

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

Contact Information: Ron Leins, V.P. Environmental Management Gannett Fleming, Inc. 9119 Corporate Lake Dr., Suite 150 Tampa, FL 33634 (813) 882-4366 Ext. 6101 rleins@gfnet.com				Date of Submittal: October 31, 2012			
Name of Project: WQ Management of Estero Island Dead-end Canals				Org and Rank: CHNEP			
Project Description: Phase I Feasibility Study to perform site inspection, WQ review, evaluation-ranking, and project planning to improve WQ and eliminate stagnation in the dead-end canals connected to Matanzas Pass							
Project Location: Lee County, FL Estero Island between Matanzas Pass and Big Carlos Pass							
Responsible Party: To be determined				Partners: To be determined			
NEP: Charlotte Harbor		Project Cost: \$13,480,000			Dollars Needed: \$280,000		
Start: January 2013				Completion: May 2013			
Status of Project Design and Permitting: This project is in the planning stage. The project team will utilize data previously collected by CHNEP, SWFWMD, county, and state agencies to evaluate each canal and to identify engineering constraints and design parameters for construction and operation.							
What Date or Year could Construction Feasibly Begin: January 2014							
Your Proposed Timing of Funding (given permits, phasing, staging, etc.)							
FY	12/13	13/14	14/15	15/16	16/17	17/18	Total
	\$280,000	\$10,460,000	\$2,500,000	\$80,000	\$80,000	\$80,000	\$13,480,000
FY 12/13 – Prepare Feasibility Study including environmental, hydrology, hydraulics, and 30% Plans. FY 13/14 – Procurement of construction services, permitting, project construction, establishment of permanent sampling stations, and baseline sampling. FY 14/15 – Project construction, commissioning, and onset of quarterly sampling and measurement of							

seagrass, benthos and nutrients.

FY 15/16 – Quarterly sampling and analysis (grass, benthos, nutrients)

FY 16/17 - Quarterly sampling and analysis (grass, benthos, nutrients)

FY 17/18 - Quarterly sampling and analysis (grass, benthos, nutrients)

Assumptions:

1. Public hearings, permitting, and funding will be complete in 3 months.
2. Project will be in existing roadway and access easements, minimizing/eliminating real estate acquisition.

Quantify Environmental Results and How to Measure Them:

1. Restoration of estuarine WQ (Nitrogen, Phosphorus, PAR, Chlorophyll A, and Turbidity) will be measured quarterly by standard methods to determine conformance with the optimum parameter range for seagrass growth established by NOAA DAS No. 12: <http://www.cop.noaa.gov/pubs/das/>
2. Restoration of seagrasses will be measured using the SWaPS method developed by NOAA-RSMAS for Biscayne Bay and annually compared to the pre-project baseline acreage and blade density: <http://vvy.rsmas.miami.edu/groups/SWaPS/index.html>
3. Sequestration of GHGs (CO₂, CH₄, N₂O) will be measured using the Verified Carbon Standard (VCS)- Wetlands Restoration and Conservation (WRC) project category for seagrasses: http://v-c-s.org/wetlands_restoration_conservation

Economic Benefits (including ecosystem services):

Estero Island between Matanzas Pass and Big Carlos Pass is fully-developed with mixed-use zoning. Approximately 40 dead-end canals, mostly bulk-headed for dockage, connect to the Matanzas Pass estuary and Estero Bay estuary. Poor WQ in dead-end canals is known negatively affect aquatic biota and to diminish the nursery functions of estuaries. The project goals include active management of canal WQ, eliminate stagnation & fish kills, reduce odors, and make the canals a productive component of the adjacent estuaries.

Estimated number of Jobs Created or Preserved: 100

How much Habitat will be restored and conserved?:

Combined, the 40 dead-end canals have a total water surface area of approximately 100 acres.

Quantify pollutant reductions:

This project intends to attain and maintain WQ requirements for seagrass as identified in NOAA-DAS No. 12 with D.O. above 5.5 ppm by creating water flow between adjacent canals, operating aeration devices, removing debris and monitoring system variables. The project complements upland efforts to mitigate estuary impacts from stormwater runoff emanating from a fully-developed watershed.

What living coastal/marine resources will be improved and by how much?:

Seagrass meadows, mangrove areas and associated biota dependent on these aquatic habitats as integral to the estuaries and the greater Gulf of Mexico ecosystem

How will community resilience be enhanced?

Management of water quality will enhance the nursery function of the canal habitats to improve bay and coastal fisheries. The local community will benefit from improved commercial fishing and tourist-based activities, which will contribute to economic resiliency. Eliminating odors that result from stagnation and die-offs will improve the aesthetics and general quality of life for the island residents and visitors.

