

Council Member Applicant and Proposal Information Summary Sheet

Council Member: State of Florida	Point of Contact: Phil Coram Phone: 850-245-2167 Email: phil.coram@dep.state.fl.us
Project Identification	
Project Title: Tampa Bay Watershed Restoration Project	
State(s): Florida	County/City/Region: Hillsborough and Manatee Counties
General Location: <i>Projects <u>must</u> be located within the Gulf Coast Region as defined in RESTORE Act. (attach map or photos, if applicable)</i>	
Southwest Florida (Tampa Bay)	
Project Description	
RESTORE Goals: <i>Identify all RESTORE Act goals this project supports. Place a P for Primary Goal, and S for secondary goals.</i> <input type="checkbox"/> Restore and Conserve Habitat <input type="checkbox"/> Replenish and Protect Living Coastal and Marine Resources <input type="checkbox"/> Restore Water Quality <input type="checkbox"/> Enhance Community Resilience <input type="checkbox"/> Restore and Revitalize the Gulf Economy	
RESTORE Objectives: <i>Identify all RESTORE Act objectives this project supports. Place a P for Primary Objective, and S for secondary objectives.</i> <input type="checkbox"/> Restore, Enhance, and Protect Habitats <input type="checkbox"/> Promote Community Resilience <input type="checkbox"/> Restore, Improve, and Protect Water Resources <input type="checkbox"/> Promote Natural Resource Stewardship and <input type="checkbox"/> Protect and Restore Living Coastal and Marine Resources <input type="checkbox"/> Environmental Education <input type="checkbox"/> Restore and Enhance Natural Processes and Shorelines <input type="checkbox"/> Improve Science-Based Decision-Making Processes	
RESTORE Priorities: <i>Identify all RESTORE Act priorities that this project supports.</i> <input checked="" type="checkbox"/> Priority 1: Projects that are projected to make the greatest contribution <input checked="" type="checkbox"/> Priority 2: Large-scale projects and programs that are projected to substantially contribute to restoring <input checked="" type="checkbox"/> Priority 3: Projects contained in existing Gulf Coast State comprehensive plans for the restoration <input checked="" type="checkbox"/> Priority 4: Projects that restore long-term resiliency of the natural resources, ecosystems, fisheries ...	
RESTORE Commitments: <i>Identify all RESTORE Comprehensive Plan commitments that this project supports.</i> <input checked="" type="checkbox"/> Commitment to Science-based Decision Making <input checked="" type="checkbox"/> Commitment to Regional Ecosystem-based Approach to Restoration <input checked="" type="checkbox"/> Commitment to Engagement, Inclusion, and Transparency <input checked="" type="checkbox"/> Commitment to Leverage Resources and Partnerships <input checked="" type="checkbox"/> Commitment to Delivering Results and Measuring Impacts	
RESTORE Proposal Type and Phases: <i>Please identify which type and phase best suits this proposal.</i>	
<input checked="" type="checkbox"/> Project <input checked="" type="checkbox"/> Planning <input checked="" type="checkbox"/> Technical Assistance <input checked="" type="checkbox"/> Implementation ___ Program	
Project Cost and Duration	
Project Cost Estimate: Total : \$6,947,460	Project Timing Estimate: Date Anticipated to Start: October 1, 2015 Time to Completion: ___ 5 ___ years (including monitoring) Anticipated Project Lifespan: >=25 years

Tampa Bay Watershed Restoration Proposal

Executive Summary

Tampa Bay is the largest open-water estuary in Florida at nearly 400 square miles. It borders three counties—Hillsborough, Manatee, and Pinellas—and, at 2,200 square miles, its watershed (Figure 1) is more than five times larger than the bay itself. More than 100 tributaries, including four major rivers—the Hillsborough, Alafia, Manatee, and Little Manatee—and more than 40 meandering, brackish creeks and coastal streams flow into the bay. Tampa Bay proper extends some 35 miles inland from the Gulf of Mexico and is 5-10 miles wide along most of its length. It averages ~12 feet deep, with the maximum natural depth of 89 feet found at its mouth in the Egmont Channel.

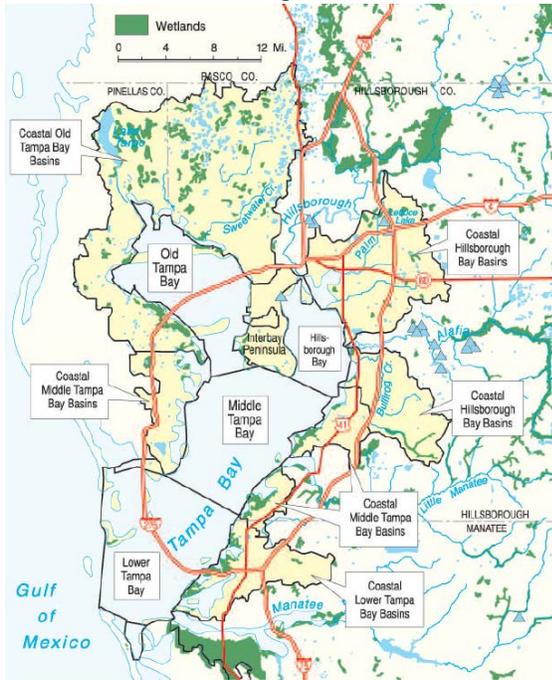


Figure 1. Tampa Bay Watershed and Bay Segments

As evidenced in Figure 2, Tampa Bay has extensive areas of impaired waterbodies (those not meeting water quality standards), which have adversely affected coastal habitats. The map also reflects the extent of specific water quality restoration targets (“TMDLs”) Florida has in place. The projects in this proposal will leverage the extensive restoration work already underway to meet these goals, particularly through the Tampa Bay Estuary Program (<http://www.tbep.org/>) and the Southwest Florida Water Management District’s Surface Water Improvement and Management (SWIM) Program for Tampa Bay www.swfwmd.state.fl.us/projects/swim/tampa_bay/.

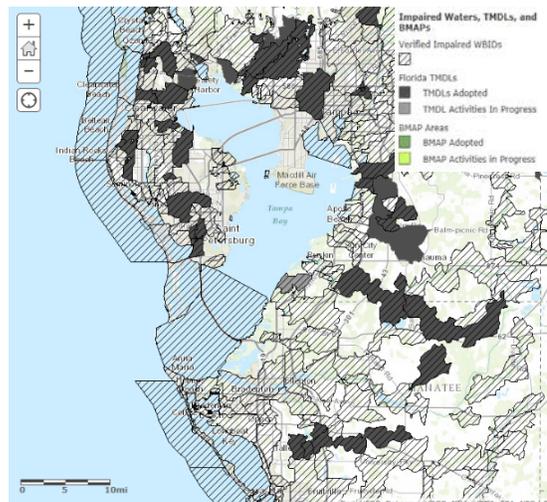


Figure 2. Impaired Waters, TMDLs, and BMAPs

The Tampa Bay Watershed proposal requests \$6,947,460 and includes five projects (see Figure 3 below) that, collectively, will restore and protect habitat and water resources; replenish living marine resources; and revitalize the local economy—and the local communities that depend on those resources and that economy—and set them on a sustainable, resilient footing for the future. Each project is briefly summarized below.

Project 1. Robinson Preserve Restoration (\$1,755,000)

Coastal habitats are essential to the protection of Tampa Bay. This project will convert a 150-acre expansion of Robinson Preserve from mostly exotic infested disturbed land to native wetland and

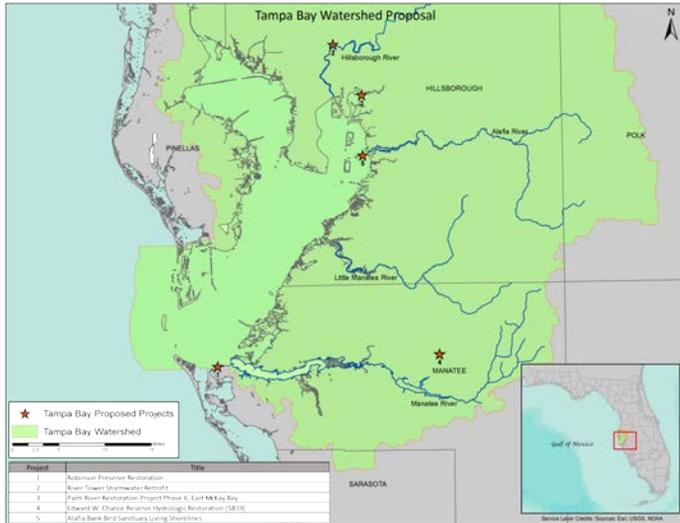


Figure 3. Tampa Bay Watershed Proposal Projects

upland habitats by re-contouring the land, followed by planting with native vegetation and intensive maintenance. Wetland habitats along the coast provide critical fish and wildlife habitat along with natural filtration of land-based sources of pollution.

Project 2. River Tower Shoreline Restoration and Stormwater Treatment (\$1,755,000)

The River Tower site comprises approximately 12.8 acres of natural and disturbed upland and wetland habitat. The project would restore 1,200 linear

Project 3. Palm River Restoration Project Phase II, East McKay Bay (\$500,000)

The project consists of extensive habitat restoration, water quality improvement, and mitigation of erosion along the Palm River at the mouth of McKay Bay. It focuses on improving water quality and enhancing upland and wetland areas on 53 acres of Southwest Florida Water Management District land. It will remove exotic vegetation, create an herbaceous wetland, and build three stormwater management areas to provide water quality treatment for 660 acres of residential, commercial and industrial developed land.

Project 4. Edward W. Chance Reserve Hydrologic Restoration (\$204,750)

This project proposes hydrologic restoration of 34 acres of hydrologically impacted freshwater wetlands in Manatee County on the Edward W. Chance Reserve-Gilley Creek Tract, a 5,800-acre preserve owned and managed by the Southwest Florida Water Management District.

