

APPENDIX D

SECTION 404(B)(1) EVALUATION

**ENVIRONMENTAL ASSESSMENT FOR ST. LUCIE
INLET SOUTH JETTY REHABILITATION**

ST. LUCIE INLET, MARTIN COUNTY, FLORIDA

NEPA ID#: EAXX-202-00-K3P-1742397469



**U.S. Army Corps of Engineers
JACKSONVILLE DISTRICT**

I. Project Description

1. Location

The St. Lucie Inlet is located in Martin County on the east coast of Florida, just north of Jupiter, Florida. The inlet lies about 115 miles north of Miami and serves as the County's only point of access to the Atlantic Ocean. The inlet connects the ocean, Okeechobee and Intracoastal waterways. The nearest coastal inlets are Jupiter, 17 miles south, and Ft. Pierce, 22 miles to the north, as shown in Figure 1. The Hobe Sound National Wildlife Refuge lies south of the project area, which lies within the St. Lucie Inlet Preserve State Park.



Figure 1. Project Area Overview.

2. General Description

The St. Lucie Inlet, a crucial navigation channel in Martin County, Florida, is comprised of several key features, including an impoundment basin, north and south jetties, and an offshore breakwater. While the federal navigation channel, particularly Cut-1 and the impoundment basin, undergoes routine maintenance, the jetties and breakwater have not received regular upkeep. The south jetty, located immediately north of Florida Department of Environmental Protection (FDEP) Range Monument (R) 45, was initially constructed from 1978-1982 without receiving any major modifications since.

The south jetty at St. Lucie Inlet, a critical structure for stabilizing the inlet and the northern shoreline of Jupiter Island, is in a state of progressive decline. This project aims to repair 400' to 500' of the seaward jetty. Constructed with a single layer of armor stone bound by asphalt grout and walkway, the jetty's integrity has been compromised by several key failure modes:

- **Material Deterioration:** The asphalt acting as a grout, essential for binding the armor stones, has deteriorated due to a lack of maintenance.
- **Stone Instability:** The armor stones are becoming unstable, a result of the deteriorating grout and the use of undersized stone in the original construction.
- **Slope Instability:** The structure's slope is failing due to toe scour, settlement, and destabilized stones caused by environmental factors.

This damage is most severe at the seaward head of the structure, where a breach that formed years ago continues to expand and new ones are appearing. Without intervention, this degradation will likely progress along the entire jetty, threatening a complete structural failure. Such an event would destabilize the northern end of Jupiter Island and significantly disrupt the federal navigation project.

3. Authority and Purpose

Initial construction of the St. Lucie Inlet Federal project was authorized in Section 201 of the Flood Control Act of 1965 and initial construction was completed in 1982.

Congressional authorization directed the Corps to construct and maintain a new south jetty with a walkway for fishermen at a length of 1,200 feet with an additional 1,200 feet for deferred construction. The existing south jetty construction was completed, at an approximate length of just over 1,300 feet with the remaining length deferred indefinitely.

4. Description of Excavated Material

The subsurface materials encountered consisted of fine- to medium-grained quartz and carbonates and with trace to little silt. Trace to few gravel to cobble sized whole and broken shell fragments and limestone fragments were encountered; in situ rock was not encountered. Existing materials from the jetty structure (gravel to boulder sized granite stone and asphalt) and debris may be present within the materials to be excavated..

- a. Quantity of Material (cubic yards)

Approximately 10,000 cubic yards of material would be excavated from around the jetty toe area as needed.

- b. Source of Material

The source of the material would be obtained from the St Lucie Inlet in Martin County.

5. Description of the Proposed Discharge Site(s)

- a. The excavated material would be placed on the beach directly south of the jetty to aid in building up the staging area. After construction is completed, the beach will be regraded, and dunes vegetated to the area. As the material is excavated though it will be screened thru a 2-inch filter. Material not meeting the criteria nor QA/QC plan will be disposed of for removal to an offsite area.

- b. Size (acres)

Approximately 85 acres in total estimation based on access, staging, and pathway areas.

- c. Type of Site (confined, unconfined, open water)

The beach side placement of excavated material will be a confined area.

