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3. Project Name: -**NAVARRE PASS- IMPROVE WATER QUALITY IN THE NAVARRE SOUND**

4. Qualifying eligible activities- Environmental(Grade only)also will impact Tourism, Infrastructure and Economic.

5. Project location: Navarre Beach barrier island 30.383683, -86.849264

6. Proposed Activity Description: SRC Engineering Contract with Army Corps of Engineers or private contractor for New Updated study to considering an opening in barrier island in Navarre Beach to determine if this opening will adequately flush the sound (**Impaired Waters**) and provide for better water quality in the sound in this area. Lead administrator would be SRC Engineering.

This proposal to be considered multi-faceted in two parts;

One-Conduct a **NEW STUDY** to considering an opening in barrier island in Navarre Beach to determine if this opening will adequately flush the sound.

Two-Construct a temporary pass if deemed appropriate for flushing Santa Rosa Sound in the vicinity of Navarre until such time watershed/storm water management practices have achieved water quality results that will not pollute Santa Rosa Sound in the Navarre area.

Summary- In May, 1970, the Santa Rosa County Beach Administration contracted with the University of Florida to carry out a coastal engineering study of the proposed Navarre Pass through Santa Rosa Island. This study was submitted in February 1973.

A new study is needed to examine the criteria of opening a pass and to determine if pass can flush the Navarre area of bacteria and any other contaminants . This study should include; - size of pass, best location -Best design for minimal erosion impacts, -water exchange and flow rate, pass opening costs with jetty construction, maintenance costs associated with pass opening.

The **MAIN OBJECTIVE** is to **IMMEDIATELY** restore water quality impacting human health issues, restore fisheries, marine habitat, improve seawater ecosystems in the sound and maintain water related tourist industry.

Problem statement- According to the Florida Healthy Beaches Program, from January 2013 to October of 2014, there have been 45 Water Quality Alerts in the Navarre Area, Navarre Park Highway 98 is listed as FDEP case number of 06-0615 under the "Statewide Comprehensive Verified List of **"IMPAIRED WATERS."**

To date, the Navarre area is **NOT** listed under the State's Two-Year TMDL(Total Maximum Daily Load)Development Plan SFY 14-15 and 15-16 for restoration. (ref. FDEP Two-Year TMDL Development Plan SFY 14-15 and 15-16 www.dep.state.fl.us/water/tmdl)

Enterococci are bacteria that normally inhabit the intestinal tract of humans and animals. The presence of enteric bacteria can be an indication of fecal pollution, which may come from storm water runoff, pets and wildlife, and human sewage. If they are present in high

concentrations in recreational waters and are ingested while swimming or enter the skin through a cut or sore, they may cause human disease, infections or rashes. According to studies conducted by the EPA, **enterococci** have a greater correlation with swimming-associated gastrointestinal illness in both marine and fresh waters than other bacterial indicator organisms, and are less likely to "die off" in saltwater.

6(1). Environmental-Would Project would align with Ecosystem Restoration-Meets Gulf Coast Ecosystem Restoration Council Comprehensive Plan? "Inlets are means by which tidal flushing

of the lagoons and estuaries takes place, providing input of seawater, nutrients and sediment which are important factors in the ecological health of these water bodies". ref (*Florida Department of Environmental Protection (FDEP) Coral Reef Conservation Program (CRCP) 2008*)

Project would immediately **RESTORE WATER QUALITY, PROTECT LIVING COASTAL AREAS AND ENHANCE COMMUNITY RESILIENCE**. Also, it would **ENHANCE THE SUSTAINABILITY AND RESILIENCY OF THE GULF ECONOMY IN THIS AREA**. Good water quality is essential to sustain fisheries, fish habitat, and their ecosystems(ref: *RGP/EMA Supporting Documentation- National Marine Fisheries Service Mark Thompson*)

Pass would immediately have impact in **REDUCING NUTRIENT LOADING** from all anthropogenic sources and pathways, including surface water management systems, coastal inlets, submarine groundwater discharge, and ocean outfall discharge, to improve conditions for near-shore.