Project 5. Alafia Bank Bird Sanctuary Living Shorelines (\$2,647,710)

This project extends ongoing work that has installed 2,050 feet of erosion control breakwater reef structures on the Alafia Bank in Hillsborough County. It will add another 4,750 feet to protect this Globally Important Bird Area. Pyramid-shaped, 8,000 pound, pH-balanced, marine concrete breakwater units would be sited parallel to the north shore of the Alafia Bank Bird Sanctuary, 50-80 feet off-shore in linear arrays, with 10-20 foot marine wildlife gaps, to intercept storm waves and ship wakes and create a quiet-water living shoreline.

Proposal Narrative

At nearly 400 miles, Tampa Bay is the largest open-water estuary in Florida. Its 2,200 square mile watershed is more than five times larger than the bay itself. It borders Hillsborough, Manatee, and Pinellas counties and has more than 100 tributaries, including four major rivers—the Hillsborough, Alafia, Manatee, and Little Manatee—and more than 40 meandering brackish coastal streams flow into the bay. Tampa Bay extends ~35 miles inland from the Gulf of Mexico and is 5-10 miles wide along most of its length. It averages ~12 feet deep, with maximum natural depth of 89 feet in a small area at its mouth in Egmont Channel. The bay contains more than 200 fish species. Its mangrove islands support some of the most diverse waterbird nesting colonies in North America, annually hosting 40,000 pairs of 25 different species, ranging from the White Ibis and Great Blue Heron to the Reddish Egret, the rarest heron in the United States.

This proposal's five projects collectively will restore and protect habitat and water resources; replenish living marine resources; and revitalize the local economy—and the communities that depend on those resources and that economy—and set them on a sustainable, resilient footing. The five projects and their requested funding amounts are:

1. Robinson Preserve Restoration (\$1,755,000)
2. River Tower Shoreline Restoration and Stormwater Treatment (\$1,755,000)
3. Palm River Restoration Project Phase II, East McKay Bay (\$585,000)
4. Edward W. Chance Reserve Hydrologic Restoration (\$204,750)
5. Alafia Bank Bird Sanctuary Living Shorelines (\$2,647,710)

Each project extends the benefits of projects and programs already proven successful in the watershed. Collectively, their primary goal is to **restore and conserve habitat** with the corresponding primary objective to **restore, enhance and protect habitat**. They will accomplish these ends by restoring shoreline habitat, creating and enhancing upland habitat, and providing stormwater treatment to reduce pollutant impacts on critical water resources—and in doing so, will achieve the complete set of Council goals and objectives. These actions in turn will invigorate the diverse Tampa Bay economy, which depends on its expansive coastal environment to attract and sustain its year-round community and a thriving tourist industry.

The projects are interrelated. All directly restore, enhance and protect for the future the region's unique coastal systems and resources. In doing so, they provide habitat essential for the vast array of fish, birds and other wildlife that make Tampa Bay their homes or seasonal stopovers. Several provide stormwater treatment while another extends a living shoreline to create habitat and intercept storm waves and ship wakes to minimize erosion. Habitat restoration, water resource restoration and protection of living coastal areas work in synergy.

The Tampa Bay Watershed proposal thus represents a large-scale, regional approach to solving critical water resource and habitat threats in the bay area. As the individual project summaries demonstrate, each one is founded on good scientific principles or other proven actions and methods that have achieved successful, measurable results in the past. They leverage other resources and build on previous investments to extend their impact. Each project is summarized below.

Project 1. Robinson Preserve Restoration (\$1,755,000)

Background – Manatee County, in partnership with the Conservation Foundation of the Gulf Coast and the Robinson Family, has expanded its popular 482-acre Robinson Preserve by acquiring and conserving an additional 150 acres of adjacent lands valued at \$3.2 million. The Preserve is located in West Bradenton, at the confluence of Tampa Bay and Sarasota Bay. The 150-acre expansion area is low ecological quality, former agricultural land in production for at least five decades and fallow for the past ten years. Fill was piled over large portions of the site for a golf course community before acquisition. Historical uses have allowed nuisance and exotic vegetation to overrun the majority of the site, severely limiting ecological functions. While the overall project involves enhancements for public access, all RESTORE funds received will be used strictly for ecological restoration.

Working with \$3.2 million from the Southwest Florida Water Management District, Manatee County has set the foundation for restoring ecological functions and improving water quality through habitat improvements to the Robinson Preserve expansion. The project’s goals are 1) Creation of coastal upland habitats resistant to near-term sea level rise; 2) Re-creation of high quality diverse coastal upland habitats; and 3) Creation of high quality habitats optimized for juvenile snook and tarpon. When completed, the project will provide ~85 acres of upland habitats and 55 acres of created wetland and sub-tidal habitats—140 acres of productive habitat from former low quality agricultural land. The remaining 10 acres will be dedicated to the environmental education center, trails, parking, and other facilities to provide access for recreation and education.

One advantage of the severely degraded condition of the area now is that it allows flexibility in project design. With so little desirable habitat, it is possible to manipulate existing land forms so that the goals of increased community resilience and specific ecological benefits can be planned, taking into account the feasibility of required management actions. The goals will be accomplished through the re-creation of productive upland habitats and creation of coastal wetland and sub-tidal habitats that have been regionally diminished from historical extents because of development of coastal areas of southwest Florida (Barrow et al 2005).

Implementation methodology – The project will be implemented over three phases related to permitting, budgets, and seasonal timing requirements for vegetation management and installation. The phases are summarized below. The concept planting plan for the project is included as Figure 10 in the **Other** section.

Tasks	Year 1	Year 2	Year 3
Phase I – Construct the environmental education center and supporting facilities.	X		
Phase II - Earthmoving and soil stabilization measures to create wetland and sub-tidal habitats and set the foundation for restoration of upland areas.	X		
Phase III – Connect internal water features to the established internal waterways in Robinson Preserve, construct parking areas and kayak launch, and early establishment of upland habitats.		X Connections	X Habitat Establishment

Monitoring and adaptive management – Initial steps included baseline vegetation monitoring and photographic monitoring. Throughout the construction period there will be regular construction and engineering inspections and monitoring. After final grading, a seven year program of habitat

establishment, including required monitoring, will be implemented. At project completion adaptive management protocols will be integrated into the overall management plan.

Measures of success – Successful completion will be achieved when created habitats have been established and are determined to be in a maintenance phase of management which can be sustained using staff and budget allocated for the site.

Risks and uncertainties – As with any restoration project, there are risks and uncertainties. Weather can cause problems with seed establishment, affect planting success, and cause erosion. Additional risks include altered flow of water and undesirable sediment deposition. These concerns have been mitigated through extensive hydrological modeling of proposed water bodies with analysis of flushing and sediment migration. Extensive geotechnical investigations were completed to identify

and avoid exposing fine sediments and ensure suitable materials is placed for elevated upland habitat areas.

The fact that Manatee County has been successful converting highly disturbed landscapes to productive habitat (Figure 4) further mitigates risks. Projects successfully undertaken within the past 10 years include the established portion of Robinson Preserve, Perico Preserve, Ungarelli Preserve, and Neal Preserve. Older projects, such as Leffis Key Preserve, Emerson Point Preserve, demonstrate a longer term reference for restoration success. Lessons learned from previous projects are reflected throughout the design and specifications for the Robinson Preserve Expansion project. The County and the design team are aware that unexpected issues will arise and are prepared and react effectively to solve them.



Figure 4. Manatee County acquisitions and preserves.

Resources Department. In 2013, they provided more than 220 education and outreach events for 23,000 attendees, nearly all free, and hosted 91 volunteer workdays across the County’s suite of preserves. Some 1,600 volunteers donate more than 12,000 hours annually to conservation areas or programs, valued at \$270,000 in 2013 (Independent Sector, 2014). Staff host nature walks, fitness and meditation programs, children’s programs, photography trips, and naturalist-guided tours. Robinson Preserve is also home to self-guided tours and geocaching, with two stops on the County’s “Taking Flight Geocache Tour,” and a stop on the Sarasota and Manatee County’s Science and Environment Council’s Watershed Tour, an audio-narrated tour with sites throughout the two counties.

Outreach and education opportunities – Education and volunteer programming at Robinson Preserve are managed by full time staff in the Manatee County Parks and Natural

Preserve expansion will promote greater reach and improvement in services, including the Mosaic Center for Nature, Exploration, Science and Technology (NEST), a 2,000-square-foot interpretive classroom/nature center, which will give provide nature-based play space and classroom activities. NEST is expected to become a regular school field trip venue, and will allow hosting group programs indoors, including during bad weather. The expansion calls for an interpretive play area and canopy walk to be built within the site’s existing tree canopy.

Leveraging of resources and partnerships – Manatee County has used a combination of local tax dollars, government and foundation grants, and water management district funds to acquire and restore ~1,500 acres of coastal lands since 1990. The Robinson Preserve Expansion was acquired in December 2012. The table below includes secured and proposed funding totaling \$71.8 million.

Restoration Sites	Funding Entities	Amount	Purpose
Robinson Preserve Expansion, acquired 2012 (\$8.4 million invested)	Conservation Foundation of the Gulf Coast	\$3.2 million	Land purchase
	Southwest Florida WMD	\$3.2 million	Restoration
	FDEP	\$200,000*	Trails
	Manatee County	\$2.0 million	Office and education center
Original Robinson Preserve, acquired 2002 (\$25.2 million invested)	Florida Communities Trust (FCT)	\$10.0 million	Land purchase
	Robinson Donation	\$6.9 million	Match for FCT
	Multiple agencies	\$7.3 million	Restoration
	Florida DOT	\$1.0 million	Transportation alternatives
Emerson, Neal, Perico, Riverview, Ungarelli coastal preserves (1990-2012) (\$38.2 million invested)	Multiple agencies	\$17.0 million	Land purchase
	Local funding	\$14.0 million	Land purchase
	SWFWMD, EPA, NOAA	\$6.0 million	Restoration
	FDEP	\$1.2 million*	Trails

*Equal local match

Along with the financial contributions, volunteers have spent thousands of hours to make these preserves a reality. The County has benefited from technical guidance from many groups and individuals. While difficult to quantify, non-monetary contributions are essential.