Additional Justification:

This project implements the objectives of the FDEP-Clean Harbors program specifically to address WQ issues inherent to dead-end canals. Verification of seagrass restoration will be performed by using the SWaPS monitoring method developed by NOAA & RSMAS for Biscayne Bay.

The Gannett Fleming Team's (Team) approach to the implementation of the project includes development of a feasibility study; identification of a project sponsor/owner; implementation of the project; and monitoring and quantification of water quality and biotic improvements. The feasibility study will include environmental; hydrology, hydraulics and water quality modeling; 30% design/procurement documents; identification of permitting requirements and evaluation of public support for the project. During the course of the feasibility study, the Team will work with the local community to assist in identification of a local project sponsor/owner. The Team will work with the local project sponsor/owner through the final design, permitting and construction procurement process. It is anticipated that the Team will assist the project sponsor by providing administrative, procurement, construction inspection and engineering services, and assistance in quantification of the water quality and biotic improvements realized by the project. The Team envisions that the final design and construction of the project will be implemented by a competitive design/build procurement process to accelerate the project completion and thereby realize the environmental benefits almost immediately. Under this process, final design, permitting, land acquisition/easements, construction and commissioning would be the responsibility of the design/build contractor.

The proposed project is one element of a regional solution to estuary water quality issues. Nine other projects are proposed separately and include (North to South):

<u>Project/Proposal</u> <u>Name</u>	<u>Estuary</u> <u>Program</u>	<u>Location</u>	<u>Acreage</u> <u>Impacted</u>
The Narrows	TBEP	Belleair Bluffs Bridge south to the 150th Ave. Bridge	1,749
Roberts Bay	SBEP	ICW – Big Sarasota to Midnight Pass	1,470
Casey Key	SBEP	ICW – Midnight Pass to Venice Inlet	1,511
Lemon Bay	CHNEP	ICW – Red Lake to Stump Pass	4,450
Bocilla Island	CHNEP	ICW – Stump Pass to Gasparilla Pass	2,646
Bokeelia Island	CHNEP	Back Bay on Bokeelia Island	633
Little Hickory	CHNEP	Fish Trap & Little Hickory Bays	1,749
Naples Park	CHNEP	Harbor Basin	333
Park Shores	CHNEP	Multi Bay Area – Clam Pass to Doctors Pass	340

USEPA administers four National Estuary Programs in Florida (six NEPs are on the coast of the five Gulf states) under Section 320 of the 1987 Clean Water Act to protect and restore the water quality and ecological integrity of estuaries of national significance. NOAA administers four National Estuarine Research Reserves in Florida (five NERRS are on the coast of the five Gulf states). The Florida DEP Office of Coastal and Aquatic Managed Areas (CAMA) manages a total of 41 aquatic preserves, which includes the NEP and NERR Florida sites. These programs recognize that over 70% of commercially important marine fish and shellfish species are dependent on estuaries and that restoring and managing estuarine water quality is paramount to optimizing the quality of these aquatic ecosystems.

Seagrass meadows provide an important nursery habitat for thousands of species. In the most recent FFWC-FWRI report on Florida seagrass mapping and monitoring (Yarbro & Carlson, March 2011 at <http://myfwc.com/media/1591147/fullsim1.pdf>) it is noted that seagrasses in all estuaries remain well below the acreage and blade density known to exist prior to the 1970's. Restoration efforts to date have been focused on identifying pollutant sources in the watershed and designing mitigation systems. This upland corrective activity is expensive and requires decades for implementation with long-term compliance and enforcement obligations for operating permits.

The barrier island component of estuaries is typically missing from restoration plans. Dredging of intra-coastal waterway channels and hardening of inlets has radically altered natural estuarine hydraulics. Commercial, residential and road construction on the barrier island has eliminated the natural processes of coastal erosion and island inlet breaching, which may be a natural cycle on the order of 100 years or more that renewed these habitats by affecting residence time and location of the hydraulic null zone.

This project improves upon the design and operation of the Destin, Florida Old Pass Lagoon Flushing Station sponsored by the Northwest Florida Water Management District (NFWFMD) and funded by the Florida Legislature. This facility has been manually operated by the City of Destin since 1996.