(*Land Based Sources of Pollution Affecting Essential Fish Habitats- Kurtis Gregg, Fishery Biologist ECS Federal, Inc. on contract to NOAA Fisheries*)

Sea grasses are important marine foundation species and are highly productive plants (*Hughes et al. 2009*). Their extensive root systems and dense, structured leaf canopies form habitat and provide food for a wide array of organisms, including commercially and recreationally important fish and invertebrates, wading birds, manatees and sea turtles (*Short and Wyllie-Echeverria 1996; Williams and Heck 2001; FDEP 2009*). Sea grasses enhance sediment stability, decrease wave energy, increase water clarity, provide and stabilize habitats, and provide food and feeding pathways (*see reviews by Phillips and McRoy 1980 McRoy and Helfferich 1977 Zieman and Zieman 1989*)

Sea grasses have been shown to be **ADVERSELY IMPACTED BY ANTHROPOGENIC NUTRIENT ENRICHMENT or nutrient loading**. (*Orth and Moore 1983; Tomasko et al. 1996*)

In short, Submerged grasses are fairly fragile and are easily adversely impacted by water quality.

Inlets can flush contaminants and nutrient loading until such time watershed practices can take effect.

THE PASS WOULD BE A SIGNIFICANT STEP TOWARDS FDEP's RESTORATION OF BACTERIOLOGICAL IMPAIRED WATERS.

6(2). Environmental-Does Project align with Watershed Approach-This project speaks directly to Restoring the water quality under the Pensacola Bay Watershed. (page 5-69) Tidal flushing in/out of the Pass provides for **IMMEDIATE "FIX" TO STABILITY** of good water quality for **IMPAIRED WATERS** leading to a long term sustainability of ecosystems habitat. **SECONDLY**, it **"PREVENTS AND LESSENS"** contact of bacteria to humans. Also, the Project **CREATES** a buffer until **BASIN MANAGEMENT ACTION PLANS (BMAPs)** watersheds and storm water projects can take effect.

6(3) .Environmental-Degree proposed project is Feasibility & Sustainability- This project proposal should be considered a semi-permanent fix to water quality issues until watershed practices and Storm Water Drainage Projects can take effect. (Time lag for this could be 15,20, 25 years or more, which would make it a sustainable project) Afterwards it would be decision of the local government to close the pass after it is determined that watershed/ Storm Water projects have been effective. SRC would be lead agency in permitting with FDEP. Proper construction and design on inlet pass will create **SUSTAINABILITY** from most natural disasters. Dependent on study, the pass may have to be dredged every 3-5 years. Estimate 25,000 yards of sand accumulation based on East Pass of 90,000 yards annually. Good design of pass could have literal drift bypass mouth of pass.

6(4) Environmental-Does Project provide direct/indirect health benefits to humans? PROJECT WOULD HAVE IMMEDIATE IMPACT TO HUMAN HEALTH by reducing Bacteria levels by FLUSHING Santa Rosa Sound in the Navarre area. Flushing benefits could extend further depending on study results.

RECURRING HEALTH WARNINGS ARE COMMON AT NAVARRE PARK BEING A DIRECT SERIOUS HUMAN HEALTH ISSUE AND HAS LISTING NUMBER 06-615 UNDER FDEP'S VERIFIED LIST OF IMPAIRED WATERS FOR BACTERIA.

ENTEROCOCCI BACTERIA is on the increase in this area and could be become a serious health threat for those in contact with the water. There are many varied reasons for this increase in rise of bacteria and good responsible water shed projects may eventually lead to cleaner water in the sound. However, these large watershed/storm drain projects are expensive, funding can be hard to obtain, and could take decades to install and see results. Also, on the increase is **VIBRIO VULNIFICUS BACTERIA**. Wound infections have a mortality rate around 25%. In patients in whom the infection worsens into septicemia, typically following ingestion, the **MORTALITY RATE RISES TO 50%**. The majority of these patients die within the first 48 hours of infection

6(5) Leveraging ability to allow overall environmental benefit to accrue- This project would have an **IMMEDIATE IMPACT** on the water quality in Santa Rosa Sound. We would hope that Leverage funding for the study could be used from various SRC committed funds @ 20% however, as a SRC project **LEVERAGE DECISION WOULD BE MADE BY SRC BOCC AFTER PROJECT IS ACCEPTED**. Leverage funding for the construction of the pass would be determined after the study by SRC BOCC and if decision is made to construct the pass. Since the Impaired water quality impacts human health other sources could be available for funding construction.