Project benefits – The expansion of Robinson Preserve and subsequent habitat restoration and facilities improvements will immeasurably benefit area wildlife along with the people who come to enjoy the experience. The project will prevent further degradation from residential and commercial development and provide net gains for the environment, public and local economy. Benefits will come from increased ecosystem services, including water quality improvements, juvenile fish nursery area expansion, and creation of prime forage for birds and other wildlife. The site provides a premier recreational experience. According to Tripadvisor.com, Robinson Preserve is already the #2 attraction in the area receiving a certificate of excellence in 2014. The project will allow volunteer education staff to build support in the community for this and similar

conservation projects, increase disaster protection and community resilience, provide economic stimulus, mitigate sea level rise, and create sustainable human/nature interaction.

Project 2. River Tower Shoreline Restoration and Stormwater Treatment (\$1,755,000)

Background – The project site, River Tower Park, is a 13-acre urban park located on the Hillsborough River near I-275, within the Tampa city limits. According to the *Tampa Shoreline Restoration Initiative Shoreline Restoration Masterplan*, the River Tower Park shoreline (see Figure 5) consists primarily of an oligohaline marsh with scattered canopy. Several large laurel oaks (*Quercus laurifolia*) and cabbage palms (*Sabal palmetto*) provide canopy along the shoreline. The system contains ~20% cover of nuisance species. Beneficial native species are located at the water's edge and include leather fern (*Acrostichum sp.*) and bulrush (*Scirpus sp.*). Other species include: common beggartick (*Bidens alba*), Caesar weed (*Urena lobata*) and St. Augustine grass (*Stenotaphrum secundatum*). Overall, the shoreline is steep and severely eroding. It provides habitat to wading birds, fish and amphibians. The City of Tampa has identified the park as priority for restoration.



Figure 5. River Tower Park.

The restoration project will significantly reduce pollutants from older residential area runoff entering the Hillsborough River. It will address erosion problems, restore shoreline habitat, enhance upland habitat, and provide stormwater treatment. It is designed to protect Tampa Bay by removing an estimated 657 pounds of nitrogen and 27 tons of total suspended solids per year.

Implementation methodology – The project focuses on developing and implementing a final design to address bank erosion problems and provide habitat and improve water quality entering Tampa Bay. The project will include water quality treatment of 350 acres of urbanized watershed via the creation of a 2-acre stormwater pond and restoration of 1,200 linear feet of shoreline through bank stabilization. The pond will be connected to a 78-inch concrete pipe under I-275 that currently discharges stormwater directly into the Hillsborough River with little treatment. A major portion of the project cost is allocated to micro-tunneling, which will provide access to the existing pipe and allow the connection of a new 72-inch pipe. The new piping will transport the greater portion of stormwater flows into the created pond, providing ample capture of stormwater surges and residence time for suspended sediment deposition and nutrient uptake by the planted littoral shelf. Restoration of the park shoreline will be achieved using a soft armor, vegetated wall system.

Monitoring and adaptive management – The City of Tampa will maintain and monitor the project once it has been completed to ensure that the objectives and measures of success are maintained in the future. The City has extensive experience with these types of projects and has the staff resources and expertise necessary to adapt and manage any changes to assure ongoing success.

Measures of success – The project is designed to remove an estimated 657 pounds of nitrogen and 27 tons of total suspended solids each year. A secondary project objective is to restore 1,200 linear feet of riparian shoreline, which will be restored using a soft armor, vegetated wall system. Success will be measured by the amount of nutrients removed from the system and the effective restoration of the riparian shoreline, which includes protection of the existing trees along the shoreline and the prevention of future erosion and undercutting of the bank. All exotic vegetation along the

shoreline will also be removed. Long term success will be demonstrated by the quality of habitat established for the flora and fauna identified in the Background section above.

Risks and uncertainties – There are few risks or uncertainties associated with the project. The final design has been completed and all permits have been received. Construction is anticipated to begin in spring 2015. Project components will be implemented using proven techniques, and the Southwest Florida Water Management District has extensive experience implementing similar projects.

Outreach and education opportunities – The park improvements will be developed as part of the long-range lower Hillsborough River Greenway Plan, which includes a series of shoreline parks within the City of Tampa, and which includes an extensive and longstanding series of educational and outreach programs. Information on the Greenway is available at <http://www.tampagov.net/parks-and-recreation/programs/parks-and-facilities/greenways-and-trails/projects-under-development/hillsborough-river-greenway>.

Leveraging of resources and partnerships – The Southwest Florida Water Management District, City of Tampa Parks and Recreation Department, City of Tampa Stormwater Department, and the Florida Department of Transportation are all partners in the project. The proposal requests \$1,500,000 toward the total project cost of \$2,790,000. The local match being provided, \$1,290,000, amounts to 46%. While the overall project involves enhancements for public access, all RESTORE funds received will be used strictly for ecological restoration.

Project benefits – The project will restore 1,200 linear feet of shoreline habitat, enhance upland habitat, and provide stormwater treatment. It will remove an estimated 657 pounds of nitrogen and 27 tons of total suspended solids per year, thereby improving water quality in the immediate environs as well as downstream and restoring and preserving crucial habitat for local aquatic-dependent life.

Project 3. Palm River Restoration Project Phase II, East McKay Bay (\$585,000)

Background – The Palm River/Tampa Bypass Canal is a tributary to Hillsborough Bay within a portion of the Tampa Bay watershed that continues to exhibit the poorest water quality and habitat in the bay, a Surface Water Improvement and Management priority waterbody. Since 1950, ~50% of Tampa Bay's natural shoreline has been lost due to development and reduction in water quality. This has resulted in a decline in the aesthetic, recreational, and commercial value of the bay, as well as a loss of habitat for native plants and animals (Morrison and Sherwood 2014).

A large, 436-acre, untreated drainage basin discharges through the proposed project site and directly enters McKay Bay from the east. Several natural and man-made ditches throughout the property funnel water to the bay. The proposed project will improve water quality entering McKay Bay through reduced erosion and treatment of stormwater prior to its discharge into McKay Bay. Additionally, restoration of publicly-owned lands along the Palm River will create habitat in this highly altered system.

Implementation methodology – Three ponds will be constructed on the site to treat untreated stormwater discharging from a 436-acre urban basin, through the site, into McKay Bay. Approximately 517 pounds of nitrogen per year will be removed from the system in these ponds.

The site is currently infested with lead tree, Brazilian pepper, and air potato vine. All exotics will be removed during construction, leaving the native remaining oak hammock and intertidal wetlands intact. Native plants will be installed throughout the project footprint. Because portions of the property are heavily used by wading and migratory bird populations, project components will create juvenile fisheries habitat and thus offer additional foraging area for these species.

Monitoring and adaptive management – The entire site is in public ownership and will be maintained by the Southwest Florida Water Management District in perpetuity. The project area will be monitored and maintained for a two-year period after restoration by the construction contractor. Requirements within the bid documents require exotic species to be maintained at <5% in the restored area along with a plant survival rate of $\geq 90\%$. Continued maintenance of exotic species and culverts/stormwater ponds will continue indefinitely.

Measures of success – This project is intended to significantly reduce pollutants in stormwater runoff entering the McKay Bay, and ultimately Tampa Bay. Success will be measured by the amount of nutrients removed from the system and the effective restoration of salt marsh and coastal uplands. The project is designed to remove an estimated 517 pounds of nitrogen per year. A secondary project objective is to restore approximately eight acres of salt marsh and 32 acres of coastal uplands. Long term success will be demonstrated by the quality of habitat established for the flora and fauna identified in the Background section above.

Risks and uncertainties – There are few risks or uncertainties associated with the project. The final design has been completed and all permits have been received. Construction is anticipated to begin in spring 2015. Stormwater pond creation, exotics removal and native plantings will be implemented using proven techniques, and the Southwest Florida Water Management District has extensive experience implementing similar projects.

Outreach and education opportunities – The McKay Bay Bike Trail, operated by the City of Tampa Parks and Recreation Department, is adjacent and connected to the property (www.tampagov.net/parks-and-recreation/programs/parks-and-facilities/greenways-and-trails/trail-maps/mckay-bay-east). Project enhancements will provide bird watching and other recreational opportunities for users of the trail along with opportunities for public education concerning exotic vegetation and water quality improvement.

Leveraging of resources and partnerships – The project is a partnership between the Southwest Florida Water Management District and the Florida Department of Transportation. The proposal requests \$500,000 toward the total project cost of \$1,400,000. The local match being provided, \$900,000, amounts to 64%.

Project benefits – The project will significantly reduce pollutants in stormwater runoff entering McKay Bay and, ultimately, Tampa Bay. It is designed to remove ~517 pounds of nitrogen annually. It will also reduce erosion, remove exotics and replant native vegetation to restore approximately eight acres of salt marsh and 32 acres of coastal uplands. The project will also benefit birdlife in the area. McKay Bay has been identified as highly important bird habitat, supporting many resident species as well as large numbers of migratory waterfowl and shorebirds that use the embayment as a feeding and resting site for several months each year.

Project 4. Edward W. Chance Reserve Hydrologic Restoration (\$204,750)

Background – The Edward W. Chance Reserve Hydrologic Restoration project focuses on two goals: 1) recovering the functions of water storage and conveyance in impacted wetlands and streams; and 2) recapturing the benefits of water quality and wildlife habitat formerly provided by the system in its undisturbed state. The site is located in the Southwest Florida Water Management District's Edward W. Chance Reserve and is managed by the District for passive recreation and natural resource protection. There are many isolated wetlands throughout the project area. The impacts to wetland systems are a result of linear ditches constructed to facilitate drainage off-site to improve lands for row crops. The project will recover the water storage and conveyance functions of Gilley Creek, a main tributary of the Manatee River, and numerous isolated herbaceous wetlands and recapture the benefits of water quality and wildlife habitat formerly provided by the system in its undisturbed state.

Implementation methodology – The project includes the installation of ditch blocks in agricultural canals to restore more normal hydro-periods to affected wetlands and, in turn, increase flood storage and on-site attenuation of surface waters, and restore groundwater tables, water quality, and recharge functions (Trusty and Ober 2009).

Monitoring and adaptive management – The Southwest Florida Water Management District has extensive experience implementing similar projects, and will monitor the project throughout its implementation and after completion to assure success.

