ST. LUCIE COUNTY, FLORIDA

COASTAL STORM RISK MANAGEMENT PROJECT

FINAL INTEGRATED FEASIBILITY STUDY AND ENVIRONMENTAL ASSESSMENT

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US Army Corps of Engineers
Jacksonville District

ST. LUCIE COUNTY, FLORIDA

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Environmental

Attachment 1 – Section 404(b) Evaluation

US Army Corps
of Engineers
Jacksonville District

SECTION 404(B) EVALUATION
ST. LUCIE COUNTY COASTAL STORM RISK MANAGEMENT STUDY
ST. LUCIE COUNTY, FLORIDA

I. Project Description

A. Location. The proposed work will occur along the Atlantic Ocean shoreline of St. Lucie County, Florida. The activity includes excavation of sand from a borrow area approximately three to five miles offshore of St. Lucie County and placement of beach fill along an estimated 3.4 miles (17,639 feet) of shoreline between FDEP reference monuments R-98 and the St. Lucie/Martin County line.

B. General Description. The project includes the following principal activities.

(1) A hopper dredge will excavate beach-quality sand from the offshore borrow area (St. Lucie Shoal) located in Federal and State waters. The hopper dredge will transport dredged sand to a location in the Atlantic Ocean near the project site and pump the sand as slurry to the project beach. Placement of sand fill will occur within the dune and beach restoration template along the project beach.

(2) The design beach fill template is characterized by a 20 foot berm extension (+7 ft-NAVD88) from the toe of the 2008 dune profile

(3) Approximately 0.57 acres of exposed nearshore hardbottom habitat within the study area was impacted by prior sand placement activities. The non-Federal sponsor provided mitigation to offset these impacts. The Recommended Plan, with its smaller placement area, would not exceed previous impacts and, therefore, no additional mitigation is proposed.

C. Authority. A Reconnaissance Study (Section 905(b), WRDA 1986 Analysis) was initiated on 25 February 2002 as an initial response to two Resolutions by the Committee on Transportation and Infrastructure of the U.S. House of Representatives. The two resolutions are listed below:

Resolution Docket 2634 St. Lucie County, Florida Shore Protection dated 11 April 2000 states: *"Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That the Secretary of the Army is requested to review the report of the Chief of Engineers for Fort Pierce Beach, Florida, published as House Document 84, 89th Congress, 1st Session, and other pertinent reports with a view to determining if modifications to the recommendations contained therein are advisable at the present time, with particular reference to providing improvements in the interest of shore protection and hurricane and storm damage reduction to the shoreline areas in St. Lucie*

County in the area north of the Ft. Pierce Inlet, the southern five miles of St. Lucie County, and adjacent shorelines."

Resolution Docket 2757 St. Lucie County, Florida Shore Protection dated 23 July 1998 states: *"Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That the Secretary of the Army is requested to review the report of the Chief of Engineers for Fort Pierce Beach, Florida, published as House Document 84, 89th Congress, 1st Session, and other pertinent reports with a view to determining if modifications to the recommendations contained therein are advisable at the present time, with particular reference to providing improvements in the interest of shore protection and hurricane and storm damage reduction to the shoreline areas in St. Lucie County from the current project for Ft. Pierce Beach, Florida southward to the Martin County Line."*

The final St. Lucie County, Florida Section 905(b) Reconnaissance Study was approved on 1 August 2003 and resulted in the finding that there was a Federal interest in proceeding into the feasibility phase.

Approval for moving from the reconnaissance study phase into the feasibility study phase is contained in a memorandum dated 1 August 2003 from USACE South Atlantic Division (SAD) stating the following:

"The Section 905(b) analysis for St. Lucie County, Florida, and the letter of intent are approved for proceeding into the feasibility phase of planning for the five southernmost miles of the study area."

D. General Description of Dredged or Fill Material.

(1) General Characteristics of Material. The native beach has a composite mean grain size of 0.49mm. South Hutchinson Island beach sand consists of light gray to very pale brown, moderately to poorly sorted, medium grained sand with 50.5% carbonate, 1% organic, 2.2% gravel and <1% fines content. The proposed borrow area for the initial project is estimated to have a composite mean grain-size of 0.42mm and a composite median grain size of 0.36mm, and less than 2% fines (material passing a #230 U.S. Standard Sieve).

(2) Quantity of Material. Beach fill material includes an average of 422,000 cubic yards for initial construction of the design beach profile and approximately 2 renourishment events averaging 390,000 cubic yards each.

(3) Source of Material. The proposed borrow area is located about three to five miles east of the project beach in Federal and State waters with water depths of about -40 feet NAVD88. Sand from these sources will conform to State of Florida standards, including compatibility with the native beach sand, for use as beach fill.

E. Description of the Proposed Discharge Site.

(1) Location. Beach quality sand would be placed along the southern shoreline of Martin County, Florida.

(2) Size. The beach nourishment area includes an estimated 3.4 miles (17,639 feet) of shoreline between FDEP reference monuments R-98 and the St. Lucie/Martin County line.

(3) Type of Site. The beach nourishment site includes eroded recreational beach with naturally occurring hardbottom variously exposed between the approximate mean low water shoreline and about 1,000 ft offshore. As previously stated, approximately 0.57 acres of exposed nearshore hardbottom habitat within the study area was impacted by prior sand placement activities. The non-Federal sponsor provided mitigation to offset these impacts. The Recommended Plan, with its smaller placement area, would not exceed previous impacts and, therefore, no additional mitigation is proposed.

(4) Type of Habitat. The beach fill disposal site comprises dune, supratidal, tidal, and subtidal beach zones.

(5) Timing and Duration of Discharge. The schedule of dredging and sand placement activities are unknown at this time, and are dependent on securing funding. In compliance with the USFWS Statewide Programmatic Biological Opinion, beach placement activities would begin November 1 or later and end before May 1 to avoid the peak sea turtle nesting season.

F. Description of Disposal Method. A hopper dredge will hydraulically pump sand from the ocean floor and transport the sand to a point offshore of the project beach. The hopper dredge will then hydraulically pump the sand from the ship through a pipeline lying on the ocean floor to the project beach. On the beach, the hydraulically pumped sand will discharge inside a shore-parallel berm, where the sand will settle and the water will flow back to the ocean. As the sand builds up, grading equipment will grade the sand into the desired template.

II. Factual Determinations

A. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. Schematic design plan view and cross section drawings area available in Appendix A.

(2) Sediment Type. Sand from the borrow areas is fine to coarse grained quartz sand with varying amounts of small broken shell. See also D (1) above.

(3) Dredge/Fill Material Movement. Cross-shore and longshore currents (principally to the south) will move some of the fill material.

(4) Physical Effects on Benthos. The placement of sand on the beach face will result in the burial and loss of most of the beach infauna. Key components of these assemblages are surf clams, mole crabs, and polychaete worms. Assuming typical planktonic larval recruitment of these and other benthic species to the project site, surf zone infauna should recover within one or two years after completion of construction. Based on known characteristics of the dredged sand and the required quality control over the sand placed on the beach, the site should remain sufficiently similar in physical characteristics to recruit a similar infaunal community.

B. Water Circulation, Fluctuation, and Salinity Determination.

(1) Water Column Effects. Fill placement will not have long-term or significant impacts on salinity, water chemistry, clarity, color, odor, taste, dissolved gas levels, nutrients, or eutrophication.

(2) Current Patterns and Circulation. Currents in the project area are both tidal and longshore. Net movement of water due to the longshore current is typically north to south.

(3) Normal Water Level Fluctuations and Salinity Gradients. Tides in the project area are semidiurnal. Elevations of mean high water and mean low water in St. Lucie County are approximately +0.4 ft NAVD88 and -3.0 ft NAVD88, respectively.

C. Suspended Particulate/Turbidity Determinations

(1) Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of the Disposal Site. A temporary increase in turbidity levels will occur in the waters adjacent to the hopper dredge during dredging and in the vicinity of the beach shoreline near the sand slurry discharge point. Short-term, localized turbidity increases should have no significant adverse impacts. Construction activities should not result in exceedance of State turbidity standards outside of the approved beach mixing zone or at the borrow site.

(2) Effects on the Chemical and Physical Properties of the Water Column.