- d. Depth of Water

Nearshore placement occurs in waters between 0 and 15 feet.

- e. Current velocity, direction, and variability

No effect. Turbidity may incur temporary impacts that will dissipate. Monitoring will occur to regulate these temporary impacts.

- f. Degree of Turbulence

Minor effect. Turbidity may incur temporary impacts that will dissipate. Monitoring will occur to regulate these temporary impacts.

- g. Stratification attributable to causes such as obstructions, salinity or density profiles

Minor effect. Turbidity may incur temporary impacts that will dissipate. Monitoring will occur to regulate these temporary impacts. A cofferdam construction if chosen by contractor will aid greatly in limiting turbidity effects by surface runoff due to weather events. Silt fencing will be done in accordance to project specifications for access pathways and controlled staging areas.

h. Type(s) of Habitat

Seagrass is expected adjacent to the project area. Turbidity control measure will be utilized to prevent impacts to this resource. The only documented SAV is near the western staging nearshore area.

i. Timing and Duration of Discharge

There will be no dredging or this project, so no effect is expected. Turbidity may incur temporary impacts that will dissipate. Monitoring will occur to regulate these temporary impacts. Turbidity, if incurred, will likely be from surface runoff with rain and wind as the cause and excavation of material in order to place marine mattress.

Timing is undetermined and duration of the coastal construction project is expected to be approximately 2 years.

II. Factual Determinations

1. Physical Substrate Determinations

Determine the nature and degree of effect that the proposed construction activity will have, individually and cumulatively, on the characteristics of the substrate at the proposed work site. Considering the effects on:

a. Substrate Elevation, Contours and Slope

The project area is a very broad and shallow area. The largest depth occurrence is around 15ft MLLW from the jetty head. Adjacent areas on northern and southern sides average 2-4 ft MLLW in depth.

b. Sediment Type.

Unconsolidated with sand, silt, and shell.

c. Dredged/Fill Material Movement

Material will be screened at 2 inches. Anything oversized or does not meet the sediment QA/QC plan will be removed to an offsite venue. Material that does fit under 2 inches and the sediment criteria will be regraded with the beach after construction is completed.

d. Physical Effects on Benthos (burial, changes in sediment type, etc.)

Non-motile infaunal invertebrates that inhabit the excavation, construction, and coffer dam installation areas below mean high water will unavoidably be lost during construction activities. These effects are expected to be permanent (throughout the life of the structure) and minor. Mobile benthic

organisms will be temporarily displaced by construction operations due to noise, vibrations, and presence of equipment. Once construction ceases, these effects will end as well. Mobile and non-motile organisms are expected to recolonize following completion of construction.

e. Other Effects

N/A

f. Actions Taken to Minimize Impacts

Silt fencing will be placed around access and staging areas.

2. Contaminant Determinations

Determine the degree to which the material proposed for discharge will introduce, relocate, or increase contaminants. This determination shall consider the material to be discharged, the aquatic environment at the proposed disposal site, and the availability of contaminants.

No contaminants are expected to be introduced, relocated, or increased by the construction operations.

