, and provide education in the area of pesticide safety, disposal and handling.

#### **Agriculture Best Management Practice Implementation**

The Florida Department of Agriculture and Consumer Services was awarded \$150,000 for the implementation and demonstration of water quality/quantity Best Management Practices (BMPs) for Hillsborough County agricultural producers. The BMP effort is focused on achieving environmental goals in partnership with growers to minimize impacts to water quality while maintaining profitable crop production.

#### **Oyster Reef Shoreline Stabilization and Enhancement**

USAF - MacDill Air Force was awarded \$30,000 to continue an existing restoration project to demonstrate that shoreline erosion can be halted through the installation of oyster shell bags and concrete oyster domes, creating an offshore oyster reef to reduce wave energy. The offshore reef allows the accumulation of sediment behind the reef so the area can be planted with marsh grass that can thrive due to the reduced wave energy on the shore. Over time through succession, the marsh area will be replaced by mangroves that further stabilize the shoreline.

#### **Nitrogen Emission/Deposition Ratios for Air Pollution Sources**

USF was awarded \$40,906 to develop conversion factors for major Hillsborough County sources and source categories that relate tons of nitrogen emitted to the air to tons of nitrogen deposited in the waters of Tampa Bay, This will aid bay managers in assessing nitrogen emissions reductions made in recent years, and reveal which sources/source categories, if controlled, would most affect the bay water quality.

#### **Lake Thonotosassa Muck Removal Feasibility Assessment**

EPC's Environmental Resources Management Division was awarded \$75,000 to assess the potential costs, benefits and feasibility of removing some or all of the nutrient-rich organic muck that is currently present on the bottom of Lake Thonotosassa, located in northeastern Hillsborough County.

#### **Erosion Control / Oyster Bar Habitat Creation Project, Phase I**

The National Audubon Society /Audubon of Florida was awarded \$75,000 to install erosion control structures along the shoreline of Bird and Sunken Islands to provide for the long-term existence of the Richard T. Paul Alafia Bank Bird Sanctuary Islands. 80-pound perforated polygonal habitat

protection devices (PPHPDs) were installed to control erosion caused by storm wave action and ship boat wakes.

#### **Tank Removal / RAMCO Service Center, Inc.**

RAMCO Service Center Inc. was awarded \$25,000 for the closure and removal of three 8,000 gallon abandoned underground storage tanks, and proper closure and/or assessment of one kerosene tank and one waste oil tank in order to contain gasoline or other petroleum products that can escape into the environment.

**2005**

#### **Apollo Beach Air Speciation Monitoring**

EPC's Air Management Division was awarded \$14,000 to allow EPC staff to measure fine particulate (PM2.5) pollution levels in Apollo Beach and analyze filters to determine the source(s) of any detected pollution.

#### **Field Measurement of Wave Energy in Hillsborough Bay**

The Tampa Bay Estuary Program was awarded \$125,000 for the partial funding of wave energy measuring instruments in Tampa Bay to measure actual wave energy at five locations.

#### **G. Maynard Underground Storage Tank Closure**

EPC's Waste Management Division was awarded \$20,000 to terminate potential continual environmental contamination by removing five abandoned underground storage tanks with the potential to cause petroleum contamination

#### **Health Advisory Signs for Hillsborough County Beaches**

The Hillsborough County Health Department was awarded \$1531 for posting at certain bathing beaches within Hillsborough County permanent, lockable metal signs to indicate whether each beach currently meets standards for swimming.

#### **Natures Classroom Capital Campaign**

The Hillsborough Education Foundation was awarded \$40,000 for the construction of new ADA compliant pathways to connect various buildings, facilities and pavilions At Natures Classroom in Hillsborough County.

#### **Port of Tampa Stormwater Improvement and Enhancement**

The Tampa Port Authority was awarded \$45,000 to identify, enhance, and improve stormwater management on Tampa Port Authority property, specifically Port of Tampa - Hooker's Point peninsula.

#### **School Bus Diesel Retrofit**

The School District of Hillsborough County's Transportation Division was awarded \$100,000 for school bus diesel retrofit to reduce diesel school bus emissions in order to realize health benefits to higher risk groups, such as children, and the general public from improved air quality.



## **State of the River**

The Hillsborough River Greenways Task Force was awarded \$10,000 for the development and printing costs of an educational brochure on the Hillsborough River and its sources of pollution.

## **Agricultural Pesticide Collection Day**

The Economic Development and Solid Waste Departments of Hillsborough County were awarded \$30,000 for the purpose of funding the collection and proper disposal of agricultural pesticides that cannot or should no longer be used.

## **Bahia Beach Restoration**

EPC's Environmental Resources Management Division was awarded \$150,000 for the design, permitting, and project oversight of the restoration project at Bahia Beach involving approximately 120 acres in southeastern Hillsborough County.

## **Stormwater Management Demonstration Project**

The Florida Aquarium was awarded \$30,000 for the partial funding of construction costs in the building of a teaching platform over the Florida Aquarium Site Building Pond in the Florida Aquarium parking lot.

## **Adopt a Shoreline**

The Mayor's Beautification Program was awarded \$10,416 for supplies needed in the mobilization of volunteers for the purpose of providing public education and hands-on restoration activities to mitigate the negative impacts of stormwater runoff, invasive vegetation, population growth and development.

## **Water Drop Patch Program**

The Girl Scouts of Suncoast Council was awarded \$7350 to educate girls and inform the community on environmental issues through public education, storm drain stenciling, and creating presentation materials.

## **Invasive Plant Removal - E.G. Simmons Park**

The Hillsborough County Parks, Recreation, and Conservation Department was awarded \$60,000 for the elimination of invasive species, primarily Brazilian pepper and lead tree, at E.G. Simmons Park, a widely visited regional county park located in eastern Hillsborough County.

## **Invasive Plant Removal - Riverview Library**

The Hillsborough County Parks, Recreation, and Conservation Department was awarded \$10,000 for the control (elimination) of invasive species, primarily kudzu and air potato, in a natural wetland located behind the Riverview Library.

**Tampa Shoreline Restoration Initiative**

Friends of the River was awarded \$30,000 for the creation of a Tampa Shoreline Restoration Master Plan which will direct activities of the Tampa Shoreline Restoration Initiative along more than 100,000 linear feet of shoreline in 30 city-owned public open spaces.