(a) Light Penetration. The placement and spread of fill on the beach will increase turbidity in the nearshore area during construction. The immediate nearshore area is a high energy system, subject to naturally occurring turbidity fluctuations. Temporary turbidity increases due to project construction should not prove significant. The State of Florida requires a nearshore turbidity

monitoring program during construction. Turbidity during construction outside of the mixing zone will not exceed State numeric standards.

(b) Dissolved Oxygen. This project will not significantly alter dissolved oxygen levels.

(c) Toxic Metals, Organics, and Pathogens. The project will release no toxic metals, organics, or pathogens.

(d) Aesthetics. Construction activities (dredging and beach placement) will reduce aesthetic qualities during construction. The completed project will provide a long-term increase in aesthetic quality.

(3) Effects on Biota.

(a) Primary Productivity and Photosynthesis. The level of suspended particles in the surf zone will temporarily increase during construction. During construction, suspended material will reduce the intensity of sunlight reaching existing algae, temporarily restricting photosynthesis and primary productivity in local areas. Post-construction monitoring of nearshore hardbottom communities will include assessment of potential project-related secondary impacts due turbidity and sedimentation.

(b) Suspension/Filter Feeders. Suspension feeders will experience short-term impacts during construction, but no long-term adverse impact.

(c) Sight Feeders. Visual feeders will experience short-term impacts due to elevated turbidity, but no long-term adverse impact.

(d) Contaminant Determinations. Deposited fill material will not introduce, relocate, or increase contaminants.

(e) Aquatic Ecosystem and Organism Determinations. Grain size characteristics and composition of the proposed fill material closely match those of the existing beach sediments. Therefore, no sediment-related impacts are expected. The proposed fill material meets the exclusion criteria and therefore will require no additional chemical-biological testing.

1. Effects on Plankton. Although turbidity may result in short-term effects (e.g., clogging of feeding appendages) on plankton, no adverse long-term impacts to planktonic organisms are anticipated.

2. Effects on Benthos. Non-motile benthic species unable to migrate away from the project area will be covered and lost. However, due to the high fecundity and turnover rates of benthic invertebrates, full recovery of the benthic community should occur within one to two years.

3. Effects on Nekton. Elevated turbidity related to the proposed project should not affect these species due their motility and ability to avoid undesirable conditions. No long-term adverse impacts are anticipated.

4. Effects on the Aquatic Food Web. The project will not likely create long-term adverse impacts to any trophic group in the food web.

5. Effects on Special Aquatic Sites.

   a. Hardbottom Communities. As previously stated, approximately 0.57 acres of exposed nearshore hardbottom habitat within the study area was impacted by prior sand placement activities. The non-Federal sponsor provided mitigation to offset these impacts. The Recommended Plan, with its smaller placement area, would not exceed previous impacts and, therefore, would not be mitigated.

   b. Sanctuaries and Refuges. No sanctuaries or wildlife refuges occur within the proposed dredge and disposal areas.

   c. Wetlands. No wetlands occur within the proposed dredge and disposal areas.

   d. Mud Flats. No mud flats occur within the proposed dredge and disposal areas.

   e. Vegetated Shallows. No seagrass beds occur within or adjacent to the dredge, beach fill, or mitigation reef sites.

6. Endangered and Threatened Species. The proposed project will affect 3.4 miles of the approximately 1,400 miles of available sea turtle nesting habitat in the southeastern United States. Project construction will occur outside of the peak sea turtle nesting season (May1 – October 31) and, therefore, will likely avoid impacts to nesting sea turtles during construction. The work may affect, but is not likely to adversely affect, loggerhead critical habitat (see Section 5.1.4 of the main report).

   Research has shown that the principal effect of beach nourishment on sea turtle reproduction is a reduction in nesting success, and this reduction is most often limited to the first year following project. Nesting success decreases during the year following nourishment as a result of escarpments obstructing beach accessibility, altered beach profiles, and increased compaction. Research has also shown that the impacts of a nourishment project on sea turtle nesting habitat are typically short-term because a nourished beach will be reworked by natural processes in subsequent

years, and beach compaction and the frequency of escarpment formation will decline.

USACE will follow the reasonable and prudent measures recommended by the USFWS in its Statewide Programmatic Biological Opinion. These measures will help minimize impacts to sea turtles. Widening of an eroded beach with beach-compatible sand will increase the amount of suitable nesting area available to sea turtles.

7. Other Wildlife. No significant adverse impacts to terrestrial foraging mammals, reptiles, wading birds, or other wildlife are expected. These highly motile organisms are able to actively seek favorable environmental conditions for foraging and nesting. Restoring the project beach and dune will have a long-term benefit by providing additional habitat.

8. Actions to Minimize Impacts. Implementing all practical safeguards during project construction to preserve and enhance aesthetic, recreational, and economic values in the project area. The environmental permits and contractor specifications will include these measures.

(f) Proposed Disposal Site Determinations.

1. Mixing Zone Determination. The fill material will not cause unacceptable changes in the mixing zone specified in the State Water Quality Certificate in relation to: depth, current velocity (speed and direction), current variability, degree of turbulence, stratification, or ambient concentrations of constituents.

2. Determination of Compliance with Applicable Water Quality Standards. The project will not violate state water quality standards outside of the established mixing zone. At no time will nearshore turbidity levels exceed 29 NTUs above background levels.

3. Potential Effects on Human Use Characteristics.

   a. Municipal and Private Water Supplies. Project implementation will not affect municipal or private water supplies.

   b. Recreational and Commercial Fisheries. The disposal of dredged material on the beach project will not permanently impact recreational and commercial fisheries. The mitigation reef structures constructed in the project area nearshore waters have created increased or new opportunities for recreational fishing.

   b. Water Related Recreation. Beach restoration will enhance beach recreation by increasing the area of beach for public use. Increased

turbidity in the vicinity of fill sites may temporarily affect nearshore snorkeling/SCUBA and fishing. The presence of construction-related equipment will create public safety risks at the beach sites. The creation of nearshore low relief mitigation reef has provided alternate snorkeling/SCUBA habitat accessible from the beach. Given the narrow scale of beach fill that the project will place immediately along the beach face, landward of locations where swimming and surfing occur, adverse impacts to swimming and surfing will not likely occur.

c. Aesthetics. The stabilization of an eroding beach will improve aesthetics of the beach.

d. Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. The widening of an eroded beach will increase the area available for public recreation at the county park within the project area. Additionally, the proposed restoration will provide storm protection for this park.

f. Determination of Cumulative Effects on the Aquatic Ecosystem. The proposed beach restoration project should not have any significant cumulative effects that would result in a major impairment of water quality of the existing aquatic ecosystem. Dredging at the borrow site should likewise result in no significant cumulative effects to the aquatic ecosystem.

g. Determination of Secondary Effects on the Aquatic Ecosystem. Placement of the fill material will not likely cause adverse secondary effects on the aquatic ecosystem.

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

A. No significant adaptations of the guidelines were made relative to this evaluation.

B. No practicable alternative exists which meets the study objectives that does not involve discharge of fill into waters of the United States.

C. After consideration of disposal site dilution and dispersion, the discharge of fill materials will not cause or contribute to, violations of any applicable State of Florida water quality standards for Class III waters. The discharge operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act**Error! Reference source not found.**.

D. The project will not jeopardize the continued existence of any species listed as threatened or endangered or result in the likelihood of destruction or adverse

modification of any critical habitat as specified by the Endangered Species Act of 1973, as amended.

E. The placement of fill material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic species and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values will not occur.

F. On the basis of the guidelines, the proposed disposal site for the discharge of dredged material is specified as complying with the requirements of these guidelines.

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COASTAL STORM RISK MANAGEMENT PROJECT

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APPENDIX G
Environmental

Attachment 2 – Coastal Zone Management Consistency

US Army Corps
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Jacksonville District

FLORIDA COASTAL ZONE MANAGEMENT PROGRAM
ST. LUCIE COUNTY COASTAL STORM RISK MANAGEMENT STUDY
ST. LUCIE COUNTY, FLORIDA

1. Chapter 161, Beach and Shore Preservation. The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

   Response: The proposed project plans and information have been submitted to the State in compliance with this chapter.