Measures of success – The project will result in the hydrologic restoration of 34 acres of wetlands within the 5,800-acre Edward W. Chance Reserve. It also will increase flood storage and on-site attenuation of surface waters, and restore groundwater tables, water quality, and recharge functions. Its overall success will be demonstrated by recovering the functions of water storage and conveyance in impacted wetlands and streams and recapturing the benefits of water quality and wildlife habitat formerly provided by the system in its undisturbed state.

Risks and uncertainties – There are few risks or uncertainties associated with the project. The risk level is low as the project components will be implemented using proven techniques, and the Southwest Florida Water Management District has extensive experience implementing similar projects.

Outreach and education opportunities – The Edward W. Chance Reserve is located on Southwest Florida Water Management District property. The reserve has an outreach and education program that will encompass this project. There are opportunities for biking, horse riding, fishing and hiking, and the reserve has a recreation and information guide, species field guide and volunteer activities. See <http://www.swfwmd.state.fl.us/recreation/areas/edwardchance-gilley.html>.

Leveraging of resources and partnerships – The Southwest Florida Water Management District are partners in this project. The proposal requests \$175,000 toward the total project cost of \$255,000. The local match being provided, \$80,000, amounts to 31%.

Project benefits – The project will hydrologically restore 34 acres of wetlands. It also will increase flood storage and on-site attenuation of surface waters, and restore groundwater tables, water quality, and recharge functions. Its success will be reflected by recovering the functions of water

storage and conveyance in impacted wetlands and streams and recapturing the benefits of water quality and wildlife habitat formerly provided by the system in its undisturbed state.

Project 5. Alafia Bank Bird Sanctuary Living Shorelines (Hillsborough County) (\$2,647,710)

Background – The Gulf of Mexico coastline is one of the biologically richest in the world and its waterbird populations are among the most effective indicators of overall environmental quality. The birds are also charismatic species that attract and sustain public concern for the ecosystem. The Alafia Bank project is an opportunity to improve the outlook for signature Gulf species including Brown Pelican, Roseate Spoonbill, and Reddish Egret by protecting the diminishing number of viable island nesting sites upon which the Gulf’s waterbird populations depend.

The Alafia Bank’s two spoil islands, Sunken and Bird, were created between 1928 and 1930, during the dredging of the Tampa Bay ship channel into the mouth of the Alafia River. Spoil was added when the channel was deepened and widened in the 1960s and 1980s. Mangroves and other vegetation recruited to the islands, which now provide nesting habitat for one of the largest, most diverse waterbird colonies in the country. Owned by the Mosaic Company and Tampa Port Authority and managed by Audubon Florida, the islands consistently host 5,000-18,000 pairs of colonial waterbirds each spring, representing 17 species. They also provide important foraging and roosting habitat for migrating and wintering shorebirds, ducks, and other bird species.

Audubon's Richard T. Paul Alafia Bank Bird Sanctuary in Hillsborough Bay has been ranked by the Florida Fish and Wildlife Conservation Commission as among the most important wading bird colonies in Florida (Runde et al. 1991, Hodgson et al. 2006). Five state-listed species nest here: Little Blue Heron, Tricolored Heron, Reddish Egret, Roseate Spoonbill, and American Oystercatcher. The Roseate Spoonbill colony is the largest in Florida (about 30% of the state's spoonbill nesting population), and the White Ibis colony is one of the largest in Florida (Hodgson et al. 2006). The sanctuary is an important nesting site for Reddish Egrets, the rarest heron in North America, and 10 pairs of American Oystercatchers nest on the shorelines each year. Storms and ship wakes have eroded at least 6,800 feet of the northern shoreline of the islands, in many places by more than 20 feet, jeopardizing habitat for the sanctuary's thousands of nesting pairs. Trees that support nesting Brown Pelicans, Roseate Spoonbills, White Ibis, and Reddish Egrets have toppled, American Oystercatcher nests now regularly overwash and sandbars used by foraging and roosting shorebirds and White Pelicans have eroded.

With prior funding, Audubon has overseen installation of 2,050 feet of erosion control breakwater reef structures at the site and monitored successful accretion of sediment and shoreline calming. Lessons learned, including the need for underlayment for these structures, will inform the installation of another 4,750 feet to protect this Globally Important Bird Area.

The project will site pyramid-shaped, 8,000-pound, pH-balanced, marine concrete breakwater units or Wave Attenuation Devices parallel to the north shore of the sanctuary, 50-80 feet offshore. The 500-foot long linear arrays will be separated by 10-15 foot marine wildlife gaps. Another 500 feet of existing breakwater will be retrofitted with underlayment. Post-installation surveys of the units installed in 2011 led Audubon to add underlayment geogrid material to assist with long-term stabilization. Local site-specific substrate and wave-energy conditions require the underlayment material to reduce scouring at the mandated wildlife gaps. These structures will intercept storm

waves and ship wakes and create a quiet-water living shoreline. Oysters and barnacles quickly attached to the existing breakwaters, with significant growth and increase in biomass. They provide filtration of the water of Hillsborough Bay and habitat for small crabs, shrimp, and other invertebrates. Sheepshead, snapper, mullet, snook, tarpon, houndfish, pipefish, and many thousands of small baitfish live among the breakwater arrays.

Implementation methodology – In its Initial Comprehensive Plan, the Gulf Coast Ecosystem Restoration Council identified five goals, two of which advocate for the protection of nesting islands: “Restore and conserve the health, diversity and resilience of key coastal, estuarine and marine habitats” and “Restore and protect healthy, diverse and sustainable living coastal and marine resources” (GCERC 2013). Similarly, in its Gulf of Mexico Regional Ecosystem Restoration Strategy, the Gulf Coast Ecosystem Restoration Task Force identified as a restoration priority “protect, stabilize and restore habitat in strategic locations where human-made and storm impacts have recurred or are likely to occur in the future” (GCEFT 2011).

Reducing and reversing erosion on nesting islands is a high priority for the State of Florida. In its Species Action Plan for the Brown Pelican, the Florida Fish and Wildlife Conservation Commission (FWC) identifies the need for shoreline stabilization activities to recover pelican populations with two priority actions: 1) Promote and utilize shoreline stabilization activities in and around colonies, and 2) Work with partners to restore, protect, improve or create suitable breeding habitat on spoil islands (FWC 2013a). In the Species Action Plan for Four Imperiled Species of Beach-nesting Birds, which includes the American Oystercatcher, FWC proposes to “Restore and/or enhance habitat to support productive breeding,” including “stabilizing shorelines to prevent erosion” (FWC 2013b). In the Species Action Plan for Six Imperiled Wading Birds, all of which nest at Alafia, FWC identifies in Action 11, “Work with the Florida Inland Navigation District and DEP to improve or creating suitable foraging and nesting habitat on spoil islands.” It further affirms that “spoil islands have a long history of providing wading bird nesting habitat” and management should include “shoreline stabilization” among other activities (FWC 2013c).

This project will build on the experience from the Alafia Bank Sunken Island breakwater project installed in fall 2011 and summer 2014. The breakwaters were fabricated at a nearby marina and port facility and deployed on a crane barge. Based on experience from the initial breakwater placement, a geogrid underlayment will be used to stabilize the structures for the balance of the project. The breakwater successfully intercepts high-energy waves/ship wakes, and reduces wave energy reaching shore (Swann, L. 2008). The breakwater installed in 2011 and 2014 has created a quieter water shoreline, retaining sediments and slowing erosion to protect key nesting trees for pelicans, herons, and spoonbills, and beach-nesting habitat for American Oystercatchers. The breakwater also provides oyster reef structure and fisheries habitat.

Engineering plans that include comprehensive wave modeling, seagrass surveys, and geotechnical reports are complete. The project has received active permits from the US Army Corps of Engineers, the Florida Department of Environmental Protection, the Tampa Port Authority, and the Environmental Protection Commission of Hillsborough County. The project schedule is reflected in the table below.

Tasks	Year 1	Year 2	Year 3	Years 4-5
Conduct current site status surveys: bathymetry, seagrass	X			
Contract engineer, breakwater contractor	X			
Install breakwater	X			
As-built and time zero-report required by permit	X			
Monitor breakwater required by permit		X	X	X
Submit final report to permit agencies				X

Monitoring and adaptive management – Monitoring reports will be submitted for at least three years following completion of breakwater construction and will include the following:

- Dates the monitoring was performed.
- Percent cover and growth of native oysters (*Crassostrea virginica*).
- Description of methods to determine percent cover and growth of all species, including the dimension of bar expansion and location of all transects on a scaled plan view.
- A written summary describing the development of the oyster bars and measures required and/or taken to ensure future success.
- A written summary describing whether or not that each bar is functioning as intended and maintaining its structural integrity.
- Color photographic prints taken from reference points established in the Time Zero Monitoring Report.

National Marine Fisheries Services requested inclusion of the following:

- Effectiveness of the Wave Attenuation Devices in sediment accretion;
- Minimization of ongoing shoreline erosion effects;
- Demonstration of any ecological services similar to artificial reef structures and a hardened substrate for oyster colonization’
- Survey to demonstrate any potential recruitment of submerged aquatic vegetation in the area between the Wave Attenuation Devices and adjacent shoreline.

The Army Corps of Engineers requires the following in the monitoring reports:

- Native epibenthic fauna colonization, including percent cover and mean live organism size, including, if present, conchs, mussels, barnacles, and crabs that colonize structures;
- Observations of any colonization by invasive exotic organisms (e.g., green mussels);
- Observations of general wildlife use of the new epibenthic fauna communities by birds and fish, with notations of species of birds, and fish that are easily recognizable, such as pipefish, sheepshead, or mullet;
- Sediment accretion and shoreline erosion effects, using same-site repetitive photo station point photographs to document shoreline changes, with transects marked by PVC pipes located at standard intervals perpendicular to the shore. The photographs will be taken from the same photo points/same angles during each monitoring period to document the conditions of the Wave Attenuation Devices and occurrence of sediment accretion and the effects of the devices wavebreak on shoreline erosion.