3. Aquatic Ecosystem and Organism Determinations

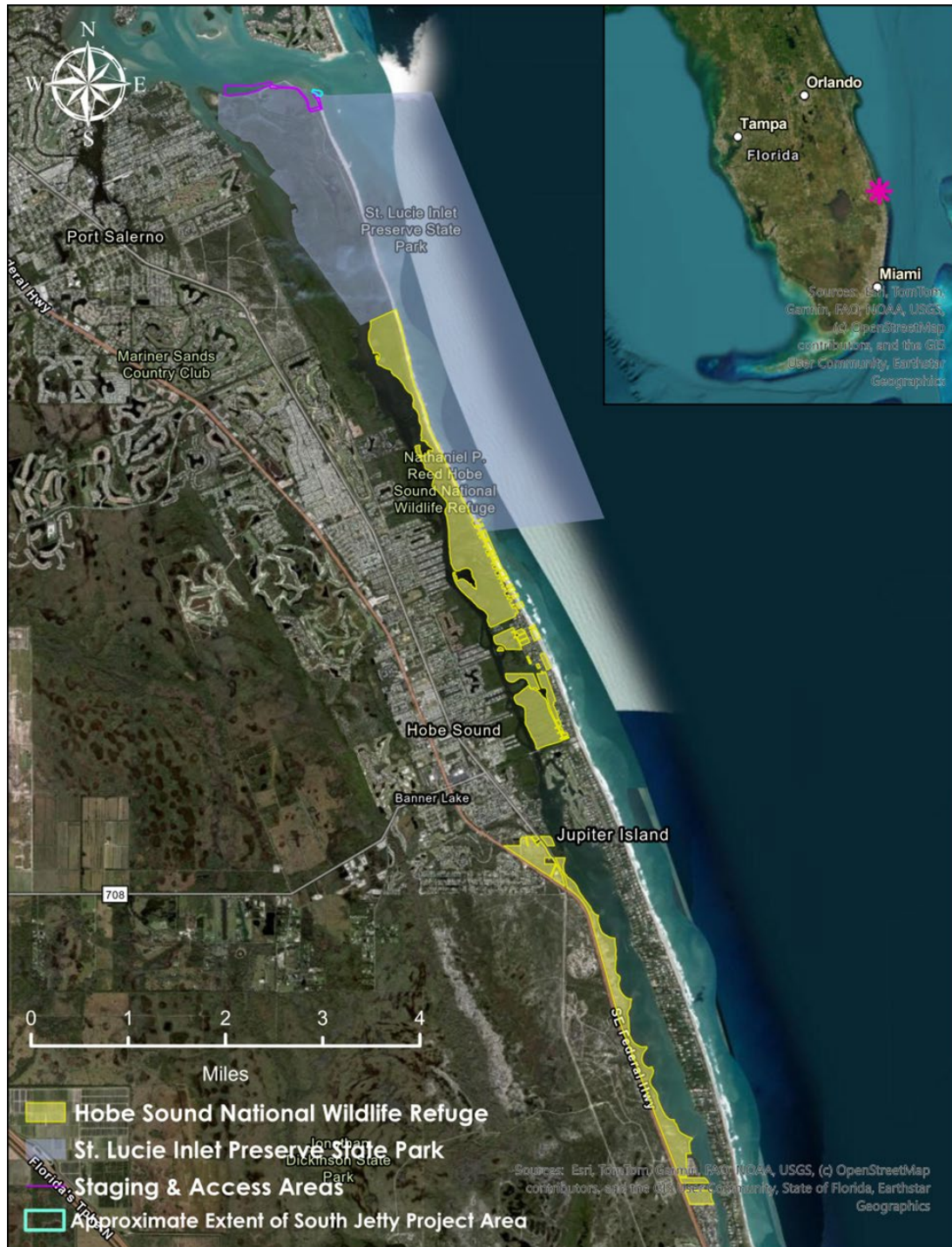
Determine the nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure and function of the aquatic ecosystem and organisms. Consideration shall be given to the effect at the proposed disposal site of potential changes in substrate characteristics and elevation, water or substrate chemistry, nutrients; currents, circulation, fluctuation, and salinity, on the recolonization and existence of indigenous aquatic organisms or communities.

a. Effects on the aquatic food web

Benthic organisms will be temporarily displaced by excavation and placement operations. These organisms are expected to recolonize following cessation of dredging and placement. The Corps does not anticipate additional significant impacts on the aquatic food web.

b. Effects on Special Aquatic Sites (*Discuss only those found in project area or disposal site*) Any chosen disposal site would be away offsite on the mainland. Effects on any special aquatic sites within project are minimal if any.

i. Sanctuaries and Refuges (*Refer to section [230.40](#)*)



ii. Wetlands (*Refer to section [230.41](#)*)

Any effects to wetlands will be minimal.

iii. Vegetated Shallows (*Refer to section [230.43](#)*)

There is a very minimal and sparse SAV area near the west staging area.