2. Chapters 186 and 187, State and Regional Planning. These chapters establish the State Comprehensive Plan, which sets goals articulating a strategic vision of the State's future. Its purpose is to define in a broad sense, goals, and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

   Response: The appropriate Federal, State, and local agencies have participated in project review and comment during the planning process. The project meets the primary goal of the State Comprehensive Plan through preservation and protection of shorefront development and infrastructure.

3. Chapter 252, Disaster Preparation, Response and Mitigation. This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health, and safety; and to preserve the lives and property of the people of Florida.

   Response: The proposed project involves the placement of beach compatible material onto an eroding beach as a means to protect residents, development, and infrastructure located along the Atlantic shoreline within St. Lucie County. Therefore, this proposed project is consistent with the efforts of the Division of Emergency Management.

4. Chapter 253, State Lands. This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

   Response: The proposed beach nourishment would increase recreational beach and potential sea turtle nesting habitat. No seagrass beds, swamps, marshes and other wetlands; mineral resources, unique natural features, spoil islands, or artificial reefs

occur within or adjacent to the areas proposed for dredging or beach fill placement. The proposed project would comply with the intent of this chapter.

5. Chapters 253, 259, 260, and 375, Land Acquisition. This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

   Response: This project proposes no land acquisition.

6. Chapter 258, State Parks and Aquatic Preserves. This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management, or operations.

   Response: No state parks or preserves occur within the project area.

7. Chapter 267, Historic Preservation. This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

   Response: A Phase I cultural resources survey was performed for the project in October 2007 (New South Associates, 2008). The survey extended from the Martin/St. Lucie County line to approximately 0.5 miles north of the St. Lucie County Nuclear Power Plant.

   The Phase I survey consisted of background desktop research, field investigations including surface reconnaissance, systematic shovel testing, using a metal detector in areas adjacent to where historic shipwrecks have been recorded, artifact identification and analysis, and preparation of a report. With the exception of two shipwreck sites, all previously recorded historic and prehistoric sites are located on or west of the back dune along U.S. A1A or west of A1A, which is well outside of the project area. The field survey uncovered no evidence of the previously recorded sites.

   The study recommended that the project avoid areas near previously recorded underwater sites and undisturbed areas of back dune where previously recorded sites are located. The survey found no evidence of any new or previously recorded sites or artifacts over 50 years old in the project fill template. The final report recommended a finding of no project effect on cultural resources listed, or eligible for listing, in the National Register of Historic Properties, or otherwise of historical, archaeological, or architectural value; and recommended no further investigation of the area. The Florida Department of State – Division of Historical Resources reviewed the survey report and, in a letter to the U.S. Army Corps of Engineers (USACE) on April 15, 2008, concurred with the report findings and recommendations.

8. Chapter 288, Economic Development and Tourism. This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

   Response: The proposed beach nourishment would provide more space for recreation and protect recreational facilities along the receiving beach. The project remains consistent with the goals of this chapter, which encourages creation of additional space for recreation.

9. Chapters 334 and 339, Public Transportation. This chapter authorizes the planning and development of a safe balanced and efficient transportation system.

   Response: This project would not impact the public transportation system.

10. Chapter 370, Saltwater Living Resources. This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, and other studies and research.

    Response: Motile species such as fish and epifaunal crustaceans will be able to avoid the area during construction and seek favorable environmental conditions. Non-motile autotrophic organisms and infaunal invertebrates will be temporarily lost. However, these organisms are highly adapted to the periodic burial by sand in the intertidal zone. As demonstrated from past scientific investigations concerning the recolonization success of the benthic communities seaward of nourished beaches, the loss of nonmotile invertebrates is expected to be a short-term impact. These organisms are highly fecund and are expected to return to pre-construction levels within 1-2 years following construction.

    Nourishment activities will occur outside of the peak sea turtle nesting season. The USFWS Statewide Programmatic Biological Opinion, FDEP permit and contract specifications will contain protective measures specifically designed to avoid adverse impacts to manatees and sea turtles that may be foraging in the area. It is not expected that sea turtles would be significantly impacted by this project. In fact, sea turtle nesting habitat should be increased as a result of increased beach width.

    Approximately 0.57 acres of exposed nearshore hardbottom habitat within the study area was impacted by prior sand placement activities. The non-Federal sponsor provided mitigation to offset these impacts. The Recommended Plan, with its smaller placement area, would not exceed previous impacts and, therefore, additional mitigation is not proposed.

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11. Chapter 372, Living Land and Freshwater Resources. This chapter establishes the Game and Freshwater Fish Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions which provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

    Response: The project will have no significant effect on freshwater aquatic life or wild animal life.

12. Chapter 373, Water Resources. This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

    Response: This project does not involve water resources as described by this chapter.

13. Chapter 376, Pollutant Spill Prevention and Control. This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

    Response: The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require the contractor to adopt safe and sanitary measures for the disposal of solid wastes. Contract specifications will require an approved spill prevention plan before contractor receipt of a notice to proceed.

14. Chapter 377, Oil and Gas Exploration and Production. This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

    Response: This project does not involve the exploration, drilling, or production of gas, oil or petroleum products. Therefore, this chapter does not apply.

15. Chapter 380, Environmental Land and Water Management. This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development.

    Response: The proposed renourishment project will not have any regional impact on resources in the area. Therefore, the project is consistent with the goals of this chapter.

16. Chapter 388, Arthropod Control. This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The proposed project will not further the propagation of mosquitoes or other pest arthropods.

17. Chapter 403, Environmental Control. This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Regulation (now a part of the Florida Department of Environmental Protection).

    Response: A Draft Environmental Assessment addressing project impacts has been reviewed by the appropriate resource agencies including the FDEP. Environmental protection measures implemented by the project will ensure that no lasting adverse effects on water quality, air quality, or other environmental resources will occur. The state will provide project Water Quality Certification before construction starts. The project complies with the intent of this chapter.

18. Chapter 582, Soil and Water Conservation. This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

Response: The proposed project will not occur near or on agricultural lands. Therefore, this chapter does no

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Attachment 3 – Essential Fish Habitat (EFH) Documents and Mitigation Reports

US Army Corps
of Engineers
Jacksonville District

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

June 9, 2016 F/SER47:JK/pw

(Sent via Electronic Mail)

Colonel Jason A. Kirk, Commander
Jacksonville District Corps of Engineers
PO Box 4970
Jacksonville, Florida 32232-0019

Attention: Paul E. Stodola

Dear Colonel Kirk:

NOAA's National Marine Fisheries Service (NMFS) reviewed *St. Lucie County, Florida, Coastal Storm Risk Management Project Draft Integrated Feasibility Report and Environmental Assessment* (DIFR/EA), dated April 2016, and the corresponding letter dated May 11, 2016, initiating consultation under the essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The Bureau of Ocean Energy Management (BOEM) is a cooperating agency under the National Environmental and Policy Act (NEPA) for the DIFR/EA because of the proposed use as beach fill of Outer Continental Shelf sand from the St. Lucie Shoal complex. The Jacksonville District proposes to increase beach and shoreline protection in the interest of hurricane protection, storm damage reduction, beach erosion control, and protection of public-trust natural resources for 3.4 miles of Atlantic shoreline from Florida Department of Environmental Protection (FDEP) Monument R-98 (just north of Normandy Beach Access) southward to the Martin County line. The tentatively selected plan (TSP) would excavate sand from the St. Lucie Shoal complex for three nourishment events with the initial nourishment event requiring 530,400 cubic yards of material and the two subsequent events requiring an average of 380,000 cubic yards of material. The District developed the project using a 50-year planning horizon with sea level rise considerations up to the year 2120. The Jacksonville District's and BOEM's initial determination is the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries along the eastern coast of Florida, including live/hardbottom habitat, worm rock reef, and sandy shoals each designated a Habitat Area of Particular Concern by the South Atlantic Fishery Management Council (SAFMC). As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the NMFS provides the following comments and recommendations pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Act.