- Presence or absence of any seagrasses that may recruit or occur waterward or shoreward of the Wave Attenuation Devices arrays, identify seagrass as to species, and measure patch size and density (Braun-Blanquet sampling technique).

In addition, Audubon will continue our partnership with Dr. Ping Wang at the University of South Florida, who has been monitoring the performance of the Wave Attenuation Device technology, to inform its application elsewhere.

Measures of success – The benefits of project success, to be reflected by monitoring, include:

- Shoreline stabilization.
- Protection from additional erosion caused by storm waves and shipping traffic wakes.
- Creation of oyster reef substrate enhancing bio-filtration and cleansing of water flowing into Hillsborough Bay from the Alafia River and Archie Creek.
- Protection of shoreline and tree substrate nesting habitat for birds, including Brown Pelicans, herons, egrets, ibis, spoonbills, and American Oystercatchers at a significant colonial waterbird nesting site (Audubon’s Alafia Bank Bird Sanctuary).
- Creation of a reef structure that provides Essential Fish Habitat for a variety of species in the estuary.
- Reduction of the velocity of incoming onshore waves across the subtidal and intertidal zone, providing a protected area that could potentially be colonized by seagrass (similar to the anticipated results of the Tampa Bay Estuary Program/Tampa Port Authority’s Longshore Bar project), saltmarsh plants, and mangroves.
- Reduction of suspension of sediments resulting from erosion of shoreline soils.

The breakwater arrays will be deemed successful when the following criteria have been continuously met for a period of at least one year, without intervention:

- Native oysters have achieved a minimum of 25% cover, and exhibit vigorous growth characteristics, including increasing total biomass, consistent with the species.
- Overall height of the bars, as measured on the waterward side, is at least 50% of the original calculated height as shown on the project drawings.
- Total contribution to percent cover by non-native and invasive species shall be maintained below 20%.
- The bar is functioning as intended and is maintaining its structural integrity.

Survey control monuments were installed on the Alafia Bank to aid in the accurate measurement of stability of the breakwater and the changes in elevation along the protected shoreline.

Risks and uncertainties – There are limited risks and uncertainties given previous similar work, including adaptive management, Audubon Florida has undertaken. Audubon’s commitment to long-term monitoring and adaptive management will help ensure the optimum installation of these structures and management of the sanctuary’s breeding birds in subsequent years. While projects like this can be affected by Florida’s coastal storms, with the potential to affect the stability and survivability of restoration sites, sound planning and timely adaptive management mitigate the concern.

Outreach and education opportunities – While the installation of the Wave Attenuation Devices is not conducive to public involvement, opportunities for the public to assist with sanctuary monitoring and management exist.

- Volunteers from Tampa Audubon, St. Petersburg Audubon, Tampa Bay Watch, and others provide information about wildlife, including birds, terrapins, and fish species using the breakwater. Audubon staff work with recreational fishermen fishing near the breakwater to assess their rod-and-reel sampling results.
- Citizen-scientists have surveyed the Alafia Bank as part of the Alafia Christmas Bird Count since 1996, one of the highest annual counts in Florida with over 150 species recorded in the area. Alafia Bank hosts wintering birds not seen in other parts of the bird count area, including Whimbrel, Long-billed Curlew, Snowy Plover, Marbled Godwit, Hudsonian Godwit, Red Knot, Sanderling, and other shorebirds. It also is a significant wintering Fish Crow, heron and egret night roost. Citizen-science data helps chart bird response to breakwater installation and provides public visibility for the project.
- For 21 years Audubon has partnered with Tampa Bay Watch, Tampa, Clearwater, St. Petersburg and Manatee Audubon, Florida State Parks, City of Clearwater, US Fish and Wildlife National Wildlife Refuges, Friend of National Wildlife Refuges to enlist the public in fishing line cleanups at the Alafia Bank and other bird habitat islands around the Tampa Bay region. These events involve boat crews removing line from 50 area locations and rescuing live birds entangled in line, plus documenting birds and other wildlife killed by line. The work has led to public recognition of wildlife mortality caused by careless disposal of line and efforts to educate fishermen on proper release of birds inadvertently caught while fishing. Alafia Bank will continue to benefit from this volunteer effort.

Leveraging of resources and partnerships - Audubon has a history of partnerships with public and private interests in the Tampa Bay region. The Alafia Bank islands have been important nesting sites since they were created in the 1929-1930s and the partnership between the Audubon Society and the islands' owners has been critical in protecting birds from disturbance since 1934 (Scott 1887). The islands are leased to Audubon to manage. The Mosaic Company actively participates in island management, providing funds, volunteers, and outreach to the community about the site's importance to Florida's colonial waterbird populations. Mosaic has donated \$66,000 for breakwater installation, participated in permit applications, and provides substantial funding for annual island management. Similarly, the Tampa Port Authority has provided security, law enforcement support, community information and signage to protect birds and has assisted with the placement of spoil material to create significant cove refuge and nesting habitats.

The Tampa Bay Estuary Program and the Tampa Bay Regional Planning Council's Agency on Bay Management have provided information sharing, consultation, and assistance in the planning and installation of the breakwater, and public communications about the breakwater projects through the quarterly *Bay Soundings* publication. The project is highly ranked by the Tampa Bay Estuary Program's review of RESTORE projects. Audubon is a member of several of these agencies' committees and has contributed articles and presentations at their meetings and symposia, including the Bay Area Scientific Information Symposium and the Baywide Environmental Monitoring Reports.

While the need to control the erosion at Alafia Banks is urgent, Audubon has been limited to date by funding, and has been installing breakwater in phases. Audubon has completed the design, permitting and installation of 2,050 feet of shoreline habitat breakwater (Figure 6) with support from the National Fish and Wildlife Foundation's Shell Marine and Pinellas County Environmental Fund programs, the Mosaic Foundation and Living Shoreline Solutions. The permits for the balance of the north shoreline have been received and the project is shovel ready.



Figure 6. Breakwater installed in 2011 and 2014 along north shore of Sunken Island at Alafia Bank Bird Sanctuary
Photo: John Landon, 10/17/14

Project benefits – The project will halt accelerating erosion on Sunken Island and Bird Island, protecting nesting trees from toppling and American Oystercatcher nests from overwashing; create a calm-water shoreline for foraging and recruiting benthic invertebrates to increase the nearshore prey base; save the sandy shoreline that remains from dispersion into Tampa Bay, providing wintering and migrating shorebirds with foraging and resting habitats. Protecting Alafia Bank has Gulf-wide significance given the magnitude of its resources and the many resident and migratory bird species it shelters.

Audubon's Richard T. Paul Alafia Bank Bird Sanctuary has been ranked by the Florida Fish and Wildlife Conservation Commission as among the most important wading bird colonies in Florida (Runde et al. September 1991a, Runde et al. 1991b). It hosts between 5,000-18,000 pairs of colonial waterbirds each spring, of 17 species. Five state-listed species (Threatened) nest at the Alafia Bank: Little Blue Heron, Tricolored Heron, Reddish Egret, Roseate Spoonbill, and American Oystercatcher. The Sanctuary supports the largest colony of Roseate Spoonbills in Florida, about 30% of the state's spoonbill nesting population, and one of the largest White Ibis colonies in Florida. The site is an important nesting site for Reddish Egrets, the rarest heron in North America, and about 10 pairs of American Oystercatchers nest on the shorelines each year.

The National Audubon Society and BirdLife International have listed Hillsborough Bay as a globally significant bird area, largely because this region includes the Alafia Bank Bird Sanctuary and the bird species and populations that live here. The Other section includes a table of nesting pairs from 2006-2014, by species.

Compliance and the NEPA Process

The permitting status of each project has been noted in the project narratives. All restoration activities implemented by this proposal will fully comply with Federal statutory and regulatory procedures and state and local permits prior to construction. The planning efforts, and design and permitting elements of this proposal will not trigger National Environmental Policy Act (NEPA) requirements for preparation of an Environmental Impact Statement (EIS) or Environmental Assessment (EA), and instead will be covered by a categorical exclusion. These planning and design activities will support the development of an EIS or EA needed for project implementation.

Summary of Tampa Bay Watershed Proposal and Gulf Coast Ecosystem Restoration Council Goals & Objectives

Implementation of the *Tampa Bay Watershed Restoration* proposal will contribute to accomplishment of each of the Gulf Coast Ecosystem Restoration Council's Comprehensive Plan Goals as well as the individual objectives as set forth in the table below (see Other section).

Location Information

Tampa Bay is the largest open-water estuary in Florida at nearly 400 square miles. It borders three counties—Hillsborough, Manatee, and Pinellas—and, at 2,200 square miles, its watershed (Figure 7) is more than five times larger than the bay itself. More than 100 tributaries, including four major rivers—the Hillsborough, Alafia, Manatee, and Little Manatee—and more than 40 meandering, brackish creeks and coastal streams flow into the bay.

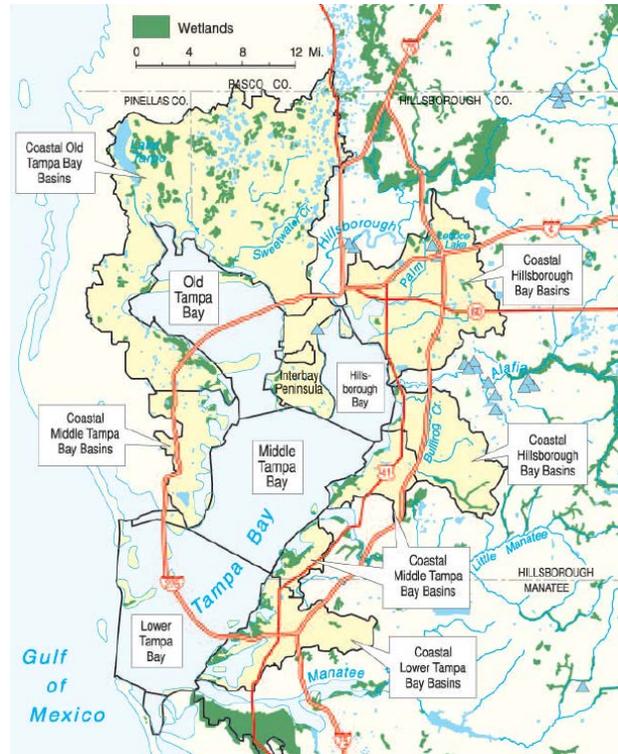


Figure 7. Tampa Bay Watershed and Bay segments

Tampa Bay proper extends some 35 miles inland from the Gulf of Mexico and is 5-10 miles wide along most of its length. The bay averages only about 12 feet deep, with the maximum natural depth of 89 feet found in a small area at its mouth in the Egmont Channel.