- iv. Coral Reefs (*Refer to Section [230.44](#)*) No reefs in project area



v. <https://www.ecfr.gov/current/title-40/section-230.45> Threatened and Endangered Species

Temporary, minor-to-moderate adverse impacts are expected to occur from construction activity. There are also long-term moderate adverse impacts to nesting sea turtles expected from jetty rehabilitation. These impacts will be avoided and minimized through implementation of appropriate terms and conditions of the SPBO, P3BO, informal consultation with NMFS, and formal consultation with USFWS. The project will also adhere to the standard manatee conditions for in-water work. See section 4.1 of the EA for more information.

c. Effects on Other Wildlife

See the 2026 EA for more information. Risk to other wildlife species will be avoided and minimized through implementation of the appropriate terms and conditions of the SPBO, P3BO, and formal and informal consultations, which are expected to provide protections to non-listed species as well.

d. Actions to Minimize Impacts (*Refer to [Subpart H](#)*)

Mitigation of environmental impacts would be addressed in terms of avoidance, minimization, and other actions, such as best management practices, that reduce or offset the negative environmental impacts. Compensatory mitigation will be completed to address impacts from the implementation of the proposed action. Whether the work is done by a trestle bridge, barge, or cofferdam for jetty construction; The type of work will be majority above waterline. The below waterline work will be the first aspects to be conducted. Marine mattress and excavation of old jetty components. Material will not be replaced into marine environment. The material will either be regraded into existing beach slope or hauled to off-site disposal.

4. <https://www.ecfr.gov/current/title-40/section-230.50><https://www.ecfr.gov/current/title-40/chapter-I/subchapter-H/part-230/subpart-F/section-230.51><https://www.ecfr.gov/current/title-40/section-230.52><https://www.ecfr.gov/current/title-40/section-230.53><https://www.ecfr.gov/current/title-40/section-230.54>Determination of Cumulative Effects on the Aquatic Ecosystem (*Consider requirements in section [230.11\(g\)](#)*)
5. Determination of Secondary Effects on the Aquatic Ecosystem (*Consider requirements in section [230.11\(h\)](#)*)

III. Findings of Compliance or Non-Compliance With the Restrictions on Discharge

The Findings and Compliance or Non-Compliance with Restriction on the Discharge should be a narrative and cover the items listed in Section III of the outline. The data presented in the Factual Determination (Section II of the outline) should be compared to the restrictions on the discharge in paragraph [230.10](#), and a determination should be made as to whether the discharge will or will not be in compliance. Do not repeat data given in the Factual Determination in the Finding of Compliance. The determinations in this section need to be supported by the information entered in the Factual Determinations.

1. Include a brief explanation of any adaptation of these Guidelines to the activity under consideration.

No adaptations are needed.

2. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem

As the work involves a structure that is located below the MHWL, all alternatives involve working below the MHWL resulting in impacts on the aquatic ecosystem.

- a. Alternatives that must be considered: (1) activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean

waters; (2) discharges at other locations in waters of the United States or ocean waters.

- b. Special Aquatic Sites – If the proposed placement site is a special aquatic site (as defined in Subpart E) additional analysis must be undertaken to justify why access, proximity, or siting within a special aquatic site is necessary to achieve the activity's basic purpose *or* it must be demonstrated that there are no practical alternatives that do not involve placement in a special aquatic site.

3. Compliance with Applicable State Water Quality Standards.

4. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 Of the Clean Water Act.

5. Compliance with the Endangered Species Act of 1973.

6. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972.

7. Evaluation of Extent of Degradation of the Waters of the United States to Ensure there will not be Significant Degradation, including consideration of the following:

a. Significant Adverse Effects on Human Health and Welfare

None

b. Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems

None

c. Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity and Stability

None

d. Significant Adverse Effects on Recreational, Aesthetic, and Economic Values

None

8. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem

The work will be majority above sea surface. The exception to this will be toe excavation at the jetty and placement of marine mattresses and armor stones comprising the jetty outer shell. That work could make the water become temporarily turbid. Turbidity monitoring will be ongoing with the project. One of the recommended methods of construction is a cofferdam around the jetty. This type would greatly minimize any adverse environmental negative impacts.