6(6) Public support/opposition-

1. Letters of support from over 1600 signatures of local citizens(Fun Fest 2007), **BOCC SANTA ROSA, NAVARRE BEACH AREA CHAMBER OF COMMERCE, PULLUM REAL ESTATE GROUP, BERMAN INSURANCE, CENTURY 21 REAL ESTATE, NAVARRE AREA BOARD OF REALTORS, EAST RIVER SMOKEHOUSE, TC'S FRONT PORCH, NAVARRE BEACH AREA CHAMBER OF COMMERCE FOUNDATION INC. and BROXSON OUTDOORS**. The SRC BOCC did not sign total acceptance to EGLIN AIR FORCE BASE Joint Land Use Study 2009. The only exception was the Pass.

As with many projects like this, many will be opposed, even though, there is a serious human health risk. What will happen to this community if nothing is quickly done to flush this bacteria laden water from the sound? What type of reputation will this area obtain?

Ask any inshore fishing guide about the waters off Navarre, there's just hardly any fish here to catch. Most local guides go towards either Pensacola bay or the East pass in Destin Florida to fish.

2. Military Opposition- For one, the pass may not be large enough to allow boating. size will be determine by the study. If the pass is large enough for boating, only a few local boats will take advantage, since there are no marinas with dock facilities in Navarre. Since the pass should be deemed temporary until sustained water quality has improved, this would discourage building of large marinas. Most smaller type boats are not going to venture out to 16-24 miles.

The pass could actually support Marine Expeditionary Unit training at EGLIN AFB in order to maximize training opportunities for the U.S. Marine Corps prior to deployment by allowing a shorter route for US Navy boats to support the Marine Amphibious Track vehicles.

FOR SECURITY PURPOSES, the Pass would set a **NATURAL BOUNDARY** if located on the eastern end of Navarre beach. **This has been a constant concern for the military for some-time.** Also priorities may have changed for the Military since the EGLIN Air Force Base Joint Land use Study JUNE 2009.

Indicator lights for Pass Closures could be installed and Operated by EGLIN Military Personnel so boats do not have to be stationed in the pass as they do in East Pass. **THE MAIN OBJECTIVE IS TO IMMEDIATELY RESTORE WATER QUALITY IMPACTING HUMAN HEALTH ISSUES.**

6(7) . Return on investment- The current **WATER QUALITY REPORT** is public information published online by Florida Healthy Beaches Program. If Water quality(**IMPAIRED WATERS**) in this area is not corrected Tourism could be drastically impacted. A Loss of 25%-30% in tourism due to poor water quality in the sound will definitely have a negative effect on the community. Good Water Quality is the key to maintaining a water related tourist industry. Tourism could actually increase with construction of a pass.

To be specific, this area represents 72% of SRC Tourist industry according to 2012 HAAS study. A 25% reduction in tourism in this area would cost SRC 262 jobs, income loss of \$7,100,941 and a value added loss of \$12,785,358 for a total of \$19,886,299. In addition, there would be a sales loss of \$15,840,000 due to less tourist visiting the area for a total of \$35,726,299. (Reference 2012 HAAS Study)(Vasenina, K. (2013). *How Water Pollution Impacts Tourism Industries*) (Economic Impact of Selected Florida Springs on Surrounding Local Areas Dr. Mark A. Bonn Dedman School of Hospitality College of Business Florida State University Tallahassee, Florida)

Therefore, ROI on maintaining status quo and preventing tourism loss equate to 2.4 : 1.

ROI which calculates 25% increase in tourism due to pass would be 2.64 :1 ROI

6(8) Environmental -Legacy Project- Lasting Impact Project Area- Major impact to the community by providing good clean water quality to the sound. Would be key to improving the natural habitat immediately by ridding the sound of contaminants. Could actually improve other impaired water in(i.e. Woodlawn Beach). Projects most likely increase Tourism and creating more jobs in the area. Water recreational opportunities would open up, while “Water Shed Projects” are being implemented. **THIS PROJECT HAS THE POTENTIAL OF SAVING LIVES AND PREVENTING COSTLY BACTERIAL INFECTIONS.**

7. Estimated Study Costs & Matching Funds/Grants, if any-

\$300,000-\$400,000 Study(confirmed by UF)

\$14-\$17M pass construction

Note: In 2007 US Army Corp of Engineers estimated cost of project at \$7-9M

8. Estimated Project Schedule

Study:

Would involve collection of measurements at different seasons during a 2-year span, carrying out numerical model scenarios involving tidal and wind conditions and analyzing all the information to provide recommendations based on well-grounded information.(ref: UF Coastal Engineering Department)

CONSTRUCTION:

Back in 2007, The Army Corp of Engineers estimated the project schedule to be approximate 4-6 months as a small project.