The five projects in the Tampa Bay Watershed proposal (Figure 8, below) are identified by red stars. The numbers underneath the stars are keyed to the map legend. Three projects are in Hillsborough County, two are in Manatee County. Additional information on several of the locations is provided below.

Project 1. Robinson Preserve Restoration

The Robinson Preserve is located in northwestern Bradenton, in the Palma Sola area of Manatee County, across the street from the Palma Sola Botanical Gardens. The project straddles the boundaries of two major estuaries, Sarasota Bay and Tampa Bay, and is near the outfall of the Manatee River. It is a 487-acre preserve that has been transformed from disturbed farmland to coastal and wetland habitats.

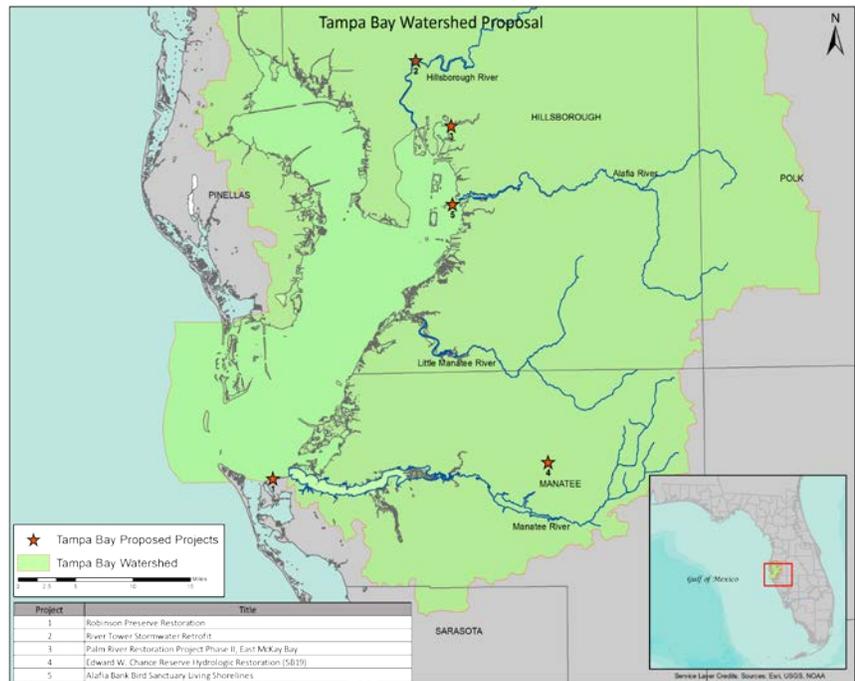


Figure 8. Tampa Bay Watershed Proposal Projects

Project 2. River Tower Shoreline Restoration and Stormwater Treatment

The project site is located in the city of Tampa on the Hillsborough River adjacent to I-275.

Project 3. Palm River Restoration Project Phase II, East McKay Bay)

The Palm River Restoration Project Phase II, East McKay Bay is located in Hillsborough County near the eastern extent of Tampa Bay.

Project 4. Edward W. Chance Reserve Hydrologic Restoration

The Edward W. Chance Reserve Gilley Creek Tract protects the main branch of Gilley Creek, which is one of the main tributaries of the Manatee River. The creek flows into Lake Manatee, which serves as the primary drinking water source for Manatee County.

Project 5. Alafia Bank Bird Sanctuary Living Shorelines

The Alafia Bank Bird Sanctuary comprises two islands located in east Hillsborough Bay, Florida, a part of Tampa Bay, at 27°50'54.29"N, 82°24'45.19"W, south of the City of Tampa and the Alafia Shipping Channel, and west of the town of Riverview (Figure 9). The breakwater will be installed along the northern shoreline of both islands, Sunken and Bird Islands, of the Alafia Bank Bird Sanctuary, starting at the eastern extent of the currently installed breakwater arrays and extending to the eastern end of Bird Island. The breakwater will be installed in arrays of 500 feet with 10-12 foot wildlife gaps, placed 50-70 feet off-shore. The exact placement of the arrays may be adjusted to avoid impacting seagrass growth, as determined by seagrass surveys conducted before installation.

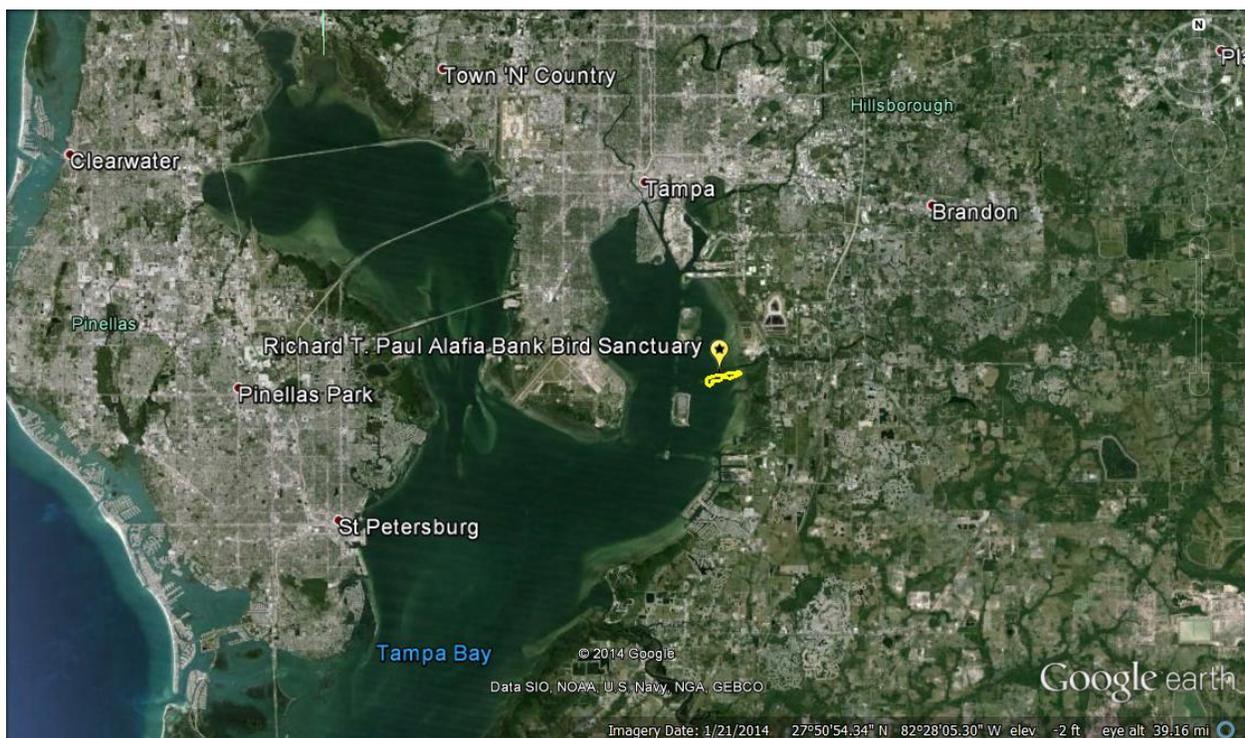


Figure 9. Alafia Bank Bird Sanctuary located in east Hillsborough Bay, Florida

High Level Budget Narrative

Project	Project Implementation	Project Contingency	Project Oversight	Project Administration	Total Funding Requested
1. Robinson Preserve Restoration	\$1,500,000	\$150,000	\$60,000	\$45,000	\$1,755,000
2. River Tower Shoreline Restoration and Stormwater Treatment	\$1,500,000	\$150,000	\$60,000	\$45,000	\$1,755,000
3. Palm River Restoration Project Phase II, East McKay Bay	\$500,000	\$50,000	\$20,000	\$15,000	\$585,000
4. Edward W. Chance Reserve Hydrologic Restoration	\$175,000	\$17,500	\$7,000	\$5,250	\$204,750
5. Alafia Bank Bird Sanctuary Living Shorelines	\$2,263,000	\$226,300	\$90,520	\$67,890	\$2,647,710
Proposal	Proposal Implementation	Proposal Contingency	Proposal Oversight	Proposal Administration	Total Funding Requested
Tampa Bay Restoration	\$5,938,000	\$593,800	\$237,520	\$178,140	\$6,947,460

Notes:

Project 1: implementation include costs associated with design, permitting, and environmental compliance, construction, implementation, operations and maintenance, monitoring and adaptive management, and data management. Any overhead/indirect costs are at the standard federal rate. A 10% contingency has been included for project implementation, a 4% is included to fund State of Florida oversight activities, and a 3% is included to fund State of Florida administration activities including contract management. The State of Florida will enter into a sub-contract with Manatee County. Manatee County has used a combination of local tax dollars, government and foundation grants, and water management district funds to acquire and restore ~1,500 acres of

coastal lands since 1990. The Robinson Preserve Expansion was acquired in December 2012. The total amount of secured and proposed funding leveraged is \$71.8 million.

Project 2: implementation include costs associated construction, implementation, operations and maintenance, monitoring and adaptive management, and data management. The final design has been completed and all permits have been received. Any overhead/indirect costs are at the standard federal rate. A 10% contingency has been included for project implementation, a 4% is included to fund State of Florida oversight activities, and a 3% is included to fund State of Florida administration activities including contract management. The State of Florida will enter into a sub-contract with the Southwest Florida Water Management District. The local match being provided, \$1,290,000, amounts to 46% of the project implementation cost.