Other examples of existing active and passive seawater controls used to manage coastal water quality include:

- Gowanus Canal Flushing Station, sponsored by USEPA, USACE, State of New York and New York City: under construction in Brooklyn, NY
- Coastal Impoundments for Wildlife Habitat Management, sponsored by USFWS and five Gulf state environmental agencies
- Seawater Intake Pipeline and Flow-through, Mote Marine Laboratory, Sarasota, FL as representative of all coastal marine laboratories and public marine aquariums
- Coastal Commercial Mariculture farms and hatcheries, multi-decade operations worldwide for production of fish, shrimp, crabs, bivalves, mollusks and alga utilizing seawater/bay intake pump stations and passive tide gates

The NEP utilizes a set of criteria to evaluate the effectiveness of basin activities and the proposed estuary restoration project meets these criteria as follows:

South Florida Regional Ecosystem Plan Documents Checklist

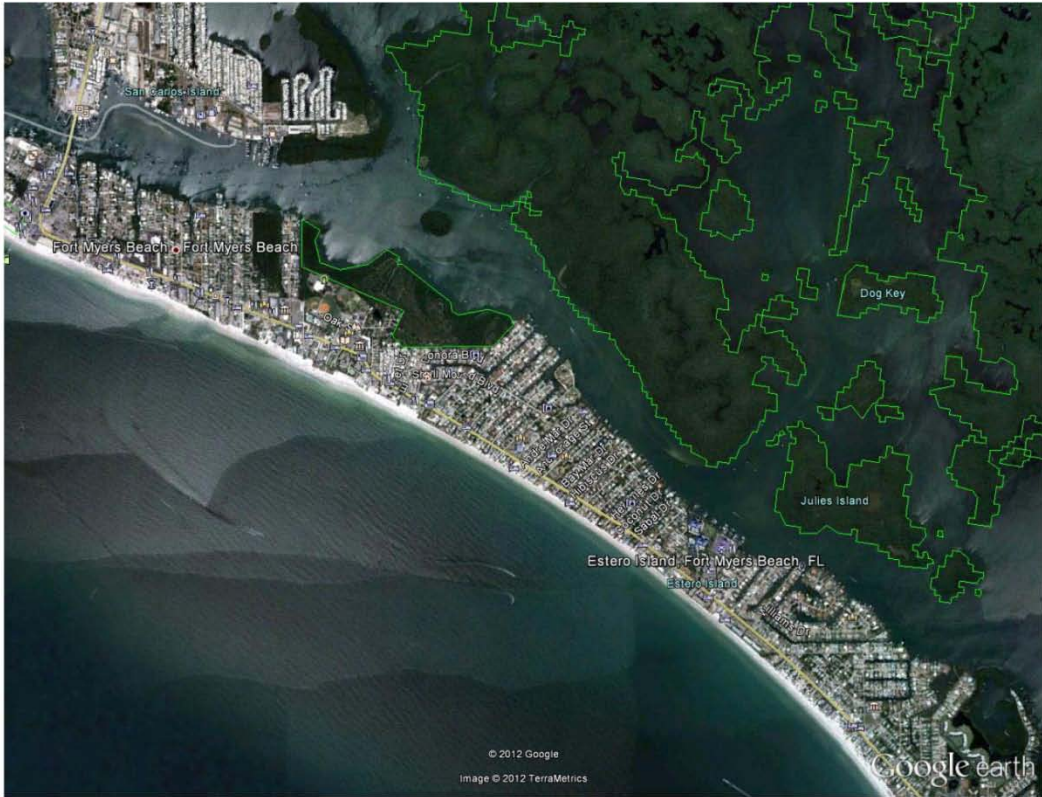
<u>Priority Project Criteria</u>	<u>Yes/No/Unknown</u>
Multiple Natural Resources	Yes
Science-based Plan, w/monitoring	Yes
Multi-faceted	Yes
Enhances WQ/Especially Impairments	Yes
Range of Bio-diversity Protected	Yes
Enhances Hydrology of the Gulf	Yes
Links to Ongoing Restoration Planning Efforts	Yes
In Permitting, Shovel-ready	No
Dollar Value Ratio, Including Ecosystem Services	Yes
Enhances Critical Habitat of Impaired Wildlife	Yes
Demonstrable Outcomes	Yes
Opportunity for Public to Participate	Yes
Leverage Other Sources of Funding	Unknown
Enhances Existing Plans or Projects	Yes
Enhances Local Economy	Yes

The project team is comprised of:

Prime Contractor:	Gannett Fleming, Inc. - Design-Build Engineers for Constr. & Ops.
Coastal Engineering:	Taylor Engineering, Inc. - Modeling & Permitting
Justification & Valuation:	Environmental Services, Inc.- Data Review & Baseline Condition
Offset Credits Verification:	York RSG, Inc.-Environmental – Seagrass Monitoring & Reporting

Add any photos or maps that explain project:





Google earth

miles
km





Google earth

miles
km