9. Key Personnel- STUDY implemented by an engineering firm or University that specializes in coastal Engineering thru Santa Rosa County Engineering, SRC Special Projects/Grants.

PROJECT implemented with bids to engineering firms that specializes in pass construction through Santa Rosa County Engineering, SRC Special Projects/Grants.

10. Risks- None

11. Public Support- see 6-6 above

12. Best Available Science

References:

- a. Florida Healthy Beaches Program, from January 2013 to October 2014
- b. FDEP Statewide Comprehensive Verified List of "IMPAIRED WATERS".
- c. FDEP Two-Year TMDL Development Plan SFY 14-15 and 15-16
www.dep.state.fl.us/water/tmdl
- d. Inlet Flushing-ref; Florida Department of Environmental Protection (FDEP) Coral Reef Conservation Program (CRCP) 2008
- e. Water-Quality-ref; (RGP/EMA Supporting Documentation-National Marine Fisheries Service Mark Thompson)
- f. Reduce Nutrient Loading-ref; Land Based Sources of Pollution Affecting Essential Fish Habitats- Kurtis Gregg, Fishery Biologist ECS Federal, Inc. on contract to NOAA Fisheries
- g. Sea Grasses; ref; Short and Wyllie-Echeverria 1996; Williams and Heck 2001; FDEP 2009
reviews by Phillips and McRoy 1980 McRoy and Helfferich 1977 Zieman and Zieman Zieman 1989) (Orth and Moore 1983; Tomaskoet al. 1996)
- h. Pensacola Bay Water Shed. (pages 5-69)
- i. Tourism-ref; (2012 HAAS Study) (Vaseline, K. (2013). (How Water Pollution impacts Tourism Industries) (Economic Impact of Selected Florida Springs on Surrounding Local Areas Dr. Mark A. Bonn Dedman School of Hospitality College of Business Florida State University Tallahassee, Florida
- j. Reference for VIBRIO VULNIFICUS BACTERIA- American Society for Microbiology by Melissa Jones and James Oliver
<http://iai.asm.org/content/77/5/1723.full>

13. *Title Issues, Land Acquisition, Permits*- Would be determined by Study

this below will be in presentation

Examples:

Story published by Brian Smith for Citizens Campaign for the Environment 30 January 2013

Hurricane Sandy caused massive damage to homeowners, businesses, and our environment on Long Island and beyond. If we could point to one silver lining, it would be the creation of a new inlet in the Fire Island Wilderness Area. In fact, Sandy caused three breaches to open on Fire Island. Two inlets were immediately closed. The third breach, now known as "New Inlet," is still open.

*Despite the millions of dollars that have been invested in restoration work in recent years, water quality in the Great South Bay has significantly degraded, adversely impacting the local economy. Superstorm Sandy has exacerbated the problem, causing the release of raw and partially treated sewage, fuel oil, gasoline, household hazardous waste, and a potpourri of other pollutants into the already struggling south shore waters. **However, the breach created by Sandy is now allowing the ocean waters to flush and clean the bay.***

Preliminary data indicates that the increased water flow from New Inlet is indeed helping to improve water quality. While some have expressed fear of flooding to the mainland, these concerns are not founded by science. Scientific studies and monitoring conducted by Stony Brook University are showing that the inlet is not, and will not cause an increased risk of flooding to the mainland.

Governor Cuomo NYS 2100 Commission recognizes the benefits of leaving the breach open.

Page 117: *The breaches at Cupsogue and Moriches Inlet on Fire Island have already been closed. The State should monitor the impact of the **Fire Island Wilderness breach on the barrier island**, the bay, and the mainland to determine whether or not to close that breach in the near future. Limited monitoring to date suggests that the inlet is stable or closing slightly. **This has resulted in improved water quality in Great South Bay and created a platform for new eelgrass and wetland growth, which may actually reduce flooding in certain cases** (i.e., when winds blow from the west).*

<http://boatingtimesli.com/NY/fire-islands-old-inletnew-inlet/>

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