Project 3: implementation include costs associated construction, implementation, operations and maintenance, monitoring and adaptive management, and data management. The final design has been completed and all permits have been received. Any overhead/indirect costs are at the standard federal rate. A 10% contingency has been included for project implementation, a 4% is included to fund State of Florida oversight activities, and a 3% is included to fund State of Florida administration activities including contract management. The State of Florida will enter into a sub-contract with the Southwest Florida Water Management District. The local match being provided, \$900,000, amounts to 64% of the project implementation cost.

Project 4: implementation include costs associated with design, permitting, and environmental compliance, construction, implementation, operations and maintenance, monitoring and adaptive management, and data management. Any overhead/indirect costs are at the standard federal rate. A 10% contingency has been included for project implementation, a 4% is included to fund State of Florida oversight activities, and a 3% is included to fund State of Florida administration activities including contract management. The State of Florida will enter into a sub-contract with the Southwest Florida Water Management District. The local match being provided, \$80,000, amounts to 31% of the project implementation cost.

Project 5: implementation include costs associated with construction, implementation, operations and maintenance, monitoring and adaptive management, and data management. The permits for this project have been received. Any overhead/indirect costs are at the standard federal rate. A 10% contingency has been included for project implementation, a 4% is included to fund State of Florida oversight activities, and a 3% is included to fund State of Florida administration activities including contract management. The State of Florida will enter into a sub-contract with the Audubon. The Mosaic Company actively participates in island management, providing funds, volunteers, and outreach to the community about the site's importance to Florida's colonial waterbird populations. Mosaic has donated \$66,000 for breakwater installation, participated in permit applications, and provides substantial funding for annual island management. Similarly, the Tampa Port Authority has provided security, law enforcement support, community information and signage to protect birds and has assisted with the placement of spoil material to create significant cove refuge and nesting habitats.

Environmental Compliance Checklist

This Environmental Compliance Checklist (Checklist) is being completed at the overall proposal level. Since the various proposed projects in this proposal are at various stages of environmental compliance review, we have checked No for all environmental compliance types listed on this Checklist. Individual Checklists will be submitted for each proposed project at a later date.

<u>Environmental Compliance Type</u>	Yes	No	Applied For	N/A
Federal				
National Marine Sanctuaries Act (NMSA)		X		
Coastal Zone Management Act (CZMA)		X		
Fish and Wildlife Coordination Act		X		
Farmland Protection Policy Act (FPPA)		X		
NEPA – Categorical Exclusion		X		
NEPA – Environmental Assessment		X		
NEPA – Environmental Impact Statement		X		
Clean Water Act – 404 – Individual Permit (USACOE)		X		
Clean Water Act – 404 – General Permit(USACOE)		X		
Clean Water Act – 404 – Letters of Permission(USACOE)		X		
Clean Water Act – 401 – WQ certification		X		
Clean Water Act – 402 – NPDES		X		
Rivers and Harbors Act – Section 10 (USACOE)		X		
Endangered Species Act – Section 7 – Informal and Formal Consultation (NMFS, USFWS)		X		
Endangered Species Act – Section 7 - Biological Assessment (BOEM,USACOE)		X		
Endangered Species Act – Section 7 – Biological Opinion (NMFS, USFWS)		X		
Endangered Species Act – Section 7 – Permit for Take (NMFS, USFWS)		X		
Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) – Consultation (NMFS)		X		
Marine Mammal Protection Act – Incidental Take Permit (106) (NMFS, USFWS)		X		
Migratory Bird Treaty Act (USFWS)		X		
Bald and Golden Eagle Protection Act – Consultation and Planning (USFWS)		X		
Marine Protection, Research and Sanctuaries Act – Section 103 permit (NMFS)		X		
BOEM Outer Continental Shelf Lands Act – Section 8 OCS Lands Sand permit		X		
NHPA Section 106 – Consultation and Planning ACHP, SHPO(s), and/or THPO(s)		X		
NHPA Section 106 – Memorandum of Agreement/Programmatic Agreement		X		
Tribal Consultation (Government to Government)		X		
Coastal Barriers Resource Act – CBRS (Consultation)		X		
State				
As Applicable per State		X		

Data / Information Sharing Plan

The Florida Department of Environmental Protection will provide a central location to access data and other information related to all of the projects in the proposal. It is not possible to have a single, uniform data sharing plan because the projects involve different approaches to the proposal's primary goal of restoring and conserving habitat and in how they will achieve the associated goals and objectives related to restoring water quality, replenishing and protecting living coastal and marine resources, and enhancing the Gulf economy and community resilience. The nature of the data they generate will vary, whether scientific, demographic or financial. Because of this fact, several of the individual projects will provide unique data sharing opportunities, summarized below.

Project 1. Robinson Preserve Restoration

As project progresses Manatee County Parks and Natural Resources department staff will present results, and lessons learned for both the restoration community and the general public. Appropriate venues for these presentations may include the Society of Ecological Restoration. The sponsor will seek opportunities to partner with researchers at academic institutions for formal scientific research.

Project 2. River Tower Shoreline Restoration and Stormwater Treatment

Data and other information will be shared on the Southwest Florida Water Management District website, <http://www.swfwmd.state.fl.us/>, with a specific location to be identified later.

Project 3. Palm River Restoration Project Phase II, East McKay Bay

Data and other information will be shared on the Southwest Florida Water Management District website, <http://www.swfwmd.state.fl.us/>, with a specific location to be identified later.

Project 4. Edward W. Chance Reserve Hydrologic Restoration

Data and other information will be shared on the Southwest Florida Water Management District website, <http://www.swfwmd.state.fl.us/>, with a specific location to be identified later.

Project 5. Alafia Bank Bird Sanctuary Living Shorelines

Data collected as part of the monitoring protocol will include wildlife use of the breakwater structure, seagrass presence/absence landward and waterward of the structures, epibenthic fauna colonization, sediment accretion and shoreline erosion effects.

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Other

As referenced in the narrative, the table below summarizes the Comprehensive Plan goals and objectives fulfilled by the projects in the *Tampa Bay Watershed Restoration* proposal.

Comprehensive Plan Goal	Proposal Contributions	Comprehensive Plan Objective	Project Contributions
1. Restore and Conserve Habitat – Restore and conserve the health, diversity and resilience of key coastal, estuarine and marine habitats.	All five projects will contribute to the restoration and conservation of coastal ecosystem health, diversity, and resilience.	1. Restore, Enhance, and Protect Habitats.	All five projects will contribute to the restoration and conservation of coastal ecosystem health, diversity, and resilience.
2. Restore Water Quality – Restore and protect water quality of the Gulf Coast region’s fresh, estuarine and marine waters.	Projects 2 and 3 will improve water quality by reducing stormwater pollutants discharging in the watershed. The other projects that improve hydrology and habits also contribute to improved water quality.	2. Restore, Improve, and Protect Water Resources.	Projects 2 and 3 will improve water quality by reducing stormwater pollutants in the watershed. The other projects that improve hydrology and habitats contribute to improved water quality.
3. Replenish and Protect Living Coastal and Marine Resources – Restore and protect healthy, diverse and sustainable living coastal and marine resources.	Projects 1 and 5 will directly restore and extend living coastal systems, including coastal uplands, and support the marine resources that depend on them.	3. Protect and Restore Living Coastal and Marine Resources.	Projects 1 and 5 will directly restore and extend living coastal systems and support the marine resources that depend on them.
4. Enhance Community Resilience – Build upon and sustain communities with capacity to adapt to short- and long-term changes.	Better water quality; restored wetland, floodplain, and coastal functions; and replenishment of living marine resources will enhance resilience of the Tampa Bay ecosystems and the human communities that depend on them.	4. Restore and Enhance Natural Processes and Shorelines.	All five projects are in all or in part devoted to the restoration of river or coastal shorelines through the restoration and enhancement of natural conditions.
5. Restore and Revitalize the Gulf Economy – Enhance the sustainability and resiliency of the Gulf economy.	The Tampa Bay Watershed’s economy and quality of life is directly tied to the ecosystem’s health and quality. Restoring and preserving water quality and living habitat will benefit the fisherman and the entire eco-tourist economy the area depends on. Alafia Bank produces a large proportion of the Reddish Egrets and Roseate Spoonbills observed around Florida—two species highly sought after by ecotourists (Carver 2009). In 2011, wildlife viewing activities generated more than \$4.9 billion for Florida’s economy (FWC 2013d).	5. Promote Community Resilience.	Better water quality; restored wetland, floodplain, and coastal functions; and replenishment of living marine resources will enhance the resilience of communities that depend on Tampa Bay for livelihood and quality of life.
		6. Promote Natural Resource Stewardship and Environmental Education.	For all projects, public engagement, outreach and distribution of watershed data and other information will contribute to long-term resource stewardship and environmental education.
		7. Improve Science-Based Decision-Making Processes.	Projects will use professionally accepted scientific methods and best management practices to assure quality project implementation and to expand on the existing knowledge base.