Consultation History and Impacts to Essential Fish Habitat

Consultation History: As noted in the DIFR/EA and EFH consultation letter, this project's history is complex because it includes an overlapping federal civil works project and a local initiative permitted in 2012 under the Clean Water Act and Rivers and Harbors Act (permit number SAJ-2009-03448). In response to a scoping request dated May 31, 2006, for issues germane to an Environmental Impact Statement (EIS) for a federal civil works project, the NMFS recommended, by letter dated June 29, 2006, evaluation of shoals and nearshore hardbottom habitats, including worm (*Phragmatopoma lapidosa*) rock reef, in the study area as foraging habitat for federally managed fishery resources. Subsequently, the EIS for the federal project was suspended and its components absorbed into the EIS for the permit application from the St. Lucie County Erosion Control District. The Jacksonville District released the EIS, entitled *St. Lucie County South Beach and Dune Restoration Project*, as draft in 2011 and as final in 2012.

Although the final EIS for the permitting action describes the project as "a one time, single and complete project," the DIFR/EA tiers off the final EIS in an effort to complete the NEPA process for the federal project expeditiously.

The permit evaluation process included significant controversy. By letter dated July 18, 2011, the NMFS provided comments on the draft EIS affirming concerns expressed earlier about nearshore live/hardbottom, worm rock reef, and the St. Lucie Shoal complex. The NMFS notified the District by letters dated July 25, 2011, and August 22, 2011, the project would substantially and unacceptably impact aquatic resources of national importance (ARNI) and objected to project authorization under Part IV Sections 3(a) and 3(b) of the Clean Water Act Section 404(q) Memorandum of Agreement between the Department of Commerce and the Department of the Army, dated August 11, 1992 (MOA). By letter dated July 27, 2012, the NMFS removed its objection under the MOA based on a draft permit and statement of findings that included reductions in project scope[1], increases in mitigation, and more vigilant monitoring than originally proposed. This letter also records commitments the Jacksonville District made during several meetings about the draft permit after its receipt by the NMFS. As noted below, it appears key aspects of this agreement have not been implemented or have not been adequately addressed in the DIFR/EA.

<u>Amount, depth, and performance criteria of compensatory mitigation reefs:</u> Permit condition 23 requires 1.89 acres of mitigation reef. To increase the likelihood of the mitigation reef providing the same ecological functions as the impacted live/hardbottom habitat, the Jacksonville District and St. Lucie County committed to building this reef in waters less than 4.0 meters (13.1 feet). Permit conditions 32(c) and 46(c) specify successful mitigation must include no less than 6 percent cover by worm reef.

St. Lucie County deployed 1.1 acres of mitigation reefs between June 3 and July 17, 2015[2]. Based on the *Bathymetric Survey of St. Lucie Mitigation Reef* (July 2015), it appears only a small area of reef was placed in waters less than 4.0 meters and the placement area differs from those provided to the NMFS by email dated July 24, 2012. The DIFR/EA states (page 4-13) "monitoring of the reef immediately after construction indicated permit requirements have been met. Specifically, the percent of net boulder cover within the mitigation site exceeds permit requirements. The non-federal sponsor will continue to monitor the mitigation reef during summer months for three years following construction." The *St. Lucie County South County Beach and Dune Restoration Project Immediate Post-Construction Mitigation Reef Monitoring Report* (CSA, September 2015), which reports surveys conducted September 14, 2015, corroborates construction of 1.1 acres of mitigation reef[3]. To date, only qualitative biological observations have been reported, with no mention worm reef. Performance standards in both the federal and state permits require three years of quantitative biological monitoring of the mitigation reefs, and the first monitoring event is scheduled for the summer of 2016. Because this quantitative monitoring has not yet occurred, only 1.1 acres of the required 1.89 acres of reef have been deployed, and much of the deployed reef was in waters deeper than 4.0 meters, the NMFS believes it is premature for the DIFR/EA to conclude permit requirements have been met.

The NMFS recommends the final IFR/EA include a schedule for constructing the remaining 0.79 acres of mitigation reef and clearly state how much of the initial 1.1 acres and the still-to-be-deployed 0.79 acres is or would be within waters less than 4.0 meters. The NMFS also requests the final IFR/EA evaluate if additional mitigation is needed to account for longer than anticipated time lag between burial of nearshore

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[1] Including avoiding impacts to 2.08 acres of nearshore live/hardbottom habitat by eliminating the northern segment of the project between FDEP Monuments R-87.7 and R-90.3.

[2] According to the *Florida Artificial Reef Materials Placement Report and Post-Deployment Notification* submitted to the Florida Fish and Wildlife Conservation Commission by St. Lucie County.

[3] Specifically the 1.5-acre mitigation site is composed of 72.4 percent mitigation reef (i.e., 1.1 acres).

live/hardbottom in 2013 and completion of the mitigation reef (date to be determined) and for substantial amounts of the reef being in deeper waters than expected. Lastly, the final IFR/EA should indicate the degree to which the mitigation reef is trending towards success of the worm reef performance standard based on quantitative data collected and analyzed.

Biological monitoring of nearshore hardbottom required for the initial nourishment indicates unauthorized impacts occurred: Permit condition 44(i)(6) describes how monitoring results would be interpreted to determine if unanticipated impacts to nearshore live/hardbottom occurred and whether additional mitigation is needed. The condition reads "Based on the pre- and post-construction assessment, any adverse differences resulting from the project in any one of the following monitoring parameters will be considered an impact and assessed: hardbottom exposure nearshore hardbottom edge mapping, line-intercept sediment measurements, sediment depth measurements, examination of the biological communities present on the hardbottoms."

Both federal and state permits require four post-construction monitoring events. Three of the four events (immediate post-construction, year 1 post-construction, and year 2 post-construction) have been completed and the fourth is planned for summer 2016. The year 2 monitoring report, *Year Two Post-Construction Nearshore Hardbottom Characterization Survey for the St. Lucie County South Beach Project* (CSA December 2015), notes a significant decrease in hardbottom relief from 2012 to 2015 in the project area. In addition, burial of permanent transect markers at the 0-m quadrats (i.e., the quadrats closest to shore) may signal project-related impacts are occurring. The hardbottom edge mapping also shows differences from the 2012 survey, with small scattered patches of hardbottom inshore of Transect R-100 and R-101 not located after construction (i.e., from 2013 to 2015). In 2015, the hardbottom edge mapped in this area was 30 to 60 meters eastward of the edge mapped in 2012. These observations are all consistent sand accumulating on live/hardbottom areas not authorized for burial.

According to the DIFR/EA, "elevated turbidity during construction is also anticipated to cause temporary impacts to nearshore hardbottom. Temporary impacts, calculated based on acreage of existing hardbottom between the predicted equilibrium toe-of-fill (ETOF) and FDEP approved mixing zone limits (65 m from shoreline), are estimated to total up to 1.0 acre of hardbottom. These temporary impacts would occur only during sand placement activities from the settling of sand particles [sedimentation]" (page 4-20). It is not clear why the DIFR/EA does not include a review of the ongoing monitoring required by the federal permit as input to the forecast for impacts from the federal civil works project. Specifically, a synthesis of the immediate post-construction, year 1 post-construction, and year 2 post-construction reports is absent. While the NMFS understands the year 3 monitoring event will be used by FDEP to determine permanent impacts, the monitoring information available suggests there have been, at a minimum, temporal impacts requiring additional mitigation. The NMFS recommends the final IFR/EA evaluates whether the County's project is likely to be in compliance with permit condition 44(i)(6). The final IFR/EA should also provide a synthesis of the available post-construction monitoring to refine impact predictions in live/hardbottom habitats located seaward of the ETOF.

Biological monitoring design does not reflect agreements between NMFS and the Jacksonville District: Permit condition 39 describes biological monitoring of nearshore live/hardbottom habitat. The District agreed to improve the statistical design of the monitoring by increasing the number of reference transects to ten (Permit condition 39(a)). According to the year 2 post-construction monitoring report, twenty transects were located between FDEP Monuments R-77.7 to R-112 in St. Lucie County and two reference transects were located at R-1 and R-3 in Martin County. While the report notes eight additional reference transects were surveyed in 2012 (as part of the pre-construction baseline), the data from these additional reference transects were neither analyzed nor included in the 2012 report for budgetary reasons. These data and analyses were, however, included in the immediate post-construction surveys and report comparing 2012 and 2013 survey data. The NMFS recommends the District affirm reports provide full

evaluations of all data required by the federal permit. The NMFS also recommends the final IFR/EA summarize the results of this monitoring.

Infaunal monitoring at the borrow site: Permit condition 51 describes monitoring of infauna at the borrow site, coordination of the sample site locations with the NMFS, and hydrographic monitoring to determine infilling rates at 12, 24, and 26 months after the 2013 construction. The required coordination with the NMFS occurred. The final IFR/EA District should provide the results of this monitoring.

Dredging Best Management Practices: The DIFR/EA states control of the dredging profile within the shoals may minimize impacts to the St. Lucie Shoal complex. These best practices include not dredging in some of the areas with higher elevations (i.e., leaving a "refuge"), not excavating below the surrounding elevation (i.e., avoid creating pits), and orienting the dredge template with the shoal long axis. The NMFS also recommends limiting the dredging to the prevailing downdrift flanks of the shoals, limiting the depths of the dredge cuts to 3 to 6 feet, and limiting the dredging within the offshore borrow area to the portions of the shoal expected to fill in most quickly once dredging has stopped.

EFH Conservation Recommendations

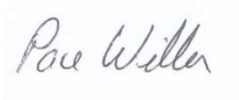
Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH Conservation Recommendations for any federal action or permit which may result in adverse impacts to EFH. Therefore, NMFS recommends the following to ensure the conservation of EFH and associated fishery resources:

- The Jacksonville District should not implement the St. Lucie County, Florida, Coastal Storm Risk Management Project until impacts authorized by permit SAJ-2009-03448 are determined and fully mitigated. Specifically:
    1. The remaining 0.79 acres of mitigation reef should be constructed as described in the federal permit in addition to any mitigation needed to offset the longer temporal lag that has resulted between burial of the live/hardbottom and establishment of the mitigation reefs.
    2. The final IFR/EA should describe quantitatively the status of the existing 1.1 acres of mitigation reef with regard to the established biological performance standards.
    3. The final IFR/EA should provide the amount of mitigation reef constructed in water depths less than 4.0 meters.
    4. The final IFR/EA should include a synthesis of the available post-construction monitoring reports and quantify direct and indirect impact predictions to live/hardbottom habitats seaward of the ETOF.
    5. The final IFR/EA should estimate temporal and direct impacts to nearshore live/hardbottom occurring as a result of project construction during 2013 based on the year 2 monitoring report (and year 3 if that information is available) and evaluate compliance with permit condition 44(i)(6).
    6. The year 3 monitoring report should reflect sampling and analysis of 10 reference areas the District agreed in July 2012.
    7. The final IFR/EA should summarize results from the infaunal monitoring at the borrow site.
    8. Dredging at the borrow site should limit dredging to the prevailing downdrift flanks of the shoals, limiting the depths of the dredge cuts to 3 to 6 feet, and limit the dredging to the portions of the shoal expected to fill in most quickly once dredging has stopped.
    9. A biological monitoring and adaptive management plan that reflects substantive input from NMFS for the nearshore hardbottom impacts is provided prior to the commencement of any new work in the project area.

Section 305(b)(4)(B) of the Magnuson-Stevens Act and implementing regulation at 50 CFR Section 600.920(k) require the Jacksonville District to provide a written response to this letter within 30 days of its receipt. If it is not possible to provide a substantive response within 30 days, in accordance with the "findings" with the Jacksonville District, an interim response should be provided to the NMFS. A detailed response then must be provided prior to final approval of the action. The detailed response must include a description of measures proposed by the Jacksonville District to avoid, mitigate, or offset the adverse impacts of the activity. If the response is inconsistent with the EFH conservation recommendations, the Jacksonville District must provide a substantive discussion justifying the reasons for not following the recommendations. As noted in the summary of the consultation history, this project may significant impact highly valued habitat. The regulations implementing Section 305(b) of the Magnuson-Stevens Act at 50 CFR 600.920(k)(2) allows the NOAA Assistant Administrator for Fisheries to request a meeting with the appropriate Department of Army headquarters official to discuss the proposed action and opportunities for resolving any disagreements. However, as provided for in the "findings" with the Jacksonville District, if the District's decision is inconsistent with EFH conservation recommendations, the NMFS will endeavor to resolve any such issues at the field level wherever possible.

Thank you for the opportunity to provide these comments. Please direct related questions or comments to the attention of Jocelyn Karazsia at our West Palm Beach Field Office, 400 North Congress Ave, Suite 110, West Palm Beach, Florida 33401, or at (561) 249-1925.

Sincerely,



/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc: COE, Paul.E.Stodola@usace.army.mil
BOEM, Douglas.Piatkowski@boem.gov
EPA, Miedema.Ron@epa.gov
USFWS, Ashleigh_Blackford@fws.gov
FDEP, Brendan.Biggs@dep.state.fl.us
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F/SER4, David.Dale@noaa.gov
F/SER47, Jocelyn.Karazsia@noaa.gov

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-0019

REPLY TO
ATTENTION OF

DEC 2 8 2016

Planning and Policy Division
Environmental Branch

Ms. Virginia Fay
NOAA Fisheries Service
Southeast Regional Office
263 13th Avenue South
Saint Petersburg, Florida 33701

Dear Ms. Fay:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) has received your Essential Fish Habitat (EFH) Conservation Recommendations provided by letter dated June 9, 2016, regarding the St. Lucie County, Florida, Coastal Storm Risk Management (CSRM) Study. The Corps and the Bureau of Ocean Energy Management (BOEM), Department of Interior, requested additional time to respond to your letter via email dated August 4, 2016. This extension was necessary in order for the Corps to re-evaluate the Federal interest (economic justification) of the northern reaches of the beach placement area. Please note that this analysis has resulted in the limitation of beach fill placement in that area between R-98 and R-99 to a transition from the design fill template near R-99 to no fill placement at R-98. Full beach fill placement is now proposed from R-99 to the St. Lucie and Martin County line. These changes with respect to beach fill placement have not resulted in significant changes to the offshore borrow area location and associated sediment volume needs located within the Outer Continental Shelf (OCS).

The Corps is the lead agency and BOEM is a cooperating agency under the National Environmental Policy Act for this study due to the proposed use of OCS sand resources located within a portion of the St. Lucie Shoal complex. BOEM is authorized under Public Law 103-426 [43 United States Code (U.S.C.) 1337 (k) (2)] to negotiate on a non-competitive basis the rights to OCS sand resources for shore protection projects. BOEM is expected to be requested to undertake a connected action (i.e., authorize use of the OCS borrow areas) that is related to, but unique from, the Corps' proposed action. BOEM's proposed action is to issue a negotiated agreement authorizing use of the sand source areas at the request of the local sponsor and the Corps. In accordance with Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act and its implementing regulations at 50 CFR 600.920(k), the Corps and BOEM are jointly providing the attached responses to your recommendations.

We believe that the responses and associated commitments contained in this letter fulfill the EFH consultation requirements pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and 50 CFR 600.920. Please direct comments and questions concerning this letter to Mr. Paul Stodola at 904-232-3271 or Paul.E.Stodola@usace.army.mil.

Sincerely,

for

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

Enclosures

cc:
Ms. Jocelyn Karazsia, National Marine Fisheries Service, 400 North Congress Avenue, Suite #110, West Palm Beach, Florida 33401
Mr. Doug Piatkowski, Bureau of Ocean Energy Management, 45600 Woodland Road, VAM OEP, Sterling, Virginia 20166
Mr. Pace Wilber, National Marine Fisheries Service, 217 Fort Johnson Road, Charleston, South Carolina 29412

St. Lucie County CSRM Study

Responses to EFH Conservation Recommendations

1. National Marine Fisheries Service (NMFS) Recommendation: The remaining 0.79 acres of mitigation reef should be constructed as described in the Federal permit in addition to any mitigation needed to offset the longer temporal lag that has resulted between burial of the live/hardbottom and establishment of the mitigation reefs.

Response: As reflected in the August 2015 "as-built survey (see attachment A)" and as cited in the corresponding September 18, 2015 "Mitigation Reef Certification Report (see Attachment B)", a total of 1.93 acres of mitigation reef were constructed in 2013 & 2015 – in excess of the 1.89 acres required by the Corps permit (Permit No: SAJ-2009-03448 [IP-GGL]). In addition, note that as identified in the August 31, 2015 "AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER" submitted to the Corps:

- Overall, the mitigation reef was built in substantial compliance with the plans and permit conditions. Adjustments to specific reef cell locations were made to comply with water depth requirements prescribed by the Corps and Florida Department of Environmental Protection (DEP) permits.
- Ocean Bay Site 5 was moved to the northeast and only ten cells were constructed at that site due to limited water depths within the limits of the archeological survey. No cells were constructed at Ocean Bay Site 6 due to too shallow water depths. The ten cells that were unable to be constructed at Ocean Bay due to too shallow of water depths were moved to Blind Creek. Five cells were added to the south end of Site 4 at Blind Creek; one cell to the south end of Blind Creek Site 3; four cells to the south end of Site 2.
- In addition, at Blind Creek Site 1 Cell 7 could not be constructed in the permitted location due to insufficient corridor width between cells and the previously constructed reef. This cell was moved to the south end of Site 2.

2. NMFS Recommendation: The final IFR/EA should describe quantitatively the status of the existing 1.1 acres of mitigation reef with regard to the established biological performance standards.

Response: Please see Attachment C, the 2015 Monitoring Report and Attachment D, the Florida Department of Environmental Protection review letter. In addition, ongoing monitoring results, including assessment of permit compliance, will be provided to NMFS upon completion of the associated reports. Natural hardbottom impacts are expected to be concluded in concert with the forthcoming 2016 monitoring report expected by January 2017. Although the 2016 report will assess fulfillment of permit conditions relative to the artificial mitigation reef, continued monitoring of the mitigation reef is expected through 2018 as required by the FDEP permit (Permit No. 0154626-001-JC), including documentation of compliance with "biological performance

standards". All of these pending reports will be provided to NMFS upon completion. Reference to the recently completed monitoring reports describing the status of the existing mitigation reef and the commitment to provide NMFS with future reports to ensure compliance with "biological performance standards" will be documented in the final IFR/EA.

3. NMFS Recommendation: The final IFR/EA should provide the amount of mitigation reef constructed in water depths less than 4.0 meters.

Response: As reflected in the as-built survey, 1.93 acres of mitigation reef were constructed in areas with ambient bottom elevations between -12' and -15' NAVD 88, consistent with the drawings (see Attachment A) approved by the Corps and included in the original Corps permit. At low tide these areas are expected to have ambient water depths between 9.37' and 12.37', less than 13.1' or 4m. In addition, note that the ocean bottom area surrounding the mitigation reef:

- is within the active nearshore littoral system – landward of the "depth of closure",
- was observed to accrete about 2 feet of sand associated with the passage of Hurricane Sandy in 2012, and
- has apparently experienced scouring around the individual reef cells after the reef construction – as is common with such structures in the nearshore region.

This summary related to the amount of mitigation reef constructed in water depths less than 4.0 meters will be documented in the final IFR/EA.

4. NMFS Recommendation: The final IFR/EA should include a synthesis of the available post construction monitoring reports and quantify direct and indirect impact predictions to live/hardbottom habitats seaward of the Equilibrium Toe of Fill.

Response: Construction of the Mitigation Reef was initiated in the summer of 2013, but was not completed until the summer of 2015. As identified in Special Conditions 32 and 33 of the Corps permit, it is anticipated that "success" of the Mitigation Reef will be assessed after 3 years following completion of the construction in 2018. Upon completion of the 2018 monitoring report, NMFS will be provided a copy for review and concurrence that "success" criteria have been met. To date, hardbottom impacts associated with the 2013 non-federal beach fill project appear to be within the "impact predictions". Per Specific Conditions 46 and 47 of the FDEP permit, the forthcoming 2016 Report (expected by January 2017) constitutes the "first (a year after construction)" year monitoring report, a "second and third annual mitigative artificial reef monitoring report shall be provided to NMFS upon completion. These monitoring reports are to address fulfillment of "all permit conditions." A summary of the status of post construction monitoring reports and commitment to provide NMFS with the 2018 monitoring report for review and concurrence that "success" criteria have been met will be integrated into the final IFR/EA.

5. NMFS Recommendation: The final IFR/EA should estimate temporal and direct impacts to nearshore live/hardbottom occurring as a result of project construction during 2013 based on the year 2 monitoring report (and year 3 if that information is available) and evaluate compliance with permit condition 44(i)(6).

Response: See response to NMFS Recommendation 4 cited above. Actual impacts to natural hardbottom are expected to be concluded by the forthcoming 2016 monitoring report – expected by January 2017. The 2016 report constitutes the final natural hardbottom monitoring report as required by Specific Condition 38 of the FDEP permit. A summary of the status of post construction monitoring reports and commitment to provide NMFS with future monitoring reports for review will be integrated into the final IFR/EA.

6. NMFS Recommendation: The year 3 monitoring report should reflect sampling and analysis of 10 reference areas the District agreed in July 2012.

Response: Ongoing monitoring and the year 3 monitoring report do and will reflect FDEP and Corps permit requirements to sample/analyze reference areas. The Scope of Work specifically cites for monitoring of natural hardbottom areas:

> A total of twenty (20) monitoring transects will be surveyed: ten (10) within the Project area, two (2) downdrift in Martin County, and eight (8) updrift in St. Lucie County, previously established in 2008/2009 and/or pre-construction monitoring in 2012. Transect positions and lengths are to be permanent.

7. NMFS Recommendation: The final IFR/EA should summarize results from the infaunal monitoring at the borrow site.

Response: In faunal monitoring results will be made available to NMFS upon completion of 2016 monitoring and completion of the associated report. The final IFR/EA will summarize these results.

8. NMFS Recommendation: Dredging at the borrow site should limit dredging to the prevailing downdrift flanks of the shoals, limiting the depths of the dredge cuts to 3 to 6 feet, and limit the dredging to the portions of the shoal expected to fill in most quickly once dredging has stopped.

Response: This recommendation implies that the proposed borrow area located within the St. Lucie shoal complex may recover through active littoral processes following dredging. However, this shoal complex is considered a relic feature and is not connected to the active littoral system. The Corps will continue to collect additional geotechnical and geophysical data within the proposed borrow area during Preconstruction Engineering and Design (PED). These more refined data will inform

the final borrow area design parameters prior to construction. The Corps and BOEM will coordinate with NMFS to develop a refined borrow area design that provides a sufficient volume of compatible sediment to support the project objectives while maintaining overall shoal integrity. The overall goal is to ensure that physical and biological processes following dredging are maintained within the St. Lucie shoal complex to the maximum extent practicable.

Based on the geophysical and geotechnical data that is currently available, the proposed borrow area design includes a dredging template that is oriented with the long axis of the shoal to minimize impacts to the overall shoal complex. Additionally, the Corps and BOEM are currently investigating the feasibility of maintaining a refuge patch at maximum shoal elevations to promote quicker biological recovery following dredging. However, additional analysis will need to be performed during PED to better understand the cumulative volume of sediment within the shoal complex relative to the identified volume of sediment needed to support the federal project. The Corps and BOEM will continue to coordinate with NMFS as additional information becomes available. The final IFR/EA will document a commitment to continue coordination with NMFS during PED as the borrow area design is refined.

9. NMFS Recommendation: A biological monitoring and adaptive management plan that reflects substantive input from NMFS for the nearshore hardbottom impacts is provided prior to the commencement of any new work in the project area.

Response: The DEP/Corps permits for the 2013 non-Federal beach fill project reference the approved Biological and Physical Monitoring Plans. Comparable monitoring (a) should be adequate for the reduced footprint associated with the proposed Federal project, and also (b) will likely be required for monitoring of the federal project per the associated State Water Quality Certification (DEP permit).

ATTACHMENTS TO THE CORPS RESPONSE LETTER DATED DECEMBER 28, 2016 CAN BE FOUND USING THE FOLLOWING LINK. CLICK ON ST. LUCIE COUNTY, THEN SCROLL DOWN TO ST. LUCIE COUNTY CSRM PROJECT AND CLICK ON APPENDIX G (ATTACHMENT 3).

http://www.saj.usace.army.mil/About/DivisionsOffices/Planning/EnvironmentalBranch/EnvironmentalDocuments.aspx

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

January 9, 2017 F/SER47:JK/pw

(Sent via Electronic Mail)

Colonel Jason A. Kirk, Commander
U.S. Army Corps of Engineers, Jacksonville District
701 San Marco Boulevard
Jacksonville, Florida 32207-0019

Attention: Paul E. Stodola

Dear Colonel Kirk:

NOAA's National Marine Fisheries Service (NMFS) reviewed the letter dated December 28, 2016, from the Jacksonville District regarding the *St. Lucie County, Florida, Coastal Storm Risk Management Project Draft Integrated Feasibility Report and Environmental Assessment* (DIFR/EA)[1]. The Jacksonville District's letter replies to conservation recommendations the NMFS provided by letter dated June 9, 2016, to protect essential fish habitat (EFH).

The NMFS and Jacksonville District have met several times to discuss the beach nourishment project authorized under permit SAJ-2009-03448 (IP-GGL). The DIFR/EA proposes continuing the beach nourishment as a federal civil works project for the next 50 years. By letter dated June 9, 2016, the NMFS provided a detailed consultation history for this project, including the steps taken by the NMFS, Jacksonville District, and St Lucie County to resolve objections the NMFS provided, under Part IV Sections 3(a) and 3(b) of the Clean Water Act Section 404(q) Memorandum of Agreement between the Department of Commerce and the Department of the Army, dated August 11, 1992 (MOA), during evaluation of the permit application. The NMFS removed its objections under the MOA after numerous meetings to develop special conditions for the permit. The comments and recommendations the NMFS provided on the DIFR/EA focused on the status of the actions required by those permit conditions and the continuation of those actions into the federal civil works project. As described below, it appears the permit conditions are not being implemented fully, in particular conditions pertaining to the amount of compensatory mitigation, monitoring of the mitigation, and monitoring of project impacts along the beach. Accordingly, the NMFS cannot conclude at this time that the proposed beach nourishment adequately minimizes impacts to EFH.

The NMFS recommended the Jacksonville District not implement the St. Lucie County, Florida, Coastal Storm Risk Management Project until impacts authorized by permit SAJ-2009-03448 are determined and mitigated fully. Specifically, the NMFS recommended:

[1] The Bureau of Ocean Energy Management is a cooperating agency under the National Environmental and Policy Act for the DIFR/EA because of the proposed use as beach fill of Outer Continental Shelf sand from the St. Lucie Shoal complex. The Jacksonville District proposes to increase beach and shoreline protection in the interest of hurricane protection, storm damage reduction, beach erosion control, and protection of public-trust natural resources for 3.4 miles of Atlantic shoreline from Florida Department of Environmental Protection Monument R-98 (just north of Normandy Beach Access) southward to the Martin County line. The tentatively selected plan would excavate sand from the St. Lucie Shoal complex for three nourishment events with the initial nourishment event requiring 530,400 cubic yards of material and the two subsequent events requiring an average of 380,000 cubic yards of material.

1. The remaining 0.79 acres of mitigation reef should be constructed as described in the federal permit in addition to any mitigation needed to offset the longer temporal lag that has resulted between burial of the live/hardbottom and establishment of the mitigation reefs.
2. The final IFR/EA should describe quantitatively the status of the existing 1.1 acres of mitigation reef with regard to the established biological performance standards.
3. The final IFR/EA should provide the amount of mitigation reef constructed in water depths less than 4.0 meters.
4. The final IFR/EA should include a synthesis of the available post-construction monitoring reports and quantify direct and indirect impact predictions to live/hardbottom habitats seaward of the ETOF.
5. The final IFR/EA should estimate temporal and direct impacts to nearshore live/hardbottom occurring as a result of project construction during 2013 based on the year 2 monitoring report (and year 3 if that information is available) and evaluate compliance with permit condition 44(i)(6).
6. The year 3 monitoring report should reflect sampling and analysis of 10 reference areas the District agreed in July 2012.
7. The final IFR/EA should summarize results from the infaunal monitoring at the borrow site.
8. Dredging at the borrow site should be limited to the prevailing downdrift flanks of the shoals, limiting the depths of the dredge cuts to 3 to 6 feet, and limit the dredging to the portions of the shoal expected to fill in most quickly once dredging has stopped.
9. A biological monitoring and adaptive management plan reflecting substantive input from the NMFS should be developed for the nearshore hardbottom impacts and provided to the NMFS prior to the commencement of future beach nourishment work.

Regarding recommendation 1, contrary to permit requirements, the District is using the sum of the acres defined by the perimeters of the mitigation reefs deployed in 2013 and 2015 at Blind Creek and Ocean Bay as the amount of mitigation reef provided. Special condition 23 of the permit states "The permittee shall create a minimum of 1.89 acres of hardbottom <u>substrate</u>" (page 9 of 27, emphasis added) and special condition 25 states "The perimeter of the mitigation site shall encompass <u>an area of 2.55 [acres] and the actual footprint of the artificial reefs shall cover 1.89 acres of the sea floor</u>" (page 9 of 27, emphasis added). While the perimeters encompass 1.93 acres (page 2 of the District's letter), this falls short of the perimeter required by special condition 25 and has an unknown relationship to the substrate requirement in special condition 23.

While conservation recommendation 2 requested information from the monitoring of the mitigation reefs deployed in 2013 and 2015, the District's response focused instead on the monitoring of hardbottom impacts at the fill site. The NMFS has not received information on the status of the monitoring of the mitigation reefs deployed in 2013 or 2015 other than the CSA report titled *The St. Lucie County South County Beach and Dune Restoration Project Immediate Post-Construction Mitigation Reef Monitoring Report* (September 2015). Please note the CSA report focuses on only 1.1 acres of mitigation reef construction[2], not all the mitigation reefs described in Appendix A.

Regarding recommendation 3, the NMFS appreciates the District providing the bathymetric survey results and analysis. It appears many of the reef placement areas were moved into deeper waters (-14 to -15 feet NAVD 88, maximum elevation) compared to what was proposed initially (-12 to -13 feet NAVD 88, maximum elevation). For example, please see cells 1 through 3 on sheet 8 of 14; cells 8 through 11

[2] Of the 1.52 acres of mitigation reef (perimeter) deployed, the percent net boulder cover and percent sand cover were 72.4 percent (1.10 acres) and 27.6 percent (0.42 acres), respectively (information from pages 1 and 30 of CSA 2015).

on sheet 10 of 14; cells 1 through 20 on sheet 11 of 14; and cells 1 through 12 on sheet 14 of 14. Despite these changes, the District concludes the reefs were constructed in water depths less than 4 meters, and the NMFS accepts the conclusion.

In response to recommendation 4, the District agrees to provide the NMFS with results from the three-year post-construction mitigation reef monitoring report (final monitoring event expected to be completed in 2018). In the interim, the NMFS requests a status report on each of the mitigation reefs constructed in 2013 and 2015. Please include in the status report any data available gauging performance of the reef with respect to the performance standards the NMFS and Jacksonville District developed as permit conditions 32(c) and 46(c), which specify successful mitigation must include no less than 6.0 percent cover by worm reef.

In response to recommendations 4 and 5, while the District agrees to provide a summary of the status of the post-construction monitoring reports for the direct and indirect impact predictions at the fill sites, the letter is inconsistent regarding this matter. The District's letter states "To date, hardbottom impacts associated with the 2013 non-federal beach fill project appear to be within the impact predictions." However, the District provided correspondence to St Lucie County from the Florida Department of Environmental Protection (FDEP) stating "The review letter for the 2014 biological monitoring report (dated 5/18/2015) noted loss of hardbottom resources due to encroachment of potentially project related sediment into the hardbottom area adjacent to the fill template (R-100 to R-113). Our [FDEP] review of the 2015 monitoring report combined with additional analysis of previous and current survey data suggest these <u>impacts have not receded</u>" (emphasis added). The NMFS requests the District resolve this inconsistency in the post-construction monitoring summary the District said would be provided during January 2017.

The District agrees to implement recommendations 6 and 7.

Regarding recommendation 8, the District and the Bureau of Ocean Energy Management (BOEM) agree to continue investigating the feasibility of maintaining a refuge patch in coordination with the NMFS; however, the other BMPs the NMFS recommended will not be followed because the shoal is a relic feature, rather than actively accreting. The BMPs are meant to minimize the effect of the dredging on localized currents created by water moving across the shoals. These localized currents include eddies and other features that concentrate prey and become feeding grounds for fishery species. The localized currents are not dependent on whether the shoal is accreting sand. Accordingly, the NMFS requests the District and BOEM re-evaluate their response to this conservation recommendation.

Regarding conservation recommendation 9, the District did not supply the monitoring and adaptive management plan the NMFS requested. Rather, the District indicates similar monitoring would occur as previously required under permits from the FDEP and Jacksonville District. Overall, the NMFS agrees the existing biological monitoring protocol is sufficient for the impact assessment. For this plan, the NMFS sees continued value in not reducing the number of reference sites, as reflected in the District's letter. Due to the low number of transects included in the monitoring, the NMFS recommends continued monitoring of permanent transects and quadrats rather than randomly selected transects and quadrats. The NMFS would like to have the opportunity to evaluate any future changes to the monitoring if changes are proposed.

As noted above, much of the information important to minimizing and mitigating impacts to EFH from nourishing the St Lucie County beaches with sand from the shoals is still in development. Accordingly, the need for an adaptive management plan for this project seems critical, especially in the case the year three biological monitoring plan determines hardbottom impacts detected in the 2014 and 2015

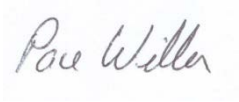
monitoring events have not receded and additional mitigation is needed to offset temporary or permanent hardbottom impacts. In addition, the adaptive management plan should address actions that may be required after the year three mitigation monitoring report and supporting data becomes available in order for St Lucie County to comply with special conditions contained in permit SAJ-2009-03448, in particular conditions 23, 25, 32(c), and 46(c), as discussed above.

Closing

In accordance with the intentions of 50 CFR 600.920(k)(2), the NMFS requests continued coordination between the Jacksonville District and the NMFS Habitat Conservation Division on the issues pertaining to the EFH recommendations for the reasons provided above.

Thank you for the opportunity to provide comments. Please direct related correspondence to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, 400 North Congress Avenue, Suite 110, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 249-1925, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,



/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc: COE, Paul.E.Stodola@usace.army.mil
COE, Gina.P.Ralph@usace.army.mil
BOEM, Douglas.Piatkowski@boem.gov
FWS, Ashleigh_Blackford@fws.gov
EPA, Miedema.Ron@epa.gov
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F/SER4, David.Dale@noaa.gov
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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

Planning and Policy Division
Environmental Branch

APR 3 2017

Ms. Virginia Fay
NOAA Fisheries Service
Southeast Regional Office
263 13th Avenue South
Saint Petersburg, Florida 33701

Dear Ms. Fay:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) and Bureau of Ocean Energy Management (BOEM), Department of Interior, have jointly reviewed the letter dated January 9, 2017, from the National Marine Fisheries Service (NMFS) regarding the St. Lucie County, Florida, Coastal Storm Risk Management Study. This was the second letter issued by NMFS on the study, and was written in response to our letter dated December 28, 2016. The outstanding recommendations and concerns described by NMFS are primarily directed towards the status of actions taken by St. Lucie County as required by Department of the Army (DA) Permit SAJ-2009-03448. We have since conducted extensive coordination with Corps Regulatory Division (RD) and St. Lucie County in order to compile and thoroughly analyze all relevant documentation required by the permit to further address your recommendations and concerns.

Your primary recommendation is that the Corps should not implement the St. Lucie County, Florida, Coastal Storm Risk Management until impacts associated with St. Lucie County's previously completed shore protection project (DA Permit SAJ-2009-03448) are determined and fully mitigated. Corps RD has reviewed all documentation provided by St. Lucie County and has determined that the beach placement, mitigation, and monitoring have been performed in compliance with the County's permit. We defer to RD's determination that all permit conditions have been satisfied and have revised the Final Integrated Feasibility Report and Environmental Assessment accordingly, including reference to all relevant documentation in support of the determination. Please find the enclosed RD compliance letter dated April 3, 2017.

As stated in our previous letter, the Corps and BOEM will continue to informally coordinate with NMFS as additional data become available during Pre-Construction Engineering and Design (PED) to develop a refined St. Lucie Shoal/borrow area design that provides a sufficient volume of compatible sediment to support the project objectives while maintaining overall shoal integrity. During PED, the Corps and BOEM will continue to investigate the feasibility of maintaining a refuge patch at maximum shoal elevations to promote quicker biological recovery following dredging. Additionally, the Corps and BOEM will coordinate with NMFS and St. Lucie County in the development of any future monitoring plans.

We are aware that NMFS issued a letter dated January 30, 2017, to Corps RD regarding public notice of DA Permit SAJ-2009-03448. The notice pertained to a request from St. Lucie County to modify its permit to perform additional beach nourishment between Florida Department of Environmental Protection monuments R-98 to R-115 plus an additional 1000 feet. It is our understanding that Corps RD is preparing a response to your letter, and will be providing information on the monitoring of the mitigation reefs deployed by St. Lucie County as a component of that response.

We believe that the responses contained in this letter fulfill the EFH consultation requirements pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and 50 CFR 600.920. With the exception of our commitment to continue informal coordination with the NMFS regarding St. Lucie Shoal, this concludes the EFH coordination process.

Sincerely,

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

Enclosures

cc:

Mr. Pace Wilber, National Marine Fisheries Service, 217 Fort Johnson Road, Charleston, SC 29412
Ms. Jocelyn Karazsia, National Marine Fisheries Service, 400 North Congress Avenue, Suite #110, West Palm Beach, FL 33401
Mr. Doug Piatkowski, Bureau of Ocean Energy Management, 45600 Woodland Road, VAM OEP, Sterling, VA 20166
Ms. Linda Knoeck, U.S. Army Corps of Engineers, 4400 Pga Boulevard, Suite #500, Palm Beach Gardens, FL 33410

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
PENSACOLA REGULATORY OFFICE
41 NORTH JEFFERSON STREET, SUITE 301
PENSACOLA, FLORIDA 32502

REPLY TO
ATTENTION OF

APRIL 3, 2017

Regulatory Division
South Branch
Enforcement Section
SAJ-2009-03448 (IP-GGL)

St. Lucie County Erosion District
Attn: Richard Bouchard
2300 Virginia Avenue
Ft. Pierce, Fl 34982

Dear Mr. Bouchard:

Reference is made to Department of the Army permit SAJ-2009-03448 issued on January 27, 2012. The project was to stabilize and restore approximately 3.4 miles of beach and dune along the South Beach shoreline of St. Lucie County, using approximately 485,900 cubic yards of fill dredged from an offshore borrow area or from upland sources. The beach and dune restoration site is located in St. Lucie County, and extends from Department reference monument R-98 to the St. Lucie / Martin County Line at R-115+1000, Sections 27, 34, 35, Township 36 and 37 South, Range 41 East, Atlantic Ocean. Two mitigation reefs are included in the project and are in the Atlantic Ocean off of St. Lucie County.

Representatives of the U.S. Army Corps of Engineers (Corps) conducted a file review on March 27, 2017. The file review confirmed the work authorized by the permit has been completed. Corps personnel reviewed the file for this project and noted all conditions of the permit are currently in compliance.

Thank you for your cooperation with our regulatory program. If you have any questions or concerns regarding this matter contact Mr. Terry Wells at the letterhead address or via email at Terry.e.wells@usace.army.mil or by telephone at 850-433-8860.

Sincerely,

TRULOCK.SHELLEY.FAYE.1230638663

Digitally signed by TRULOCK.SHELLEY.FAYE.1230638663
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=TRULOCK.SHELLEY.FAYE.1230638663
Date: 2017.04.03 09:46:45 -04'00'

Shelley Trulock
Acting Chief, Enforcement Section

ATTACHMENTS TO THE CORPS RESPONSE LETTER DATED DECEMBER 28, 2016 CAN BE FOUND USING THE FOLLOWING LINK. CLICK ON ST. LUCIE COUNTY, THEN SCROLL DOWN TO ST. LUCIE COUNTY CSRM PROJECT AND CLICK ON APPENDIX G (ATTACHMENT 3).

http://www.saj.usace.army.mil/About/DivisionsOffices/Planning/EnvironmentalBranch/EnvironmentalDocuments.aspx