Other information for Project 1. Robinson Preserve Restoration

Concept Planting Plan:

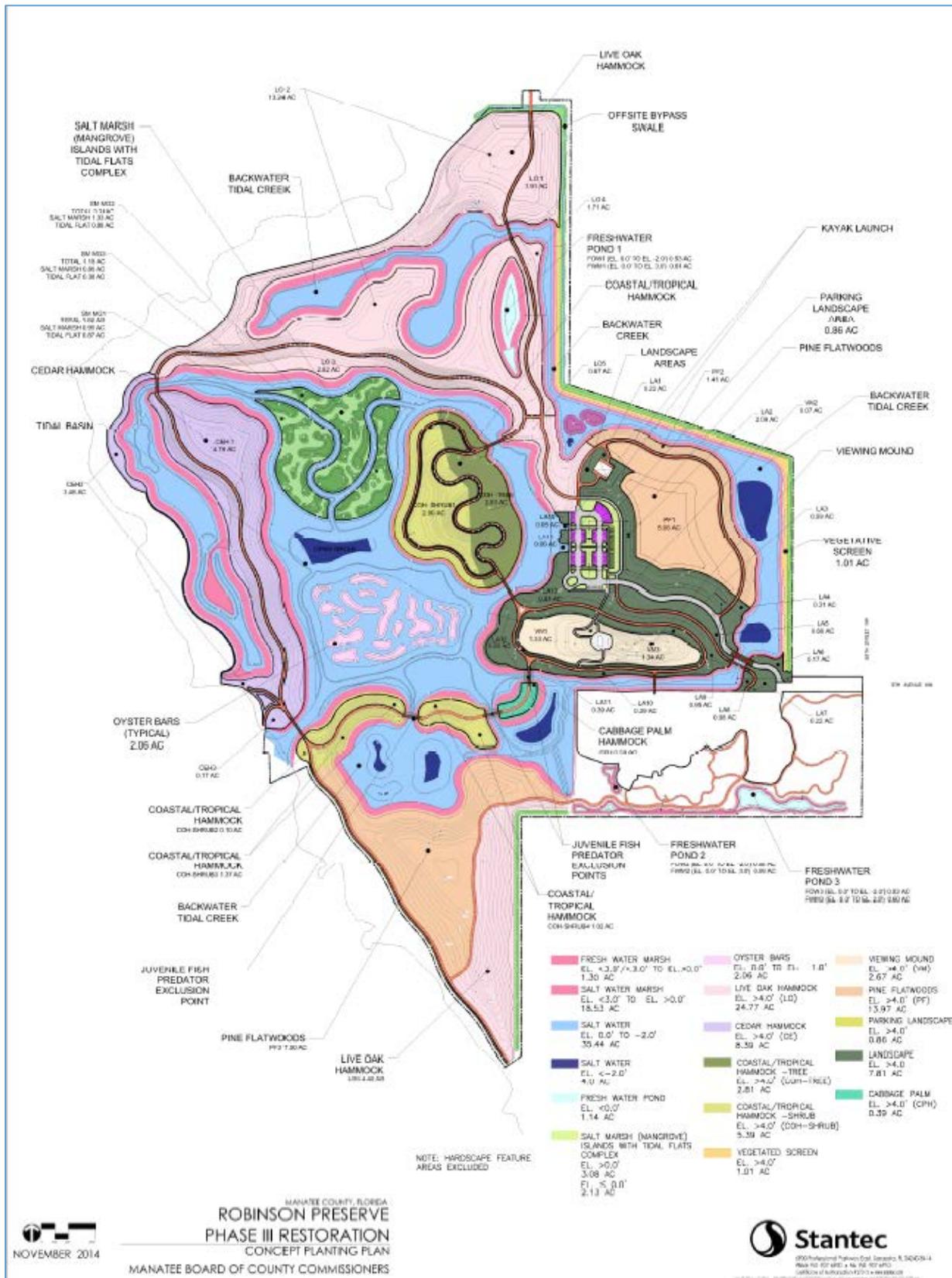


Figure 10. Robinson Preserve Phase III Restoration Concept Planting Plan

Other information for Project 5. Alafia Bank Bird Sanctuary Living Shorelines

Nesting bird pair counts – The National Audubon Society and BirdLife International have listed Hillsborough Bay as a globally significant bird area, largely because this region includes the Alafia Bank Bird Sanctuary and the bird species and populations that live here. The table below reflects species nesting pair counties since 2006.

SPECIES	NESTS/ PAIRS									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Brown Pelican	414	125	322	150	288	382	344	350	190	
Double-crested Cormorant	110	65	100	65	135	70	125	70	140	
Great Blue Heron	34	36	25	30	36	20	35	25	50	
Great Egret	240	250	70	225	249	50	50	85	100	
Snowy Egret	180	72	55	95	108	430	45	35	30	
Little Blue Heron	70	27	45	65	69	140	35	50	45	
Tricolored Heron	200	75	90	160	174	200	150	170	110	
Reddish Egret	40	21	5	10	10	14	8	25	15	
Cattle Egret	80	48	390	320	150	520	575	175	280	
Green Heron	+	5	10	+	5	+	+	+	5	
Black-crowned Night-Heron	40	9	20	50	21	30	20	40	20	
Yellow-crowned Night-Heron	20	10	25	15	10	20	35	30	40	
White Ibis	8,910	5,289	8,870	4,520	7,387	7,375	5,300	3,800	4,650	
Glossy Ibis	80	168	170	200	105	285	140	125	75	
Roseate Spoonbill	460	294	260	310	258	190	155	235	170	
American Oystercatcher	16	16	14	15	10	10	12	8	8	
Willet	4	2	3	4	5	4	3	3	4	
Laughing Gull	150	0	50	0	0	0	0	0	0	
TOTAL PAIRS	11,048	6,512	10,524	6,234	9,020	9,740	7,032	5,227	5,927	

Construction site plan – The site plan, including details and construction notes, has been prepared and can be made available for review.

CONSTRUCTION SITE PLAN FOR:
ALAFIA BANK BIRD SANCTUARY SHORELINE RESTORATION BREAKWATER

SECTION 22, TOWNSHIP 30 SOUTH, RANGE 19 EAST
HILLSBOROUGH COUNTY, FLORIDA

VICINITY MAP

GENERAL NOTES

- All elevations are based on NAVD 88 datum. All existing information is provided by name data prepared by Dr. Ping Wang, University of South Florida.
- Total Station (1983-2001 Epoch) based on Station ID Number 07-7-00000, Long. (Elev) = 40.74. The Total Station is based on NAVD 88. It has an X offset = 0.000, Y offset = 45.00, Z offset = -0.74. X = -0.19, Y = -1.24, Z = -1.02.

Prepared For:
Audubon FLORIDA
 410 SOUTH WARE BOULEVARD, SUITE 702
 TAMPA, FLORIDA, 33619
 PH. (813) 623-8826

Prepared By:

LMA
Landon, Moree & Associates, Inc.
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 31622 U.S. 19 NORTH PALM HARBOR, FLORIDA 34684
 Phone: (727)789-5010, Fax: (727)787-4394, Toll Free: 1-800-282-7960
 WWW.LANDONMOREE.COM
 EB 84096

PLAN INDEX

- COVER SHEET
- AERIAL BASEMAP
- PHASE I MODIFICATIONS
- PROPOSED BREAKWATER - SUNKEN ISLAND
- PROPOSED BREAKWATER - SUNKEN ISLAND
- PROPOSED BREAKWATER - BIRD ISLAND
- PROPOSED BREAKWATER - BIRD ISLAND
- DETAILS & CONSTRUCTION NOTES
- BREAKWATER ALTERNATE

PERMITS

PERMIT TYPE	NUMBER	APPROVED
CDP MAP (PHASE I)	28-00000-002	08/17/2011
CDP MAP	28-00000-002	
TAMPA PORT AUTHORITY (PHASE I)	11487	02/26/2011
TAMPA PORT AUTHORITY		
GRABCE	84U-0011-00011 (CDP-ADD)	08/03/2011

REVISIONS

REVISION DATE	COMMENTS
02-03-2014	REVISED PER AECDE COMMENTS

ALL ELEVATIONS REFER TO NAVD 88 DATUM

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 WWW.LANDONMOREE.COM

STILITY MARKING NOTE
 AREAS UNDEVELOPED OR UNDEVELOPED UTILITIES MAY BE IN THE AREA OF THIS PROJECT.
 CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
 CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
 CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.

NOTE TO CONTRACTOR/OWNER
 CONSTRUCTION IS NOT AUTHORIZED UNTIL PLANS HAVE BEEN REVIEWED BY LANDON, MOREE & ASSOCIATES, INC. BY NAME. OWNER SHALL OBTAIN ALL NECESSARY CONSTRUCTION PERMITS AND APPROVALS PRIOR TO CONSTRUCTION.
 CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
 CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.

FEBRUARY 03, 2014
JOB# 649-01

Figure 11. Alafia Bank Bird Sanctuary Shoreline Restoration Breakwater Construction Site Plan Image



ELIGIBILITY REVIEW

Bucket 2 – Council Selected Restoration Component

PROPOSAL TITLE

Tampa Bay Watershed Restoration

PROPOSAL NUMBER

FL-4

LOCATION

Hillsborough and Manatee County, Florida

SPONSOR(S)

Florida

TYPE OF FUNDING REQUESTED (Planning, Technical Assistance, Implementation)

Planning/Technical Assistance/Implementation

REVIEWED BY:

Bethany Carl Kraft/ Ben Scaggs

DATE:

11-18-14

1. Does the project aim to restore and/or protect natural resources, ecosystems, fisheries, marine and wildlife habitat, beaches, coastal wetlands and economy of the Gulf Coast Region?

YES NO

Notes:

Proposal seeks funding for projects that, collectively, will restore and protect habitat and water resources; replenish living marine resources; and revitalize the local economy.

2. Is the proposal a project?

YES NO

If yes, is the proposed activity a discrete project or group of projects where the full scope of the restoration or protection activity has been defined?

YES NO

Notes:

3. Is the proposal a program?

YES NO

If yes, does the proposed activity establish a program where the program manager will solicit, evaluate, select, and carry out discrete projects that best meet the program's restoration objectives and evaluation criteria?

YES NO

Notes:

4. Is the project within the Gulf Coast Region of the respective Gulf States?

YES NO

If no, do project benefits accrue in the Gulf Coast Region?

YES NO

Notes:



Eligibility Determination

ELIGIBLE

Additional Information

[Empty box for additional information]

Proposal Submission Requirements

1. Is the project submission overall layout complete? *Check if included and formatted correctly.*

- | | | | |
|--------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|
| A. Summary sheet | <input checked="" type="checkbox"/> | F. Environmental compliance checklist | <input checked="" type="checkbox"/> |
| B. Executive summary | <input checked="" type="checkbox"/> | G. Data/Information sharing plan | <input checked="" type="checkbox"/> |
| C. Proposal narrative | <input checked="" type="checkbox"/> | H. Reference list | <input checked="" type="checkbox"/> |
| D. Location information | <input checked="" type="checkbox"/> | I. Other | <input checked="" type="checkbox"/> |
| E. High level budget narrative | <input checked="" type="checkbox"/> | | |

If any items are NOT included - please list and provide details

[Empty box for listing missing items]

2. Are all proposal components presented within the specified page limits (if applicable)?

YES NO

Notes: