

APPENDIX F

PERTINENT CORRESPONDENCE

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MEMO

24360.06

June 17, 2008

To: Paden Woodruff, FDEP Bureau of Beaches & Shores
Via: Richard Bouchard, P.E. – St. Lucie County
From: Walker Dawson - via: Michael Walther, P.E. – Coastal Tech

Re: Critically Eroded Beaches & Public Access in South St. Lucie County

This MEMO is to summarize:

- a review and recommended update of FDEP's June 2007 report titled "Critically Eroded Beaches in Florida" as related to south St. Lucie County, and
- an assessment of public beach access throughout the *Study Area* (R77 to Martin County line) for the purpose of determining: (a) the length of shoreline eligible for State cost-sharing, and (b) potential access improvements to increase the length of eligible shoreline.

On behalf of St. Lucie County, we request that FDEP:

- a) designate the entire *Study Area* as "critically eroded", and
- b) accept that 86% of the *Study Area* is eligible for State-cost sharing at 50% - subject to public access improvements as identified herein.

Please note the following:

Critically Eroded Classification: FDEP oversees the Florida Beach Management Program "to develop and execute a comprehensive, long range, statewide beach management plan for erosion control, beach preservation, restoration, nourishment and storm protection for the critically eroded shoreline of the State of Florida" [§62B36.003(1), F.A.C.].

The governing rules of this Program [§62B36.003(1), F.A.C.] state:

"Critically Eroded Shoreline" is a segment of shoreline where natural processes or human activities have caused, or contributed to, erosion and recession of the beach and dune system to such a degree that upland development, recreational interests, wildlife habitat or important cultural resources are threatened or lost. Critically eroded shoreline may also include adjacent segments or gaps between identified critical erosion areas which, although they may be stable or slightly erosional now, their inclusion is necessary for continuity of management of the coastal system or for the design integrity of adjacent beach management projects.

Figure 1 depicts the shoreline in St. Lucie County currently designated by FDEP as "Critically Eroded Shoreline". Within the *Study Area* (R77 to Martin County Line) of the "South County Beach Project", there are two segments that are currently designated as "non-critical":

- 1) from R77 to R80, and
- 2) between Sand Dollar Shores (R-90.3) and Normandy Beach Access (R-98)



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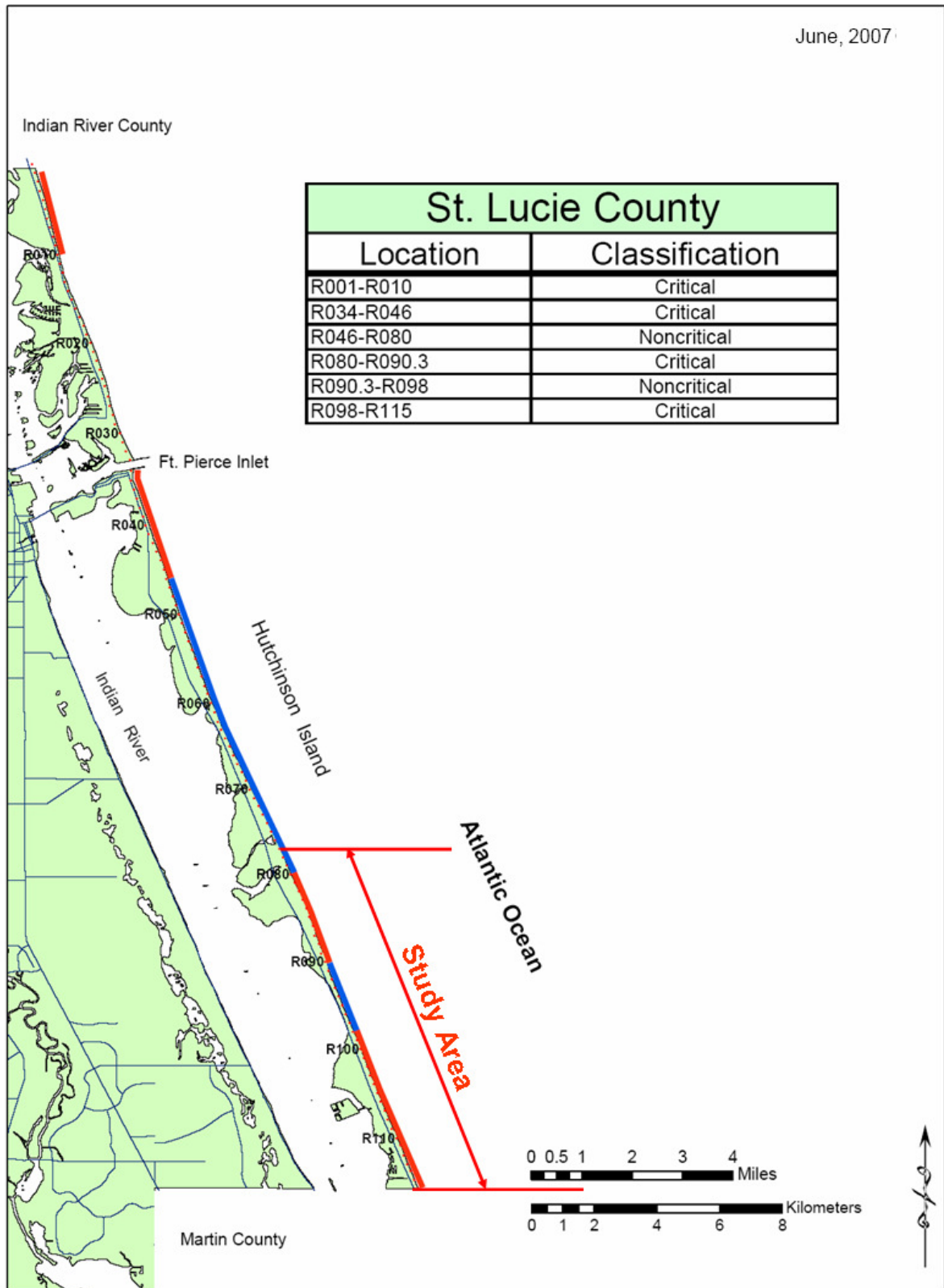


Figure 1 - FDEP critical erosion map for St. Lucie County (FDEP, 2007)



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As identified in Figure 2, these segments have experienced the highest volumetric and shoreline losses in the *Study Area* with the peak shoreline changes near 80 feet and the peak volumetric change rate near 40 cy/ft for the period from 1972 to 2006.

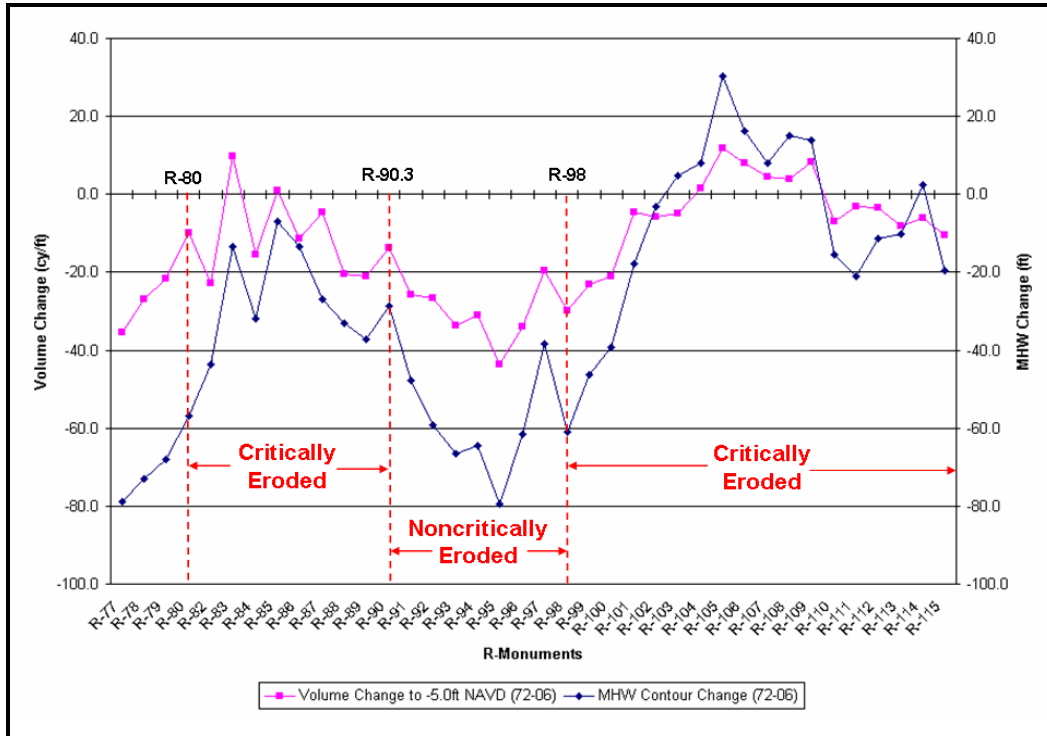


Figure 2 – Volumetric & Shoreline Changes in *Study Area*

These two segments, currently designated as “non-critical”, should be designated as “critically eroded” for the following reasons:

- 1) For the northernmost segment (R77 to R80):
 - a) Big Mud Creek Beach Access (R-78+800S to R-79+50S) constitutes a “recreational interest” that is “threatened” by erosion.
 - b) This segment is mostly undeveloped and includes “wildlife habitat” for turtles and shorebirds that is “threatened” by erosion.
 - c) This segment is immediately north of the FP&L Nuclear Power Plant, and
 - Reference monument R80 is located about 600 north of the northern edge of the northern cooling canal.
 - The cooling canals are a crucial part of the facilities operation.
 - There is no armoring between the canals and the beach.
 - The discharge canal pipe is partially exposed behind the dune.

Nourishment of this segment is needed to reasonably provide a feeder beach updrift of the FP&L Plant to provide “for continuity of management of the coastal system” and “for the design integrity of the adjacent beach management project” anticipated surrounding the FP&L Plant which is included in a “critically eroded shoreline” segment.



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- 2) For the segment between R90.3 to R98:
 - a) The “Narrows” (R-93 to R-98) has a barrier island width that ranges from 300 to 500 feet from the Atlantic Ocean to the Indian River Lagoon. Within the “Narrows”, infrastructure (roads & stormwater improvements) has been constructed to support the platted single family development (“Diamond Sands Subdivision No. 2”). State Road A1A also traverses this stretch of barrier island and is the only evacuation route available to the residents of the barrier island. This “upland development” is “threatened” by erosion.
 - b) This segment is mostly undeveloped and includes “wildlife habitat” for turtles and shorebirds that is “threatened” by erosion.
 - c) Nourishment of this segment is needed to reasonably provide a feeder beach updrift of the shoreline segment to the south (R98+) to provide “for continuity of management of the coastal system” and “for the design integrity of the adjacent beach management project” anticipated for the downdrift segment which is designated as “critically eroded shoreline”.

Public Access & State Cost-sharing: The governing rules of the Department’s Program [§62B-36.003(4)] require that: “Beach and dune restoration and nourishment projects funded by the Department shall be accessible to the general public and access shall be maintained for the life of the project.” To be eligible for state cost-sharing, a shoreline segment must be (a) designated as “critically eroded” and (b) have “public accessibility” per the criteria cited in Section 62B-36.007. As part of this assessment, the following three alternate conditions are examined:

- Existing Conditions
- *Study Area* classified as critically eroded
- *Study Area* classified as critically eroded with access improvements

Figure 3a identifies the eligible segments of shoreline for the existing conditions and Figure 3b identifies eligible segments of shoreline for two (2) alternate conditions. Table 1 summarizes the inventory of existing public beach access. Table 2 summarizes total shoreline eligibility for these three alternate conditions. It appears feasible to construct improvements at Dolman (add 70 parking spaces & restrooms), and Waveland Park (add 30 parking spaces) to yield additional “Primary” access sites. With these improvements at Dolman and Waveland to become “Primary” access sites, the shoreline beyond that access site that would have “public accessibility” is extended from $\frac{1}{4}$ to $\frac{1}{2}$ mile; note that the extended shoreline overlaps with adjacent shoreline associated with the Normandy access, the Vistana Beach Club, and the Turtle Reef club, respectively. With these improvements and with the re-classification of the entire *Study Area* shoreline to “critically eroded”, the percentage of shoreline eligible for state cost sharing would increase from 53% to 86% - as reflected in Table 2 and Figure 3b. It should be noted that the evaluation of the *Study Area* and the corresponding state cost-sharing eligibility is ongoing and may change based on additional improvements not identified within this MEMO.



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Table 1 - Existing Public Access in Study Area

Access Site Shoreline Frontage R-Monuments	Beach Access (Public Lodging)	Parking Spaces (% Rooms)	Public Restrooms	Beach Access Classification	Shoreline with "public accessibility" beyond access site (feet)
R-78+800S to R-79+50S	Big Mud Creek	25 (see note)	No	Secondary	1,320
R-85 to R-87+200S	Walton Rocks	100	Yes	Primary	2,640
R-90+300S to R-91+300S	Ocean's Bay	25 (see note)	No	Secondary	1,320
R-93+400S to R-93+550S	Herman's Bay	20 (see note)	No	Secondary	1,056
R-98+300S to R-98+400S	Normandy	25	No	Secondary	1320
R-101+400S to R-103+300S	Dolman	30 (see note)	No	Secondary	1,320
R-106+100S to R-106+450S	(Island Beach Club)	(100%)	--	Public Lodging	--
R-110+600S to R-111+200S	Waveland	70	Yes	Secondary	1,320
R-112+750S to R-113	(Vistana Beach Club)	(100%)	--	Public Lodging	--
R-113 to R-113+450S	(Turtle Reef Club)	(100%)	--	Public Lodging	--
R-114+950S to R-115+300S	(Courtyard Marriott)	(100%)	--	Public Lodging	--
Martin County	Glascok	25	No	Secondary	1,320

Note: Number of Parking Spaces is estimated for unimproved parking areas without delineated spaces

Table 2 - Eligible Shoreline – under Alternate Conditions

Access Site Shoreline Frontage R-Monuments	Beach Access/Public Lodging	Total Eligible Shoreline (ft)		
		Existing Conditions	Study Area Classified as Critically Eroded	Study Area Classified as Critically Eroded w/ access improvements
R-78+800S to R-79+50S	Big Mud Creek	370	2,890	2,890
R-85 to R-87+200S	Walton Rocks	7,516	7,516	7,516
R-90+300S to R-91+300S	Ocean's Bay	390	3,640	3,640
R-93+400S to R-93+550S	Herman's Bay	--	2,260	2,260
R-98+300S to R-98+400S	Normandy	1,858	2,883	2,883
R-101+400S to R-103+300S	Dolman	4,468	4,468	5,978
R-106+100S to R-106+450S	Island Beach Club	340	340	340
R-110+600S to R-111+200S	Waveland	2,965	2,965	5,195
R-112+750S to R-113	Vistana Beach Club	285	285	285
R-113 to R-113+450S	Turtle Reef Club	450	450	450
R-114+950S to R-115+300S	Courtyard Marriott	370	370	370
Martin County	Glascok	1,000	1,000	1,000
Total Eligible Shoreline (ft):		20,012	29,067	32,807
Total Eligible Shoreline (%):		53%	76%	86%





Figure 3a – Eligible Shoreline – under Existing Conditions



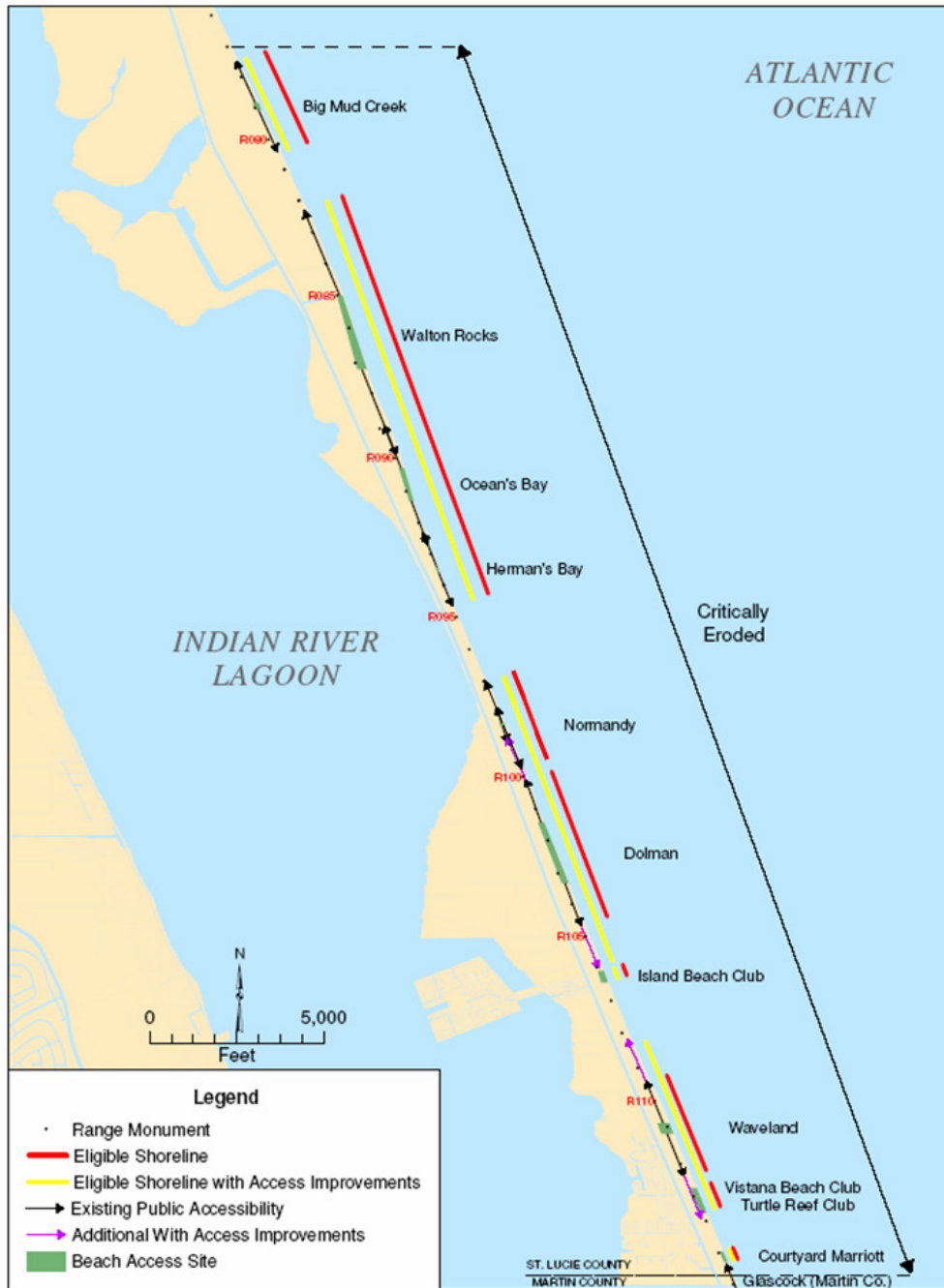


Figure 3b – Eligible Shoreline – under Alternate Conditions





FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

Mr. Eric P. Summa
Acting Chief, Environmental Branch
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

September 4, 2008

Re: DHR Project File No.: 2008-05091 (2007-4714)
Received by DHR: August 4, 2008
1A-32 Permit No.: 0708.16
DRAFT REPORT: *Historic Assessment and Submerged Cultural Resources Remote Sensing Survey of Four Borrow Areas for Martin and St. Lucie Counties Shore Protection Projects, Florida*

Dear Mr. Summa:

Our office received and reviewed the above referenced draft survey report in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and 36 *C.F.R., Part 800: Protection of Historic Properties*, and Chapter 267, *Florida Statutes*, for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the National Register of Historic Places (NRHP).

Between September 2007 and June 2008, Southeastern Archaeological Research, Inc. (SEARCH) conducted an underwater remote sensing survey of four proposed sand borrow areas for shore protection projects. The survey was conducted on behalf of the U.S. Army Corps of Engineers. SEARCH identified twenty-one magnetic anomalies within the surveyed areas during the investigation.

SEARCH determined that a cluster of four magnetic anomalies in Borrow Area C (M3 – M6) may represent a significant cultural resource and should be avoided by dredging. The U.S. Army Corps of Engineers recommends that the cluster be avoided with a 500-foot buffer zone.

SEARCH also located two previously recorded historic shipwrecks (8SL29 and 8SL30) outside of the project area. SEARCH did not locate the previously recorded America Wreck (8SL28) but determined that it does not exist in project area.

The U.S. Army Corps of Engineers determined that, contingent upon the preservation of the anomaly cluster with the 500-foot buffer zone, no historic properties will be affected by the proposed dredging project.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6436

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6452

☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

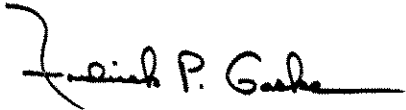
Mr. Summa
September 4, 2008
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Based on the information provided, our office concurs with the determinations of the U.S. Army Corps of Engineers and finds the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code*.

However, the final report should include information regarding the weather at the time of the remote sensing survey. Also, the report should include the location where project records will be curated.

For any questions concerning our comments, please contact April Westerman, Historic Preservationist, by electronic mail at amwesterman@dos.state.fl.us, or by phone at (850) 245-6333. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,

A handwritten signature in black ink, appearing to read "Frederick P. Gaske", with a long horizontal flourish extending to the right.

Frederick P. Gaske, Director, and
State Historic Preservation Officer

Xc: Louis Tesar, Bureau of Archaeological Research



Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

December 5, 2008

Mr. Michael Walther, P.E.
Coastal Technology Corporation
3625 20th Street
Vero Beach, Florida 32960-2409

RE: South Saint Lucie County, Florida – Critically Eroded Beaches

Dear Mr. Walther:

This letter is in response to your request for designation as critically eroded beaches that segment of beach between FDEP reference monuments R-77 to R-80, and between monuments R-90.3 and R-98, in Saint Lucie County.

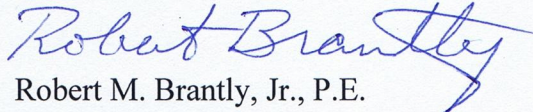
This most recent request for review of the critically eroded beaches designation was received in a memorandum from you dated June 17, 2008.¹ After consideration of this request, the Bureau's coastal engineering staff indicated in personal communications with you and the Bureau's project managers that it still could not recommend designation of these areas as critically eroded. This was reiterated during our meeting on August 20, 2008. At this meeting, it was agreed that a draft preliminary design document would be submitted to the Bureau for evaluation by the engineering staff. The preliminary design document was received on September 25, 2008, and the engineering staff has completed a review of the document.

Based upon the information provided in the draft preliminary design document, as well as previous memoranda and assessments prepared by the County and the Bureau, the engineering staff still cannot recommend designation of the above referenced shoreline segments as critically eroded. The available engineering data does not support designation of these areas as necessary for continuity of management or for the design integrity of the proposed beach restoration project. Although these areas have experienced severe storm erosion, the available engineering data does not indicate erosion to such a degree that upland development, recreational interests, wildlife habitat or important cultural resources are threatened or lost.

Mr. Michael Walther, P.E.
December 5, 2008
Page 2

As part of the annual update of the Department's Critically Eroded Beaches Report, the Bureau staff will evaluate the erosion designation of Florida beaches based upon new engineering data indicating changes in the beach and dune conditions.

Sincerely,



Robert M. Brantly, Jr., P.E.
Coastal Engineering Program Administrator
Bureau of Beaches and Coastal Systems

RMB/

cc: Richard Bouchard, P.E., St. Lucie County
Michael Barnett, P.E., FDEP-Beaches
Paden Woodruff, FDEP-Beaches

¹ Previously, the County requested designation of this segment of beach as critically eroded in a memorandum dated August 13, 2007, followed by the submittal of a memorandum dated February 8, 2008. After consultation with the County and its consultant, the Department did not designate this area in the June 2008 update of the Critically Eroded Beaches Report.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960



May 27, 2009

Eric P. Summa
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, Florida 32232-0019

Service Log No.: 41420-2009-FA-0389
Date Received: February 9, 2009
Applicant: U.S. Army Corps of Engineers
Project: Beach Renourishment in
CBRA Unit P11
County: St. Lucie

Dear Mr. Summa:

The Fish and Wildlife Service (Service) has reviewed the maps and other information submitted by the U.S. Army Corps of Engineers (Corps) for the project listed above. This letter is submitted in accordance with Section 6 of the Coastal Barrier Resources System Act (CBRA). CBRA requires that the appropriate Federal officer consult with the Secretary of the Interior before making Federal expenditures or financial assistance available within the System.

PROJECT DESCRIPTION

The Corps is requesting a consistency determination for an action affecting CBRA Unit P11 Hutchinson Island, located in St. Lucie County, Florida. Specifically, the Corps would like to evaluate the feasibility of providing shoreline erosion protection, hurricane and storm damage reduction, and related purposes to the shores of St. Lucie County, Florida. In the original letter dated February 6, 2009, the Corps proposes to renourish 5 miles of shoreline from the Sand Dollar Shores Development (R-88) south to the county line (R-115). The Corps also requested information regarding any restrictions under CBRA for structural and nonstructural shore protection measures.

A second letter from the Corps was submitted on March 12, 2009, and provided further clarification to the original letter of request. The Corps identified two possible project alternatives, the first of which is to renourish 7.2 miles of shoreline from the Sand Dollar Shores development (R-88) south to the county line (R-115). The second alternative is to renourish approximately 3.6 miles of beach within three CBRA Unit P11 excluded areas which are located



approximately between monuments R-81 to R-84, R-89 to R-90, and R-100 to R-101, plus the remaining southern 2.4 miles of St. Lucie County beach outside the CBRA Unit P11. Additionally, the Corps is requesting a consistency determination with regard to measures to reduce “end losses” under this alternative such as terminal groins, groin fields, and breakwaters.

CBRA CONSISTENCY DETERMINATION

Portions of the project area described in the first alternative are within Unit P11 Hutchinson Island. Unit P11 is part of the System, located east of Port St. Lucie, Florida. This area supports suitable habitat for species listed under the Endangered Species Act of 1973, as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*), including the threatened piping plover (*Charadrius melodus*), threatened loggerhead sea turtle (*Caretta caretta*), endangered green sea turtle (*Chelonia mydas*), endangered leatherback sea turtle (*Dermochelys coriacea*), and endangered hawksbill sea turtle (*Eretmochelys imbricata*). The beaches of St. Lucie County support the fifth highest nesting density of sea turtles in Florida. The purposes of CBRA are to minimize the loss of human life, wasteful expenditure of Federal revenues, and damage to fish, wildlife, and other natural resources associated with units of the System.

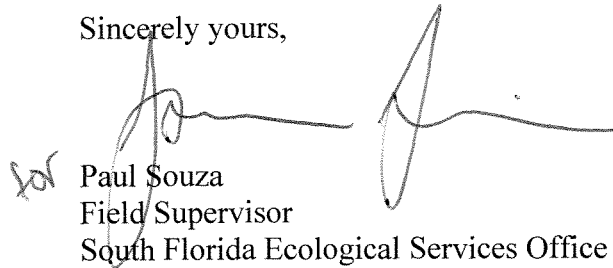
Section 6 of the CBRA provides an exception to Section 5, *Limitations on Federal Expenditures Affecting the System*, if the expenditure is for nonstructural shoreline stabilization projects that are designed to mimic, enhance, or restore a natural stabilization system.

Upon review of the St. Lucie County property appraisal maps, the primary ownership of land outside the excluded parcels of Unit P11 are privately owned and not under any perpetual conservation designation. Without permanent protection of the environmental attributes of these privately owned parcels, it is anticipated that renourishment of the beaches may encourage development of the privately owned parcels. Therefore, it is our conclusion that the proposed action as described in the first alternative does not meet the exception definition under Section 6 of CBRA.

We have no comment on the renourishment activities under the second alternative since they would occur within excluded areas that are outside the boundary of Unit P11. However, the placement of end structures such as groins or jetties within the excluded areas to maintain renourished sand in these areas is not consistent with CBRA. These structures would impede natural sediment transport and may accelerate erosion throughout the entire CBRA unit. This would cause indirect adverse effects to the natural environment for which this unit was designed to protect.

Thank you for your cooperation and effort in protecting federally listed species. If you have any questions regarding this project, please contact Debbie DeVore at 772-562-3909, extension 324.

Sincerely yours,

A handwritten signature in dark ink, appearing to be 'Paul Souza', is written over a horizontal line. To the left of the signature, the letters 'for' are handwritten in a cursive style.

Paul Souza
Field Supervisor
South Florida Ecological Services Office

cc:

Service, Arlington, Virginia (Katie Niemi)

Service, Atlanta, Georgia (Cindy Bohn)



September 14, 2009

Ms. Merrie Beth Neely, Ph.D.
Florida Department of Environmental Protection
Bureau of Beaches and Coastal Systems
5050 W. Tennessee Street, Building B
Tallahassee, FL 32304

RE: Proposed South County Beach Project for St. Lucie County, Florida

Dear Ms. Neely:

St Lucie County Growth Management has reviewed the above captioned project and finds that on a preliminary basis the proposal is consistent with the goals, objectives and policies found in the St Lucie County Comprehensive Land Use Plan (CLUP) and the requirements of the Land Development Code (LDC).

The relevant CLUP language is as follows:

- Goal 7.1 states: Balancing growth and coastal resources, all development proposed in the future land use element in the coastal area shall occur in a manner which protects, conserves and enhances the natural resources of the coastal area and the environmental, social and economic benefits attributed to them.
- Objective 7.1.5 states, in part, the following: St Lucie County shall provide for the protection and restoration of beaches and dunes.
- Policy 7.1.5.3 states: The beach renourishment projects currently recommended by the US Army Corp of Engineers and Florida Department of Environmental Protection shall be supported if shown to comply with the measures of Goal 7.1.

The relevant LDC provisions are as follows:

- Chapter 6.02.01(C)(1)(b) and (c) which provide that all development in the coastal area is required to protect environmentally sensitive resources and habitats. Moreover, development that alters or degrades resources or habitats is not allowed except where it is necessary to meet a demonstrated public need and that the activity will be carried out in a manner least damaging to the habitat.

St Lucie County demonstrates consistency with the above CLUP goals, objectives and policies and LDC provisions as follows:

1. The proposed project is in an area of South Hutchinson Island determined by FDEP to be critically eroded, which qualifies the project area for state funding. Subsequent to submittal of the permit application, the proposed project is expected to be adopted by the Florida Department of Environmental Protection as part of the State of Florida Strategic Beach Management Plan, which complies with Policy 7.1.5.3.
2. Erosional losses lead to habitat losses for natural resources and/or protected species within the coastal zone, as well as potential reduction in recreational uses by the general public. The proposed project entails placement of approximately 610,034 cubic yards of beach-compatible sand over approximately 3.8 miles of beach to partially restore the beach and dune in southern St. Lucie County in two segments (a) from FDEP reference monuments R87.7 to R90.3 and (b) from reference monument R98 to the St. Lucie County/Martin County Line. This provides for the direct protection and restoration of beaches and dunes, as outlined in Objective 7.1.5.
3. The proposed project design mimics the existing and historical characteristics of south St Lucie County shoreline, and involves planting the restored dune with appropriate salt-tolerant native vegetation. The proposed project therefore protects, conserves, and enhances natural resources (Goal 7.1), as well as protects and restores beaches and dunes (Objective 7.1.5), by providing restored habitat.
4. The proposed project is being designed to avoid or minimize impacts to on- and off-shore animal and vegetation communities as the proposed fill is predicted to impact 1.08 acres of nearshore hardbottom. These impacts are necessary to meet a demonstrated public need and the activity is proposed to be carried out in a manner least damaging to the habitat, as outlined in Chapter 6.02.01(C)(1)(b) and (c). Appropriate mitigation for impacts to hardbottom will be developed concurrent with federal/state permit processing, which is also consistent with the intent of Objective 7.1.5.3.

I trust the above to be helpful, please do not hesitate to contact me if you have questions or require further information.

Sincerely,



Mark Satterlee, AICP
Growth Management Director

Cc:

Christopher Steers, Assistant County Administrator
Karen Smith, Environmental Resources Director
Don West, Public Works Director
Richard Bouchard, Erosion District Manager



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
4400 PGA BOULEVARD, SUITE 500
PALM BEACH GARDENS, FLORIDA 33410

August 16, 2010

REPLY TO
ATTENTION OF

Palm Beach Gardens Regulatory Section
SAJ-2009-3448(IP-GGL)

James F. Bennett
Bureau of Ocean Energy Management, Regulation, and Enforcement
Environmental Division Branch of Environmental Assessment
MS4042
381 Elden Street
Herndon, VA 20170

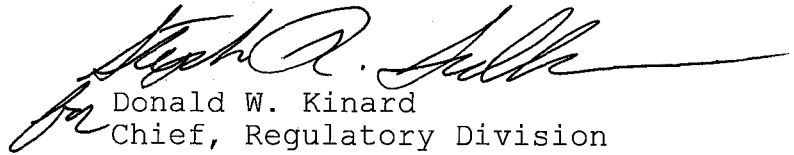
Dear Mr. Bennett:

In accordance with regulations pertaining to the National Environmental Policy Act (Title 40 of the Code of Federal Regulations, part 1501.6), the Jacksonville District Corps of Engineers (Corps) is formally inviting the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEM) to become a cooperating agency for an Environmental Impact Statement (EIS) during the required NEPA process on the St. Lucie County South Beach and Dune Restoration Project (Project).

The project purpose is to stabilize and restore the beach and dune between Florida Department of Environmental Protection Shoreline Monuments (FDEP) Monuments R-88.5 to R-90.3, and R-98 to the St. Lucie/Martin County line. One alternative will evaluate stabilizing the beach and dune by placing approximately 610,000 cubic yards of beach compatible sand along the proposed project's beach. The sand is proposed to be hopper-dredged from shoals three to six miles offshore. The Project involves the use of BOEM resources located seaward of the three mile statutory mile limit, therefore, the Corps requests BOEM serve as a cooperating agency. The Corps further requests that BOEM serve as a cooperating or joint agency on environmental requirements related to the Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Coastal Zone Management Act, and Magnuson-Stevens Fishery Management and Conservation Act. This letter serves as the coordinating request prescribed for ESA Section 7 (50 CFR 402), NHPA Section 106 (36 CFR 800), Subpart C Consistency (15 CFR 930), and Magnuson-Stevens Section 305 (50 CFR 600). Pursuant to 50 CFR 402, and upon receipt of BOEM's agreement to serve as a cooperating agency, the Corps will notify the U.S Fish and Wildlife Service and the National Marine Fisheries Service of the Corps's lead role and BOEM's cooperating role.

Please advise us at your earliest convenience as to your agency's willingness to serve as a cooperating agency for the Project. Mr. Garrett Lips is the major point of contact and he may be reached at 561-472-3519.

Sincerely,


Donald W. Kinard
Chief, Regulatory Division

Copy Furnished (w/o encls):
NMFS, Jocelyn Karaszia (email)
NMFS, Audra Livergood, (email)
USFWS, Jeff Howe, (email)



United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION, AND ENFORCEMENT

Washington, DC 20240

Mr. Donald Kinard
U.S. Army Corps of Engineers - Jacksonville District
Regulatory Division, Palm Beach Gardens Regulatory Section
4400 PGA Boulevard, Suite 500
Palm Beach Gardens, Florida 33410

Dear Mr. Kinard:

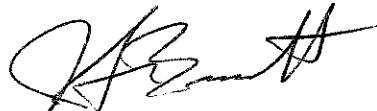
Thank you for your August 16, 2010, letter requesting that the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) become a cooperating agency during the preparation of an Environmental Impact Statement (EIS) for the St. Lucie County South Beach and Dune Restoration Project. The proposed action, being evaluated by the U.S. Army Corps of Engineers (Corps) under its regulatory authority, may involve beach nourishment of two separate reaches in St. Lucie County using sand from borrow areas more than 3 to 6 miles offshore.

The BOEMRE welcomes the opportunity to participate in this National Environmental Policy Act (NEPA) effort and agrees to serve as a cooperating agency since BOEMRE has jurisdiction over mineral leasing on the Outer Continental Shelf (OCS). As a cooperating agency, BOEMRE expects to: participate and provide input in the NEPA process at the earliest possible time; assume, on the request of the Corps, responsibility for developing information and preparing environmental analyses for which BOEMRE has special expertise; make available staff support, at the lead agency's request, to enhance the interdisciplinary capability of the Corps; provide comment on draft versions of the EIS when requested; and use our own funds to accomplish these responsibilities.

The BOEMRE also recognizes the importance of initiating and agrees to participate in the required Endangered Species Act (ESA) Section 7 consultation; the Magnuson-Stevens Fishery and Conservation Management Act Essential Fish Habitat (EFH) consultation (Section 305); the National Historic Preservation Act Section (NHPA) 106 process; and the Coastal Zone Management Act (CZMA) Section 307 consistency process. As the lead federal agency for ESA Section 7 and the EFH consultations, the Corps must notify the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) of its lead role and BOEMRE's cooperating role. The BOEMRE would expect the Corps, as lead agency, to work with BOEMRE to ensure existing biological opinions from U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) are applicable to BOEMRE's part of the Federal action and/or expect to jointly submit the ESA Section 7 and EFH assessments to FWS and NMFS. BOEMRE expects the Corps to be the lead federal agency for NHPA Section 106 and CZMA Section 307 compliance with BOEMRE acting in a consulting role.

The BOEMRE looks forward to working with the Corps during this process. If you would like to discuss any of these items further, please contact Geoffrey Wikel at (703) 787-1283 or by e-mail at Geoffrey.Wikel@boemre.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Bennett', with a stylized flourish at the end.

James F. Bennett
Chief, Branch of Environmental Assessment

cc: Mr. Garrett Lips
U.S. Army Corps of Engineers

Ms. Colleen Finnegan
Bureau of Ocean Energy Management,
Regulation and Enforcement



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Michael Krivor
Southeastern Archaeological Research, Inc.
315 NW 138th Terrace
Newberry, Florida 32669

January 20, 2011

Re: DHR Project File No.: 2011-00114 / 1A-32 Permit No.: 1011.026
Received by DHR: January 4, 2011
*Submerged Cultural Resources Remote Sensing Survey of Proposed Offshore Sand
Source Area 5, St. Lucie County, Florida*

Dear Mr. Krivor:

Our office received and reviewed the above referenced survey report in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*, and Chapter 267, *Florida Statutes*, for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the National Register of Historic Places (NRHP).

In December 2010, Southeastern Archaeological Research, Inc. (SEARCH) conducted an underwater remote sensing survey of the portion of Offshore Sand Source Area 5 that was not previously investigated. The survey was conducted on behalf of Coastal Technology Corporation. SEARCH identified one side-scan sonar target but no magnetic anomalies or subbottom profiler features within the project area during the investigation.

SEARCH determined that the side-scan sonar target appears to represent isolated modern debris and is also outside of the proposed project area.

SEARCH determined that the proposed activities within the portion of Area 5 surveyed in this investigation will have no effect on cultural resources listed, or eligible for listing, on the NRHP. SEARCH recommends no further investigation of the area.

Based on the information provided, our office concurs with these determinations and finds the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code*.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
850.245.6300 • FAX: 245.6436

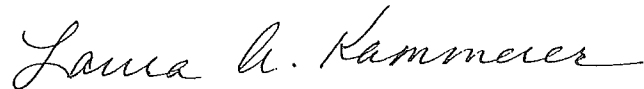
☐ Archaeological Research
850.245.6444 • FAX: 245.6452

☒ Historic Preservation
850.245.6333 • FAX: 245.6437

Mr. Krivor
January 20, 2011
Page 2

For any questions concerning our comments, please contact Rudy Westerman, Historic Preservationist, by electronic mail at rjwesterman@dos.state.fl.us, or by phone at 850.245.6333. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,

A handwritten signature in cursive script that reads "Laura A. Kammerer". The signature is written in dark ink and is positioned above the typed name and title.

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance

Pc: Louis Tesar, Interoffice Mail Station 8B



24360.06

July 8, 2011

Mr. Garrett Lips
Department of the Army
Jacksonville District Corps of Engineers
4400 PGA Boulevard, Suite 500
Palm Beach Gardens, Florida 33410

Attn: Palm Beach Gardens Regulatory Section
SAJ-2009-03448 (IPGGL)

Re: St. Lucie County South Beach and Dune Restoration Project – Draft EIS

Dear Mr. Lips:

On behalf of St. Lucie County, this letter is to provide comments relative to the referenced Draft EIS for the proposed St. Lucie County South Beach and Dune Restoration Project. In general, the Draft EIS

- does not appear to adequately reflect the basis by which the County formulated the proposed project ("applicant's preferred alternative") to specifically meet the project purpose, and
- should more thoroughly and accurately reflect the project formulation in concert with the characterization of alternatives considered and assessed by the County.

Note that:

1. The proposed project area was formulated primarily on the basis of where, within the Study Area from R77 to the Martin County line, upland development is threatened by damage due to erosion – consistent with the project purpose to “provide storm damage protection for property and infrastructure”. Specifically note that:
 - (a) FDEP’s governing rules [§62B36.003(1), F.A.C.] state:

“Critically Eroded Shoreline” is a segment of shoreline where natural processes or human activities have caused, or contributed to, erosion and recession of the beach and dune system to such a degree that upland development, recreational interests, wildlife habitat or important cultural resources are threatened or lost. Critically eroded shoreline may also include adjacent segments or gaps between identified critical erosion areas which, although they may be stable or slightly erosional now, their inclusion is necessary for continuity of management of the coastal system or for the design integrity of adjacent beach management projects.
 - (b) On page 163, the Draft EIS appropriately identifies that: “In consultation with the FDEP, St. Lucie County has delineated the project area to (a) include that portion of the study area that is designated by FDEP as ‘critically eroded’ – thus qualified for State cost-sharing and where beach nourishment appears feasible for obtainment of a FDEP permit, but (b) exclude shoreline segments where minimal or no beach-front development exists and where beach nourishment would contribute little to storm damage prevention benefits.”
 - (c) The Draft EIS does not appear to recognize that there are virtually no significant upland structures north of R87.7 within the Study Area. The only exception is the FP&L power plant where the north cooling pond might be at moderate risk of damage along about 300± feet of shoreline (north of R81) within the 10,000± feet of shoreline between R77 and R87.7. Due to the lack of existing upland structures, “no action” is proposed by the County north of R87.7.

July 8, 2011

- (d) On page v, the Draft EIS appropriately identifies that: “The county eliminated this CBRS beach (R-90.3 to R-98) because the FDEP had not identified that beach segment as ‘critically eroded’.” Almost no upland development exists in this beach segment. Although the County requested that FDEP consider designation of this segment as “critically eroded” for purposes of “continuity of management”, the County’s request was denied by FDEP.
- (e) The proposed project area entails those portions of the Study Area where extensive existing upland development is at significant risk of damage by erosion.
- 2. The proposed project was developed to give the County the "biggest bang for the buck" by yielding the maximum net benefits among all alternatives – consistent with USACE planning regulations for development of the National Economic development (NED) project. Specifically note that:
 - (a) About two-thirds (2/3) of the project benefits are associated with reduced storm damage to upland structures.
 - (b) Any reduction in the extent of the proposed fill or the fill area – particularly where existing upland structures are threatened by erosion - would significantly reduce the net benefits of the project and the benefit-cost ratio – potentially yielding a project that is not economically justified.
 - (c) To achieve the project purpose – to “provide storm damage protection for property and infrastructure”, it is necessary to include both the north and south proposed project segments.
- 3. If the “North Segment Dune Restoration Only” alternative is implemented:
 - (a) The economic feasibility of the project may be jeopardized – as described above.
 - (b) As identified in Section 2.1.7 of the Draft EIS, “DNRBS modeling results predict that over time, the north segment beach width increases due to dispersion of sand from the south segment of the project. The gradual increase in beach width over time provides an increasing level of protection along the north segment.” However, contrary to the subsequent text in Section 2.1.7 of the Draft EIS, “by the tenth year, the north segment beach width approaches” an added beach width of about 10 feet – only about ¼ of “the beach width of the south segment”, which is expected to re-nourished by the tenth year.
 - (c) The upland property owners within the north segment will likely seek permits for armoring structures to protect their property from damage by erosion – as allowed by Florida law.
 - (d) Construction of armoring structures and continued-unabated-erosion would jeopardize environmental habitat for nesting sea turtles, nearshore beach benthic communities, and shorebirds - directly contrary to the project purpose to “restore/maintain habitat for marine turtle nesting, marine life and shore birds”.

Please appropriately incorporate the above into the Draft EIS. Thank you for the opportunity to provide these comments. If you have any questions, please contact me.

Sincerely,

COASTAL TECH



Michael Walther, P.E.

cc: Jim David, Richard A. Bouchard, P.E. - St. Lucie County



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Garett Lips
Department of the Army
Jacksonville District Corps of Engineers
PGA Boulevard, Suite 500
Palm Beach Gardens, Florida 33410

THPO#: 008495
Project #: SAJ-2009-03448

July 12, 2011

Subject: Assessment of Effects for the Proposed St. Lucie County Beach and Dune Restoration Project, Florida

Dear Mr. Lips,

The Seminole Tribe of Florida's Tribal Historic Preservation Office (STOF-THPO) has received the Corps of Engineers public notice concerning the aforementioned project. The STOF-THPO has no objection to your proposal at this time. However, the STOF-THPO would like to be informed if cultural resources that are potentially ancestral or historically relevant to the Seminole Tribe of Florida are discovered at any point during the restoration process. We thank you for the opportunity to review the information that has been sent to date regarding this project. Please reference **THPO-008495** for any related issues.

We look forward to working with you in the future.

Sincerely,

Willard Steele
Tribal Historic Preservation Officer
Seminole Tribe of Florida

Direct routine inquiries to:

Anne Mullins
Compliance Review Supervisor
annemullins@semtribe.com

ETY:am:ws



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
(727) 824-5317; FAX (727) 824-5300
<http://sero.nmfs.noaa.gov/>

July 18, 2011

F/SER4:JK/pw

(Sent via Electronic Mail)

Colonel Alfred Pantano
District Engineer, Jacksonville District
Department of the Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232

Attention: Garret Lips

Dear Colonel Pantano:

NOAA's National Marine Fisheries Service (NMFS) reviewed the Draft Environmental Impact Statement (EIS) dated May 2011, titled *St. Lucie County South Beach and Dune Restoration Project*, and prepared by the Jacksonville District. An Essential Fish Habitat (EFH) assessment is included as Appendix H to the draft EIS. The draft EIS describes plans by the St. Lucie County Erosion Control District to dredge 610,000 cubic yards (cy) of material from the southwestern end of St. Lucie Shoal, located approximately 3 miles offshore of St. Lucie County. The fill would be placed in two segments along 3.8 miles of Hutchinson Island shoreline between Florida Department of Environmental Protection (FDEP) monuments R-88.7 to R-90.3 and R-98 to R-115 +1,000 ft. The draft EIS states that approximately 1.08 acres of nearshore hardbottom, which is designated EFH and a Habitat Area of Particular Concern (HAPC) by the South Atlantic Fishery Management Council (SAFMC), would be directly buried by the project. The Jacksonville District's initial determination is the proposed activity would not adversely affect EFH, and the District indicates this determination is largely based on the applicant's commitment to compensatory mitigation. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments and recommendations are provided pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

NMFS also is reviewing public notice SAJ-2009-03448, dated June 29, 2011, which focuses on the applicant's preferred alternative for their project. The due date for comments established in that public notice is July 29, 2011. NMFS will provide comments by that date, and those comments may include elevation of the project in accordance with Part IV Section 3(a) and Part IV Section 3(b) of the Memorandum of Agreement (MOA) between the Department of Commerce and Department of the Army, dated August 11, 1992.

Consultation History

NMFS provided a letter, dated June 21, 2010, to the Jacksonville District in response to the District's



request for views, comments, and information related to the District's efforts to conduct scoping pursuant to the National Environmental Policy Act (NEPA) to inform the preparation of this EIS. In this letter, NMFS stated that excavation of the offshore shoals could have significant adverse consequences to the shoreline and living marine resources. NMFS also informed the District that mining the shoal for sand may alter the local wave climate leading to erosion that could affect EFH. In addition, we recommended that the Jacksonville District evaluate designs that avoid and minimize impacts to hardbottom habitat throughout all phases of the project. NMFS also recommended that the Jacksonville District continue to coordinate closely with the Habitat Conservation Division to ensure the EFH assessment and EIS contain sufficient detail to complete the EFH consultation. We recommended that the EFH assessment include the results of an on-site inspection, the views of recognized experts on the habitat or species affects, a literature review, an analysis of alternatives to the proposed action, and analyses of the borrow site analyses using methods similar to those recommended in Kelley et al. (2004). Each of the aforementioned issues and the District's response are identified in the sections below.

Project Description – the Preferred Alternative

The draft EIS indicates that the total volume of sand required for the 50-year life of the project is expected to be 1.41 million cy (610,000 cy for the initial fill and 200,000 for maintenance on 10-year intervals). The fill would be placed in two segments along a 3.8-mile stretch of beach between FDEP Monuments R-88.7 to R-90.3 (northern segment) and R-98 to R-115 +1,000 ft (southern segment). A hopper dredge would be used to excavate the sand from the offshore borrow sites. The material would be transported to locations just offshore from the fill areas and then pumped to the beach. Details of how this would occur do not appear in the draft EIS, however, the drawings in the public notice depict one pipeline for the northern segment and five pipelines for the southern segment.

The draft EIS describes that seismic and core boring investigations in the borrow area indicate that it contains about 1.3 million cy of beach quality sand. The draft EIS depicts an extension of the shoal located in federal waters that would be dredged to obtain material to last the life of the project proposed by St. Lucie County (Figure 2.2-1 on page 31). The District's draft EIS for the nearby, federal Martin County Florida Hurricane and Storm Reduction Project (USACE 2010) identifies the portion of this feature in federal waters as "borrow area C1-C." Based on Hammer et al. (2005), USACE (2010) states that borrow area C1-C was eliminated from future analysis in part due to wave refraction modeling results that indicate unacceptable impacts to the wave climate and changes to shoreline sediment transport processes would occur from dredging these two areas. NMFS believes that similar unacceptable impacts would occur from dredging the portion of this shoal in state waters and recommends that a similar analysis be conducted for the state waters portion of the borrow area (see EFH conservation recommendation #1). Until this analysis has been completed and results are coordinated with NMFS and other agencies, we do not recommend moving forward with the other project elements provided below.

Alternatives

The draft EIS evaluates seven alternatives, including "Beach Fill to Restore the 1972 Dune with a 35-ft Berm," which is the preferred alternative; and the no action alternative. The draft EIS also presents 13 other alternatives that were eliminated from further consideration. Much of the discussion in the draft EIS, EFH assessment, and public notice pertains to the preferred alternative. Overall, the analysis of alternatives seems narrow. Additionally, the analysis presented for "Alternatives Eliminated From Detailed Evaluation (Section 2.4)," are described in more detail than many of the "Alternatives Evaluated in Detail (Section 2.1)." NMFS recommends the District evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts (see EFH conservation recommendation #2). We specifically recommend further examination of the following three alternatives: Beach Fill with No Impact to Existing Hardbottom; Beach Fill to Restore the 1972 Beach and Dune; and South Segment Beach and Dune Restoration – North Segment Dune

Restoration Only. This would also address our recommendation provided in our letter dated, June 21, 2010, regarding the need to evaluate designs that avoid and minimize impacts to hardbottom throughout all phases of the project.

Essential Fish Habitat within the Project Area

The South Atlantic Fishery Management Council (SAFMC) identifies sandy shoals as EFH for migratory pelagic fish, including king mackerel, Spanish mackerel, cobia, and dolphin. Evidence provided by Gilmore (2008) suggests that this shoal area is biologically unique and diverse, supporting fisheries that are economically and recreationally important, such as the migratory species listed above, sailfish, and prey species consumed by these fishery species. This report captures input from experienced regional fishermen, provides a review of published, unpublished manuscripts, theses and reports, and unanalyzed fish capture data, and defines the continental shelf fish fauna off Hutchinson Island.

Gilmore (2008) describes the EFH functions provided by the shoals and how they support regional fisheries, particularly the pelagic fisheries, through: 1) serving as refugia for schooling planktivores that are principal prey for pelagic predators such as king and Spanish mackerel, billfish (sailfish, marlin, and swordfish), dolphin, amberjack (mostly common amberjack and almaco), wahoo, and various tuna (little tunny, bonita, blackfin tuna); 2) providing habitat for a benthic invertebrate and vertebrate fauna that may serve as a trophic base for demersal fish assemblages some of which support regional fisheries (red/black drum, weakfish, sand drum, whiting); and 3) serving as spawning sites for schooling planktivores (anchovies, sardines, herring, menhaden, and scad) based on the collection of eggs and larvae, as well as gravid adult king mackerel, tripletail, red drum, and goliath grouper having been captured in spawning aggregations on shoals or adjacent to shoals.

SAFMC also designates hardbottoms as EFH for coral, red grouper, gag grouper, gray snapper, mutton snapper, white grunt, and spiny lobster. These reefs also reduce wave energy and stabilize shorelines (Kirtley 1967; Kirtley and Tanner 1968) and provide structural habitat for fishery organisms (Gore et al. 1977; Nelson 1989; Lindeman and Snyder 1999). Nearshore hardbottom habitats are the primary natural reef structures at depths of 0 to 4 meters offshore of southeastern and east central Florida. The structural complexity of this habitat is enhanced by colonies of tube-building polychaete worms (*Phragmatopoma lapidosa*, forming “worm rock”) and by other invertebrates and macroalgae.

Over 250 species of fishes, 500 species of invertebrates, and 340 species of algae have been recorded from nearshore hardbottom habitats of east central Florida (CSA 2009). Nearshore hardbottom fish assemblages are dominated by early life stages. Hardbottom habitats often occur between mid-shelf reefs to the east and estuarine habitats to the west, and this central location allows the habitats to serve as settlement areas for immigrating larvae or as nursery areas for emigrating juveniles. The central location coupled with being the only natural hard structure in the areas makes nearshore hardbottom an important EFH resource (Lindeman and Snyder 1999).

SAFMC also designated corals and hardbottoms, including worm rock, as a Habitat Area of Particular Concern (HAPC), which is a subset of EFH that is either rare, particularly susceptible to human-induced degradation, especially important ecologically, or located in an environmentally stressed area.

Impacts to Essential Fish Habitat

Nearshore Hardbottom

The draft EIS states that 1.08 acres of nearshore hardbottom would be directly buried as a result of the preferred alternative. An explanation of how hardbottom impacts are quantified is missing from the draft EIS and EFH assessment. Digitized aerials from 2008 are provided as figures in the public notice and these figures depict the exposed hardbottoms between the shoreline and 600 feet eastward of the shoreline. Given the shifting nature of sand in nearshore areas, NMFS does not believe that one year of

analysis is sufficient to quantify the amount of hardbottom habitat within the equilibrium toe of fill (ETOF). We recommend maps be based on at least three time periods, including a more recent survey (see EFH conservation recommendation #3).

Overall, the EFH assessment provides a sufficient level of detail in characterizing fishes in the project area and in describing sedimentation and turbidity effects to nearshore hardbottom habitats and associated fishery resources in nearshore fill areas. Results from surveys are presented and the fish assemblages primarily included reef-associated species. In total, 70 species were recorded including 24 federally managed species. Species documented on the nearshore hardbottom were primarily represented by the grunt and jack families, many of these managed species also occurred as newly settled or juvenile stage individuals, indicating that the area serves as effective juvenile habitat for most of the managed species recorded. The snapper-grouper complex accounted for most of the managed species. Other economically important, but not federally managed, species (e.g., snook) also were observed during the survey.

The draft EIS describes two types of hardbottom habitat in the project area, referred to Community 1 and Community 2. These habitat types are qualitatively described and differentiated in terms of relief and the presence of worm rock and other functional groups (sponges and macroalgae), with Community 1 providing higher ecological services (and a higher mitigation requirement). Within the preferred alternative impact area, approximately 0.39 acres of Community 1 and 0.69 acres of Community 2 would be filled. The locations of these habitats and the survey information that fed into the habitat characterizations is not provided. Further, information is not provided regarding the presence of these habitat types with respect to the planned pipeline installation and if nearshore hardbottom habitat impacts would occur from this activity. In addition, the EFH assessment does not provide detail on the different benthic functional groups that are present in the project area. For example, corals are not mentioned in the EFH assessment, however the biological monitoring plan (appendix F) describes evaluation of metrics associated with corals (see EFH conservation recommendation #3). We acknowledge that the draft EIS refers to CSA 2010a, *Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project* (report not provided to NMFS). It is possible that more information from this report may need to be incorporated into the EFH assessment or additional biological resource surveys may be needed.

Biological Monitoring Needed for Nearshore Hardbottoms

NMFS reviewed the nearshore biological monitoring plan (appendix F), however we feel it is premature to provide detailed recommendations on this plan until sufficient information to characterize and quantify nearshore hardbottom impacts is provided (EFH conservation recommendation #3). Specifically, we will not be able to complete our review of the plan until we have a better understanding of what functional groups are present in fill areas and which alternative is authorized for construction as this will inform the selection of methods, metrics for evaluation, location of reference sites, length of the transects, and other important nearshore monitoring considerations.

NMFS recommends that a biological monitoring plan be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS. Generally, the plan should include monitoring hardbottom habitat within the area of the ETOF and 1,000-foot buffer. The monitoring schedule should include a minimum of one pre-construction event, one event immediately after construction, one event 6 months after construction, and annually for three years post-construction (see EFH conservation recommendation #4).

Pipeline Corridor

The draft EIS generally describes how material will be transported to the beach and the public notice drawings depict that six pipeline corridors are proposed. However as noted above, a habitat characterizations of the pipeline routes are not provided in the draft EIS. There is no mention of the

pipeline in the EFH assessment. A survey of the pipeline corridors will be needed to complete the EFH consultation (see EFH conservation recommendation #3).

Additionally, NMFS requests the District require monitoring the pipelines for leaks at least twice each day. NMFS requests that the District develop a pipeline monitoring plan and provide the plan to us for review and approval prior to construction. The plan should clearly identify measures for corrective actions, should a leak be detected (see EFH conservation recommendation #5).

Offshore Borrow Areas

The loss of shoal habitat can result in a substantial and long-term impact to EFH. The temporal scale of shoal morphology precludes quick recovery for species that are dependent on these types of relief features, including prey of the coastal migratory pelagic complex (Hammer et al. 2005). While Gilmore (2008) notes the value to additional studies of local sand shoals and the effects of mining on fish habitat, the studies he reviewed demonstrate that shoals serve as aggregation and spawning sites for schooling planktivorous fishes that support regional pelagic fisheries, such as mackerels. Accordingly, it is not clear how the Jacksonville District reached the preliminary determination that the project would not adversely affect EFH.

The draft EIS concludes that given the short temporal duration of the preferred alternative and relatively rapid recovery of the soft bottom infaunal invertebrate assemblage, short duration impacts to soft bottom assemblages within the borrow site are expected. The potential impacts from the modification to the shoal are considered minor and, therefore, unlikely to adversely affect the benthic community for extended periods. However, NMFS is concerned that systematic dredging of shoals, such as the proposed project and the dredging described in USACE (2010), may result in unanticipated changes in habitat quality. Although opportunistic invertebrate communities may repopulate these areas after the dredging, benthic populations may not recover to pre-project levels. Dredging will also resuspend any fine material in the borrow area which can result in clogged gills in young, less mobile fish and invertebrates and thereby increase their mortality rate. The extent of negative effect is dependent on the life history stages of the species present and the duration of the event. The St. Lucie shoal complex is a long-established seascape feature that provides valuable habitat for fishery resources that utilize estuaries and offshore waters as a part of their life cycle. Minimizing mining sand from these shoals would ensure that these important areas would not be altered to the point that they no longer provide valuable habitat (see EFH conservation recommendations #1, 2, and 7).

Monitoring Needed for the Offshore Sand Mining

To fully evaluate the proposed mining of the shoals for sand, NMFS requires additional information regarding the rates at which borrow areas are expected to fill and measures the District may require the applicant to take to limit dredging to portions of the shoal expected to fill in most rapidly. NMFS also recommends monitoring of the shoal's infauna communities be required to quantify whether the actual impacts to EFH are within acceptable limits. A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which the offshore borrow areas fill and grain-size distribution of the material that fills the dredge holes (see EFH conservation recommendation #6).

Dredging Best Management Practices

The draft EIS and EFH assessment refer to adherence of best management practices, however a comprehensive list of those BMPs is not provided. The implementation of best management practices to minimize the adverse effects from dredging the shoal is warranted. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. In addition, dredging within the offshore borrow area should be limited to the portions

of the shoal expected to fill in most quickly once dredging has stopped. The District should provide a list of best management practices to NMFS for review and approval prior to finalizing the EIS (see EFH conservation recommendation #7).

Wave Refraction Analysis

See comments above and EFH conservation recommendation #1.

Compensatory Mitigation

The EIS describes the construction of 0.98 acres of artificial mitigation reef to offset the loss of 1.08 acres of nearshore hardbottom. However the mitigation plan (appendix D), describes that up to 6.22 acres of mitigation would be needed (1.19 acres of Community 1 and 5.03 acres of Community 2). It is unclear how either mitigation amount was determined. The draft EIS and mitigation plan refer to the completion of a Unified Mitigation Assessment Method (UMAM) as appendix C to the mitigation plan, however the appendix is not contained within the document.

Similar to our comments on the nearshore hardbottom biological monitoring plan, we feel it is premature to provide detailed recommendations on this plan until sufficient information to characterize and quantify nearshore hardbottom impacts is provided (EFH conservation recommendation #3). Specifically, we will not be able to complete our review of the plan until we have a better understanding of what functional groups are present in fill areas and the depths of habitats within fill areas.

NMFS recommends that a compensatory mitigation plan be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS. This plan should include performance standards, monitoring protocols and schedule, and a functional assessment (e.g., UMAM) that demonstrates how mitigation amounts offset the resource impacts (see EFH conservation recommendation #8).

Information Needs

NMFS believes the information provided in the draft EIS is not consistent with existing Council on Environmental Quality (CEQ) guidelines and Army regulations regarding mitigation and mitigation monitoring. Final guidance recently released by CEQ regarding mitigation and monitoring (CEQ 2011) cites Army regulations which state that “consistent with existing CEQ guidelines, the Army’s NEPA implementing regulations place significant emphasis on the planning and implementation of mitigation throughout the environmental analysis process. The first step of mitigation planning is to seek to avoid or minimize harm” [40 CFR 1508.2]. In the absence of habitat mapping and biological survey information that quantifies in the draft EIS the extent of potential damage to hardbottom, NMFS is unable to determine that impacts to EFH have been avoided to the extent practicable. In addition, the guidance states that “when the analysis proceeds to an EA or EIS, however, the Army regulation requires that any mitigation measures be ‘clearly assessed and those selected for implementation will be identified in the FONSI or the ROD’ and that ‘the proponent must implement those identified mitigations, because they are commitments made as part of the Army decision’ [32 CFR 651.15(b)].” The draft EIS does not sufficiently discuss mitigation and monitoring plans and implementation programs as required by these regulations.

NMFS believes the information provided in the draft EIS does not meet the requirements of the EFH provisions of the Magnuson-Stevens Act. The Jacksonville District chose to integrate the required components of an EFH assessment, as appendix H, based on our review, NMFS does not agree that all components of an EFH assessment are present or provided in sufficient detail (50 CFR 600.920(e)(2)) to adequately analyze the effects on EFH. Based on the nature of the proposed action and the potential adverse effects on EFH and EFH-HAPCs, NMFS provides the following assessment of the mandatory

and additional information requirements found at 50 CFR 600.920(e)(3) and (4) that should be included in the Final EIS:

Mandatory Components of an EFH Assessment:

1. *Description of the action.* Provided.
2. *Analysis of the potential adverse effects of the action on EFH and the managed species.* This analysis is not complete in the EIS. Information describing the quantity and quality of hardbottoms within nearshore fill areas and pipeline corridors is needed for NMFS to make a determination regarding the level of effect to NOAA trust resources. Additional information regarding dredging best management practices is needed to complete this component as well. See EFH conservation recommendations #3 and #7.
3. *Federal agency's conclusions regarding the effects of the action on EFH.* Provided, however it is unclear how the District came to the initial determination based on the lack of available information on the quantity and quality of hardbottoms in nearshore areas that would be adversely affected by the project. In addition, portions of the EIS and EFH assessment seem to clearly acknowledge that dredging the offshore shoal would result in an adverse effect to EFH. The analysis does not support the conclusion and clarification is needed.
4. *Proposed mitigation, if applicable.* NMFS believes compensatory mitigation should be required. Upon receipt of responses to EFH recommendation #2 and #3 we should be able to provide more informed recommendations on the plan. See EFH conservation recommendation #8.

Additional Information:

1. *Results of an on-site inspection to evaluate the habitat and the site-specific effects of the project.* Deficiencies are noted above for both pipeline corridors, hardbottoms near within and near the toe-of-fill. See EFH conservation recommendations #3.
2. *Views of recognized experts on the habitat or species that may be affected.* Provided.
3. *Review of pertinent literature and related information.* Provided
4. *An analysis of alternatives to the proposed action.* Least environmentally damaging practical alternatives should be evaluated, including alternatives minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts. See EFH conservation recommendation #2.

EFH Conservation Recommendations

Although additional information is needed to complete the EFH consultation, based on the information provided thus far NMFS concludes the project will likely adversely affect EFH, including over one acre of hardbottom that supports worm reef and, potentially, coral. Significant indirect and cumulative adverse impacts are also likely in connection with construction activities and the subsequent loss of marine habitats and their associated functions. These indirect and cumulative impacts include increased turbidity, sedimentation from dredging and the placement of fill in the aquatic environment, and loss of food production and other functions that coral, coral reef, and hardbottom habitats that contribute to fishery productivity. Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. Based on this requirement, NMFS provides the following:

EFH Conservation Recommendations

The following EFH Conservation Recommendations may require re-evaluation or augmentation following review of any additional information. As stated above, until the analysis identified in EFH conservation recommendation #1 has been completed and results are coordinated with NMFS and other agencies, we do not recommend moving forward with the other project elements described below.

1. The shoal proposed for excavation shall be eliminated from the project design due to the potential for unacceptable impacts to the wave climate and shoreline sediment transport. Alternatively, NMFS will re-consider this recommendation based on receipt of additional analysis performed similar to Kelley et al. (2004).
2. The District shall evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts. Specifically, we recommend further examination of the following three alternatives: Beach Fill with No Impact to Existing Hardbottom; Beach Fill to Restore the 1972 Beach and Dune; and South Segment Beach and Dune Restoration – North Segment Dune Restoration Only.
3. Results from a biological resource and nearshore habitat mapping survey within the ETOF with 1,000-foot buffer and the pipeline corridor with a 100-foot buffer shall be provided to NMFS. The biological survey report should map, quantify, and characterize hardbottom within 100 feet of the pipeline corridor and hardbottom within 1,000 feet from the ETOF. The method for determining the amount of hardbottom present should be described and based on historical and recent data. In addition, the survey report should identify survey dates and include full characterizations of each habitat depicted in the maps. These characterizations should focus on the following taxonomical groups: stony corals, octocorals, sponges, worm reef, and macroalgae. For stony corals, species, density, size distribution (colony diameter and height), and condition (bleaching and disease) should be documented. For octocorals, species, density, and size distribution (colony height) should be documented.
4. A biological monitoring plan shall be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS.
5. A plan for monitoring the pipeline for leaks at least twice per day and response actions to any leaks detected shall be provided to NMFS for review and approval prior to finalizing the EIS.
6. A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which infaunal communities recover from dredging and the fill and grain-size distribution of the material that fills the dredge holes.
7. Best management practices (BMP) to minimize the adverse impacts associated with mining the shoals shall be developed and integrated into the project design. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. Please provide a list of BMPs to NMFS for review and approval prior to finalizing the EIS.
8. A compensatory mitigation plan that describes how unavoidable impacts to hardbottom habitat shall be offset from construction activities and the ETOF. This plan should include performance standards, monitoring protocols and schedule, and a functional assessment (e.g., Unified Mitigation Assessment Method) that demonstrates how mitigation amounts offset the resource impacts.

Section 305(b)(4)(B) of the Magnuson-Stevens Act and its implementing regulation at 50 CFR 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 NMFS' "findings" with the District, an interim response should be provided to NMFS. A detailed response then must be provided prior to final approval of the action. The District's detailed response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity. If the District's response is inconsistent with these EFH Conservation Recommendations, the District must provide a substantive discussion justifying the reasons for not following the recommendation.

Thank you for the opportunity to provide comments. Related correspondence should be directed to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, which is co-located with the US Environmental Protection Agency at USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 616-8880, extension 207, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,



/ for

Virginia Fay
Assistant Regional Administrator (Acting)
Habitat Conservation Division

cc:

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CSA International, Inc. 2010a. Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project. Prepared for Coastal Technology Corporation, Vero Beach, FL. 50 pp + apps. (NMFS does not have)

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<http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/DOCS/OnLine/Martin/DraftSEIS/DraftSEIS.pdf>



United States Department of the Interior

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ER 11/480
9043.1

July 18, 2011

Garett Lips
US Corps of Engineers
4400 PGA Boulevard, Suite 500
Palm Beach Gardens, FL 33410

Re: Comments on the Review of the Draft Environmental Impact Statement (DEIS) for the
St. Lucie South Beach and Dune Restoration Project

Dear Mr. Lips:

The United States Department of the Interior (Department) has reviewed the DEIS for the St. Lucie South Beach and Dune Restoration Project. We have no comments at this time.

Let me know if you have questions or concerns. I can be reached on (404) 331-4524 or emailed at joyce_stanley@ios.doi.gov.

Sincerely,

Joyce Stanley, MPA
Regional Environmental Protection Assistant

for

Gregory Hogue
Regional Environmental Officer

cc: Jerry Ziewitz - FWS
Brenda Johnson - USGS
David Vela - NPS
Chester McGhee - BIA
OEPC - WASH



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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July 25, 2011

F/SER4:JK/pw

Colonel Alfred Pantano, Commander
Jacksonville District, Army Corps of Engineers
Jacksonville Regulatory Office, South Permits Branch
PO Box 4970
Jacksonville, Florida 32232

Attention: Garret Lips

Dear Colonel Pantano:

NOAA's National Marine Fisheries Service (NMFS) reviewed public notice SAJ-2009-03448 (IP-GGL) dated June 29, 2011, the application from the St. Lucie County Erosion Control District to construct a beach nourishment project in St. Lucie County. Approximately 610,000 cubic yards (cy) of material would be dredged from the southwestern end of St. Lucie Shoal, located approximately 3 miles offshore of St. Lucie County. The fill would be placed in two segments along 3.8 miles of Hutchinson Island shoreline between Florida Department of Environmental Protection monuments R-88.7 to R-90.3 and R-98 to R-115 +1,000 ft.

The public notice indicates the work would impact approximately 1.08 acres of nearshore hardbottom that is designated essential fish habitat (EFH) and a Habitat Area of Particular Concern (HAPC) by the South Atlantic Fishery Management Council. As indicated in the enclosed letter, NMFS concludes impacts to hardbottom habitat may be greater than what is presented in the notice. In addition, the work would adversely affect sandy shoals that are also designated EFH. The Jacksonville District's initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries, and the District indicates this determination is largely based on the applicant's commitment to compensatory mitigation. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments and recommendations are provided pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Consultation History

By letter dated July 18, 2011, NMFS provided comments and EFH conservation recommendations in response to the Draft Environmental Impact Statement (DEIS) dated May 2011, entitled *St. Lucie County South Beach and Dune Restoration Project*, prepared by the Jacksonville District; that letter is incorporated here by reference and is enclosed. The letter reviewed the consultation history for this project, described habitats within the project area, and discussed the likely impacts to EFH and fishery resources from the project.

Impacts to Aquatic Resources of National Importance

Several fish and invertebrates known to inhabit the project area are aquatic resources of national



importance (ARNI) in accordance with Section 906(e)(1) of the Water Resources Development Act of 1986 (PL 99-602), including, bluefish, spotted seatrout, croaker, sailfish, southern flounder, summer flounder, yellowfin tuna, red drum, Spanish and king mackerel, Florida pompano, tarpon, and snook. These species utilize hardbottoms or sandy shoals for spawning, refuge, foraging, or nursery areas.

As proposed, the work could directly and permanently eliminate a substantial amount of hardbottom and sandy shoal habitat. Indirect impacts to these habitats and the ARNI that depend upon them also may result from the altered wave climate caused by removing a substantial portion of the shoal. These indirect and cumulative impacts from the proposed action include increased turbidity and sedimentation from placement of fill in the aquatic environment and loss of food production functions performed by hardbottom reefs and sandy shoals.

In accordance with Part IV, Section 3(a) of the MOA between the Department of Commerce and Department of the Army, dated August 11, 1992, we have determined that the proposed project may result in substantial and unacceptable impacts to ARNI.

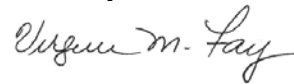
EFH Conservation Recommendations

Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. Based on this requirement and the preceding concerns, NMFS provided eight EFH conservation recommendations in the enclosed letter.

Closing

Thank you for considering these additional comments on this project. Related correspondence should be directed to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, which is co-located with the U.S. Environmental Protection Agency at USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 616-8880, extension 207, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,



Virginia M. Fay
Assistant Regional Administrator (Acting)
Habitat Conservation Division

Enclosure: NMFS response to the Draft EIS, *St. Lucie County South Beach and Dune Restoration Project*, (letter dated July 18, 2011).

cc:

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July 18, 2011

F/SER4:JK/pw

(Sent via Electronic Mail)

Colonel Alfred Pantano
District Engineer, Jacksonville District
Department of the Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232

Attention: Garret Lips

Dear Colonel Pantano:

NOAA's National Marine Fisheries Service (NMFS) reviewed the Draft Environmental Impact Statement (EIS) dated May 2011, titled *St. Lucie County South Beach and Dune Restoration Project*, and prepared by the Jacksonville District. An Essential Fish Habitat (EFH) assessment is included as Appendix H to the draft EIS. The draft EIS describes plans by the St. Lucie County Erosion Control District to dredge 610,000 cubic yards (cy) of material from the southwestern end of St. Lucie Shoal, located approximately 3 miles offshore of St. Lucie County. The fill would be placed in two segments along 3.8 miles of Hutchinson Island shoreline between Florida Department of Environmental Protection (FDEP) monuments R-88.7 to R-90.3 and R-98 to R-115 +1,000 ft. The draft EIS states that approximately 1.08 acres of nearshore hardbottom, which is designated EFH and a Habitat Area of Particular Concern (HAPC) by the South Atlantic Fishery Management Council (SAFMC), would be directly buried by the project. The Jacksonville District's initial determination is the proposed activity would not adversely affect EFH, and the District indicates this determination is largely based on the applicant's commitment to compensatory mitigation. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments and recommendations are provided pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

NMFS also is reviewing public notice SAJ-2009-03448, dated June 29, 2011, which focuses on the applicant's preferred alternative for their project. The due date for comments established in that public notice is July 29, 2011. NMFS will provide comments by that date, and those comments may include elevation of the project in accordance with Part IV Section 3(a) and Part IV Section 3(b) of the Memorandum of Agreement (MOA) between the Department of Commerce and Department of the Army, dated August 11, 1992.

Consultation History

NMFS provided a letter, dated June 21, 2010, to the Jacksonville District in response to the District's



request for views, comments, and information related to the District's efforts to conduct scoping pursuant to the National Environmental Policy Act (NEPA) to inform the preparation of this EIS. In this letter, NMFS stated that excavation of the offshore shoals could have significant adverse consequences to the shoreline and living marine resources. NMFS also informed the District that mining the shoal for sand may alter the local wave climate leading to erosion that could affect EFH. In addition, we recommended that the Jacksonville District evaluate designs that avoid and minimize impacts to hardbottom habitat throughout all phases of the project. NMFS also recommended that the Jacksonville District continue to coordinate closely with the Habitat Conservation Division to ensure the EFH assessment and EIS contain sufficient detail to complete the EFH consultation. We recommended that the EFH assessment include the results of an on-site inspection, the views of recognized experts on the habitat or species affects, a literature review, an analysis of alternatives to the proposed action, and analyses of the borrow site analyses using methods similar to those recommended in Kelley et al. (2004). Each of the aforementioned issues and the District's response are identified in the sections below.

Project Description – the Preferred Alternative

The draft EIS indicates that the total volume of sand required for the 50-year life of the project is expected to be 1.41 million cy (610,000 cy for the initial fill and 200,000 for maintenance on 10-year intervals). The fill would be placed in two segments along a 3.8-mile stretch of beach between FDEP Monuments R-88.7 to R-90.3 (northern segment) and R-98 to R-115 +1,000 ft (southern segment). A hopper dredge would be used to excavate the sand from the offshore borrow sites. The material would be transported to locations just offshore from the fill areas and then pumped to the beach. Details of how this would occur do not appear in the draft EIS, however, the drawings in the public notice depict one pipeline for the northern segment and five pipelines for the southern segment.

The draft EIS describes that seismic and core boring investigations in the borrow area indicate that it contains about 1.3 million cy of beach quality sand. The draft EIS depicts an extension of the shoal located in federal waters that would be dredged to obtain material to last the life of the project proposed by St. Lucie County (Figure 2.2-1 on page 31). The District's draft EIS for the nearby, federal Martin County Florida Hurricane and Storm Reduction Project (USACE 2010) identifies the portion of this feature in federal waters as "borrow area C1-C." Based on Hammer et al. (2005), USACE (2010) states that borrow area C1-C was eliminated from future analysis in part due to wave refraction modeling results that indicate unacceptable impacts to the wave climate and changes to shoreline sediment transport processes would occur from dredging these two areas. NMFS believes that similar unacceptable impacts would occur from dredging the portion of this shoal in state waters and recommends that a similar analysis be conducted for the state waters portion of the borrow area (see EFH conservation recommendation #1). Until this analysis has been completed and results are coordinated with NMFS and other agencies, we do not recommend moving forward with the other project elements provided below.

Alternatives

The draft EIS evaluates seven alternatives, including "Beach Fill to Restore the 1972 Dune with a 35-ft Berm," which is the preferred alternative; and the no action alternative. The draft EIS also presents 13 other alternatives that were eliminated from further consideration. Much of the discussion in the draft EIS, EFH assessment, and public notice pertains to the preferred alternative. Overall, the analysis of alternatives seems narrow. Additionally, the analysis presented for "Alternatives Eliminated From Detailed Evaluation (Section 2.4)," are described in more detail than many of the "Alternatives Evaluated in Detail (Section 2.1)." NMFS recommends the District evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts (see EFH conservation recommendation #2). We specifically recommend further examination of the following three alternatives: Beach Fill with No Impact to Existing Hardbottom; Beach Fill to Restore the 1972 Beach and Dune; and South Segment Beach and Dune Restoration – North Segment Dune

Restoration Only. This would also address our recommendation provided in our letter dated, June 21, 2010, regarding the need to evaluate designs that avoid and minimize impacts to hardbottom throughout all phases of the project.

Essential Fish Habitat within the Project Area

The South Atlantic Fishery Management Council (SAFMC) identifies sandy shoals as EFH for migratory pelagic fish, including king mackerel, Spanish mackerel, cobia, and dolphin. Evidence provided by Gilmore (2008) suggests that this shoal area is biologically unique and diverse, supporting fisheries that are economically and recreationally important, such as the migratory species listed above, sailfish, and prey species consumed by these fishery species. This report captures input from experienced regional fishermen, provides a review of published, unpublished manuscripts, theses and reports, and unanalyzed fish capture data, and defines the continental shelf fish fauna off Hutchinson Island.

Gilmore (2008) describes the EFH functions provided by the shoals and how they support regional fisheries, particularly the pelagic fisheries, through: 1) serving as refugia for schooling planktivores that are principal prey for pelagic predators such as king and Spanish mackerel, billfish (sailfish, marlin, and swordfish), dolphin, amberjack (mostly common amberjack and almaco), wahoo, and various tuna (little tunny, bonita, blackfin tuna); 2) providing habitat for a benthic invertebrate and vertebrate fauna that may serve as a trophic base for demersal fish assemblages some of which support regional fisheries (red/black drum, weakfish, sand drum, whiting); and 3) serving as spawning sites for schooling planktivores (anchovies, sardines, herring, menhaden, and scad) based on the collection of eggs and larvae, as well as gravid adult king mackerel, tripletail, red drum, and goliath grouper having been captured in spawning aggregations on shoals or adjacent to shoals.

SAFMC also designates hardbottoms as EFH for coral, red grouper, gag grouper, gray snapper, mutton snapper, white grunt, and spiny lobster. These reefs also reduce wave energy and stabilize shorelines (Kirtley 1967; Kirtley and Tanner 1968) and provide structural habitat for fishery organisms (Gore et al. 1977; Nelson 1989; Lindeman and Snyder 1999). Nearshore hardbottom habitats are the primary natural reef structures at depths of 0 to 4 meters offshore of southeastern and east central Florida. The structural complexity of this habitat is enhanced by colonies of tube-building polychaete worms (*Phragmatopoma lapidosa*, forming “worm rock”) and by other invertebrates and macroalgae.

Over 250 species of fishes, 500 species of invertebrates, and 340 species of algae have been recorded from nearshore hardbottom habitats of east central Florida (CSA 2009). Nearshore hardbottom fish assemblages are dominated by early life stages. Hardbottom habitats often occur between mid-shelf reefs to the east and estuarine habitats to the west, and this central location allows the habitats to serve as settlement areas for immigrating larvae or as nursery areas for emigrating juveniles. The central location coupled with being the only natural hard structure in the areas makes nearshore hardbottom an important EFH resource (Lindeman and Snyder 1999).

SAFMC also designated corals and hardbottoms, including worm rock, as a Habitat Area of Particular Concern (HAPC), which is a subset of EFH that is either rare, particularly susceptible to human-induced degradation, especially important ecologically, or located in an environmentally stressed area.

Impacts to Essential Fish Habitat

Nearshore Hardbottom

The draft EIS states that 1.08 acres of nearshore hardbottom would be directly buried as a result of the preferred alternative. An explanation of how hardbottom impacts are quantified is missing from the draft EIS and EFH assessment. Digitized aerials from 2008 are provided as figures in the public notice and these figures depict the exposed hardbottoms between the shoreline and 600 feet eastward of the shoreline. Given the shifting nature of sand in nearshore areas, NMFS does not believe that one year of

analysis is sufficient to quantify the amount of hardbottom habitat within the equilibrium toe of fill (ETOF). We recommend maps be based on at least three time periods, including a more recent survey (see EFH conservation recommendation #3).

Overall, the EFH assessment provides a sufficient level of detail in characterizing fishes in the project area and in describing sedimentation and turbidity effects to nearshore hardbottom habitats and associated fishery resources in nearshore fill areas. Results from surveys are presented and the fish assemblages primarily included reef-associated species. In total, 70 species were recorded including 24 federally managed species. Species documented on the nearshore hardbottom were primarily represented by the grunt and jack families, many of these managed species also occurred as newly settled or juvenile stage individuals, indicating that the area serves as effective juvenile habitat for most of the managed species recorded. The snapper-grouper complex accounted for most of the managed species. Other economically important, but not federally managed, species (e.g., snook) also were observed during the survey.

The draft EIS describes two types of hardbottom habitat in the project area, referred to Community 1 and Community 2. These habitat types are qualitatively described and differentiated in terms of relief and the presence of worm rock and other functional groups (sponges and macroalgae), with Community 1 providing higher ecological services (and a higher mitigation requirement). Within the preferred alternative impact area, approximately 0.39 acres of Community 1 and 0.69 acres of Community 2 would be filled. The locations of these habitats and the survey information that fed into the habitat characterizations is not provided. Further, information is not provided regarding the presence of these habitat types with respect to the planned pipeline installation and if nearshore hardbottom habitat impacts would occur from this activity. In addition, the EFH assessment does not provide detail on the different benthic functional groups that are present in the project area. For example, corals are not mentioned in the EFH assessment, however the biological monitoring plan (appendix F) describes evaluation of metrics associated with corals (see EFH conservation recommendation #3). We acknowledge that the draft EIS refers to CSA 2010a, *Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project* (report not provided to NMFS). It is possible that more information from this report may need to be incorporated into the EFH assessment or additional biological resource surveys may be needed.

Biological Monitoring Needed for Nearshore Hardbottoms

NMFS reviewed the nearshore biological monitoring plan (appendix F), however we feel it is premature to provide detailed recommendations on this plan until sufficient information to characterize and quantify nearshore hardbottom impacts is provided (EFH conservation recommendation #3). Specifically, we will not be able to complete our review of the plan until we have a better understanding of what functional groups are present in fill areas and which alternative is authorized for construction as this will inform the selection of methods, metrics for evaluation, location of reference sites, length of the transects, and other important nearshore monitoring considerations.

NMFS recommends that a biological monitoring plan be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS. Generally, the plan should include monitoring hardbottom habitat within the area of the ETOF and 1,000-foot buffer. The monitoring schedule should include a minimum of one pre-construction event, one event immediately after construction, one event 6 months after construction, and annually for three years post-construction (see EFH conservation recommendation #4).

Pipeline Corridor

The draft EIS generally describes how material will be transported to the beach and the public notice drawings depict that six pipeline corridors are proposed. However as noted above, a habitat characterizations of the pipeline routes are not provided in the draft EIS. There is no mention of the

pipeline in the EFH assessment. A survey of the pipeline corridors will be needed to complete the EFH consultation (see EFH conservation recommendation #3).

Additionally, NMFS requests the District require monitoring the pipelines for leaks at least twice each day. NMFS requests that the District develop a pipeline monitoring plan and provide the plan to us for review and approval prior to construction. The plan should clearly identify measures for corrective actions, should a leak be detected (see EFH conservation recommendation #5).

Offshore Borrow Areas

The loss of shoal habitat can result in a substantial and long-term impact to EFH. The temporal scale of shoal morphology precludes quick recovery for species that are dependent on these types of relief features, including prey of the coastal migratory pelagic complex (Hammer et al. 2005). While Gilmore (2008) notes the value to additional studies of local sand shoals and the effects of mining on fish habitat, the studies he reviewed demonstrate that shoals serve as aggregation and spawning sites for schooling planktivorous fishes that support regional pelagic fisheries, such as mackerels. Accordingly, it is not clear how the Jacksonville District reached the preliminary determination that the project would not adversely affect EFH.

The draft EIS concludes that given the short temporal duration of the preferred alternative and relatively rapid recovery of the soft bottom infaunal invertebrate assemblage, short duration impacts to soft bottom assemblages within the borrow site are expected. The potential impacts from the modification to the shoal are considered minor and, therefore, unlikely to adversely affect the benthic community for extended periods. However, NMFS is concerned that systematic dredging of shoals, such as the proposed project and the dredging described in USACE (2010), may result in unanticipated changes in habitat quality. Although opportunistic invertebrate communities may repopulate these areas after the dredging, benthic populations may not recover to pre-project levels. Dredging will also resuspend any fine material in the borrow area which can result in clogged gills in young, less mobile fish and invertebrates and thereby increase their mortality rate. The extent of negative effect is dependent on the life history stages of the species present and the duration of the event. The St. Lucie shoal complex is a long-established seascape feature that provides valuable habitat for fishery resources that utilize estuaries and offshore waters as a part of their life cycle. Minimizing mining sand from these shoals would ensure that these important areas would not be altered to the point that they no longer provide valuable habitat (see EFH conservation recommendations #1, 2, and 7).

Monitoring Needed for the Offshore Sand Mining

To fully evaluate the proposed mining of the shoals for sand, NMFS requires additional information regarding the rates at which borrow areas are expected to fill and measures the District may require the applicant to take to limit dredging to portions of the shoal expected to fill in most rapidly. NMFS also recommends monitoring of the shoal's infauna communities be required to quantify whether the actual impacts to EFH are within acceptable limits. A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which the offshore borrow areas fill and grain-size distribution of the material that fills the dredge holes (see EFH conservation recommendation #6).

Dredging Best Management Practices

The draft EIS and EFH assessment refer to adherence of best management practices, however a comprehensive list of those BMPs is not provided. The implementation of best management practices to minimize the adverse effects from dredging the shoal is warranted. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. In addition, dredging within the offshore borrow area should be limited to the portions

of the shoal expected to fill in most quickly once dredging has stopped. The District should provide a list of best management practices to NMFS for review and approval prior to finalizing the EIS (see EFH conservation recommendation #7).

Wave Refraction Analysis

See comments above and EFH conservation recommendation #1.

Compensatory Mitigation

The EIS describes the construction of 0.98 acres of artificial mitigation reef to offset the loss of 1.08 acres of nearshore hardbottom. However the mitigation plan (appendix D), describes that up to 6.22 acres of mitigation would be needed (1.19 acres of Community 1 and 5.03 acres of Community 2). It is unclear how either mitigation amount was determined. The draft EIS and mitigation plan refer to the completion of a Unified Mitigation Assessment Method (UMAM) as appendix C to the mitigation plan, however the appendix is not contained within the document.

Similar to our comments on the nearshore hardbottom biological monitoring plan, we feel it is premature to provide detailed recommendations on this plan until sufficient information to characterize and quantify nearshore hardbottom impacts is provided (EFH conservation recommendation #3). Specifically, we will not be able to complete our review of the plan until we have a better understanding of what functional groups are present in fill areas and the depths of habitats within fill areas.

NMFS recommends that a compensatory mitigation plan be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS. This plan should include performance standards, monitoring protocols and schedule, and a functional assessment (e.g., UMAM) that demonstrates how mitigation amounts offset the resource impacts (see EFH conservation recommendation #8).

Information Needs

NMFS believes the information provided in the draft EIS is not consistent with existing Council on Environmental Quality (CEQ) guidelines and Army regulations regarding mitigation and mitigation monitoring. Final guidance recently released by CEQ regarding mitigation and monitoring (CEQ 2011) cites Army regulations which state that “consistent with existing CEQ guidelines, the Army’s NEPA implementing regulations place significant emphasis on the planning and implementation of mitigation throughout the environmental analysis process. The first step of mitigation planning is to seek to avoid or minimize harm” [40 CFR 1508.2]. In the absence of habitat mapping and biological survey information that quantifies in the draft EIS the extent of potential damage to hardbottom, NMFS is unable to determine that impacts to EFH have been avoided to the extent practicable. In addition, the guidance states that “when the analysis proceeds to an EA or EIS, however, the Army regulation requires that any mitigation measures be ‘clearly assessed and those selected for implementation will be identified in the FONSI or the ROD’ and that ‘the proponent must implement those identified mitigations, because they are commitments made as part of the Army decision’ [32 CFR 651.15(b)].” The draft EIS does not sufficiently discuss mitigation and monitoring plans and implementation programs as required by these regulations.

NMFS believes the information provided in the draft EIS does not meet the requirements of the EFH provisions of the Magnuson-Stevens Act. The Jacksonville District chose to integrate the required components of an EFH assessment, as appendix H, based on our review, NMFS does not agree that all components of an EFH assessment are present or provided in sufficient detail (50 CFR 600.920(e)(2)) to adequately analyze the effects on EFH. Based on the nature of the proposed action and the potential adverse effects on EFH and EFH-HAPCs, NMFS provides the following assessment of the mandatory

and additional information requirements found at 50 CFR 600.920(e)(3) and (4) that should be included in the Final EIS:

Mandatory Components of an EFH Assessment:

1. *Description of the action.* Provided.
2. *Analysis of the potential adverse effects of the action on EFH and the managed species.* This analysis is not complete in the EIS. Information describing the quantity and quality of hardbottoms within nearshore fill areas and pipeline corridors is needed for NMFS to make a determination regarding the level of effect to NOAA trust resources. Additional information regarding dredging best management practices is needed to complete this component as well. See EFH conservation recommendations #3 and #7.
3. *Federal agency's conclusions regarding the effects of the action on EFH.* Provided, however it is unclear how the District came to the initial determination based on the lack of available information on the quantity and quality of hardbottoms in nearshore areas that would be adversely affected by the project. In addition, portions of the EIS and EFH assessment seem to clearly acknowledge that dredging the offshore shoal would result in an adverse effect to EFH. The analysis does not support the conclusion and clarification is needed.
4. *Proposed mitigation, if applicable.* NMFS believes compensatory mitigation should be required. Upon receipt of responses to EFH recommendation #2 and #3 we should be able to provide more informed recommendations on the plan. See EFH conservation recommendation #8.

Additional Information:

1. *Results of an on-site inspection to evaluate the habitat and the site-specific effects of the project.* Deficiencies are noted above for both pipeline corridors, hardbottoms near within and near the toe-of-fill. See EFH conservation recommendations #3.
2. *Views of recognized experts on the habitat or species that may be affected.* Provided.
3. *Review of pertinent literature and related information.* Provided
4. *An analysis of alternatives to the proposed action.* Least environmentally damaging practical alternatives should be evaluated, including alternatives minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts. See EFH conservation recommendation #2.

EFH Conservation Recommendations

Although additional information is needed to complete the EFH consultation, based on the information provided thus far NMFS concludes the project will likely adversely affect EFH, including over one acre of hardbottom that supports worm reef and, potentially, coral. Significant indirect and cumulative adverse impacts are also likely in connection with construction activities and the subsequent loss of marine habitats and their associated functions. These indirect and cumulative impacts include increased turbidity, sedimentation from dredging and the placement of fill in the aquatic environment, and loss of food production and other functions that coral, coral reef, and hardbottom habitats that contribute to fishery productivity. Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. Based on this requirement, NMFS provides the following:

EFH Conservation Recommendations

The following EFH Conservation Recommendations may require re-evaluation or augmentation following review of any additional information. As stated above, until the analysis identified in EFH conservation recommendation #1 has been completed and results are coordinated with NMFS and other agencies, we do not recommend moving forward with the other project elements described below.

1. The shoal proposed for excavation shall be eliminated from the project design due to the potential for unacceptable impacts to the wave climate and shoreline sediment transport. Alternatively, NMFS will re-consider this recommendation based on receipt of additional analysis performed similar to Kelley et al. (2004).
2. The District shall evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts. Specifically, we recommend further examination of the following three alternatives: Beach Fill with No Impact to Existing Hardbottom; Beach Fill to Restore the 1972 Beach and Dune; and South Segment Beach and Dune Restoration – North Segment Dune Restoration Only.
3. Results from a biological resource and nearshore habitat mapping survey within the ETOF with 1,000-foot buffer and the pipeline corridor with a 100-foot buffer shall be provided to NMFS. The biological survey report should map, quantify, and characterize hardbottom within 100 feet of the pipeline corridor and hardbottom within 1,000 feet from the ETOF. The method for determining the amount of hardbottom present should be described and based on historical and recent data. In addition, the survey report should identify survey dates and include full characterizations of each habitat depicted in the maps. These characterizations should focus on the following taxonomical groups: stony corals, octocorals, sponges, worm reef, and macroalgae. For stony corals, species, density, size distribution (colony diameter and height), and condition (bleaching and disease) should be documented. For octocorals, species, density, and size distribution (colony height) should be documented.
4. A biological monitoring plan shall be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS.
5. A plan for monitoring the pipeline for leaks at least twice per day and response actions to any leaks detected shall be provided to NMFS for review and approval prior to finalizing the EIS.
6. A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which infaunal communities recover from dredging and the fill and grain-size distribution of the material that fills the dredge holes.
7. Best management practices (BMP) to minimize the adverse impacts associated with mining the shoals shall be developed and integrated into the project design. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. Please provide a list of BMPs to NMFS for review and approval prior to finalizing the EIS.
8. A compensatory mitigation plan that describes how unavoidable impacts to hardbottom habitat shall be offset from construction activities and the ETOF. This plan should include performance standards, monitoring protocols and schedule, and a functional assessment (e.g., Unified Mitigation Assessment Method) that demonstrates how mitigation amounts offset the resource impacts.

Section 305(b)(4)(B) of the Magnuson-Stevens Act and its implementing regulation at 50 CFR 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 NMFS' "findings" with the District, an interim response should be provided to NMFS. A detailed response then must be provided prior to final approval of the action. The District's detailed response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity. If the District's response is inconsistent with these EFH Conservation Recommendations, the District must provide a substantive discussion justifying the reasons for not following the recommendation.

Thank you for the opportunity to provide comments. Related correspondence should be directed to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, which is co-located with the US Environmental Protection Agency at USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 616-8880, extension 207, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,



/ for

Virginia Fay
Assistant Regional Administrator (Acting)
Habitat Conservation Division

cc:

FWS, Charles_Kelso@fws.gov
FWCC, Lisa.Gregg@MyFWC.com
FWCC, Debby.Tucker@MyFWC.com
FDEP, Stephanie.Gudeman@dep.state.fl.us
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CSA International, Inc. 2010a. Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project. Prepared for Coastal Technology Corporation, Vero Beach, FL. 50 pp + apps. (NMFS does not have)

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
4400 PGA BOULEVARD, SUITE 500
PALM BEACH GARDENS, FLORIDA 33410

September 20, 2011

REPLY TO
ATTENTION OF

Palm Beach Gardens Regulatory Section
SAJ-2009-03448(IP-GGL)

Mr. Paul Souza, Field Supervisor
South Florida Ecological Services Office
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960

Dear Mr. Souza:

This letter refers to a request on behalf of St. Lucie County Erosion Control District for shoreline stabilization including placement of approximately 610,034 cubic yards of sand over about 3.8 miles of shoreline. The project is located within the Atlantic Ocean adjacent to the beaches in southern St. Lucie County, Florida, in Sections 02, 11, 22, 35, 37, Townships 36 and 37 South, Range 41 East. The project area has two discontinuous fill areas extending from Florida Department of Environmental Protection (FDEP) Shoreline Monuments R-87.7 to R-90.3, and R-98 to the St. Lucie/Martin County line. A public notice dated June 29, 2011 and a draft Environmental Impact Statement were previously sent to your office for review.

The project as proposed is anticipated to adversely affect approximately 10.85 acres of nearshore hardbottom/worm reef. The anticipated adverse effects were quantified based on the hardbottom resources inside the equilibrium toe of fill line, and are related to direct fill, turbidity, littoral drift, and pipeline corridors. The proposed beach fill template of the dune restoration includes a crest width between 9.0 feet and 67.0 feet, at a crest elevation of +12.5 feet NAVD. The restored dune's landward and seaward slopes are proposed to be 3.0 foot horizontal to 1.0 foot vertical (3H:1V). The project proposes planting native, salt-tolerant dune vegetation on the restored dune crest.

Restoration of the beach includes a berm fill template extending from the toe of the restored dune at elevation +5.35' NAVD seaward approximately 35.0 feet at a 100H:1V slope to produce the design beach. The seaward extension of about 25.0 feet of the berm at a 100H:1V slope to the seaward edge of the top of the berm is proposed as "advance" fill to offset expected future erosion. The applicant stated the re-nourishment interval would be approximately 10 years.

The U.S. Army Corps of Engineers (Corps) has completed an evaluation of the impacts the work may have on the piping plover (*Charadrius melodus*). Based on species information and the location of the project area, the Corps is aware the range of piping plover overlaps the project area, and the species may utilize open beaches during winter migrations. The project is proposed to occur outside turtle nesting season when piping plovers may be present. Therefore, the Corps has determined the proposed project "may affect, but is not likely to adversely" piping plovers. Pursuant to Section 7 of the Endangered Species Act we request your concurrence with this determination within 30 days.

Furthermore, the Corps has evaluated the anticipated effects of the proposed project on nesting sea turtles and their nesting habitat with regards to the U.S. Fish and Wildlife (FWS) State Programmatic Biological Opinion (SPBO) dated April 19, 2011. The Corps requested the applicant to review the SPBO reasonable and prudent measures and the terms and conditions. The applicant agreed to adhere to the terms and conditions that apply to their project. The Corps is submitting project information received from the applicant that demonstrates adherence with the SPBO. Therefore, the Corps believes the project complies with the FWS's programmatic opinion. Please inform us if the project does not meet the criteria of the SPBO and what additional information is required.

Please advise if you agree with the above determinations or provide a date when individual formal consultation would commence. If you have any questions regarding this letter, please contact Garrett Lips at the letterhead address, by telephone at 561-472-3519, or by email at Garrett.G.Lips@usace.army.mil.

Sincerely,

Leah Oberlin
Chief, Palm Beach Gardens Section

Enclosure(s)

Copies Furnished:

Applicant SLC, (Richard Bouchard)
Agent Coastal Tech Corp, (Lois Edwards)
Taylor Engineering, (David Stites)

SAND DOLLAR SHORES CONDOMINIUM ASSOCIATION, INC.

7420 SOUTH OCEAN DRIVE

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Website: www.sanddollarshores.net

November 23, 2011

Congressman Tom Rooney
1529 Longworth House Office Building
Washington D.C 20515

RE: St. Lucie County Beach & Dune Restoration Project, Local Funding Plan

Dear Congressman Rooney:

The Board of Directors of the Sand Dollar Shores (SDS) Condominium Association, Inc. on behalf of our unit owners is writing to inform you that SDS has decided to opt out of the *St. Lucie County South Beach and Dune Restoration Project*, as well as any Special Assessment District (SAD) that may be formed to pay for it. We request your support for our decision.

First, we want to make you aware of our unique situation. SDS has the good fortune to be blessed with an abundance of nearshore hardbottom/live worm rock reef that provides protection from erosion.

Secondly, the project being proposed by the County, according to an estimate by your own consultant, will bury 2.16 acres in the north section of the project area where SDS is located. According to the Draft Environmental Impact Statement (DEIS) released in May 2011 by the Army Corps of Engineers: *"Substantial geologic evidence suggests that nearshore hardbottom and/or worm rock are also important in the maintenance and persistence of beaches and barrier islands by dissipating wave energy and retaining sediments, and thus increasing the volume of standing sand on beaches adjacent to large worm rock habitat."* Unfortunately, not only will your proposed project destroy our natural protection, once the sand proposed by the project is removed by natural wave action, we will be left with no protection unless repeated expensive renourishments are funded. This is simply not a risk we are willing to take.

Thirdly, even if the Board of Commissioners gives effect to SDS opting out of this project and the SAD, there are still concerns about this project that must be addressed as it moves forward. The National Marine Fisheries Service (NMFS) is quite concerned about mining of the

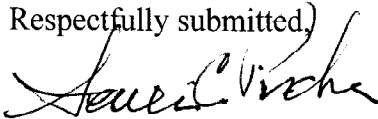
St. Lucie Shoal for sand. In its August 2011 letter, NMFS "*determined that the proposed work would adversely impact aquatic resources of national importance.*" Not only is the shoal important Essential Fish Habitat (EFH) and a vital aquatic environmental resource, mining it may have unintended erosion consequences for the beach in front of SDS and other condominiums on the coast, which have not been addressed. It is our understanding that no wave study analysis has been conducted to determine how mining of the shoal could change the climate of the wave action and induce more erosion than is already occurring in some places. Such an analysis is essential before a final decision is made, as we and others living along the shore may be adversely impacted even if we are not a part of the project.

Fourthly, not only will this proposed project bury our live worm rock reef, the Draft Local Funding Plan adds insult to injury by proposing to make our unit owners pay \$3,782 for it through a Special Assessment District (SAD). In addition, because the beach directly to the south of us will not be getting any sand, SDS erosion will be accelerated, and this to the benefit of owners to the south who are not being required to pay anything. Even if SDS wanted this project for our beach, which we do not, we would oppose being unfairly taxed as beachfront property owners to pay to put sand on a beach that benefits all of St. Lucie County. This is especially disconcerting in light of the fact that the tax would be assessed without regard to the value of the property nor the current state of erosion damage/vulnerability. Even more disconcerting is that only a few beachfront property owners on Hutchinson Island are being singled out to pay dearly for this project when other beach projects in Martin County and Ft. Pierce have recently received more than \$12 million of dollars in federal and state funds.

Fifthly, we wish to point out that the process followed by the Board for thus project is seriously flawed, notably by reason that the required public notices were not provided to the unit owners and neither a "willingness to pay" nor an "affordability" study have been conducted.

In closing, we ask that the Board of Commissioners formally give effect to our decision to opt out of the proposed beach project. By opting out of this project and the SAD, we remove our unit owners from the threat of being excessively and unfairly taxed to pay for a project that they neither asked for nor want. We ask the Board of Commissioners to formally approve our decision to opt out of this project and the SAD at your next meeting and provide us with written confirmation. We are hopeful that you will support our decision so that no further action by SDS will be necessary.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Lewis C. Fischer", written in a cursive style.

Lewis C. Fischer, President, SDSCA

Cc: St. Lucie County Commissioners:

Frannie Hutchinson

Chris Dzadovsky

Tod Mowery

Paula Lewis

Chris Craft

Senator Joe Negron negron.joe.web@flsenate.gov

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Bill Cronan, President, DuneWalk by the Ocean Condominium Association



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
4400 PGA BOULEVARD, SUITE 500
PALM BEACH GARDENS, FLORIDA 33410

November 28, 2011

REPLY TO
ATTENTION OF

Palm Beach Gardens Regulatory Section
SAJ-2009-03448(IP-GGL)

Mr. Miles M. Croom
Assistant Regional Administrator
Southeast Regional Office, Habitat Conservation
NOAA, National Marine Fisheries Service
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Mr. Croom:

We have received your ") ' „) Essential Fish Habitat provided by letter dated July 18, 2011, permit application SAJ-2009-03448(IP-GGL), submitted by the St. Lucie County Erosion Control District. The project is located along 3.8 miles of Hutchinson Island shoreline between Florida Department of Environmental Protection (FDEP) monuments R-88.7 to R-90.3 and R-98 to R-115+1,000 feet, St. Lucie County, Florida.

Please find attached comments provided by your office dated July 18, 2011 and the USACE responses. The document identifies the source of the comment or response in **bold face type**, identifies comments in plain face type, and identifies responses *in italics*. The responses include references to documents that you may or may not have. The comments appear verbatim from the comment letters, without changes to grammar, content, or formatting other than font size and typeface.

The USACE will provide you access to a copy of each document or report not readily available or previously cited by NMFS. The Taylor Engineering ftp site contains each new document cited in the responses; however, documents or citations from the DEIS may be referenced using the original DEIS. Please find the ftp site below and use the userid and password provided. Please contact Garrett Lips at 561-472-3519, or David Stites at Taylor Engineering (904) 256-1373 if you cannot access the ftp site. Please note that the password is case sensitive.

ftp site link: <ftp://taylorftpservices.com>
username: nmfs2011
password: Hello1

Please do not hesitate to call or email to discuss these responses.

Sincerely,

Garett Lips
Project Manager

Copy Furnished:

NMFS, Jocelyn Karaszia

Attachment
St. Lucie County South Beach and Dune Restoration Project
Draft Environmental Impact Statement
Response to Comments Provided by the NMFS

This document contains each written comment and the USACE's response to each comment. The document identifies the source of the comment in **bold face type**, identifies comments in plain face type, and identifies responses *in italics*. The comments appear verbatim from the comment letters, without changes to grammar, content, or formatting other than font size and typeface.

The comment numbers are arbitrary in the sense that the USACE did not prioritize or rank the comments based on subject matter. All the comments from a single comment letter occur sequentially, as they appeared in the comment letter.

The Taylor Engineering ftp site provides the documents referred to in the responses if those documents are not already available in the DEIS.

Comment 1 Provided by NOAA-NMFS: HCD

Provided by V. Fay

Comment letter date: 7/18/2011

NMFS Comment: A hopper dredge would be used to excavate the sand from the offshore borrow sites. The material would be transported to locations just offshore from the fill areas and then pumped to the beach. Details of how this would occur do not appear in the draft EIS, however, the drawings in the public notice depict one pipeline for the northern segment and five pipelines for the southern segment.

Response:

The FEIS will provide additional detail concerning the operation of the hopper dredge and transfer of sand from the hopper dredge to the beach along the project length. Specifically, the applicant has provided the following information:

Construction Plan Assumptions

The applicant made the following assumptions concerning hopper dredge operations:

- *2,000 cubic yard hopper dredge capacity (305 hopper loads to complete the project)*
- *5 hour round trip cycle time to load, transit, and offload hopper dredge*

The applicant noted that the actual construction values might vary slightly from these estimates. Please also note that the applicant has provided a total of five (not six) pipeline corridors in its most recent submissions.

Pipeline Corridors

The contractor will likely require the following workday efforts at each pipeline location:

- *R-89.4 – Approximately 9 work days*
- *R-100 – Approximately 14 work days*
- *R-104 – Approximately 11 work days*
- *R-108 – Approximately 15 work days*
- *R-114 – Approximately 16 work days*

St. Lucie County has not recommended use of the potential pipeline corridor at R-101 (the sixth corridor identified in DEIS documents). The applicant eliminated use of this corridor to avoid hardbottom impacts.

Pipeline Placement

At each pipeline corridor, the contractor will perform the following pipeline placement procedures:

- *A diver will video survey bottom conditions within the authorized pipeline corridor before pipeline placement.*
- *Alignment of the pipeline on the surface followed by pipe flooding will sink the pipe to the bottom in the desired location. The intent is to sink the pipeline in place and to avoid dragging the pipeline along the bottom to obtain proper placement*
- *In any location within a corridor where the pipeline cannot avoid hardbottom, the contractor will equip the pipeline with collars or other similar types of “stand-off” devices to minimize impacts to hardbottom.*
- *The contractor likely will not anchor the pipeline to the bottom. The pipeline and pipeline collar mass should prove sufficient to keep the pipeline in place on the ocean bottom. Daily monitoring will verify pipeline location.*
- *Typically, watertight “lock joints” connect dredge pipes.*

A buoy attached to the seaward end of the pipeline will allow the hopper dredge to locate and connect to it easily. The contractor will connect the pipeline to the hopper dredge and pump sand from the hopper dredge onto the beach. As the sand pile grows around the pipe end, earthmoving equipment will continually grade the sand into the desired template. When the area around the pipe end has received enough sand, the contractor will extend (or shorten) the pipe to nourish additional beach areas. When the extended pipeline can no longer reach additional areas without a booster pump, the dredger will cease the pumping operation by pumping water through the pipeline until no sand remains in the pipeline. At that time, the dredger will force air through the pipeline to float it, move the floating pipe to the new location. After completing a necessary lengthening or shortening, pipeline placement as described above will occur. After satisfactory placement, dredging will recommence.

Comment 2 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS describes that seismic and core boring investigations in the borrow area indicate that it contains about 1.3 million cy of beach quality sand. The draft EIS depicts an extension of the shoal located in federal waters that would be dredged to obtain material to last the life of the project proposed by St. Lucie County (Figure 2.2-1 on page 31). The District's draft EIS for the nearby, federal Martin County Florida Hurricane and Storm Reduction Project (USACE 2010) identifies the portion of this feature in federal waters as "borrow area C1-C." Based on Hammer et al. (2005), USACE (2010) states that borrow area C1-C was eliminated from future analysis in part due to wave refraction modeling results that indicate unacceptable impacts to the wave climate and changes to shoreline sediment transport processes would occur from dredging these two areas. NMFS believes that similar unacceptable impacts would occur from dredging the portion of this shoal in state waters and recommends that a similar analysis be conducted for the state waters portion of the borrow area (see EFH conservation recommendation #1). Until this analysis has been completed and results are coordinated with NMFS and other agencies, we do not recommend moving forward with the other project elements provided below.

Response:

The applicant has described a conceptual 50-year plan for shoal dredging that provides one means of obtaining sand for the project. The EIS also includes discussion of other sand sources that would likely remain available over the 50-year project life.

USACE 2010 assumed complete deflation of the shoal as a result of dredging. That is one of the reasons why they did not select the site for their proposed project (Paul DeMarco personal communication September 2011).

*Hammer et al. (2005) modeled "the significance of changes to longshore transport along the modeled shoreline from dredging proposed borrow sites to their maximum design depths" (page 239). This entailed modeling a scenario dredging 14.6 million cubic meters (18.3 million cubic yards) of sand and reduction of the shoal elevation from between -5.4 m and -7.6 m (-17.8 ft and -24.9 ft) to an elevation of -12 m (-39.4 ft) in other words complete deflation of the shoal to surrounding elevations). The modeled dredging caused unacceptable changes in wave climate along the shoreline. Referring to acceptable levels of dredging, Hammer et al (2005) concluded that "the most likely change would be a reduction in maximum dredging depth to reduce site impacts" (page 240). The "reduction in maximum dredging depth" refers to the final elevation of the shoal. However, the Hammer et al modeled dredging removed almost 25 times the amount of sand proposed by the applicant. In addition, **The proposed dredging will not reduce the maximum elevation of the shoal.** The applicant has demonstrated that the wave climate changes caused by the project do not include significant impacts on nearshore wave climate and sand transport.*

*Similarly, Kelley et al. (2004) modeled the removal of an estimated 24 million cubic meters (31.4 million cy) with an excavation depth of 4.6 meters (15 ft - all of St. Lucie Shoal in federal waters). After determining that this dredging would cause unacceptable effects on the wave climate, they determined that the shoal — if reduced in elevation by less than 2.3 meters (7.5 ft) — would yield 12 million cubic meters (15.7 million cy) of sand without causing significant impacts on longshore sediment transport. Again, the USACE notes that **the proposed project maintains the shoal height and extracts about 5% of the volume Kelley et al. identified as safe to extract considering nearshore wave climate.***

Dibajnia and Nairn (2011) formulated and recommended “offshore dredging guidelines to protect and maintain the morphologic integrity of the ridge and shoal features found on the Outer Continental Shelf (OCS) which are being targeted as sand borrow sites for beach nourishment and coastal restoration efforts”. Using historic survey data and model analysis of the effects of eleven dredging scenarios for 10-15 year periods, they concluded that “ there was no indication that there exists a critical threshold for dredging that once crossed, ridge and shoal features may deflate, losing their morphologic integrity”. The ftp site includes a copy of the report.

The Record of Decision will include identification of the USACE’s preferred sand sources based on the results of the applicant’s modeling, and the position of the NMFS HCD stated in this comment and Conservation Recommendation #1.

See Coastal Technology Corporation wave climate analyses (three documents) provided on the Taylor Engineering ftp site. Please find also copies of Hammer et al. 2005 and Kelley et al. 2004.

Comment 3 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS evaluates seven alternatives, including “Beach Fill to Restore the 1972 Dune with a 35-ft Berm,” which is the preferred alternative; and the no action alternative. The draft EIS also presents 13 other alternatives that were eliminated from further consideration. Much of the discussion in the draft EIS, EFH assessment, and public notice pertains to the preferred alternative. Overall, the analysis of alternatives seems narrow. Additionally, the analysis presented for “Alternatives Eliminated From Detailed Evaluation (Section 2.4),” are described in more detail than many of the “Alternatives Evaluated in Detail (Section 2.1).” NMFS recommends the District evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts (see EFH conservation recommendation #2). We specifically recommend further examination of the

following three alternatives: Beach Fill with No Impact to Existing Hardbottom; Beach Fill to Restore the 1972 Beach and Dune; and South Segment Beach and Dune Restoration – North Segment Dune Restoration Only. This would also address our recommendation provided in our letter dated, June 21, 2010, regarding the need to evaluate designs that avoid and minimize impacts to hardbottom throughout all phases of the project.

Response:

The DEIS identifies “Beach Fill to Restore the 1972 Dune with a 35-ft Berm” as the applicant’s preferred alternative. St. Lucie County presented this preference in its Dredge and Fill permit application SAJ-2009-03448 (IP-GGL). The USACE is evaluating all reasonable alternatives. The Record of Decision (ROD) will identify the USACE’s preferred alternative. In the DEIS, the USACE reviewed several alternatives with a range of hardbottom impacts. In addition to the hardbottom impacts, the USACE must also consider impacts to listed species (such as marine turtles) and their habitat, and to humans and human habitats. The final USACE recommendation, expressed in the ROD, will consider the full range of alternatives, impacts, and mitigation for those impacts.

NOAA HCD has elsewhere indicated its requirement that the EFH assessment focus on one alternative. The USACE has done so in the EFH Assessment and Biological Assessment.

**Comment 4 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011**

Comment: The draft EIS states that 1.08 acres of nearshore hardbottom would be directly buried as a result of the preferred alternative. An explanation of how hardbottom impacts are quantified is missing from the draft EIS and EFH assessment. Digitized aerials from 2008 are provided as figures in the public notice and these figures depict the exposed hardbottoms between the shoreline and 600 feet eastward of the shoreline. Given the shifting nature of sand in nearshore areas, NMFS does not believe that one year of analysis is sufficient to quantify the amount of hardbottom habitat within the equilibrium toe of fill (ETOF). We recommend maps be based on at least three time periods, including a more recent survey (see EFH conservation recommendation #3).

USACE Response:

The FEIS will contain a clear explanation of the quantification of hardbottom impacts and the means by which the applicant characterized the different hardbottom community types. The applicant has also provided analysis of hardbottom habitat and impacts based on 2010 aerial photographs. USACE will use the impact assessment based on the most recent hardbottom data. The FEIS Appendix N provided 2008 hardbottom maps with the Applicant’s Preferred Project and 2010 hardbottom maps with the Applicant’s Preferred Project.

These maps are available on the Taylor Engineering ftp site. Note that the 2010 maps also point out the different hardbottom communities.

Comment 5 Provided by NOAA-NMFS: HCD

Provided by V. Fay

Comment date: 7/18/2011

Comment: The draft EIS describes two types of hardbottom habitat in the project area, referred to Community 1 and Community 2. These habitat types are qualitatively described and differentiated in terms of relief and the presence of worm rock and other functional groups (sponges and macroalgae), with Community 1 providing higher ecological services (and a higher mitigation requirement). Within the preferred alternative impact area, approximately 0.39 acres of Community 1 and 0.69 acres of Community 2 would be filled. The locations of these habitats and the survey information that fed into the habitat characterizations is not provided. Further, information is not provided regarding the presence of these habitat types with respect to the planned pipeline installation and if nearshore hardbottom habitat impacts would occur from this activity. In addition, the EFH assessment does not provide detail on the different benthic functional groups that are present in the project area. For example, corals are not mentioned in the EFH assessment; however, the biological monitoring plan (appendix F) describes evaluation of metrics associated with corals (see EFH conservation recommendation #3). We acknowledge that the draft EIS refers to CSA 2010a, *Baseline Nearshore Hardbottom Characterization Survey for the St. Lucie County South Beach Project* (report not provided to NMFS). It is possible that more information from this report may need to be incorporated into the EFH assessment or additional biological resource surveys may be needed.

Response:

Revisions to the EFH Assessment and EIS will provide locations of the community types, planned pipeline installation locations, all benthic functional groups present in the project area, and a description of the surveys performed.

The applicant's survey methods to characterize benthic community types included

- *Twenty-two permanent transects installed perpendicular to shore near FDEP range monuments. Final transect locations varied slightly from the range monument locations to avoid areas devoid or largely devoid of hardbottom and to ensure transect installation near candidate pipeline corridor routes. Permanent transects were installed at R-77.7, R-78.7, R-80.4, R-82.8, R-85, R-86.3, R-88.7, R-90.4, R-92, R-93.5, R-100, R-101, R-102, R-103.2, R-104.5, R-105.9, R-109.2, R-110, R-110.5, and R-112 in St. Lucie County, and R-1 and R-3 in Martin County. Each transect extended from the landward edge of exposed nearshore hardbottom to the easternmost extent of exposed hardbottom along the transect, not exceeding 150 meters(492 ft) in total length.*

- Scientists collected quantitative and qualitative video data along the entire length of each transect to determine percent cover of benthic flora, fauna, and substrate components. In addition, sampling occurred at in situ quadrats at 10 to 12 point-intercept locations along each transect. The nearshore hardbottom edge was mapped to document the position of the exposed hardbottom and characterize associated benthic communities within the survey area.
- Percent cover of each taxon as well as major categories (macroalgae, fauna, substrate, and biotic turf) was calculated from quantitative video using the point count method and from raw in situ quadrat data. Percent cover data sets were log transformed and subjected to nonparametric statistical analyses with PRIMER 6.1.6 statistical software to investigate potential patterns in hardbottom community composition and distribution.
- Community classifications were based on a combination of physical (water depth, distance from shore, hardbottom relief), and compositional (dominant floral and faunal species) characteristics. The community locations are pointed out in the 2010 hardbottom maps that are provided in the Taylor Engineering ftp site. The FEIS will also include these figures.
- During the 2010 monitoring event, three scleractinian coral polyps were observed in one quadrat on the transect located at R-104.5. No scleractinian corals were observed in any quantitative or qualitative video transects. One octocoral was observed during the point count analysis of one transect (R-78.7). Note that this transect falls outside the project equilibrium toe of fill.
- Community Three included octocorals. The project will not impact this community, which is located further offshore than Community One or Community Two.

Note that the FEIS will include a detailed, observation-based description of Hardbottom Communities One, Two, and Three in an Appendix to the FEIS. Response to another comment, below, includes summary descriptions of the three hardbottom communities and their locations within the project area.

The information on hardbottom mapping methodology, the baseline hardbottom survey report, and other relevant information are provided on the Taylor Engineering ftp site.

Comment 6 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: NMFS recommends that a biological monitoring plan be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS. Generally, the plan should include monitoring hardbottom habitat within the area of the ETOF and 1,000-foot buffer. The monitoring schedule should include a minimum of one pre-construction event, one event immediately after construction, one event 6 months after construction, and annually for three years post-construction (see EFH conservation recommendation #4).

USACE Response:

The applicant has provided a biological monitoring plan that includes consistent baseline and post-construction transect locations and distances (DEIS Appendix F). The monitoring plan includes pre-construction and immediate post-construction efforts, and annual events for a total monitoring period of five years. The Record of Decision will provide USACE recommended monitoring activities.

Please find the applicant's proposed monitoring plan as Appendix F of the DEIS.

Comment 7 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS generally describes how material will be transported to the beach and the public notice drawings depict that six pipeline corridors are proposed. However as noted above, a habitat characterizations of the pipeline routes are not provided in the draft EIS. There is no mention of the pipeline in the EFH assessment. A survey of the pipeline corridors will be needed to complete the EFH consultation (see EFH conservation recommendation #3).

USACE Response:

Six proposed pipeline corridors — diver-surveyed in 2009 (R-89.5, R-100, R-101, R-104, R-108, and R-114) — dives resulted in the elimination of the proposed corridor at R-101 due to a 62m (203 ft) extent of hardbottom in the nearshore region of that proposed pipeline corridor. Based on the diver survey results, pipeline corridors selected at that time avoided almost all hardbottom impacts

The northernmost pipeline corridor (approximately at R-89.5) contains variable presence of hardbottom and partially exposed hardbottom. However, no practicable alternative (i.e. another route that would result in lesser impact) would allow project construction in the north Project segment. The remaining four proposed pipeline corridors (R-100, R-104, R-108, and R-114) consist almost completely of sand and shell hash, with some interspersed small expanses of

*hardbottom or partially exposed hardbottom. These small expanses, perhaps areas of ephemeral hardbottom exposure, had little biotic cover (CSA, **Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project January 2010**, included in the FEIS). The applicant has proposed the use of pipeline collars or similar type of standoff device if the pre-placement survey dive identifies any unavoidable hardbottom (see Comment 1 Response concerning best management practices, above). This approach will avoid and minimize potential impacts to hardbottom resources along the pipeline corridors.*

*The document referred to above, **Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project**, will be available to the NMFS on the Taylor Engineering ftp site.*

Comment 8 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: Additionally, NMFS requests the District require monitoring the pipelines for leaks at least twice each day. NMFS requests that the District develop a pipeline monitoring plan and provide the plan to us for review and approval prior to construction. The plan should clearly identify measures for corrective actions, should a leak be detected (see EFH conservation recommendation #5).

Response:

The FEIS will include a pipeline monitoring plan including daily dive survey of the pipeline to verify that the pipeline remains in the desired location and to identify any impacts outside the 50 ft corridor. The ROD will include a recommended means of pipeline monitoring.

The Taylor Engineering ftp site includes the pipeline monitoring plan proposed by the applicant.

Comment 9 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS concludes that given the short temporal duration of the preferred alternative and relatively rapid recovery of the soft bottom infaunal invertebrate assemblage, short duration impacts to soft bottom assemblages within the borrow site are expected. *The potential impacts from the modification to the shoal are considered minor and, therefore, unlikely to adversely affect the benthic community for extended periods. However, NMFS is concerned that systematic dredging of shoals, such as the proposed project and the dredging described in USACE (2010), may result in unanticipated changes in habitat*

quality. Although opportunistic invertebrate communities may repopulate these areas after the dredging, benthic populations may not recover to pre-project levels. Dredging will also resuspend any fine material in the borrow area which can result in clogged gills in young, less mobile fish and invertebrates and thereby increase their mortality rate. The extent of negative effect is dependent on the life history stages of the species present and the duration of the event. The St. Lucie shoal complex is a long-established seascape feature that provides valuable habitat for fishery resources that utilize estuaries and offshore waters as a part of their life cycle. Minimizing mining sand from these shoals would ensure that these important areas would not be altered to the point that they no longer provide valuable habitat (see EFH conservation recommendations #1, 2, and 7).

Response:

The DEIS focuses (and the FEIS will focus) on the sand source alternatives for a single project that requires over 600,000 cubic yards of sand. In the cumulative impact assessment, the DEIS considers the availability of sand for a 50-year project horizon and includes consideration of all other such possible projects over a 50-year horizon. The single project considered in this EIS does not represent "systematic dredging of the shoals" and will not result in the loss of shoal features. The project proposes extraction of a small fraction (610,000 cubic yards) of the more than 24 million cubic yards of sand that make up St. Lucie Shoal. The dredging design takes into account numerous best management practices including maintaining a refuge patch in the area with the highest elevation, dredging at elevations above rather than below the surrounding substrate regional ocean bottom elevation, avoiding dredging across the shoal, and monitoring turbidity. Thus, this one project will avoid and minimize impacts to the structure and functions of St. Lucie Shoal.

An important requirement for avoidance and minimization of beach nourishment impacts includes the placement of sand in a single period outside the turtle nesting season. Otherwise, the project would have to include additional sand to account for that lost to erosion between available construction periods. Truck delivery of the large volume of sand (610,000 cubic yards) required for the initial project would entail very significant disruption of the human communities in the project area and along the truck route. A trucking effort to move sand for the initial project would require so much time that (1) the required project period might likely extend beyond a single construction period and (2) any problem that slowed the trucking process would very likely result in the project operating during two available construction periods.

The DEIS also states that future renourishment projects at the proposed site will require less sand (approximately 200,000 cubic yards) on a 10-year renourishment cycle. This renourishment cycle requires about 1,410,000 cubic yards over the 50-year project planning horizon including the initial project volume. One million cubic yards comprise less than or equal to 4% of the sand resources in the St. Lucie Shoal (depending on the estimate source). Thus, over its project life, and assuming adherence to best management practices, this project alone is unlikely to impact shoal structure and functions. Also, based on

recent beach nourishment projects, construction of a 200,000-cubic yard project with upland sand sources can reasonably occur within a single annual period outside turtle nesting season. Thus, the problem of using an upland sand source to perform the project within the allowed seasonal period does not necessarily apply to renourishment efforts. Future projects, if constructed using upland sand sources, renourishment projects, would result in much lower disruption and impact to human communities and infrastructure. Renourishment project proposals should carefully reevaluate the use of upland sand for construction.

The USACE recognizes that some unavoidable impacts may occur to fishes in planktonic stages and to some juveniles. However, closely monitored past offshore dredging efforts have not produced visible fish kills of juvenile fishes. Most fishes able to do so will avoid the area until water quality returns to acceptable levels. The vibracore samples logs indicate that the sand layer exposed within the proposed borrow area after dredging contains less than 4% fines, a percent of fines present (4%) in the existing exposed top layer of sediment in the borrow area. Mobile species will move out of the dredge area during the dredging activities due to the short-term disruption to the area from construction activities. Once dredging ceases, suspended sediment will settle. The mobile species will return to the area and, based on the geotechnical data, should experience no more turbidity after dredging than turbidity before dredging.

The USACE could identify no reports or observations of dredging impacts sufficient to harm a fish species significantly. The project area represents a small portion of the St. Lucie Shoal, which represents only a portion of the offshore shoals in the central Florida offshore coastal shelf (OCS). Therefore, the USACE considers such dredging impacts insignificant.

Future projects may request the use of this shoal as a sand source. In the future, impacts may occur if dredging occurs without consideration of these shoals as important components of the offshore marine ecosystems. USACE expects to consider each future project that requests to dredge St. Lucie Shoal on its merits as a single project and as part of potential cumulative effects of all such projects — past, present, and future. USACE will continue to consult with its federal natural resource partners on this issue.

We have discussed the question of benthic macroinvertebrate communities in response to other comments. The applicant has collected samples of the softbottom benthic community; the FEIS will include these data. The applicant has indicated in the benthic monitoring plan provided in the DEIS that they intend to collect and analyze post-construction benthic samples. The USACE is unaware of any evidence suggesting that “benthic populations may not [ever] recover to pre-project levels.” The available data suggest that benthic communities do recover.

Comment 10 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: To fully evaluate the proposed mining of the shoals for sand, NMFS requires additional information regarding the rates at which borrow areas are expected to fill and measures the District may require the applicant to take to limit dredging to portions of the shoal expected to fill in most rapidly. NMFS also recommends monitoring of the shoal's infauna communities be required to quantify whether the actual impacts to EFH are within acceptable limits. A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which the offshore borrow areas fill and grain-size distribution of the material that fills the dredge holes (see EFH conservation recommendation #6).

Response:

The monitoring plans proposed by the applicant (DEIS Appendices E and F) include measurements of pre- and post-construction physical and biological conditions at the borrow site. Thus, the applicant has committed to collect data necessary to assess infilling rates and changes in infaunal communities requested by NMFS. Note that the DEIS includes results of a pre-construction bathymetric survey as part of the borrow area description and dredging design. The FEIS will include results of baseline benthic macroinvertebrate sampling performed in 2010. Please note the large between-site variability in the benthic community data. This variability is characteristic of benthic communities.

Please find baseline benthic macroinvertebrate data on the Taylor Engineering ftp site. The FEIS will also include this information.

Comment 11 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS and EFH assessment refer to adherence of best management practices, however a comprehensive list of those BMPs is not provided. The implementation of best management practices to minimize the adverse effects from dredging the shoal is warranted. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. In addition, dredging within the offshore borrow area should be limited to the portions of the shoal expected to fill in most quickly once dredging has stopped. The District should provide a list of best management practices to NMFS for review and approval prior to finalizing the EIS (see EFH conservation recommendation #7).

Response:

Revisions to the EIS and EFH Assessment will include consideration of best management practices (BMPs).

BMPs applied in the proposed project may include those listed below. Many contractors include them as standard operating practices for offshore hopper dredging operations:

Design BMPs

- Design the borrow area with the long axis parallel to the long axis of the shoal. However, avoid dredging along the entire long axis of the shoal (included in this project).*
- Maintain a refuge patch at the highest shoal elevations to help minimize the impacts to the shoal habitat (included in this project).*
- Dredge on the downdrift side of the shoal (included in this project).*
- Excavate only to surrounding ocean floor elevations (included in this project).*

Managerial BMPs

- Water quality monitoring plan (included in this project)*
- Biological monitoring plan (included in this project)*
- Construction window to minimize seasonal impacts (included in this project)*

Operational BMPs

- Use of manatee signage/observer (included in this project)_*
- Use of marine turtle deflectors/marine turtle trawling (required during all hopper dredge activities) (included in this project)*
 - Prevent sea turtle mortality*
 - Deflect sea turtles in or near the path of the draghead during dredging activities*

Potential BMPs for consideration

Operational BMPs

- Three controls associated with dredges and barges filling operations help to minimize turbidity.*
 - Eliminate or reduce hopper overflow. Eliminating or reducing hopper overflow reduces the volume of fine material that flows from the hopper in the overflow. Note that this control may significantly reduce hopper dredge production*
 - Lower hopper fill level. Lowering the hopper fill level in rough sea conditions can prevent material loss during transport.*
 - Implement a recirculation system. Recirculating water from the hopper overflow to the draghead can reduce water discharged from the hopper.*
- Use integrated GPS systems (included in this project)*

- *Monitors dredge position, cutterhead location, and allows calculation of dredge production status*
- *Enhances environmental monitoring – provides real-time alarms and archival recording of dredge head position/depth outside of prescribed boundaries/depths*
- *Use floating tow lines*
- *Locate pipeline corridors to avoid and minimize impacts to hardbottom (included in this project)*
- *Use pipeline collars in corridors including hardbottom habitat (included in this project)*
- *Establish vessel ingress and egress corridors (included in this project)*
 - *Minimizes likelihood of vessel impact to hardbottom due to movement of vessels to and from a site during coastal construction*
 - *Protects the benthic community. Corridor selection considerations include mean tidal range, difference in draft between a fully loaded and empty vessel, width of vessels, and vessel turning radius*

Beach Placement Area BMPs

- *Use of sand dikes at the beach dredged material discharge site (included in this project)*
 - *Provides settling time for fine particles to be released from the water column before entering the open waters. Shore-parallel dikes must withstand incoming waves and maintain structural integrity during the discharging of sand onto the beach*
 - *Becomes the seaward edge of construction when integrated into the final beach; requires no removal.*

The FEIS will include this list of best management practices. Note that Kelley et al. (2004) also identify the practices that NMFS HCD provides as examples but Kelley et al indicate that the practices are site and project specific. Note also that limiting the depth of dredge cuts recommended in Hammer et al. (2010) and Kelley et al. referred to dredging at the highest shoal elevations. The proposed project has incorporated the highest elevations into a refuge area specifically to avoid altering those elevations. The 50-year conceptual dredging plan uses the same logic in describing conceptual borrow area locations.

Comment 12 Provided by NOAA-NMFS: HCD

Provided by V. Fay

Comment date: 7/18/2011

Comment: The EIS describes the construction of 0.98 acres of artificial mitigation reef to offset the loss of 1.08 acres of nearshore hardbottom. However the mitigation plan (appendix D), describes that up to 6.22 acres of mitigation would be needed (1.19 acres of Community 1 and 5.03 acres of Community 2). It is unclear how either mitigation amount was determined. The draft EIS and

mitigation plan refer to the completion of a Unified Mitigation Assessment Method (UMAM) as appendix C to the mitigation plan, however the appendix is not contained within the document.

Similar to our comments on the nearshore hardbottom biological monitoring plan, we feel it is premature to provide detailed recommendations on this plan until sufficient information to characterize and quantify nearshore hardbottom impacts is provided (EFH conservation recommendation #3). Specifically, we will not be able to complete our review of the plan until we have a better understanding of what functional groups are present in fill areas and the depths of habitats within fill areas.

NMFS recommends that a compensatory mitigation plan be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS. This plan should include performance standards, monitoring protocols and schedule, and a functional assessment (e.g., UMAM) that demonstrates how mitigation amounts offset the resource impacts (see EFH conservation recommendation #8).

Response:

The FEIS will include completed UMAM qualitative and quantitative analyses. Their omission in the DEIS was unintentional. The USACE UMAMS are available to the NMFS on the Taylor Engineering ftp site.

The mitigation plan the applicant submitted includes information requested by the Florida Department of Environmental Protection that the USACE might not require. The USACE considers permanent (as opposed to temporary) impacts as the basis for mitigation. Should compliance monitoring during and after construction demonstrate additional impacts, the USACE would require additional compensatory mitigation.

The FEIS will include a report characterizing the nearshore hardbottom communities. This report has been placed on the Taylor Engineering ftp site. Community types are based on a combination of physical (water depth, distance from shore, hardbottom relief) and compositional (dominant floral and faunal species) characteristics:

Community One: Low- to medium-relief (0.5 to 1.5 m) sabellariid wormrock

- Located from transects (FDEP Range Monument [R-] 82.8 south to R-94)*
- Wormrock observed along these transects with other observed fauna included hydroids and unidentified encrusting sponge, and algal species included canopy-forming red algae (B. seaforthii and Hypnea sp.), low-growing turf algae, and Caulerpa sp.*
- Fishes observed included spottail pinfish (Diplodus holbrooki), juvenile grunts (F. Haemulidae), nurse shark (Ginglymostoma cirratum), and black seabass (Centropristis striata)*

Community Two: Low-relief (0.5 m) consolidated coquina rock

- Located from R-100 south to R-106
- The hardbottom ledge was typically well-defined, undercut exposed consolidated coquina rock ledge with little to no benthic cover. Where observed, macroalgae was typically composed of turf algae and low-growing green algae *Caulerpa* cf. *laetevirens*, *Caulerpa sertularioides*, and *Codium* sp.
- Sand along the hardbottom edge was coarse in size with areas of large consolidated shell rubble.
- Fishes observed included sand drum (*Umbrina coroides*), spottail pinfish, electric ray (*Narcine brasiliensis*), hairy blenny (*Labrisomus nuchipinnis*), and grey snapper (*Lutjanus griseus*).

Community Three: Medium-relief (1.5 m) large rock slab ledges

- Located from R-77.7 to R-82.8 and R-109.2 to R-112, in deeper water than Communities One and Two.
- Dominated by large (1- to 3-m diameter), flat rock structures found in deeper (3 to 4 m) water deeper (3-4 m) and considerably farther from the shoreline than Communities One and Two.
- Supported many faunal species not observed in the more nearshore hardbottom areas including spiny lobster (*Panulirus argus*), octocorals (*Leptogorgia* sp.), holothuroids, and a variety of encrusting sponges.
- Fishes observed included porkfish (*Anisotremus virginicus*), sheepshead (*Archosargus probatocephalus*), striped burrfish (*Chilomycterus schoepfii*), highhat (*Pareques acuminatus*), juvenile angelfish (*Pomacanthus* sp.), and many other species of newly settled juvenile fishes.

The FEIS will include a report characterizing macroinvertebrate communities inhabiting the borrow area and nearshore sand habitat. The NMFS staff can access the report on the Taylor Engineering ftp site.

The FEIS will contain a nearshore hardbottom fish community report. The NMFS staff can access the report on the Taylor Engineering ftp site.

This EIS has considered the design of the mitigation plan and concluded that the applicant's proposed approach includes sufficient detail and flexibility to allow development of a specific design once the impacts and required mitigation area are finally resolved through the permit application process. The monitoring plans provided in the DEIS are likewise sufficient to conclude that the applicant can define a specific mitigation monitoring plan scaled to the mitigation area defined during the permit application process. The Record of Decision will include any appropriate recommendations for compliance monitoring.

**Comment 13 Provided by NOAA-NMFS: HCD
Provided by V. Fay**

Comment date: 7/18/2011

Comment: NMFS believes the information provided in the draft EIS is not consistent with existing Council on Environmental Quality (CEQ) guidelines and Army regulations regarding mitigation and mitigation monitoring. Final guidance recently released by CEQ regarding mitigation and monitoring (CEQ 2011) cites Army regulations which state that “consistent with existing CEQ guidelines, the Army’s NEPA implementing regulations place significant emphasis on the planning and implementation of mitigation throughout the environmental analysis process. The first step of mitigation planning is to seek to avoid or minimize harm” [40 CFR 1508.2]. In the absence of habitat mapping and biological survey information that quantifies in the draft EIS the extent of potential damage to hardbottom, NMFS is unable to determine that impacts to EFH have been avoided to the extent practicable. In addition, the guidance states that “when the analysis proceeds to an EA or EIS, however, the Army regulation requires that any mitigation measures be ‘clearly assessed and those selected for implementation will be identified in the FONSI or the ROD’ and that ‘the proponent must implement those identified mitigations, because they are commitments made as part of the Army decision’ [32 CFR 651.15(b)].” The draft EIS does not sufficiently discuss mitigation and monitoring plans and implementation programs as required by these regulations.

Response:

The EIS has considered avoidance and minimization. The DEIS included habitat maps and survey information. The DEIS provided summaries of the information and reports detailing those hardbottom communities sustaining unavoidable impacts. The DEIS also included a mitigation plan for those impacts, and a description of the monitoring effort that the applicant will undertake to assess the effectiveness of the mitigation. The FEIS will provide additional details concerning the habitat mapping efforts.

The Taylor Engineering ftp site provides a document describing the habitat mapping methodology.

Comment 14 Provided by NOAA-NMFS: HCD

Provided by V. Fay

Comment date: 7/18/2011

Comment: NMFS believes the information provided in the draft EIS does not meet the requirements of the EFH provisions of the Magnuson-Stevens Act. The Jacksonville District chose to integrate the required components of an EFH assessment, as appendix H, based on our review, NMFS does not agree that all components of an EFH assessment are present or provided in sufficient detail (50 CFR 600.920(e)(2)) to adequately analyze the effects on EFH. Based on the nature of the proposed action and the potential adverse effects on EFH and EFH-HAPCs, NMFS provides the following assessment of the mandatory and

additional information requirements found at 50 CFR 600.920(e)(3) and (4) that should be included in the Final EIS:

Mandatory Components of an EFH Assessment:

1. Description of the action. Provided.
2. *Analysis of the potential adverse effects of the action on EFH and the managed species.* This analysis is not complete in the EIS. Information describing the quantity and quality of hardbottoms within nearshore fill areas and pipeline corridors is needed for NMFS to make a determination regarding the level of effect to NOAA trust resources. Additional information regarding dredging best management practices is needed to complete this component as well. See EFH conservation recommendations #3 and #7.
3. *Federal agency's conclusions regarding the effects of the action on EFH.* Provided, however it is unclear how the District came to the initial determination based on the lack of available information on the quantity and quality of hardbottoms in nearshore areas that would be adversely affected by the project. In addition, portions of the EIS and EFH assessment seem to clearly acknowledge that dredging the offshore shoal would result in an adverse effect to EFH. The analysis does not support the conclusion and clarification is needed.
4. *Proposed mitigation, if applicable.* NMFS believes compensatory mitigation should be required. Upon receipt of responses to EFH recommendation #2 and #3 we should be able to provide more informed recommendations on the plan. See EFH conservation recommendation #8.

Additional Information:

1. *Results of an on-site inspection to evaluate the habitat and the site-specific effects of the project.* Deficiencies are noted above for both pipeline corridors, hardbottoms near within and near the toe-of-fill. See EFH conservation recommendations #3.
2. *Views of recognized experts on the habitat or species that may be affected.* Provided.
3. *Review of pertinent literature and related information.* Provided
4. *An analysis of alternatives to the proposed action.* Least environmentally damaging practical alternatives should be evaluated, including alternatives minimizing the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts. See EFH conservation recommendation #2.

Response:

The revised EFH assessment will provide additional detail in the areas identified by the NMFS as follows:

1. *No comment*
2. *The DEIS provided characterization of the hardbottom communities in the nearshore area. The FEIS will provide the additional detail necessary to*

understand the means by which the applicant distinguished the different hardbottom communities. Documents detailing the requested information are available on the Taylor Engineering ftp site and in this response document.

3. The applicant has identified the locations of pipeline corridors as approximate based on selection of the locations that best avoid impacts. The responses to other comments provide additional detail on pipeline construction methods. The FEIS will include discussion of best management practices as detailed in another response within this document.
4. The applicant has considered a range of project and alternatives. The compensatory mitigation plan provided in the DEIS provides mitigation appropriate to the type and level of impacts. The plan is sufficiently flexible to account for any additional impacts that the approved project may cause.

Additional Information

The DEIS includes results of field surveys characterizing the hardbottom community in the nearshore area. The FEIS will include these data and data describing the sand benthic community in the offshore shoal area. The USACE has evaluated “least environmentally damaging practical alternatives”, including the no action and no impact alternatives. The Record of Decision will describe the USACE-recommended alternative, specifically that alternative judged the least impactful among those that meet the minimum necessary criterion — protection of upland property and infrastructure against a 25-year storm. This frequency storm, St. Lucie County’s minimum practical protection standard, occurs relatively often.

5. The DEIS Appendix D provided a mitigation plan including the design of low – medium relief artificial reef, the means of locating such reefs for sustainability in the soft sand habitat, and monitoring plans for evaluation of artificial reef development using compliance criteria.

Additional information Responses

1. The FEIS will include results of field surveys that provide detailed data on nearshore hardbottom communities, including those impacted by the project. The FEIS will include descriptions of the means by which the applicant distinguished hardbottom communities during aerial photograph mapping efforts. The aerial maps provided the location of and amount (planar coverage of) the hardbottom communities. Those documents are made available to NMFS on the Taylor Engineering ftp site.
2. Comment noted
3. Comment noted

The DEIS considered and the FEIS will consider a range of alternatives including those with no impact to the nearshore hardbottom habitats.

Provided by V. Fay
Comment date: 7/18/2011

Comment: Although additional information is needed to complete the EFH consultation, based on the information provided thus far NMFS concludes the project will likely adversely affect EFH, including over one acre of hardbottom that supports worm reef and, potentially, coral. Significant indirect and cumulative adverse impacts are also likely in connection with construction activities and the subsequent loss of marine habitats and their associated functions. These indirect and cumulative impacts include increased turbidity, sedimentation from dredging and the placement of fill in the aquatic environment, and loss of food production and other functions that coral, coral reef, and hardbottom habitats that contribute to fishery productivity. Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. Based on this requirement, NMFS provides the following:

Response:

Thank you for your comment. Please see below for responses to EFH conservation recommendations.

Comment 16 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: As stated above, until the analysis identified in EFH conservation recommendation #1 has been completed and results are coordinated with NMFS and other agencies, we do not recommend moving forward with the other project elements described below.

Conservation Recommendation No. 1

The shoal proposed for excavation shall be eliminated from the project design due to the potential for unacceptable impacts to the wave climate and shoreline sediment transport. Alternatively, NMFS will re-consider this recommendation based on receipt of additional analysis performed similar to Kelley et al. (2004).

Response:

The proposed project differs substantially than those projects modeled by Kelley et al. (2004) and Hammer et al. (2005). Kelley et al. based project wave changes on removal of 24 million cubic yards of sand and significant decreases in the maximum elevation of the shoal. The proposed project includes removal of 600,000 cubic yards of sand (5% of that used by Kelley et al. as the basis for their modeling) and no decrease in maximum shoal elevations. Kelley et al. found that dredging of 12 million cubic yards and reducing maximum shoal elevations by 2.3 meters would increase potential nearshore transport energy. Notably, however, Kelley et al. used the area of shoal seaward of that proposed in this project.

Hammer et al. modeled wave climate changes associated with removal of 14.6 million cubic meters (18.3 million cubic yards) from St. Lucie Shoal (dredging to a depth of 12 meters: Table 4.6) (. The study found that removal of the volume, which deflated the shoal (reduced it to the elevation of the surrounding outer coastal shelf resulted in significant changes to shoreline sediment transport rates. The analysis concluded with a recommendation to limit dredging to some higher depth (with no specific depth suggested). The proposed project will not alter the elevation of the shoal, and thus, based on the analyses in Hammer et al., should not significantly change shoreline sediment transport.

The applicant has provided wave climate analyses (available to NMFS on the Taylor Engineering ftp site) that evaluate the potential changes in wave climate due to the project. The analyses demonstrate that the changes, even considered as the worst case (highest average) wave conditions do not significantly alter the shoreline erosion potential.

The Record of Decision will include identification of USACE-preferred sand source or sources considering the results of the applicant's modeling, and the position of the NMFS HCD Conservation Recommendation No. 1.

Comment 17 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 2**

The District shall evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts. Specifically, we recommend further examination of the following three alternatives: Beach Fill with No Impact to Existing Hardbottom; Beach Fill to Restore the 1972 Beach and Dune; and South Segment Beach and Dune Restoration – North Segment Dune Restoration Only.

Response:

The USACE has evaluated the least damaging practical alternatives, including alternatives that avoid any fill below mean high water or minimize the amount of fill placed below the mean high water line. These alternatives minimize offshore dredge volumes offshore and reduce nearshore hardbottom impacts. The Record of Decision will report the USACE-preferred alternative and the reasons for that preference.

Comment 18 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 3**

Results from a biological resource and nearshore habitat mapping survey within the ETOF with 1,000-foot buffer and the pipeline corridor with a 100-foot buffer shall be provided to NMFS. The biological survey report should map, quantify, and characterize hardbottom within 100 feet of the pipeline corridor and hardbottom within 1,000 feet from the ETOF. The method for determining the amount of hardbottom present should be described and based on historical and recent data. In addition, the survey report should identify survey dates and include full characterizations of each habitat depicted in the maps. These characterizations should focus on the following taxonomical groups: stony corals, octocorals, sponges, worm reef, and macroalgae. For stony corals, species, density, size distribution (colony diameter and height), and condition (bleaching and disease) should be documented. For octocorals, species, density, and size distribution (colony height) should be documented.

Response:

The FEIS will include results of nearshore hardbottom habitat mapping (including project fill and pipeline areas) and characterization of those habitats. Maps of the 2008 and 2010 hardbottom habitat overlain by the applicant's preferred plan are available on the Taylor Engineering ftp site.

In 2008, the applicant mapped and classified hardbottom habitat from R-77 in St. Lucie County to R-3 in Martin County. The DEIS reported these data. In 2011, the applicant used 2010 aerial photographs to map the same area. The FEIS will also report the 2010 data and related project impacts. Mapping occurred to at least 1,000 feet from the 2008 shoreline. Field efforts in 2009 and 2010 provided verification of the aerial mapping efforts. In 2009, field biologists verified hardbottom habitat characterizations within 50-foot-wide pipeline corridors:

- Baseline Nearshore Hardbottom Characterization Survey for the St. Lucie County South Beach Project (January 2010)*
- Letter report (January 26, 2011) summarizing the 2010 Hardbottom Mapping Characterization Survey*

*A description of the surveys methods used to characterize benthic community types is provided in **Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project**, and a letter report describing sampling and analysis of soft bottom sampling. The FEIS will contain both reports.*

Post-construction hardbottom monitoring will follow protocols described in the biological monitoring plan (DEIS Appendix F) and used for pre-construction baseline monitoring. The FEIS will include the preconstruction monitoring report.

The USACE considers monitoring protocols proposed by the applicant sufficient to understand existing conditions and identify any impacts caused by the proposed project. Note that the preconstruction survey (January 2010) identified no stony corals or octocorals in the project area. Octocorals constituted less

than 1% mean coverage along transect R-78.7, located outside the project footprint. One stony coral species (Phyllangia americana americana, cup coral) also constituted less than 1% mean coverage along transect R-110.5, a transect that starts 188 meters from the mean high water line and falls outside the project footprint. The FEIS will include this document. The Taylor Engineering ftp site includes the hardbottom survey cited above.

Comment 19 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 4**

A biological monitoring plan shall be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS.

Response:

The USACE notes the recommendation and refers the NMFS to DEIS Appendix E and DEIS Appendix F). The FEIS will also include a report characterizing the benthic communities of the borrow site and surrounding area.

Comment 20 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 5**

A plan for monitoring the pipeline for leaks at least twice per day and response actions to any leaks detected shall be provided to NMFS for review and approval prior to finalizing the EIS.

Response:

The applicant will mitigate for a potential pipeline corridor impact area measuring 50 ft wide along the length of the pipeline path of the pipeline corridor that unavoidably includes significant hardbottom habitat. While impacts may not occur, the applicant has nonetheless proposed mitigation for potential impacts. Presumption of impact provides a level of security against potential pipe movement sufficient to damage the habitat. Daily survey of the pipeline to verify the location of the pipeline and identify any leaks or other issues that require cessation of the pumping activity will provide verification of compliance with the intent to avoid all impacts. The regular pipeline examination and location mapping will also provide evidence of specific impacts should the pipe move outside the corridor assumed to be impacted. Note that only one of the pipeline corridors required for the project includes hardbottom habitat. The applicant has already offered mitigation for that northernmost pipeline corridor regardless of whether the impact actually occurs.

Note also that the pipeline will reside for at most several weeks in any one location. By nature of using a hopper dredge, pumping will occur between four and six hours daily for an hour or more at a time, not continuously (as would occur in a hydraulic dredging project). The pumping occurs in this fashion because the pipeline serves to empty the hopper dredge (which takes an hour or more) after which the hopper dredge returns to the dredge site. The round trip requires about four hours, with about an hour of dredging at the dredge site before returning to the pipeline location.

Comment 21 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 6**

A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which infaunal communities recover from dredging and the fill and grain-size distribution of the material that fills the dredge holes.

Response:

DEIS Appendices E and F include physical and biological monitoring plans. Those plans include monitoring of offshore borrow area activities.

Comment 22 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 7**

Best management practices (BMP) to minimize the adverse impacts associated with mining the shoals shall be developed and integrated into the project design. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. Please provide a list of BMPs to NMFS for review and approval prior to finalizing the EIS.

Response:

See Response to above comments. The dredge template illustrates the limits of dredging. The highest relief of the shoal will be avoided and will remain as a refuge patch. Furthermore, the dredge template illustrates the proposed dredge area is downdrift (landward) of the highest relief of the shoal. The maximum shoal elevation will remain post project.

Comment 23 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 8**

A compensatory mitigation plan that describes how unavoidable impacts to hardbottom habitat shall be offset from construction activities and the ETOF. This plan should include performance standards, monitoring protocols and schedule, and a functional assessment (e.g., Unified Mitigation Assessment Method) that demonstrates how mitigation amounts offset the resource impacts.

Response:

DEIS Appendices D, E, and F provide compensatory mitigation plans, monitoring protocols, and monitoring schedules. The FEIS will include UMAM assessments, inadvertently excluded from the DEIS Appendix D. The draft USACE UMAM calculations are provided on the Taylor Engineering ftp site.



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

DEC 09 2011

Ms. Virginia Fay
Assistant Regional Administrator
Southeast Regional Office, Habitat Conservation
NOAA, National Marine Fisheries Service
263 13th Avenue South St. Petersburg, FL 33 701

Dear Ms. Fay:

This letter is regarding Essential Fish Habitat (EFH) coordination (F/SER4:JK/pw) for the Martin County Hurricane and Storm Damage Reduction (HSDR) Project. Specifically, the U.S. Army Corps of Engineers (Corps), the lead Federal agency, and Bureau of Ocean Energy Management (BOEM), which has authority over the use of the borrow area, have been coordinating with NOAA Habitat Conservation Division since 2007 on a Supplemental Environmental Impact Statement (SEIS) which is to identify a new sand borrow source for the Federal project. The Corps and BOEM formally responded to NOAA HCD EFH conservation recommendations for the Martin County HSDR Project via letter dated February 22, 2011, in which we indicated that "the Corps and BOEM are satisfied that the coordination procedures outlined in 50 CFR Section 600.920 of the regulation to implement the EFH provisions of the Magnuson-Stevens Act have been met and intend to make final agency decision on or about 10 days after the date of that letter". NOAA HCD chose not to elevate the EFH coordination at that time and instead responded via letter dated October 3, 2011, regarding your agency's review of the Final SEIS for the Martin County HSDR Project. In that letter, NOAA requested that "the Jacksonville District and BOEM withhold their final decision on the project until our offices can meet to discuss the action and opportunities for resolving this disagreement". As indicated in our February 22, 2011 letter, the Corps and BOEM have fully complied with the EFH Assessment regulations and consultation process. The Corps, as the lead Federal agency, does not believe that a formal meeting would be productive and respectfully decline your invitation.

Instead, to further address your concerns, the Corps and BOEM provide the following additional responses to the eight EFH conservation recommendations contained in your October 3, 2011 letter:

Regarding EFH Conservation Recommendation #1: As indicated on page ii of the Final SEIS Summary: "The scope of this SEIS considers alternative sand sources for fill material for the authorized beach nourishment project, evaluates the potential effects that may result from the use of a new borrow area, and re-evaluates the potential effects of entire beach nourishment project in light of new available environmental information. This SEIS tiers from the existing 1986 *Feasibility Report with Final SEIS* and the 1994 *General Design Memorandum (GDM) with Environmental Assessment (EA)* that was prepared during initial evaluation and authorization of the Martin County Shore Protection Project [U.S. Army Corps of Engineers (USACE) 1994]. During the initial planning process, a full range of both nonstructural (NS) and structural (S) measures were evaluated. This current SEIS does not re-consider all of the alternatives, it only evaluates potential sources of beach-compatible sand which will yield enough sand to last for the remaining period of federal cost-sharing participation for the authorized project. Alternatives considered in detail in this SEIS include three offshore borrow areas (C1-A, C1-B, and C1-C) which lie primarily on the Federal Outer Continental Shelf (OCS) approximately 3 to 7 miles offshore Martin and St. Lucie Counties and several upland sand sources."

Regarding EFH Conservation Recommendation #2: This item is complete.

Regarding EFH Conservation Recommendation #3: Although the current Federal action evaluated in the SEIS is to identify a new borrow area, the Corps provides the following for clarification: the original project direct fill template (constructed berm) was anticipated to directly cover approximately 1.3 acres of nearshore hardbottom based on early 1990's surveys. However, the 1994 USFWS Final Coordination Act Report (FCAR) estimated that up to approximately 13 acres of nearshore hardbottom could be impacted as the sand equilibrates naturally post construction. So the mitigation that was constructed and accepted by the USFWS, DEP, and the Corps adequately compensated project related hardbottom impacts within the 1996 Equilibrium Toe of Fill (ETOF). In addition, the survey protocol and fixed permanent transect locations were closely developed with DEP Bureau of Beaches and Coastal Systems (BBCS). Monitoring will identify any additional impacts outside the ETOF both offshore and down-drift and compensatory mitigation would be proposed for any new impacts not previously mitigated.

Regarding EFH Conservation Recommendation #4: As stated in our February 22nd 2011 letter, the biological monitoring plan prepared by the project sponsor was written through close coordination with DEP BBCS. The buffer spacing and post-construction survey timing are all standard conditions for beach projects within the State of Florida. In addition, the Corps feels the 1000-foot monitoring zone outside the ETOF is onerous and excessive and above the standard for beach projects within the State of Florida. Furthermore, implementation of a 1000-foot monitoring zone may marginally improve documentation of any unexpected sedimentation at that distance offshore the placement area but would significantly increase the post construction monitoring costs which are not currently in the authorized budget. Therefore the Corps believes that this recommended mitigation measure is not practicable.

Regarding EFH Conservation Recommendation #5: The recommendation has been sufficiently addressed in the final SEIS.

Regarding EFH Conservation Recommendation #6: As discussed in #4 above, the physical and biological monitoring plans are incorporated into the draft SEIS and provided as Appendix L. Neither the sponsor nor the Corps can accept the condition to monitor for infaunal community recovery at the borrow area as this exceeds the State and Federal standards for beach projects within the State of Florida. Furthermore, in order to properly evaluate project effects multiple out-year monitoring is needed which would significantly increase the post construction monitoring costs not currently in the authorized budget. However, physical monitoring (bathymetric surveys) will occur along transect lines, spaced 500 ft apart within and 500 ft beyond all sides of the borrow site biennially for a period of four years after completion of construction. Numerous benthic recovery studies in comparable settings suggest benthic invertebrates re-colonize disturbed borrow areas within several years following dredging (for example see Brooks et al., 2006). The fidelity of fishes to disturbed foraging grounds is poorly understood. Fortunately, comparable undisturbed foraging areas often exist in the immediate area adjacent to the area dredged. These areas, in addition to areas un-disturbed by dragheads or cutterheads, serve as source areas for benthic fauna that re-colonize the dredged area. Provided there is a strong coupling between prey item and fish presence, the long-term impact to fisheries communities are expected to be minimal provided severe physical perturbations, such as deep pits, are not created and the window between successive dredging events is greater than recovery period of benthic communities (Hobbs, 2002). Finally, the anticipated dredge interval is expected to be greater (8-10 years) than the expected several year benthic community recovery interval.

Regarding EFH Conservation Recommendation #7: Borrow CI-B is best characterized as a relatively deep (14-17 m), poorly-defined, low-relief shoal complex, in contrast to the shallow, well-defined, shore-oblique St. Lucie Shoal (5-12 m). Although the proposed borrow area has been described as a shoal, the bathymetric profile across most of the borrow area is minimal (Hesperides Group, 2009). Visible relief on the bottom consists strictly of small bed forms and scour holes. The southeast corner of the borrow area exhibits the maximum relief. The substrate is composed exclusively of fine to medium sand and medium to coarse shell hash. Divers observed relatively low species abundance and diversity on and over the shoal area; the resident benthic community on the shoal was composed of fecund, short life cycle organisms. NMFS' Conservation Recommendation to 1) target accretional shoal areas when practicable and 2) avoid dredge cuts in excess of 6 feet is best suited for dredging well-defined high relief shoals, such as borrow areas CI-A and CI-C, where those practices can be implemented using available dredge positioning and draghead monitoring technology. The best management practices suggested are generally not applicable since CI-B does not have identifiable high relief, accretional areas outside of the southeast corner. The Corps will avoid creating deep pits across the low-relief, gently sloping bottom area. To the extent it is technically feasible; the higher relief area in the southeast corner of CI-B will be dredged using the contour method avoiding dredge cuts in excess of 6 feet.

Regarding EFH Conservation Recommendation #8: As discussed in #3 above, the impacts to hardbottom resources within the 1996 ETOF have been previously mitigated. It is the Corps and Martin County's position that the previously constructed mitigation was consistent with agency mitigation requirements at that time. However, should the results of the required physical and biological monitoring indicate additional impacts occurred to hardbottom resources outside the ETOF, compensatory mitigation would be proposed.

The Corps and BOEM have provided the necessary information and have fully satisfied the requirements of the EFH assessment and consultation process. The Corps and BOEM are proceeding with the preliminary steps necessary for implementation of the project and anticipate a construction start in November 2012. If you have further questions or concerns, please feel free to call me at 904-232-1665.

Sincerely,



 Eric P. Summa
Chief, Environmental Branch

DeMarco/CESAJ-PD-EC/x1897
Spinning/CESAJ-PD-EC
Durkin/CESAJ-PD-PN
Bronson/CESAJ-PD-PN
Trulock/CESAJ-PM-WN
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Summa/CESAJ-PD-E

Copy Furnished:
NMFS, Charleston

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

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October 3, 2011

F/SER4:JK/pw

(Sent via Electronic Mail)

Colonel Alfred Pantano, Commander
Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232

Attention: Paul DeMarco

Dear Colonel Pantano:

NOAA's National Marine Fisheries Service (NMFS) reviewed the Final Supplemental Environmental Impact Statement (EIS), dated August 2011, titled *Martin County, Florida, Hurricane and Storm Damage Reduction Project* from the U.S. Army Corps of Engineers and Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE). The EIS is a supplement to *Feasibility Report with Environmental Impact Statement: Beach Erosion Control Study, Martin County, Florida (1985)*, which was prepared by the Jacksonville District.

Consultation History

By letter dated January 7, 2011, NMFS commented on the draft EIS. In that letter, we (1) identified the components of an essential fish habitat (EFH) assessment that were missing or not provided in sufficient detail, (2) identified corrections that were needed in the EIS, and (3) provided 8 EFH conservation recommendations. Our comments on the draft EIS include a description of the proposed work and summary of the proposed impacts to EFH; those descriptions are incorporated here by reference. By letter dated February 22, 2011, the District provided a response to our EFH conservation recommendations; our comments below consider both the District's letter and the final EIS from the District and BOEMRE.

Final EIS Response to EFH Assessment Information Needs

The requirements of an EFH assessment are listed at 50 CFR 600.920(e) and include four mandatory contents for all EFH assessments. Our comments below focus first on the required components of an EFH assessment and then on EFH conservation recommendations; cross references are provided where appropriate.

Mandatory Contents of an EFH Assessment listed at 50 CFR 600.920(e)(3):

1. *Description of the action.* The draft and final EIS include the required description.
2. *Analysis of the potential adverse effects of the action on EFH and the managed species.* By letter dated January 7, 2011, NMFS indicated this analysis was not complete in the draft EIS. We requested the final EIS contain information describing the quantity and quality of hardbottoms within



nearshore fill areas. While this information is not included in the final EIS, the District has provided a report, *Hutchinson Island Shore Protection Project 2010 Hardbottom Baseline Survey*, dated January 2011, and prepared by CSA International. This report characterizes the general quality of the hardbottoms within the nearshore fill areas; however this information is not sufficient for quantifying impacts to this habitat. In several places, the final EIS indicates the proposed nourishment would impact 1.3 acres of hardbottom. The source of this estimate is not clear. Our best interpretation is this acreage is what the District believes were the direct impacts to hardbottom from the fill placed in 1996. This acreage estimate suffers from two shortcomings. First, it does not consider the indirect impacts to hardbottom that occurred from fill material equilibrating to the shoreline in 1996. Second, it is inconsistent with the acreages listed in the final EIS that show 7.3 to 11.7 acres of hardbottom within the fill area based on more recent surveys (Table 3.4-1). A precise, up-to-date estimate of the impacts to hardbottom habitat is needed, and this estimate must include both the direct impacts as well as the indirect impacts that result from fill equilibration (please see related comments under EFH conservation recommendation #3).

We also requested information on the proposed best management practices (BMPs) referenced as impact minimization measures for the dredging within the borrow areas but not further described in the draft EIS; this information remains lacking in the final EIS (please see related comments under EFH conservation recommendation #7).

3. *Federal agency's conclusions regarding the effects of the action on EFH.* The draft and final EIS include a conclusion from the District and BOEMRE that impacts to EFH would be minimal; however it is still unclear how the District and BOEMRE came to this determination because the hardbottom habitat within the fill area has not been thoroughly quantified. Further, it appears to discount the impacts from dredging the offshore shoals. Additional justification is needed from the District and BOEMRE regarding their overall conclusion.
4. *Proposed mitigation, if applicable.* Please see our comments below regarding the District's response to EFH conservation recommendation #8.

Corrections Requested for the Final EIS

In our letter dated January 7, 2011, NMFS disagreed with the analysis of effects to hardbottoms provided in the draft EIS. We requested that corrections be made in the final EIS based on the best available science. While the final EIS has removed incorrect statements about the Broward County nourishment projects, other corrections were not made, for example:

- Because background turbidity and sedimentation levels are naturally high in this area, no significant, long-term changes attributable to the beach nourishment project are expected (Section 4.4.1).
- Because of the resiliency of the hardbottom habitat (being periodically exposed, buried, and re-exposed) in this area, it is likely that these organisms would be able to survive in highly turbid conditions that may be temporarily present during beach renourishment. Since the duration of the construction activity is anticipated to be relatively short, the potential impacts from turbidity are considered minor (Section 4.26.2.2).

NMFS is unaware of literature or study results that support these statements. We acknowledge that there is a natural cycle of burial and re-exposure, however large-scale fill events can disrupt this natural cycle and cause additional burial. Early life stages of fishery species and other organisms associated with nearshore hardbottoms often cannot survive complete burial and often are severely damaged by high levels of sedimentation and turbidity.

EFH Conservation Recommendations

EFH Conservation Recommendation #1: District shall evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts.

Jacksonville District Response: The project berm width has been designed to provide the level of storm damage reduction benefit authorized by Congress. The current project design is the least damaging practical alternative.

NMFS evaluation of completeness: We maintain that least environmentally damaging practicable alternatives should be evaluated, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredged from offshore and reducing impacts to nearshore hardbottom.

EFH Conservation Recommendation #2: The shoals referred to as C1-A and C1-C shall be eliminated from the project design due to the potential for unacceptable impacts to the wave climate and shoreline sediment transport, as identified in Hammer et al. (2005).

Jacksonville District Response (summary): The District intends to use C1-B to obtain the necessary volume of beach compatible fill for the remainder of the authorized project. The District does not concur with the recommendation to remove C1-A and C1-C in perpetuity as potential alternatives for this or other projects. The District states that Hammer et al. (2005) did not consider the consequences of relatively shallower depth cuts, which the District believes could provide sufficient volume for several construction cycles and potentially have a negligible impact on longshore sediment transport. The District also believes that although shoal volume is reduced, similar topographic features are expected to reform over decadal time scales. At this time, the final EIS and Record of Decision will only authorize the excavation of C1-B for the subject project, however the District and BOEMRE cannot eliminate potential use of the other borrow areas for this and other projects in the future.

NMFS evaluation of completeness: This item is complete for the subject project. We recommend that in the case that the District and BOERME consider dredging of C1-A or C1-C at a later date, an examination be conducted of the effects of shallower cuts and expected reformation of topographic gradients of the shoal on longshore sediment transport and the wave climate, respectively.

EFH Conservation Recommendation #3: Results from a biological resource and nearshore habitat mapping survey within the equilibrium toe-of-fill (ETOF) with 1000-foot buffer and the pipeline corridor with a 100-foot buffer shall be provided to NMFS. The biological survey report should map, quantify, and characterize hardbottom within 100 feet of the pipeline corridor and hardbottom within 1000 feet from the ETOF. The method for determining the amount of hardbottom present should be described. In addition, the survey report should identify survey dates and include full characterizations of each habitat depicted in the maps. These characterizations should focus on the following taxonomical groups: stony corals, octocorals, sponges, and macroalgae. For stony corals, species, density, size distribution (colony diameter and height), and condition (bleaching and disease) should be documented. For octocorals, species, density, and size distribution (colony height) should be documented.

Jacksonville District Response (summary): The draft EIS incorporated in Section 3.4.1 and Appendix H studies that evaluated hardbottom exposure within the project area and downdrift of the project site. These studies incorporate interpretations of high-resolution aerial photography (1997, 2001, 2004, and 2008) with results of field surveys conducted along 12 transects in 2006 and 2007, in addition to the report from CSA International [from January 2011].

NMFS evaluation of completeness: The information provided does not address our recommendation to map and quantify hardbottom within 100 feet of the pipeline corridor and hardbottom within 1000 feet from the ETOF. Table 3-4.1 in the final EIS provides the amount of hardbottom in the project area based

on the aerial photography interpretation listed above. The amount of hardbottom in the most recent surveys in 2004 and 2008 was 7.3 and 11.7 acres, respectively, so it remains unclear how the District determined there will be 1.3 acres of hardbottom impacts from this project.

EFH Conservation Recommendation #4: A biological monitoring plan for the worm rock and nearshore hardbottom within and offshore of the fill area should be provided to NMFS for review and approval before the EIS is finalized. Specifically, the plan should include monitoring hardbottom habitat within the area of the ETOF and 1000-foot buffer. The monitoring schedule should include a minimum of one pre-construction event, one event immediately after construction, one event 6-months after construction, and annually for three years post-construction.

Jacksonville District Response: Section 2.6.2 and Appendix I incorporate and discuss the sponsor's biological monitoring plan, which has been accepted by the District and Florida Department of Environmental Protection (FDEP).

NMFS evaluation of completeness: Section 3.1 of the monitoring plan describes that hardbottom monitoring will be performed before construction, immediately after construction, and three years post-construction. Additionally the monitoring will include a 500-foot buffer from the ETOF, as opposed to the 1000-foot buffer we requested. The District did not provide a substantive response for not implementing the 1000-foot buffer or conducting the 6-month post-construction survey.

EFH Conservation Recommendation #5: A plan for monitoring the pipeline for leaks and response actions to any leaks detected shall be provided to NMFS for review and approval prior to finalizing the EIS.

Jacksonville District Response (summary): The District's contract specifications state:

- No pipelines are to be placed on hardgrounds.
- The Contractor shall ensure there is 100 feet of buffer from any existing hardbottom area.
- The pipeline corridor shall be visually inspected by the Contractor daily during period of active pumpout operations for signs of slicks, plumes, boils, or other surface anomalies that would indicate leaks, seepage, ruptures, or failures.

NMFS evaluation of completeness: This recommendation has been sufficiently addressed in the final EIS.

EFH Conservation Recommendation #6: A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which infaunal communities recover from dredging and the fill and grain-size distribution of the material that fills the dredge hole(s).

Jacksonville District Response (summary): Neither the sponsor nor the District and BOEMRE can accept the condition to monitor for infaunal community recovery at the borrow area.

NMFS evaluation of completeness: The District and BOEMRE did not provide a substantive response for not implementing this recommendation.

EFH Conservation Recommendation #7: Best management practices (BMP) to minimize the adverse impacts associated with mining the shoals shall be developed and integrated into the project design. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. Limiting the dredging within offshore borrow area C1-B to the portions of the shoal expected to fill in most quickly should be evaluated as a BMP as well. Please provide a list of BMPs to NMFS for review and approval prior to finalizing the EIS.

Jacksonville District Response (summary): The BMPs recommended are generally not applicable since C1-B does not have identifiable high relief, accretional areas outside the southeast corner. The District agrees to:

- Avoid creating deep pits across the low-relief, gently sloping bottom area.
- To the extent that is technically feasible, the higher relief area in the southeast corner of C1-B will be dredged using the contour method avoiding dredge cuts in excess of 6 feet.

NMFS evaluation of completeness: Sections of the final EIS refer to the implementation of BMPs to minimize impact to the shoal (e.g., Sections 4.7.1 and 4.19); however based on the District's and BOEMRE's response, it appears that the District and BOEMRE are only willing to implement one or two actions to minimize impacts to the shoal as needed. NMFS does not believe that one or two actions that may or may not be implemented constitute the implementation of BMPs to minimize impacts, and we recommend the District and BOEMRE further evaluate actions that can be implemented to avoid and minimize impacts to shoal habitats.

EFH Conservation Recommendation #8: A compensatory mitigation plan that describes how unavoidable impacts to hardbottom habitat shall be offset from construction activities and the equilibrium toe-of-fill. This plan should include the an assessment of the 6.0 acres of mitigation that was constructed in 2000 and how the mitigation is offsetting nearshore hardbottom habitat, objectives of any additional needed mitigation, performance standards, monitoring protocols and schedule, and a functional assessment (e.g., Unified Mitigation Assessment Method) that demonstrates how mitigation amounts offset the resource impacts.

Jacksonville District Response: Impacts to hardbottom resources within the ETOF of the 1996 project have been previously mitigated. It is the position of the District and Martin County that the previously constructed mitigation was consistent with the agency requirements at that time. In addition, FDEP states that they will not require mitigation for impacts within the ETOF that were previously mitigated. However, it was determined that the applicant will submit a contingency mitigation plan for unanticipated impacts due to burial that may occur downdrift of the project area or outside the ETOF that have not been previously mitigated. FDEP will also require mitigation for impacts that were previously not mitigated for as a result of the expanded mixing zone. The final amount of mitigation, if any will be evaluated based on post-construction monitoring reports. A contingency mitigation plan is incorporated into the final EIS.

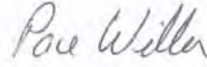
NMFS evaluation of completeness: NMFS still believes compensatory mitigation has not been previously provided for the impacts from the proposed nourishment event. The past mitigation only addressed 1.3 acres of impact; more than 1.3 acres of impact likely occurred in 1996 and the overlap of that 1.3 acres with those expected from the proposed nourishment event have not been quantified. While we acknowledge that the District will have a contingency mitigation plan in the case unanticipated impacts occur, the trigger for that additional mitigation requirement is not fully described.

Closing

NMFS does not conclude that the goals of the Magnuson-Stevens Fishery Conservation and Management Act and the regulations for implementing the EFH requirements of the Act will be met for this project. Consistent with the findings between our offices and 50 CFR 600.920 (k)(2), we request the Jacksonville District and BOEMRE withhold their final decision on this project until our offices can meet to discuss the action and opportunities for resolving this disagreement. NMFS has insufficient detail to adequately analyze the effects on EFH, our EFH conservation recommendations were not fully addressed, and the justification for not addressing our recommendations does not meet the requirements of section 305(b)(4)(B) of the Magnuson-Stevens Act. Responses inconsistent with our EFH Conservation Recommendation must include a substantive discussion justifying the reasons for not following the recommendation.

Thank you for the opportunity to provide comments. Related correspondence should be directed to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, which is co-located with the US Environmental Protection Agency at USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 616-8880, extension 207, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,



/ for

Virginia M. Fay
Assistant Regional Admin. (acting)
Habitat Conservation Division

cc:

COE, Paul.M.DeMarco@usace.army.mil
FWS, Charles_Kelso@fws.gov
FWCC, Lisa.Gregg@MyFWC.com
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

December 14, 2011



RECEIVED

DEC 27 2011

PALM BEACH GRDNS REGULATORY OFFICE
JAX DISTRICT, USACE

Alfred A. Pantano, Jr., Colonel
District Commander
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Service Federal Activity Code: 41420-2011-CPA-0316
Corps Application No: SAJ-2009-03448 (IP-GGL)
Date Received: September 26, 2011
Formal Consultation Initiation Date: October 26, 2011
Project: Shoreline Stabilization
Applicant: St. Lucie County Erosion
District
County: St. Lucie

Dear Colonel Pantano:

This document transmits the U.S. Fish and Wildlife Service's (Service) decision regarding the application of the proposed beach and dune restoration project along Hutchinson Island, St. Lucie County, Florida to the August 22, 2011, Statewide Programmatic Biological Opinion (SPBO) concerning sand placement activities along the coast of Florida for the U.S. Army Corps of Engineers (Corps) (Service Log No. 41910-2011-F-0170; Service, 2011). The Corps determined on June 29, 2011, the proposed project "may affect" the threatened loggerhead sea turtle (*Caretta caretta*), endangered leatherback sea turtle (*Dermochelys coriacea*), endangered green sea turtle (*Chelonia mydas*), endangered hawksbill sea turtle (*Eretmochelys imbricata*), and endangered Kemp's ridley sea turtle (*Lepidochelys kempii*), and that the proposed project "may affect, but is not likely to adversely affect" the endangered West Indian manatee (*Trichechus manatus*) and the threatened piping plover (*Charadrius melodus*). In addition, on December 1, 2011, the Corps provided a supplemental Public Notice and determined the project "may affect, but is not likely to adversely affect" the endangered beach jacquemontia (*Jacquemontia reclinata*). The Service concurs with these determinations. This document is provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). Your September 21, 2011, request for formal consultation was received on September 26, 2011.

PROJECT DESCRIPTION

The St. Lucie County Erosion District (Applicant) proposes to place approximately 610,034 cubic yards of beach compatible sand on approximately 3.8 miles of shoreline along Hutchinson Island, St. Lucie County, Florida (Figure 1). The project area consists of the 3.8-mile long fill template which extends between the Florida Department of Environmental Protection (DEP) reference



monuments R-87.7 to R-90.3 and R-98 to R-115 +1,000 feet south (Figure 1). Restoration of the beach berm includes a fill template extending from the toe of the restored dune at an elevation of +5.35 North American Vertical Datum (NAVD) seaward approximately 35 feet at a 1 vertical foot: 100 horizontal feet slope to produce the authorized beach design.

The proposed dune restoration includes a crest width between 9 and 67 feet at a crest elevation of +12.5 feet NAVD. The restored dune's landward and seaward slopes are proposed to be 1 vertical foot: 3 horizontal feet. The restored dune will be planted with native species including railroad vine (*Ipomoea pes-caprae*), sea oats (*Uniola paniculata*), dune panic grass (*Panicum amarum*), and dune sunflower (*Helianthus debilis*). Dune vegetation will be planted on 1.5-foot centers in staggered rows. All planting activities will occur postconstruction. If 80 percent survival has not been attained at the end of the first year postplanting, replanting and monitoring will continue until 80 percent survivorship is achieved for 1 full year. All planting within the proposed dune restoration template will be completed outside of the sea turtle nesting season (March 1 through November 30) or if conducted during season, Term and Condition 17a-g as outlined in the SPBO shall be fulfilled.

Based on observations in January 2010, the endangered beach jacquemontia may be present in the proposed project area. In addition to the minimization measures outlined in the Corps' Biological Assessment dated February 17, 2011, the following minimization measures shall be followed to reduce potential impacts on beach jacquemontia.

1. Surveys shall be performed preconstruction to determine the presence of beach jacquemontia. Surveys must be performed during the growing season (May through November) or, at a minimum, when dormant vegetation is present. Plant locations must be recorded using GPS, photographs, and written descriptions of the location and extent of growth. To preclude intentional or unintentional disturbance or harm, the exact location of plants should not be marked until necessary for construction design, surveys, and implementation. Marking of plant locations must use noninvasive, temporary techniques such as pin flagging. Surveys must be performed by personnel who have training or experience in identification of beach jacquemontia.
2. All construction personnel shall be educated concerning the presence and location of beach jacquemontia and the minimization measures to be implemented to avoid all potential impacts to the plant.
3. A 25-foot buffer shall be created between any existing beach jacquemontia and construction activities (e.g., dune restoration, dune planting), equipment storage, and beach access corridors.
4. Unless otherwise directed by the Service, all plant site markings must be removed postconstruction.
5. All marked sites shall be reinspected postconstruction. Any disturbance or other impacts to beach jacquemontia shall be photographed and recorded in a narrative report and immediately shared with the Service's South Ecological Services Office. Based on the Service's review, remedial action may be necessary.

The frequency of sand placement events over the course of the 10-year Corps permit will not exceed more than one event. The intent of the project is to renourish the shoreline in order to protect infrastructure and property, offset the sediment deficit, and to maintain the recreational beach.

Beach compatible sand will be obtained from Borrow Area 5 located in the southern portion of St. Lucie Shoal, located within state waters, and approximately 3 miles offshore (Figure 2). All material dredged from Borrow Area 5 and placed within the fill template must be approved by the DEP and meet all requirements as outlined in the Florida Administrative Code subsection 62B-41.007. The dredge cut depth will be approximately -49 feet NAVD. Dredge material will be excavated from the borrow area and transferred to the fill template by a hopper dredge with pump-out capabilities. Using a series of pipelines positioned on the ocean bottom, dredge material will be hydraulically transferred to the fill template. Five potential pipeline corridors have been identified based on 2008 and 2009 aerial photography and diver surveys, respectively. The use of pipeline collars or similar type of stand-off devices are proposed and expected to minimize potential impacts to nearshore hardbottom resources. Prior to project commencement, pipeline corridor location and orientation will be further refined to avoid or minimize potential impacts to nearshore hardbottom resources.

A shore-parallel dike comprised of sand shall be constructed to confine and accommodate settlement of the dredge material from the pipeline discharge in order to comply with the DEP water quality standards. The dike will be relocated along the shoreline as the pipeline discharge point advances. Once deposited within the fill template, the dredge material will be loaded and transported using a variety of heavy equipment including backhoes and all-terrain dump trucks using the wet portion of the beach as a corridor, and graded to the permitted design fill profile using a bulldozer. Potential upland staging areas and beach access corridors include Walton Rocks Beach Park (DEP reference monument R-86), Normandy Beach Park (DEP reference monument R-98), Dollman Beach Park (DEP reference monument R-102), and Waveland Beach Park (DEP reference monument R-111)[Figure 1]. Vegetated upland habitat will be protected to the maximum extent possible to minimize disturbance; therefore, impacts associated with the beach access corridors and staging areas are not anticipated. If impacts are incurred, all impacted areas and vegetation will be restored to preconstruction condition and elevation.

Although Borrow Area 5 is the preferred sand source for the proposed project based on cost and geotechnical compatibility with existing native beach sediment, beach compatible sand from three upland mines (Ranch Road Lake Mine, Fisher 86th Avenue Mine, and Stewart Mine) has been identified for possible consideration (Figure 3). If upland sand is used it must be approved by the DEP and meet all requirements as outlined in the Florida Administrative Code subsection 62B-41.007.

The proposed beach and dune restoration project is scheduled to take place between November 1, 2012, and April 30, 2013. Construction activities will take place during daylight and nighttime hours.

The action area is defined as all areas to be affected directly or indirectly by the action and not merely the immediate area involved in the action. The Service identifies the action area to include

the 3.8-mile dredge material fill template, pipeline corridors, four potential staging areas and beach access corridors, Borrow Area 5, and the downdrift area (approximately 1,000 feet). The project is located along the Atlantic Ocean, Hutchinson Island, St. Lucie County, Florida at latitude 27.2967 and longitude -80.2152.

The Service has determined the proposed project is appropriate to apply to the SPBO. The minimization measures, Reasonable and Prudent Measures, and Terms and Conditions in the SPBO are applicable to the proposed project and must be followed for nesting sea turtles. Both the Corps and Applicant have agreed to follow and implement the above stated measures and Terms and Conditions that apply to the proposed project. The Applicant requested an exception to allow a more gradual dune slope (a berm fill template extending from the toe of the restored dune at elevation +5.35 feet NAVD seaward approximately 35 feet at a 1 vertical foot: 100 horizontal feet slope to produce the design beach; a seaward extension of approximately 25 feet of the berm at a 1 vertical foot: 100 horizontal feet slope to the seaward edge of the top of the berm; and a 1 vertical foot: 10 horizontal feet slope from the seaward edge of top of berm extending to existing grade) than outlined in Term and Condition A6, Figure 13 in the SPBO. Upon completion of our review of the proposed project, the requested exception is authorized by the Service.

In addition, the Standard Manatee Conditions for In-Water Work shall be implemented to avoid potential impacts on manatees (Florida Fish and Wildlife Conservation Commission [FWC] 2011). To reduce potential impacts on piping plovers, the commitments outlined in the SPBO shall be implemented. In order to comply with the Migratory Bird Treaty Act (16 U.S.C. 701 *et seq.*) and potential for the proposed project to impact nesting shorebirds, the Applicant shall follow FWC standard guidelines to protect against impacts to nesting shorebirds during implementation of this project during the periods from February 15 to August 31. The Service has assigned Federal Activity Code 41420-2011-CPA-0316 to this individual consultation.

The Service anticipates no more than 27.7 miles of highly eroded shoreline along the Florida coastline (no more than 8.8 miles within the Northern Gulf of Mexico Recovery Unit [NGMRU] and no more than 18.9 miles within the Peninsular Florida Recovery Unit [PFRU]) would receive sand per year during nonemergency years with a maximum of 102 miles of shoreline (38 miles within the NGMRU and 64 miles of shoreline within the PFRU) receiving sand during or following an emergency event (declared disaster or Congressional Order) as a result of the SPBO. The amount or extent of incidental take for nesting sea turtles will be considered exceeded if during the course of the proposed project, sand is placed on more shoreline per year than authorized in the SPBO as outlined above.

FISH AND WILDLIFE RESOURCES

This section is provided in accordance with the Fish and Wildlife Coordination Act of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*) to address other fish and wildlife resources in the project area.

Hardbottom Reef Habitat and Seagrasses

The proposed project is expected to directly impact approximately 2.73 acres of nearshore hardbottom habitat due to both fill placement and pipeline corridors. The anticipated direct impacts were quantified based on the nearshore hardbottom habitat located within the predicted equilibrium toe of fill (ETOF). An additional 10.85 acres of nearshore hardbottom habitat may be indirectly and temporarily impacted by the mixing zone. The anticipated indirect impacts were quantified based on the hardbottom habitat located between the predicted ETOF and the mixing zone limits (approximately 213 feet offshore).

Due to direct and indirect impacts to nearshore hardbottom habitat, the Applicant shall submit a mitigation plan to compensate for these impacts. The plan shall be provided to the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) and the DEP for review and joint approval prior to project authorization. In addition, the NOAA Fisheries will assess and consult with the Corps concerning potential impacts to foraging and swimming sea turtles, and all other marine species under their jurisdiction within the action area.

Please submit a report by July 31 of the following year of construction as described in the SPBO Term and Condition A22 following completion of the proposed work.

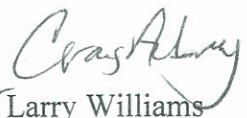
REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if:

1. The amount or extent of incidental take outlined in the SPBO is exceeded. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.
2. New information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion.
3. The agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion.
4. A new species is listed or critical habitat designated that may be affected by the action.

Thank you for your cooperation in the effort to conserve fish and wildlife resources. Should you have additional questions or require clarification regarding this letter, please contact Jeff Howe at 772-469-4283.

Sincerely yours,



Larry Williams

Field Supervisor
South Florida Ecological Services Office

cc: electronic only

Corps, Palm Beach Gardens, Florida (Garett Lips)

DEP, Tallahassee, Florida (Stephanie Gudeman)

EPA, West Palm Beach, Florida (Ron Miedema)

FWC, Imperiled Species Management Section, Tallahassee, Florida (Robbin Trindell)

NOAA Fisheries, West Palm Beach, Florida (Jocelyn Karazsia)

NOAA Fisheries, Fort Lauderdale, Florida (Audra Livergood)

Service, Atlanta, Georgia (David Flemming)

Service, St. Petersburg, Florida (Anne Marie Lauritsen)

Service, Panama City, Florida (Patty Kelly)

USGS, Florida Integrated Science Center, Gainesville, Florida (Susan Walls)

LITERATURE CITED

Florida Fish and Wildlife Conservation Commission (FWC). 2011. Standard Manatee Conditions for In-Water Work 2011. Tallahassee, Florida [Internet]. [cited October 26, 2011]. Available from:
http://myfwc.com/media/415448/Manatee_StdCondln_waterWork.pdf.

U.S. Fish and Wildlife Service (Service). 2011. Statewide programmatic biological opinion to the U.S. Army Corps of Engineers (FWS Log No. 41910-2011-F-0170) for shore protection activities along the coast of Florida (August 22, 2011). Jacksonville, Panama City, and Vero Beach Field Offices, Florida.

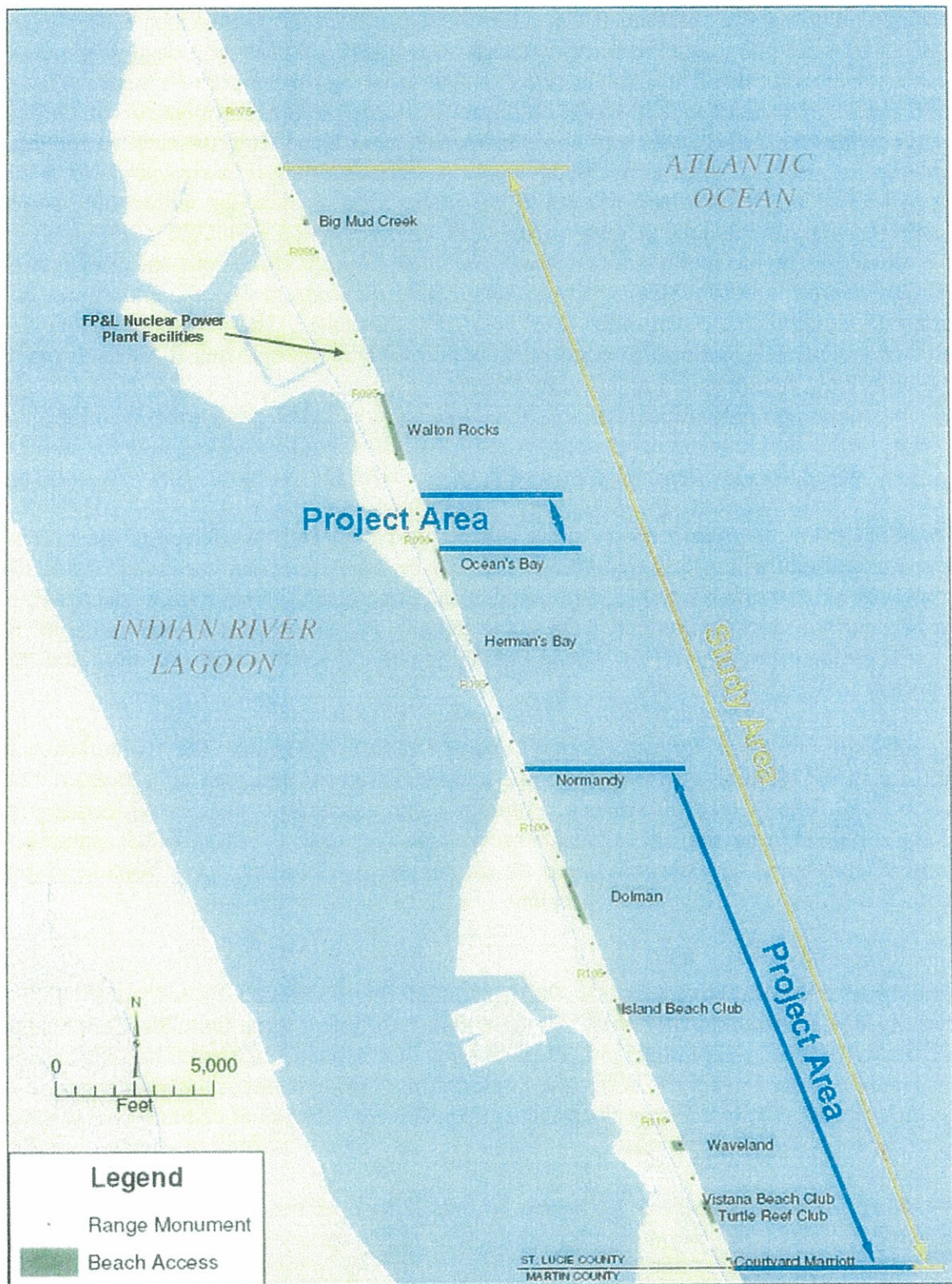


Figure 1. Location of the proposed beach and dune restoration project and upland staging/beach corridor areas along Hutchinson Island, St. Lucie County, Florida.

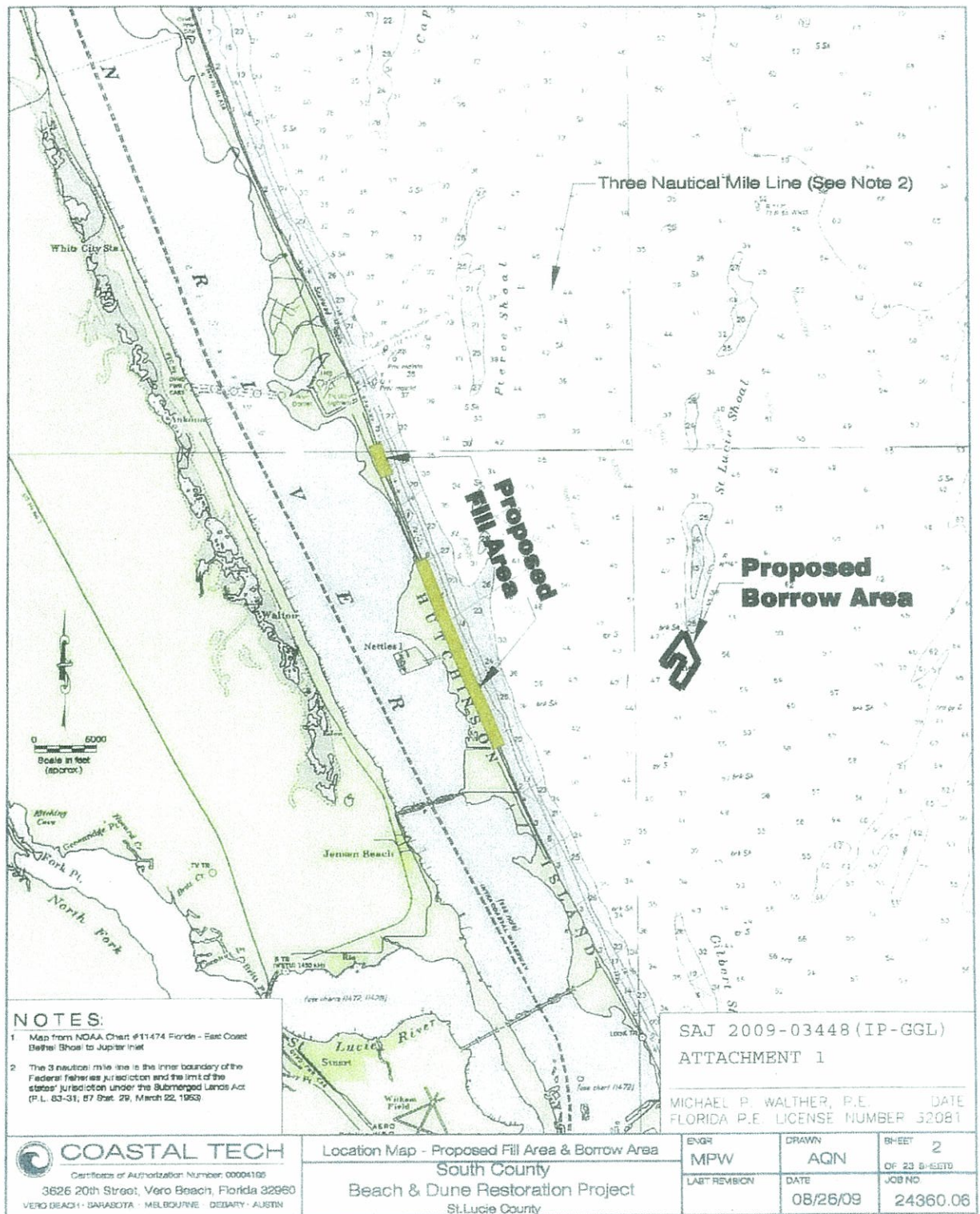


Figure 2. Location of Borrow Area 5, Atlantic Ocean, Florida.

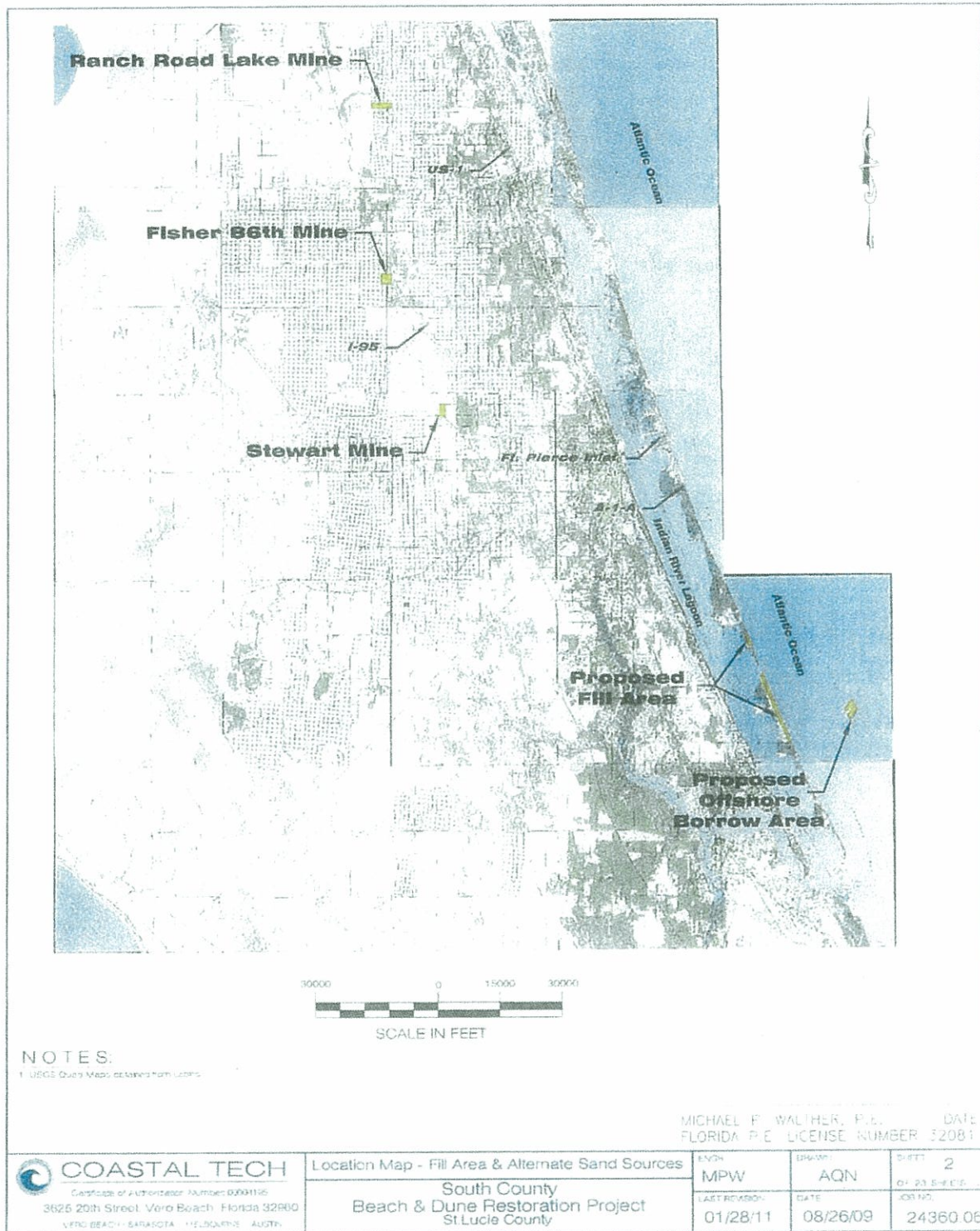


Figure 3. Location of potential upland borrow areas.



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
(727) 824-5317; FAX (727) 824-5300
<http://sero.nmfs.noaa.gov/>

January 5, 2012

F/SER4:BH/pw

(Sent via Electronic Mail)

Colonel Alfred Pantano
Department of the Army
Jacksonville District Corps of Engineers
Palm Beach Gardens Regulatory Field Office
4400 PGA Boulevard, Suite 500
Palm Beach Gardens, Florida 33410

Attention: Garrett G. Lips

Dear Colonel Pantano:

NOAA's National Marine Fisheries Service (NMFS) reviewed the Jacksonville District's public notice SAJ-2011-3599(IP-GGL) dated December 29, 2011. The applicant, Florida Department of Transportation District 6 (FDOT), requests authorization from the Department of the Army for the construction of a 2,300-foot bulkhead along the eastern bank of the Red Road Canal, backfilling 1.36 acres of Red Road Canal, and dredging approximately 7,200 cubic yards of sediments from 1.16 acres of the Red Road and C-7 Canals. Overall, FDOT intends to reconstruct a 0.60-mile segment of Red Road from West 45th Street to West 54th Street to improve traffic capacity and safety. This project proposes to add two traffic lanes (one in each direction) to the existing four-lane roadway with turning lanes added at the intersections. We agree with the Corps that essential fish habitat (EFH) would not be impacted by the proposed road modifications; accordingly, we offer no comments pursuant to the EFH provisions of the Magnuson-Stevens Act. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments and recommendations are provided pursuant to authorities of the Fish and Wildlife Coordination Act.

The project area is a roadside canal with steep side slopes and limited vegetation blocked on both sides by water control structures. We concur that FDOT's proposal reflects adequate avoidance and minimization of impacts to wetlands, and we also agree that based on the low quality of the wetlands that would be unavoidably impacted, no compensatory mitigation is needed. Should additional information or subsequent project modifications indicate that impacts to NOAA trust resources would occur; we may elect to provide recommendations as may be needed to address those changes.



We appreciate the opportunity to provide these comments. Questions should be directed to the attention of Mr. Brandon Howard in our West Palm Beach Field Office, which is co-located with the US Environmental Protection Agency at USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, FL 33401. He also may be reached by telephone at (561) 616-8880 extension 210, or by email at Brandon.Howard@noaa.gov.

Sincerely,



/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc:

COE, Palm Beach Gardens (Garett.G.Lips@usace.army.mil)

FWS, Vero (John_Wrublik@fws.gov)

FDOT, Miami (John.Palenchar@dot.state.fl.us)

F/SER4

F/SER47, Karazsia, Howard



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
4400 PGA BOULEVARD, SUITE 500
PALM BEACH GARDENS, FLORIDA 33410

November 28, 2011

REPLY TO
ATTENTION OF

Palm Beach Gardens Regulatory Section
SAJ-2009-03448(IP-GGL)

Mr. Miles M. Croom
Assistant Regional Administrator
Southeast Regional Office, Habitat Conservation
NOAA, National Marine Fisheries Service
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Mr. Croom:

We have received your comments regarding Essential Fish Habitat provided by letter dated July 18, 2011, for permit application SAJ-2009-03448(IP-GGL), submitted by the St. Lucie County Erosion Control District. The project is located along 3.8 miles of Hutchinson Island shoreline between Florida Department of Environmental Protection (FDEP) monuments R-88.7 to R-90.3 and R-98 to R-115+1,000 feet, St. Lucie County, Florida.

Please find attached comments provided by your office dated July 18, 2011 and the USACE responses. The document identifies the source of the comment or response in **bold face type**, identifies comments in plain face type, and identifies responses *in italics*. The responses include references to documents that you may or may not have. The comments appear verbatim from the comment letters, without changes to grammar, content, or formatting other than font size and typeface.

The USACE will provide you access to a copy of each document or report not readily available or previously cited by NMFS. The Taylor Engineering ftp site contains each new document cited in the responses; however, documents or citations from the DEIS may be referenced using the original DEIS. Please find the ftp site below and use the userid and password provided. Please contact Garrett Lips at 561-472-3519, or David Stites at Taylor Engineering (904) 256-1373 if you cannot access the ftp site. Please note that the password is case sensitive.

ftp site link: <ftp://taylorftpservices.com>
username: nmfs2011
password: Hello1

Please do not hesitate to call or email to discuss these responses.

Sincerely,

LIPS.GARETT.GRA
NT.1185704153

Digitally signed by
LIPS.GARETT.GRANT.1185704153
DN: c=US, o=U.S. Government, ou=DoD,
ou=PKI, ou=USA,
cn=LIPS.GARETT.GRANT.1185704153
Date: 2011.11.28 15:37:16 -05'00'

Garett Lips
Project Manager

Copy Furnished:

NMFS, Jocelyn Karaszia



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
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<http://sero.nmfs.noaa.gov/>

December 29, 2011

F/SER4:JK/pw

Colonel Alfred Pantano, Commander
Jacksonville District, Army Corps of Engineers
Jacksonville Regulatory Office, South Permits Branch
PO Box 4970
Jacksonville, Florida 32232

Attention: Garret Lips

Dear Colonel Pantano:

NOAA's National Marine Fisheries Service (NMFS) reviewed the *revised* public notice SAJ-2009-03448 (IP-GGL) dated December 1, 2011, and the application from the St. Lucie County Erosion Control District to construct a beach nourishment project in St. Lucie County. The Jacksonville District's initial determination was that the proposed action would not have a substantial adverse impact on essential fish habitat (EFH) or federally managed fisheries, however in the revised public notice, the Jacksonville District changes this determination and now believes the action would have a substantial adverse impact on EFH or federally managed fisheries. As noted in the *Consultation History* section of this letter, NMFS commented on this project previously and views as still in effect the letter we provided the District pursuant to Part IV 3(b) of the Memorandum of Agreement (MOA) between the Department of Commerce and the Department of the Army. As a step towards resolving the issues NMFS has with this proposed project, by letter dated November 28, 2011, the District provided NMFS with a preliminary response to the EFH recommendations that we provided July 18, 2011. Our comments below review the status of the project with respect to the EFH conservation recommendations, the information recently provided by the District, and the revised public notice.

Consultation History

- NMFS provided a letter, dated June 21, 2010, to the Jacksonville District in response to the District's request for views, comments, and information related to the District's efforts to conduct scoping pursuant to the National Environmental Policy Act to inform preparation of the Draft Environmental Impact Statement (DEIS).
- By letter dated July 18, 2011, NMFS provided the Corps with comments and eight EFH conservation recommendations in response to the DEIS, entitled *St. Lucie County South Beach and Dune Restoration Project*, prepared by the Jacksonville District and dated May 2011. This letter describes the EFH in the project area and potential effects to fishery resources from the project; these descriptions do not require amendment based on the new information within the revised public notice.
- By letter dated July 25, 2011, in response to a public notice dated June 29, 2011, NMFS recommended the Department of the Army not authorize the project as proposed. This recommendation was provided pursuant to Part IV 3(a) of the MOA between the Department of Commerce and the Department of the Army dated August 11, 1992.



- By letter dated August 22, 2011, and pursuant to Part IV 3(b) of the MOA, NMFS re-iterated the recommendation that the Department of the Army not authorize the project as proposed.

Project Revisions

The revised public notice describes an increase in impacts to hardbottom habitats based on a more recent (winter 2010) biological resource survey. The DEIS and original notice indicate the work would impact approximately 1.08 acres of nearshore hardbottom habitat, whereas the revised public notice indicates 2.73 acres of impact to hardbottom habitat. While this represents an increase of 1.65 acres of hardbottom habitat; NMFS still believes this is an underestimate (see our response to EFH recommendation #3).

EFH Conservation Recommendations

EFH Conservation Recommendation #1: The shoal proposed for excavation shall be eliminated from the project design due to the potential for unacceptable impacts to the wave climate and shoreline sediment transport. Alternatively, NMFS will re-consider this recommendation based on receipt of additional analysis performed similar to Kelley et al. (2004).

Jacksonville District Response (summary): Hammer et al. (2005) modeled “the significance of changes to longshore transport along the modeled shoreline from dredging the proposed borrow sites to their maximum design depths” (page 239). This entailed modeling a scenario of dredging 14.6 million cubic meters (18.3 million cubic yards) of sand and reducing the shoal elevation from between -5.4 meters and -7.6 meters (-17.8 feet and -24.9 feet) to an elevation of -12 meters (-39.4 feet); in other words, complete deflation of the shoal to surrounding elevations. The modeled dredging indicated unacceptable changes in wave climate would occur along the shoreline. Referring to expected acceptable levels of dredging, Hammer et al. (2005) concluded that “the most likely change would be a reduction in maximum dredging depth to reduce site impacts” (page 240). The “reduction in maximum dredging depth” refers to the final elevation of the shoal. However, the dredging modeled in Hammer et al. (2005) removed almost 25 times the amount of sand proposed by the applicant. In addition, the proposed dredging would not reduce the maximum elevation of the shoal. The applicant has demonstrated that the wave climate changes caused by the project do not include significant impacts on nearshore wave climate and sand transport.

Similarly, Kelley et al. (2004) modeled the removal of an estimated 24 million cubic meters (31.4 million cy) with an excavation depth of 4.6 meters (15 feet; all of St. Lucie Shoal in federal waters). After determining that this dredging would cause unacceptable effects on the wave climate, they determined that the shoal — if reduced in elevation by less than 2.3 meters (7.5 feet) — would yield 12 million cubic meters (15.7 million cy) of sand without causing significant impacts on longshore sediment transport. Again, the District notes that the proposed project maintains the shoal height and extracts about 5% of the volume Kelley et al. (2004) identified as safe to extract considering the nearshore wave climate.

NMFS evaluation of completeness: Based on a teleconference on December 21, 2011, the District advised that the response provided above only considers the initial project (610,000 cy) and not the entire 50-year plan. We can agree unacceptable impacts to the wave climate and shoreline sediment transport are not likely from the initial nourishment event; however future dredging of the shoal for maintenance of this project (or to obtain material for a separate project) will likely require a new EFH consultation. For the purposes of the initial project only, EFH conservation recommendation #1 has been sufficiently addressed.

EFH Conservation Recommendation #2: The District shall evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts. Specifically, we recommend further examination of the following three alternatives: Beach Fill with No Impact to Existing Hardbottom; Beach Fill to Restore the 1972 Beach and Dune; and South Segment Beach and Dune Restoration – North Segment Dune Restoration Only.

Jacksonville District Response: The DEIS identifies “Beach Fill to Restore the 1972 Dune with a 35-foot Berm” as the applicant’s preferred alternative. St. Lucie County presented this preference in its dredge-and-fill permit application SAJ-2009-03448 (IP-GGL). The District is evaluating all reasonable alternatives. The Record of Decision (ROD) will identify the District’s preferred alternative. In the DEIS, the District reviewed several alternatives with a range of hardbottom impacts. In addition to the hardbottom impacts, the District must also consider impacts to listed species (such as marine turtles) and their habitat, and to humans and human habitats. The final recommendation expressed in the ROD will consider the full range of alternatives, impacts, and mitigation for those impacts.

NMFS evaluation of completeness: We support the District’s continued evaluation of less damaging alternatives. In light of the new information on the amount of hardbottom habitat in the project area being higher than previously reported, we support continued evaluation of the alternatives listed in EFH recommendation #2. An alternative with dune fill only in the north segment would notably reduce hardbottom impacts; however, NMFS will not be able complete its evaluation of the District’s response to this EFH conservation recommendation until the District completes the alternatives analysis.

EFH Conservation Recommendation # 3: Results from a biological resource and nearshore habitat mapping survey within the ETOF with 1,000-foot buffer and the pipeline corridor with a 100-foot buffer shall be provided to NMFS. The biological survey report should map, quantify, and characterize hardbottom within 100 feet of the pipeline corridor and hardbottom within 1,000 feet from the ETOF. The method for determining the amount of hardbottom present should be described and based on historical and recent data. In addition, the survey report should identify survey dates and include full characterizations of each habitat depicted in the maps. These characterizations should focus on the following taxonomical groups: stony corals, octocorals, sponges, worm reef, and macroalgae. For stony corals, species, density, size distribution (colony diameter and height), and condition (bleaching and disease) should be documented. For octocorals, species, density, and size distribution (colony height) should be documented.

Jacksonville District Response: The Final Environmental Impact Statement (FEIS) will contain a clear explanation of the quantification of hardbottom impacts and the means by which the applicant characterized the different hardbottom community types. The applicant has also provided analysis of hardbottom habitat and impacts based on 2010 aerial photographs. The District will use the impact assessment based on the most recent hardbottom data. The FEIS (Appendix N) provides 2008 hardbottom maps with the Applicant’s Preferred Project and 2010 hardbottom maps with the Applicant’s Preferred Project. These maps are available on Taylor Engineering’s ftp site. Note that the 2010 maps also point out the different hardbottom communities.

NMFS evaluation of completeness: NMFS reviewed aerial photos from 2009 and 2010 and it appears that there is much more hardbottom in the project area than reported by the applicant. NMFS estimates that approximately 6.1 acres of relatively continuous hardbottom is present in the north project area and much of the hardbottom in this area appears to be persistently exposed. We estimate that approximately 5.8 acres of patchy hardbottom is present in the south project area. By teleconference date December 21, 2011, NMFS and the District reviewed the aerial imagery and discussed this matter.

NMFS is concerned that the methods used by the applicant to complete the surveys under-sampled the area. Specifically, bounce dives were conducted (versus in-water verification of the hardbottom edge) and large areas between dive sites were not verified. Accordingly, EFH conservation recommendation #3 is not sufficiently addressed by the information provided.

EFH Conservation Recommendation #4: A biological monitoring plan shall be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS.

Jacksonville District Response: The applicant has provided a biological monitoring plan that includes consistent baseline and post-construction transect locations and distances (DEIS Appendix F). The monitoring plan includes pre-construction and immediate post-construction efforts, and annual events for a total monitoring period of five years. The ROD will provide recommended monitoring activities.

NMFS evaluation of completeness: Since EFH recommendations #2 and #3 have not yet been sufficiently addressed, we are unable to complete our review of the biological monitoring plan. NMFS will expeditiously review the plan once the project design and the hardbottom impact evaluation is complete.

EFH Conservation Recommendation #5: A plan for monitoring the pipeline for leaks at least twice per day and response actions to any leaks detected shall be provided to NMFS for review and approval prior to finalizing the EIS.

Jacksonville District Response: The FEIS will include a pipeline monitoring plan that has daily dive surveys of the pipeline to verify that the pipeline remains in the desired location and to identify any impacts outside the 50-foot corridor. The ROD will include a recommended means of pipeline monitoring. Taylor Engineering's ftp site includes the pipeline monitoring plan proposed by the applicant.

NMFS evaluation of completeness: We reviewed the pipeline monitoring plan and note that it describes monitoring for leaks once per day (we recommended twice per day). In addition, the plan describes coordination that would occur when leaks are detected; however the plan does not describe response actions that will be taken. Therefore NMFS determines this recommendation has not been adequately addressed.

EFH Conservation Recommendation #6: A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which infaunal communities recover from dredging and the fill and grain-size distribution of the material that fills the dredge holes.

Jacksonville District Response: The DEIS (Appendices E and F) include physical and biological monitoring plans. Those plans include monitoring of offshore borrow area activities.

NMFS evaluation of completeness: Appendix E describes plans to complete bathymetric surveys of the borrow area. Hydrographic surveys will be conducted at 12, 24, and 36 months post-construction and used to determine the infilling rate of the shoal. Additionally, Appendix F describes infaunal monitoring at the borrow sites. Specifically the applicant proposes to conduct pre- and post-construction infaunal biomass surveys for secondary productivity, approximately 15 sample sites will be established within and proximal to the borrow area: 5 within the refuge patch, 5 in the area to be dredged, and 5 outside the borrow area. While this general approach may sufficiently address our recommendation, NMFS is concerned that the sample sizes are too low to yield a robust test of differences in biomass and abundance between impact and reference areas over time. NMFS requests a power analysis be prepared to show that 5 samples in each area is sufficient.

EFH Conservation Recommendation #7: Best management practices (BMP) to minimize the adverse impacts associated with mining the shoals shall be developed and integrated into the project design. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. Please provide a list of BMPs to NMFS for review and approval prior to finalizing the EIS.

Jacksonville District Response: Revisions to the EIS and EFH Assessment will include consideration of best management practices (BMPs). BMPs applied in the proposed project may include those listed

below. Many contractors include them as standard operating practices for offshore hopper dredging operations.

Design BMPs:

- Design the borrow area with the long axis parallel to the long axis of the shoal. However, avoid dredging along the entire long axis of the shoal (included in this project).
- Maintain a refuge patch at the highest shoal elevations to help minimize the impacts to the shoal habitat (included in this project).
- Dredge on the downdrift side of the shoal (included in this project).
- Excavate only to surrounding ocean floor elevations (included in this project).

Potential Operational BMPs for consideration:

- Three controls associated with dredge and barge filling operations help to minimize turbidity.
 - Eliminate or reduce hopper overflow. Eliminating or reducing hopper overflow reduces the volume of fine material that flows from the hopper in the overflow. Note that this control may significantly reduce hopper dredge production.
 - Lower hopper fill level. Lowering the hopper fill level in rough sea conditions can prevent material loss during transport.
 - Implement a recirculation system. Recirculating water from the hopper overflow to the draghead can reduce water discharged from the hopper.
- Use of integrated positioning systems (included in this project).
 - Monitors dredge position, cutterhead location, and allows calculation of dredge production status.
 - Enhances environmental monitoring – provides real-time alarms and archival recording of dredge head position/depth outside of prescribed boundaries/depths.
- Use of floating tow lines.

The FEIS will include this list of BMPs. Note that Kelley et al. (2004) also identify the practices that NMFS provides as examples but Kelley et al. (2004) indicate that the practices are site and project specific. Note also that limiting the depth of dredge cuts recommended in Hammer et al. (2010) and Kelley et al. (2004) referred to dredging at the highest shoal elevations. The proposed project has incorporated the highest elevations into a refuge area specifically to avoid altering those elevations. The 50-year conceptual dredging plan uses the same logic in describing conceptual borrow area locations.

NMFS evaluation of completeness: The District's response adequately addresses EFH conservation recommendation #7.

EFH Conservation Recommendation #8: A compensatory mitigation plan that describes how unavoidable impacts to hardbottom habitat shall be offset from construction activities and the ETOF. This plan should include performance standards, monitoring protocols and schedule, and a functional assessment (e.g., Unified Mitigation Assessment Method) that demonstrates how mitigation amounts offset the resource impacts.

Jacksonville District Response: DEIS Appendices D, E, and F provide compensatory mitigation plans, monitoring protocols, and monitoring schedules. The FEIS will include Unified Mitigation Assessment Method (UMAM) assessments, inadvertently excluded from DEIS Appendix D. The draft UMAM calculations are provided on Taylor Engineering's ftp site.

NMFS evaluation of completeness: For the following reasons, NMFS concludes EFH conservation recommendation #8 has not been sufficiently addressed. Within the sequential mitigation process, compensatory mitigation is evaluated only after avoidance and minimization have occurred to the

maximum extent practicable. NMFS will provide more detailed comments on the mitigation proposal once it has been demonstrated that hardbottom impacts have been minimized to the maximum extent possible. In the interim, we offer the following comments:

- The original mitigation proposal described the construction of 0.98 acres of artificial hardbottom habitat. The revised notice states that based on a preliminary UMAM evaluation, creation of 3.5 acres of artificial hardbottom habitat may be sufficient to offset the lost ecological functions. We generally agree with the approach on how the impacts were scored using UMAM, however considering the lack of detailed information on the mitigation design, we cannot agree at this time that the UMAM score sheets are complete and accurate. In this regard, we point out that details about the mitigation (location, acreage, water depth, design) would be needed in a final mitigation plan. Furthermore, based on the preceding section about impacts to hardbottoms, NMFS believes that additional mitigation would be needed.
- Depth of mitigation structures. According to the mitigation plan, the mitigation would be constructed in 12 feet to 15 feet of water, whereas the impacts would occur to hardbottoms located in shallower water. We are concerned that this would result in the creation of dissimilar habitat and we support consideration of shallower sites at comparable water depths as the impact sites.
- The mitigation plan describes the potential to relocate wormrock boulders located within the impact site to the mitigation sites, if feasible. NMFS supports this concept.

Closing

Based on the preceding, EFH recommendations 1, 5, and 7 have been sufficiently addressed. However more information is needed for EFH recommendations 2, 3, 4, 6, and 8 in order for NMFS to complete the EFH evaluation. NMFS would like to work with the Jacksonville District, the applicant, and agency partners from the Florida Department of Environmental Protection as more information becomes available and our review continues.

Thank you for considering these additional comments on this project. Related correspondence should be directed to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, which is co-located with the U.S. Environmental Protection Agency at 400 North Congress Avenue, Suite 120, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 616-8880, extension 207, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,



/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc:

FWS, Charles_Kelso@fws.gov
FWCC, Lisa.Gregg@MyFWC.com, Debby.Tucker@MyFWC.com
FDEP, Vladimir.Kosmynin@dep.state.fl.us
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SAFMC, Roger.Pugliese@safmc.net
F/SER4, David.Dale@noaa.gov, Jocelyn.Karazsia@noaa.gov

Attachment
St. Lucie County South Beach and Dune Restoration Project
Draft Environmental Impact Statement
Response to Comments Provided by the NMFS

This document contains each written comment and the USACE's response to each comment. The document identifies the source of the comment in **bold face type**, identifies comments in plain face type, and identifies responses *in italics*. The comments appear verbatim from the comment letters, without changes to grammar, content, or formatting other than font size and typeface.

The comment numbers are arbitrary in the sense that the USACE did not prioritize or rank the comments based on subject matter. All the comments from a single comment letter occur sequentially, as they appeared in the comment letter.

The Taylor Engineering ftp site provides the documents referred to in the responses if those documents are not already available in the DEIS.

Comment 1 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment letter date: 7/18/2011

NMFS Comment: A hopper dredge would be used to excavate the sand from the offshore borrow sites. The material would be transported to locations just offshore from the fill areas and then pumped to the beach. Details of how this would occur do not appear in the draft EIS, however, the drawings in the public notice depict one pipeline for the northern segment and five pipelines for the southern segment.

Response:

The FEIS will provide additional detail concerning the operation of the hopper dredge and transfer of sand from the hopper dredge to the beach along the project length. Specifically, the applicant has provided the following information:

Construction Plan Assumptions

The applicant made the following assumptions concerning hopper dredge operations:

- 2,000 cubic yard hopper dredge capacity (305 hopper loads to complete the project)*
- 5 hour round trip cycle time to load, transit, and offload hopper dredge*

The applicant noted that the actual construction values might vary slightly from these estimates. Please also note that the applicant has provided a total of five (not six) pipeline corridors in its most recent submissions.

Pipeline Corridors

The contractor will likely require the following workday efforts at each pipeline location:

- R-89.4 – Approximately 9 work days
- R-100 – Approximately 14 work days
- R-104 – Approximately 11 work days
- R-108 – Approximately 15 work days
- R-114 – Approximately 16 work days

St. Lucie County has not recommended use of the potential pipeline corridor at R-101 (the sixth corridor identified in DEIS documents). The applicant eliminated use of this corridor to avoid hardbottom impacts.

Pipeline Placement

At each pipeline corridor, the contractor will perform the following pipeline placement procedures:

- A diver will video survey bottom conditions within the authorized pipeline corridor before pipeline placement.
- Alignment of the pipeline on the surface followed by pipe flooding will sink the pipe to the bottom in the desired location. The intent is to sink the pipeline in place and to avoid dragging the pipeline along the bottom to obtain proper placement
- In any location within a corridor where the pipeline cannot avoid hardbottom, the contractor will equip the pipeline with collars or other similar types of “stand-off” devices to minimize impacts to hardbottom.
- The contractor likely will not anchor the pipeline to the bottom. The pipeline and pipeline collar mass should prove sufficient to keep the pipeline in place on the ocean bottom. Daily monitoring will verify pipeline location.
- Typically, watertight “lock joints” connect dredge pipes.

A buoy attached to the seaward end of the pipeline will allow the hopper dredge to locate and connect to it easily. The contractor will connect the pipeline to the hopper dredge and pump sand from the hopper dredge onto the beach. As the sand pile grows around the pipe end, earthmoving equipment will continually grade the sand into the desired template. When the area around the pipe end has received enough sand, the contractor will extend (or shorten) the pipe to nourish additional beach areas. When the extended pipeline can no longer reach additional areas without a booster pump, the dredger will cease the pumping operation by pumping water through the pipeline until no sand remains in the pipeline. At that time, the dredger will force air through the pipeline to float it, move the floating pipe to the new location. After completing a necessary lengthening or shortening, pipeline placement as described above will occur. After satisfactory placement, dredging will recommence.

Comment 2 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS describes that seismic and core boring investigations in the borrow area indicate that it contains about 1.3 million cy of beach quality sand. The draft EIS depicts an extension of the shoal located in federal waters that would be dredged to obtain material to last the life of the project proposed by St. Lucie County (Figure 2.2-1 on page 31). The District's draft EIS for the nearby, federal Martin County Florida Hurricane and Storm Reduction Project (USACE 2010) identifies the portion of this feature in federal waters as "borrow area C1-C." Based on Hammer et al. (2005), USACE (2010) states that borrow area C1-C was eliminated from future analysis in part due to wave refraction modeling results that indicate unacceptable impacts to the wave climate and changes to shoreline sediment transport processes would occur from dredging these two areas. NMFS believes that similar unacceptable impacts would occur from dredging the portion of this shoal in state waters and recommends that a similar analysis be conducted for the state waters portion of the borrow area (see EFH conservation recommendation #1). Until this analysis has been completed and results are coordinated with NMFS and other agencies, we do not recommend moving forward with the other project elements provided below.

Response:

The applicant has described a conceptual 50-year plan for shoal dredging that provides one means of obtaining sand for the project. The EIS also includes discussion of other sand sources that would likely remain available over the 50-year project life.

USACE 2010 assumed complete deflation of the shoal as a result of dredging. That is one of the reasons why they did not select the site for their proposed project (Paul DeMarco personal communication September 2011).

*Hammer et al. (2005) modeled "the significance of changes to longshore transport along the modeled shoreline from dredging proposed borrow sites to their maximum design depths" (page 239). This entailed modeling a scenario dredging 14.6 million cubic meters (18.3 million cubic yards) of sand and reduction of the shoal elevation from between -5.4 m and -7.6 m (-17.8 ft and -24.9 ft) to an elevation of -12 m (-39.4 ft) in other words complete deflation of the shoal to surrounding elevations). The modeled dredging caused unacceptable changes in wave climate along the shoreline. Referring to acceptable levels of dredging, Hammer et al (2005) concluded that "the most likely change would be a reduction in maximum dredging depth to reduce site impacts" (page 240). The "reduction in maximum dredging depth" refers to the final elevation of the shoal. However, the Hammer et al modeled dredging removed almost 25 times the amount of sand proposed by the applicant. In addition, **The proposed dredging will not reduce the maximum elevation of the shoal.** The applicant has demonstrated that the wave climate changes caused by the project do not include significant impacts on nearshore wave climate and sand transport.*

Similarly, Kelley et al. (2004) modeled the removal of an estimated 24 million cubic meters (31.4 million cy) with an excavation depth of 4.6 meters (15 ft - all of St. Lucie Shoal in federal waters). After determining that this dredging would cause unacceptable effects on the wave climate, they determined that the shoal — if reduced in elevation by less than 2.3 meters (7.5 ft) — would yield 12 million cubic meters (15.7 million cy) of sand without causing significant impacts on longshore sediment transport. Again, the USACE notes that **the proposed project maintains the shoal height and extracts about 5% of the volume Kelley et al. identified as safe to extract considering nearshore wave climate.**

Dibajnia and Nairn (2011) formulated and recommended “offshore dredging guidelines to protect and maintain the morphologic integrity of the ridge and shoal features found on the Outer Continental Shelf (OCS) which are being targeted as sand borrow sites for beach nourishment and coastal restoration efforts”. Using historic survey data and model analysis of the effects of eleven dredging scenarios for 10-15 year periods, they concluded that “there was no indication that there exists a critical threshold for dredging that once crossed, ridge and shoal features may deflate, losing their morphologic integrity”. The ftp site includes a copy of the report.

The Record of Decision will include identification of the USACE’s preferred sand sources based on the results of the applicant’s modeling, and the position of the NMFS HCD stated in this comment and Conservation Recommendation #1.

See Coastal Technology Corporation wave climate analyses (three documents) provided on the Taylor Engineering ftp site. Please find also copies of Hammer et al. 2005 and Kelley et al. 2004.

Comment 3 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS evaluates seven alternatives, including “Beach Fill to Restore the 1972 Dune with a 35-ft Berm,” which is the preferred alternative; and the no action alternative. The draft EIS also presents 13 other alternatives that were eliminated from further consideration. Much of the discussion in the draft EIS, EFH assessment, and public notice pertains to the preferred alternative. Overall, the analysis of alternatives seems narrow. Additionally, the analysis presented for “Alternatives Eliminated From Detailed Evaluation (Section 2.4),” are described in more detail than many of the “Alternatives Evaluated in Detail (Section 2.1).” NMFS recommends the District evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts (see EFH conservation recommendation #2). We specifically recommend further examination of the

following three alternatives: Beach Fill with No Impact to Existing Hardbottom; Beach Fill to Restore the 1972 Beach and Dune; and South Segment Beach and Dune Restoration – North Segment Dune Restoration Only. This would also address our recommendation provided in our letter dated, June 21, 2010, regarding the need to evaluate designs that avoid and minimize impacts to hardbottom throughout all phases of the project.

Response:

The DEIS identifies “Beach Fill to Restore the 1972 Dune with a 35-ft Berm” as the applicant’s preferred alternative. St. Lucie County presented this preference in its Dredge and Fill permit application SAJ-2009-03448 (IP-GGL). The USACE is evaluating all reasonable alternatives. The Record of Decision (ROD) will identify the USACE’s preferred alternative. In the DEIS, the USACE reviewed several alternatives with a range of hardbottom impacts. In addition to the hardbottom impacts, the USACE must also consider impacts to listed species (such as marine turtles) and their habitat, and to humans and human habitats. The final USACE recommendation, expressed in the ROD, will consider the full range of alternatives, impacts, and mitigation for those impacts.

NOAA HCD has elsewhere indicated its requirement that the EFH assessment focus on one alternative. The USACE has done so in the EFH Assessment and Biological Assessment.

**Comment 4 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011**

Comment: The draft EIS states that 1.08 acres of nearshore hardbottom would be directly buried as a result of the preferred alternative. An explanation of how hardbottom impacts are quantified is missing from the draft EIS and EFH assessment. Digitized aerials from 2008 are provided as figures in the public notice and these figures depict the exposed hardbottoms between the shoreline and 600 feet eastward of the shoreline. Given the shifting nature of sand in nearshore areas, NMFS does not believe that one year of analysis is sufficient to quantify the amount of hardbottom habitat within the equilibrium toe of fill (ETOF). We recommend maps be based on at least three time periods, including a more recent survey (see EFH conservation recommendation #3).

USACE Response:

The FEIS will contain a clear explanation of the quantification of hardbottom impacts and the means by which the applicant characterized the different hardbottom community types. The applicant has also provided analysis of hardbottom habitat and impacts based on 2010 aerial photographs. USACE will use the impact assessment based on the most recent hardbottom data. The FEIS Appendix N provided 2008 hardbottom maps with the Applicant’s Preferred Project and 2010 hardbottom maps with the Applicant’s Preferred Project.

These maps are available on the Taylor Engineering ftp site. Note that the 2010 maps also point out the different hardbottom communities.

Comment 5 Provided by NOAA-NMFS: HCD

Provided by V. Fay

Comment date: 7/18/2011

Comment: The draft EIS describes two types of hardbottom habitat in the project area, referred to Community 1 and Community 2. These habitat types are qualitatively described and differentiated in terms of relief and the presence of worm rock and other functional groups (sponges and macroalgae), with Community 1 providing higher ecological services (and a higher mitigation requirement). Within the preferred alternative impact area, approximately 0.39 acres of Community 1 and 0.69 acres of Community 2 would be filled. The locations of these habitats and the survey information that fed into the habitat characterizations is not provided. Further, information is not provided regarding the presence of these habitat types with respect to the planned pipeline installation and if nearshore hardbottom habitat impacts would occur from this activity. In addition, the EFH assessment does not provide detail on the different benthic functional groups that are present in the project area. For example, corals are not mentioned in the EFH assessment; however, the biological monitoring plan (appendix F) describes evaluation of metrics associated with corals (see EFH conservation recommendation #3). We acknowledge that the draft EIS refers to CSA 2010a, *Baseline Nearshore Hardbottom Characterization Survey for the St. Lucie County South Beach Project* (report not provided to NMFS). It is possible that more information from this report may need to be incorporated into the EFH assessment or additional biological resource surveys may be needed.

Response:

Revisions to the EFH Assessment and EIS will provide locations of the community types, planned pipeline installation locations, all benthic functional groups present in the project area, and a description of the surveys performed.

The applicant's survey methods to characterize benthic community types included

- Twenty-two permanent transects installed perpendicular to shore near FDEP range monuments. Final transect locations varied slightly from the range monument locations to avoid areas devoid or largely devoid of hardbottom and to ensure transect installation near candidate pipeline corridor routes. Permanent transects were installed at R-77.7, R-78.7, R-80.4, R-82.8, R-85, R-86.3, R-88.7, R-90.4, R-92, R-93.5, R-100, R-101, R-102, R-103.2, R-104.5, R-105.9, R-109.2, R-110, R-110.5, and R-112 in St. Lucie County, and R-1 and R-3 in Martin County. Each transect extended from the landward edge of exposed nearshore hardbottom to the easternmost extent of exposed hardbottom along the transect, not exceeding 150 meters(492 ft) in total length.*

- Scientists collected quantitative and qualitative video data along the entire length of each transect to determine percent cover of benthic flora, fauna, and substrate components. In addition, sampling occurred at in situ quadrats at 10 to 12 point-intercept locations along each transect. The nearshore hardbottom edge was mapped to document the position of the exposed hardbottom and characterize associated benthic communities within the survey area.
- Percent cover of each taxon as well as major categories (macroalgae, fauna, substrate, and biotic turf) was calculated from quantitative video using the point count method and from raw in situ quadrat data. Percent cover data sets were log transformed and subjected to nonparametric statistical analyses with PRIMER 6.1.6 statistical software to investigate potential patterns in hardbottom community composition and distribution.
- Community classifications were based on a combination of physical (water depth, distance from shore, hardbottom relief), and compositional (dominant floral and faunal species) characteristics. The community locations are pointed out in the 2010 hardbottom maps that are provided in the Taylor Engineering ftp site. The FEIS will also include these figures.
- During the 2010 monitoring event, three scleractinian coral polyps were observed in one quadrat on the transect located at R-104.5. No scleractinian corals were observed in any quantitative or qualitative video transects. One octocoral was observed during the point count analysis of one transect (R-78.7). Note that this transect falls outside the project equilibrium toe of fill.
- Community Three included octocorals. The project will not impact this community, which is located further offshore than Community One or Community Two.

Note that the FEIS will include a detailed, observation-based description of Hardbottom Communities One, Two, and Three in an Appendix to the FEIS. Response to another comment, below, includes summary descriptions of the three hardbottom communities and their locations within the project area.

The information on hardbottom mapping methodology, the baseline hardbottom survey report, and other relevant information are provided on the Taylor Engineering ftp site.

Comment 6 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: NMFS recommends that a biological monitoring plan be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS. Generally, the plan should include monitoring hardbottom habitat within the area of the ETOF and 1,000-foot buffer. The monitoring schedule should include a minimum of one pre-construction event, one event immediately after construction, one event 6 months after construction, and annually for three years post-construction (see EFH conservation recommendation #4).

USACE Response:

The applicant has provided a biological monitoring plan that includes consistent baseline and post-construction transect locations and distances (DEIS Appendix F). The monitoring plan includes pre-construction and immediate post-construction efforts, and annual events for a total monitoring period of five years. The Record of Decision will provide USACE recommended monitoring activities.

Please find the applicant's proposed monitoring plan as Appendix F of the DEIS.

Comment 7 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS generally describes how material will be transported to the beach and the public notice drawings depict that six pipeline corridors are proposed. However as noted above, a habitat characterizations of the pipeline routes are not provided in the draft EIS. There is no mention of the pipeline in the EFH assessment. A survey of the pipeline corridors will be needed to complete the EFH consultation (see EFH conservation recommendation #3).

USACE Response:

Six proposed pipeline corridors — diver-surveyed in 2009 (R-89.5, R-100, R-101, R-104, R-108, and R-114) — dives resulted in the elimination of the proposed corridor at R-101 due to a 62m (203 ft) extent of hardbottom in the nearshore region of that proposed pipeline corridor. Based on the diver survey results, pipeline corridors selected at that time avoided almost all hardbottom impacts

The northernmost pipeline corridor (approximately at R-89.5) contains variable presence of hardbottom and partially exposed hardbottom. However, no practicable alternative (i.e. another route that would result in lesser impact) would allow project construction in the north Project segment. The remaining four proposed pipeline corridors (R-100, R-104, R-108, and R-114) consist almost completely of sand and shell hash, with some interspersed small expanses of

*hardbottom or partially exposed hardbottom. These small expanses, perhaps areas of ephemeral hardbottom exposure, had little biotic cover (CSA, **Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project January 2010**, included in the FEIS). The applicant has proposed the use of pipeline collars or similar type of standoff device if the pre-placement survey dive identifies any unavoidable hardbottom (see Comment 1 Response concerning best management practices, above). This approach will avoid and minimize potential impacts to hardbottom resources along the pipeline corridors.*

*The document referred to above, **Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project**, will be available to the NMFS on the Taylor Engineering ftp site.*

Comment 8 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: Additionally, NMFS requests the District require monitoring the pipelines for leaks at least twice each day. NMFS requests that the District develop a pipeline monitoring plan and provide the plan to us for review and approval prior to construction. The plan should clearly identify measures for corrective actions, should a leak be detected (see EFH conservation recommendation #5).

Response:

The FEIS will include a pipeline monitoring plan including daily dive survey of the pipeline to verify that the pipeline remains in the desired location and to identify any impacts outside the 50 ft corridor. The ROD will include a recommended means of pipeline monitoring.

The Taylor Engineering ftp site includes the pipeline monitoring plan proposed by the applicant.

Comment 9 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS concludes that given the short temporal duration of the preferred alternative and relatively rapid recovery of the soft bottom infaunal invertebrate assemblage, short duration impacts to soft bottom assemblages within the borrow site are expected. The potential impacts from the modification to the shoal are considered minor and, therefore, unlikely to adversely affect the benthic community for extended periods. However, NMFS is concerned that systematic dredging of shoals, such as the proposed project and the dredging described in USACE (2010), may result in unanticipated changes in habitat

quality. Although opportunistic invertebrate communities may repopulate these areas after the dredging, benthic populations may not recover to pre-project levels. Dredging will also resuspend any fine material in the borrow area which can result in clogged gills in young, less mobile fish and invertebrates and thereby increase their mortality rate. The extent of negative effect is dependent on the life history stages of the species present and the duration of the event. The St. Lucie shoal complex is a long-established seascape feature that provides valuable habitat for fishery resources that utilize estuaries and offshore waters as a part of their life cycle. Minimizing mining sand from these shoals would ensure that these important areas would not be altered to the point that they no longer provide valuable habitat (see EFH conservation recommendations #1, 2, and 7).

Response:

The DEIS focuses (and the FEIS will focus) on the sand source alternatives for a single project that requires over 600,000 cubic yards of sand. In the cumulative impact assessment, the DEIS considers the availability of sand for a 50-year project horizon and includes consideration of all other such possible projects over a 50-year horizon. The single project considered in this EIS does not represent "systematic dredging of the shoals" and will not result in the loss of shoal features. The project proposes extraction of a small fraction (610,000 cubic yards) of the more than 24 million cubic yards of sand that make up St. Lucie Shoal. The dredging design takes into account numerous best management practices including maintaining a refuge patch in the area with the highest elevation, dredging at elevations above rather than below the surrounding substrate regional ocean bottom elevation, avoiding dredging across the shoal, and monitoring turbidity. Thus, this one project will avoid and minimize impacts to the structure and functions of St. Lucie Shoal.

An important requirement for avoidance and minimization of beach nourishment impacts includes the placement of sand in a single period outside the turtle nesting season. Otherwise, the project would have to include additional sand to account for that lost to erosion between available construction periods. Truck delivery of the large volume of sand (610,000 cubic yards) required for the initial project would entail very significant disruption of the human communities in the project area and along the truck route. A trucking effort to move sand for the initial project would require so much time that (1) the required project period might likely extend beyond a single construction period and (2) any problem that slowed the trucking process would very likely result in the project operating during two available construction periods.

The DEIS also states that future renourishment projects at the proposed site will require less sand (approximately 200,000 cubic yards) on a 10-year renourishment cycle. This renourishment cycle requires about 1,410,000 cubic yards over the 50-year project planning horizon including the initial project volume. One million cubic yards comprise less than or equal to 4% of the sand resources in the St. Lucie Shoal (depending on the estimate source). Thus, over its project life, and assuming adherence to best management practices, this project alone is unlikely to impact shoal structure and functions. Also, based on

recent beach nourishment projects, construction of a 200,000-cubic yard project with upland sand sources can reasonably occur within a single annual period outside turtle nesting season. Thus, the problem of using an upland sand source to perform the project within the allowed seasonal period does not necessarily apply to renourishment efforts. Future projects, if constructed using upland sand sources, renourishment projects, would result in much lower disruption and impact to human communities and infrastructure. Renourishment project proposals should carefully reevaluate the use of upland sand for construction.

The USACE recognizes that some unavoidable impacts may occur to fishes in planktonic stages and to some juveniles. However, closely monitored past offshore dredging efforts have not produced visible fish kills of juvenile fishes. Most fishes able to do so will avoid the area until water quality returns to acceptable levels. The vibracore samples logs indicate that the sand layer exposed within the proposed borrow area after dredging contains less than 4% fines, a percent of fines present (4%) in the existing exposed top layer of sediment in the borrow area. Mobile species will move out of the dredge area during the dredging activities due to the short-term disruption to the area from construction activities. Once dredging ceases, suspended sediment will settle. The mobile species will return to the area and, based on the geotechnical data, should experience no more turbidity after dredging than turbidity before dredging.

The USACE could identify no reports or observations of dredging impacts sufficient to harm a fish species significantly. The project area represents a small portion of the St. Lucie Shoal, which represents only a portion of the offshore shoals in the central Florida offshore coastal shelf (OCS). Therefore, the USACE considers such dredging impacts insignificant.

Future projects may request the use of this shoal as a sand source. In the future, impacts may occur if dredging occurs without consideration of these shoals as important components of the offshore marine ecosystems. USACE expects to consider each future project that requests to dredge St. Lucie Shoal on its merits as a single project and as part of potential cumulative effects of all such projects — past, present, and future. USACE will continue to consult with its federal natural resource partners on this issue.

We have discussed the question of benthic macroinvertebrate communities in response to other comments. The applicant has collected samples of the softbottom benthic community; the FEIS will include these data. The applicant has indicated in the benthic monitoring plan provided in the DEIS that they intend to collect and analyze post-construction benthic samples. The USACE is unaware of any evidence suggesting that “benthic populations may not [ever] recover to pre-project levels.” The available data suggest that benthic communities do recover.

Comment 10 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: To fully evaluate the proposed mining of the shoals for sand, NMFS requires additional information regarding the rates at which borrow areas are expected to fill and measures the District may require the applicant to take to limit dredging to portions of the shoal expected to fill in most rapidly. NMFS also recommends monitoring of the shoal's infauna communities be required to quantify whether the actual impacts to EFH are within acceptable limits. A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which the offshore borrow areas fill and grain-size distribution of the material that fills the dredge holes (see EFH conservation recommendation #6).

Response:

The monitoring plans proposed by the applicant (DEIS Appendices E and F) include measurements of pre- and post-construction physical and biological conditions at the borrow site. Thus, the applicant has committed to collect data necessary to assess infilling rates and changes in infaunal communities requested by NMFS. Note that the DEIS includes results of a pre-construction bathymetric survey as part of the borrow area description and dredging design. The FEIS will include results of baseline benthic macroinvertebrate sampling performed in 2010. Please note the large between-site variability in the benthic community data. This variability is characteristic of benthic communities.

Please find baseline benthic macroinvertebrate data on the Taylor Engineering ftp site. The FEIS will also include this information.

Comment 11 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The draft EIS and EFH assessment refer to adherence of best management practices, however a comprehensive list of those BMPs is not provided. The implementation of best management practices to minimize the adverse effects from dredging the shoal is warranted. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. In addition, dredging within the offshore borrow area should be limited to the portions of the shoal expected to fill in most quickly once dredging has stopped. The District should provide a list of best management practices to NMFS for review and approval prior to finalizing the EIS (see EFH conservation recommendation #7).

Response:

Revisions to the EIS and EFH Assessment will include consideration of best management practices (BMPs).

BMPs applied in the proposed project may include those listed below. Many contractors include them as standard operating practices for offshore hopper dredging operations:

Design BMPs

- *Design the borrow area with the long axis parallel to the long axis of the shoal. However, avoid dredging along the entire long axis of the shoal (included in this project).*
- *Maintain a refuge patch at the highest shoal elevations to help minimize the impacts to the shoal habitat (included in this project).*
- *Dredge on the downdrift side of the shoal (included in this project).*
- *Excavate only to surrounding ocean floor elevations (included in this project).*

Managerial BMPs

- *Water quality monitoring plan (included in this project)*
- *Biological monitoring plan (included in this project)*
- *Construction window to minimize seasonal impacts (included in this project)*

Operational BMPs

- *Use of manatee signage/observer (included in this project)*
- *Use of marine turtle deflectors/marine turtle trawling (required during all hopper dredge activities) (included in this project)*
 - *Prevent sea turtle mortality*
 - *Deflect sea turtles in or near the path of the draghead during dredging activities*

Potential BMPs for consideration

Operational BMPs

- *Three controls associated with dredges and barges filling operations help to minimize turbidity.*
 - *Eliminate or reduce hopper overflow. Eliminating or reducing hopper overflow reduces the volume of fine material that flows from the hopper in the overflow. Note that this control may significantly reduce hopper dredge production*
 - *Lower hopper fill level. Lowering the hopper fill level in rough sea conditions can prevent material loss during transport.*
 - *Implement a recirculation system. Recirculating water from the hopper overflow to the draghead can reduce water discharged from the hopper.*
- *Use integrated GPS systems (included in this project)*

- *Monitors dredge position, cutterhead location, and allows calculation of dredge production status*
- *Enhances environmental monitoring – provides real-time alarms and archival recording of dredge head position/depth outside of prescribed boundaries/depths*
- *Use floating tow lines*
- *Locate pipeline corridors to avoid and minimize impacts to hardbottom (included in this project)*
- *Use pipeline collars in corridors including hardbottom habitat (included in this project)*
- *Establish vessel ingress and egress corridors (included in this project)*
 - *Minimizes likelihood of vessel impact to hardbottom due to movement of vessels to and from a site during coastal construction*
 - *Protects the benthic community. Corridor selection considerations include mean tidal range, difference in draft between a fully loaded and empty vessel, width of vessels, and vessel turning radius*

Beach Placement Area BMPs

- *Use of sand dikes at the beach dredged material discharge site (included in this project)*
 - *Provides settling time for fine particles to be released from the water column before entering the open waters. Shore-parallel dikes must withstand incoming waves and maintain structural integrity during the discharging of sand onto the beach*
 - *Becomes the seaward edge of construction when integrated into the final beach; requires no removal.*

The FEIS will include this list of best management practices. Note that Kelley et al. (2004) also identify the practices that NMFS HCD provides as examples but Kelley et al indicate that the practices are site and project specific. Note also that limiting the depth of dredge cuts recommended in Hammer et al. (2010) and Kelley et al. referred to dredging at the highest shoal elevations. The proposed project has incorporated the highest elevations into a refuge area specifically to avoid altering those elevations. The 50-year conceptual dredging plan uses the same logic in describing conceptual borrow area locations.

Comment 12 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: The EIS describes the construction of 0.98 acres of artificial mitigation reef to offset the loss of 1.08 acres of nearshore hardbottom. However the mitigation plan (appendix D), describes that up to 6.22 acres of mitigation would be needed (1.19 acres of Community 1 and 5.03 acres of Community 2). It is unclear how either mitigation amount was determined. The draft EIS and

mitigation plan refer to the completion of a Unified Mitigation Assessment Method (UMAM) as appendix C to the mitigation plan, however the appendix is not contained within the document.

Similar to our comments on the nearshore hardbottom biological monitoring plan, we feel it is premature to provide detailed recommendations on this plan until sufficient information to characterize and quantify nearshore hardbottom impacts is provided (EFH conservation recommendation #3). Specifically, we will not be able to complete our review of the plan until we have a better understanding of what functional groups are present in fill areas and the depths of habitats within fill areas.

NMFS recommends that a compensatory mitigation plan be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS. This plan should include performance standards, monitoring protocols and schedule, and a functional assessment (e.g., UMAM) that demonstrates how mitigation amounts offset the resource impacts (see EFH conservation recommendation #8).

Response:

The FEIS will include completed UMAM qualitative and quantitative analyses. Their omission in the DEIS was unintentional. The USACE UMAMS are available to the NMFS on the Taylor Engineering ftp site.

The mitigation plan the applicant submitted includes information requested by the Florida Department of Environmental Protection that the USACE might not require. The USACE considers permanent (as opposed to temporary) impacts as the basis for mitigation. Should compliance monitoring during and after construction demonstrate additional impacts, the USACE would require additional compensatory mitigation.

The FEIS will include a report characterizing the nearshore hardbottom communities. This report has been placed on the Taylor Engineering ftp site. Community types are based on a combination of physical (water depth, distance from shore, hardbottom relief) and compositional (dominant floral and faunal species) characteristics:

Community One: Low- to medium-relief (0.5 to 1.5 m) sabellariid wormrock

- Located from transects (FDEP Range Monument [R-] 82.8 south to R-94)*
- Wormrock observed along these transects with other observed fauna included hydroids and unidentified encrusting sponge, and algal species included canopy-forming red algae (*B. seaforthii* and *Hypnea* sp.), low-growing turf algae, and *Caulerpa* sp.*
- Fishes observed included spottail pinfish (*Diplodus holbrooki*), juvenile grunts (*F. Haemulidae*), nurse shark (*Ginglymostoma cirratum*), and black seabass (*Centropristis striata*)*

Community Two: Low-relief (0.5 m) consolidated coquina rock

- Located from R-100 south to R-106
- The hardbottom ledge was typically well-defined, undercut exposed consolidated coquina rock ledge with little to no benthic cover. Where observed, macroalgae was typically composed of turf algae and low-growing green algae *Caulerpa* cf. *laetevirens*, *Caulerpa sertularioides*, and *Codium* sp.
- Sand along the hardbottom edge was coarse in size with areas of large consolidated shell rubble.
- Fishes observed included sand drum (*Umbrina coroides*), spottail pinfish, electric ray (*Narcine brasiliensis*), hairy blenny (*Labrisomus nuchipinnis*), and grey snapper (*Lutjanus griseus*).

Community Three: Medium-relief (1.5 m) large rock slab ledges

- Located from R-77.7 to R-82.8 and R-109.2 to R-112, in deeper water than Communities One and Two.
- Dominated by large (1- to 3-m diameter), flat rock structures found in deeper (3 to 4 m) water deeper (3-4 m) and considerably farther from the shoreline than Communities One and Two.
- Supported many faunal species not observed in the more nearshore hardbottom areas including spiny lobster (*Panulirus argus*), octocorals (*Leptogorgia* sp.), holothuroids, and a variety of encrusting sponges.
- Fishes observed included porkfish (*Anisotremus virginicus*), sheepshead (*Archosargus probatocephalus*), striped burrfish (*Chilomycterus schoepfii*), highhat (*Pareques acuminatus*), juvenile angelfish (*Pomacanthus* sp.), and many other species of newly settled juvenile fishes.

The FEIS will include a report characterizing macroinvertebrate communities inhabiting the borrow area and nearshore sand habitat. The NMFS staff can access the report on the Taylor Engineering ftp site.

The FEIS will contain a nearshore hardbottom fish community report. The NMFS staff can access the report on the Taylor Engineering ftp site.

This EIS has considered the design of the mitigation plan and concluded that the applicant's proposed approach includes sufficient detail and flexibility to allow development of a specific design once the impacts and required mitigation area are finally resolved through the permit application process. The monitoring plans provided in the DEIS are likewise sufficient to conclude that the applicant can define a specific mitigation monitoring plan scaled to the mitigation area defined during the permit application process. The Record of Decision will include any appropriate recommendations for compliance monitoring.

**Comment 13 Provided by NOAA-NMFS: HCD
Provided by V. Fay**

Comment date: 7/18/2011

Comment: NMFS believes the information provided in the draft EIS is not consistent with existing Council on Environmental Quality (CEQ) guidelines and Army regulations regarding mitigation and mitigation monitoring. Final guidance recently released by CEQ regarding mitigation and monitoring (CEQ 2011) cites Army regulations which state that "consistent with existing CEQ guidelines, the Army's NEPA implementing regulations place significant emphasis on the planning and implementation of mitigation throughout the environmental analysis process. The first step of mitigation planning is to seek to avoid or minimize harm" [40 CFR 1508.2]. In the absence of habitat mapping and biological survey information that quantifies in the draft EIS the extent of potential damage to hardbottom, NMFS is unable to determine that impacts to EFH have been avoided to the extent practicable. In addition, the guidance states that "when the analysis proceeds to an EA or EIS, however, the Army regulation requires that any mitigation measures be 'clearly assessed and those selected for implementation will be identified in the FONSI or the ROD' and that 'the proponent must implement those identified mitigations, because they are commitments made as part of the Army decision' [32 CFR 651.15(b)]." The draft EIS does not sufficiently discuss mitigation and monitoring plans and implementation programs as required by these regulations.

Response:

The EIS has considered avoidance and minimization. The DEIS included habitat maps and survey information. The DEIS provided summaries of the information and reports detailing those hardbottom communities sustaining unavoidable impacts. The DEIS also included a mitigation plan for those impacts, and a description of the monitoring effort that the applicant will undertake to assess the effectiveness of the mitigation. The FEIS will provide additional details concerning the habitat mapping efforts.

The Taylor Engineering ftp site provides a document describing the habitat mapping methodology.

Comment 14 Provided by NOAA-NMFS: HCD

Provided by V. Fay

Comment date: 7/18/2011

Comment: NMFS believes the information provided in the draft EIS does not meet the requirements of the EFH provisions of the Magnuson-Stevens Act. The Jacksonville District chose to integrate the required components of an EFH assessment, as appendix H, based on our review, NMFS does not agree that all components of an EFH assessment are present or provided in sufficient detail (50 CFR 600.920(e)(2)) to adequately analyze the effects on EFH. Based on the nature of the proposed action and the potential adverse effects on EFH and EFH-HAPCs, NMFS provides the following assessment of the mandatory and

additional information requirements found at 50 CFR 600.920(e)(3) and (4) that should be included in the Final EIS:

Mandatory Components of an EFH Assessment:

1. Description of the action. Provided.
2. *Analysis of the potential adverse effects of the action on EFH and the managed species.* This analysis is not complete in the EIS. Information describing the quantity and quality of hardbottoms within nearshore fill areas and pipeline corridors is needed for NMFS to make a determination regarding the level of effect to NOAA trust resources. Additional information regarding dredging best management practices is needed to complete this component as well. See EFH conservation recommendations #3 and #7.
3. *Federal agency's conclusions regarding the effects of the action on EFH.* Provided, however it is unclear how the District came to the initial determination based on the lack of available information on the quantity and quality of hardbottoms in nearshore areas that would be adversely affected by the project. In addition, portions of the EIS and EFH assessment seem to clearly acknowledge that dredging the offshore shoal would result in an adverse effect to EFH. The analysis does not support the conclusion and clarification is needed.
4. *Proposed mitigation, if applicable.* NMFS believes compensatory mitigation should be required. Upon receipt of responses to EFH recommendation #2 and #3 we should be able to provide more informed recommendations on the plan. See EFH conservation recommendation #8.

Additional Information:

1. *Results of an on-site inspection to evaluate the habitat and the site-specific effects of the project.* Deficiencies are noted above for both pipeline corridors, hardbottoms near within and near the toe-of-fill. See EFH conservation recommendations #3.
2. *Views of recognized experts on the habitat or species that may be affected.* Provided.
3. *Review of pertinent literature and related information.* Provided
4. *An analysis of alternatives to the proposed action.* Least environmentally damaging practical alternatives should be evaluated, including alternatives minimizing the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts. See EFH conservation recommendation #2.

Response:

The revised EFH assessment will provide additional detail in the areas identified by the NMFS as follows:

1. *No comment*
2. *The DEIS provided characterization of the hardbottom communities in the nearshore area. The FEIS will provide the additional detail necessary to*

understand the means by which the applicant distinguished the different hardbottom communities. Documents detailing the requested information are available on the Taylor Engineering ftp site and in this response document.

3. The applicant has identified the locations of pipeline corridors as approximate based on selection of the locations that best avoid impacts. The responses to other comments provide additional detail on pipeline construction methods. The FEIS will include discussion of best management practices as detailed in another response within this document.
4. The applicant has considered a range of project and alternatives. The compensatory mitigation plan provided in the DEIS provides mitigation appropriate to the type and level of impacts. The plan is sufficiently flexible to account for any additional impacts that the approved project may cause.

Additional Information

The DEIS includes results of field surveys characterizing the hardbottom community in the nearshore area. The FEIS will include these data and data describing the sand benthic community in the offshore shoal area. The USACE has evaluated "least environmentally damaging practical alternatives", including the no action and no impact alternatives. The Record of Decision will describe the USACE-recommended alternative, specifically that alternative judged the least impactful among those that meet the minimum necessary criterion — protection of upland property and infrastructure against a 25-year storm. This frequency storm, St. Lucie County's minimum practical protection standard, occurs relatively often.

5. The DEIS Appendix D provided a mitigation plan including the design of low – medium relief artificial reef, the means of locating such reefs for sustainability in the soft sand habitat, and monitoring plans for evaluation of artificial reef development using compliance criteria.

Additional information Responses

1. The FEIS will include results of field surveys that provide detailed data on nearshore hardbottom communities, including those impacted by the project. The FEIS will include descriptions of the means by which the applicant distinguished hardbottom communities during aerial photograph mapping efforts. The aerial maps provided the location of and amount (planar coverage of) the hardbottom communities. Those documents are made available to NMFS on the Taylor Engineering ftp site.
2. Comment noted
3. Comment noted

The DEIS considered and the FEIS will consider a range of alternatives including those with no impact to the nearshore hardbottom habitats.

Provided by V. Fay
Comment date: 7/18/2011

Comment: Although additional information is needed to complete the EFH consultation, based on the information provided thus far NMFS concludes the project will likely adversely affect EFH, including over one acre of hardbottom that supports worm reef and, potentially, coral. Significant indirect and cumulative adverse impacts are also likely in connection with construction activities and the subsequent loss of marine habitats and their associated functions. These indirect and cumulative impacts include increased turbidity, sedimentation from dredging and the placement of fill in the aquatic environment, and loss of food production and other functions that coral, coral reef, and hardbottom habitats that contribute to fishery productivity. Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. Based on this requirement, NMFS provides the following:

Response:

Thank you for your comment. Please see below for responses to EFH conservation recommendations.

Comment 16 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: As stated above, until the analysis identified in EFH conservation recommendation #1 has been completed and results are coordinated with NMFS and other agencies, we do not recommend moving forward with the other project elements described below.

Conservation Recommendation No. 1

The shoal proposed for excavation shall be eliminated from the project design due to the potential for unacceptable impacts to the wave climate and shoreline sediment transport. Alternatively, NMFS will re-consider this recommendation based on receipt of additional analysis performed similar to Kelley et al. (2004).

Response:

The proposed project differs substantially than those projects modeled by Kelley et al. (2004) and Hammer et al. (2005). Kelley et al. based project wave changes on removal of 24 million cubic yards of sand and significant decreases in the maximum elevation of the shoal. The proposed project includes removal of 600,000 cubic yards of sand (5% of that used by Kelley et al. as the basis for their modeling) and no decrease in maximum shoal elevations. Kelley et al. found that dredging of 12 million cubic yards and reducing maximum shoal elevations by 2.3 meters would increase potential nearshore transport energy. Notably, however, Kelley et al. used the area of shoal seaward of that proposed in this project.

Hammer et al. modeled wave climate changes associated with removal of 14.6 million cubic meters (18.3 million cubic yards) from St. Lucie Shoal (dredging to a depth of 12 meters: Table 4.6) (. The study found that removal of the volume, which deflated the shoal (reduced it to the elevation of the surrounding outer coastal shelf resulted in significant changes to shoreline sediment transport rates. The analysis concluded with a recommendation to limit dredging to some higher depth (with no specific depth suggested). The proposed project will not alter the elevation of the shoal, and thus, based on the analyses in Hammer et al., should not significantly change shoreline sediment transport.

The applicant has provided wave climate analyses (available to NMFS on the Taylor Engineering ftp site) that evaluate the potential changes in wave climate due to the project. The analyses demonstrate that the changes, even considered as the worst case (highest average) wave conditions do not significantly alter the shoreline erosion potential.

The Record of Decision will include identification of USACE-preferred sand source or sources considering the results of the applicant's modeling, and the position of the NMFS HCD Conservation Recommendation No. 1.

Comment 17 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: Conservation Recommendation No. 2

The District shall evaluate least damaging practical alternatives, including alternatives that minimize the amount of fill placed below the mean high water line, thereby minimizing the amount of material to be dredge offshore and reducing nearshore hardbottom impacts. Specifically, we recommend further examination of the following three alternatives: Beach Fill with No Impact to Existing Hardbottom; Beach Fill to Restore the 1972 Beach and Dune; and South Segment Beach and Dune Restoration – North Segment Dune Restoration Only.

Response:

The USACE has evaluated the least damaging practical alternatives, including alternatives that avoid any fill below mean high water or minimize the amount of fill placed below the mean high water line. These alternatives minimize offshore dredge volumes offshore and reduce nearshore hardbottom impacts. The Record of Decision will report the USACE-preferred alternative and the reasons for that preference.

Comment 18 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 3**

Results from a biological resource and nearshore habitat mapping survey within the ETOF with 1,000-foot buffer and the pipeline corridor with a 100-foot buffer shall be provided to NMFS. The biological survey report should map, quantify, and characterize hardbottom within 100 feet of the pipeline corridor and hardbottom within 1,000 feet from the ETOF. The method for determining the amount of hardbottom present should be described and based on historical and recent data. In addition, the survey report should identify survey dates and include full characterizations of each habitat depicted in the maps. These characterizations should focus on the following taxonomical groups: stony corals, octocorals, sponges, worm reef, and macroalgae. For stony corals, species, density, size distribution (colony diameter and height), and condition (bleaching and disease) should be documented. For octocorals, species, density, and size distribution (colony height) should be documented.

Response:

The FEIS will include results of nearshore hardbottom habitat mapping (including project fill and pipeline areas) and characterization of those habitats. Maps of the 2008 and 2010 hardbottom habitat overlain by the applicant's preferred plan are available on the Taylor Engineering ftp site.

In 2008, the applicant mapped and classified hardbottom habitat from R-77 in St. Lucie County to R-3 in Martin County. The DEIS reported these data. In 2011, the applicant used 2010 aerial photographs to map the same area. The FEIS will also report the 2010 data and related project impacts. Mapping occurred to at least 1,000 feet from the 2008 shoreline. Field efforts in 2009 and 2010 provided verification of the aerial mapping efforts. In 2009, field biologists verified hardbottom habitat characterizations within 50-foot-wide pipeline corridors:

- Baseline Nearshore Hardbottom Characterization Survey for the St. Lucie County South Beach Project (January 2010)*
- Letter report (January 26, 2011) summarizing the 2010 Hardbottom Mapping Characterization Survey*

*A description of the surveys methods used to characterize benthic community types is provided in **Baseline Nearshore Hard Bottom Characterization Survey for the St. Lucie County South Beach Project**, and a letter report describing sampling and analysis of soft bottom sampling. The FEIS will contain both reports.*

Post-construction hardbottom monitoring will follow protocols described in the biological monitoring plan (DEIS Appendix F) and used for pre-construction baseline monitoring. The FEIS will include the preconstruction monitoring report.

The USACE considers monitoring protocols proposed by the applicant sufficient to understand existing conditions and identify any impacts caused by the proposed project. Note that the preconstruction survey (January 2010) identified no stony corals or octocorals in the project area. Octocorals constituted less

than 1% mean coverage along transect R-78.7, located outside the project footprint. One stony coral species (*Phyllangia americana americana*, cup coral) also constituted less than 1% mean coverage along transect R-110.5, a transect that starts 188 meters from the mean high water line and falls outside the project footprint. The FEIS will include this document. The Taylor Engineering ftp site includes the hardbottom survey cited above.

Comment 19 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 4**

A biological monitoring plan shall be provided to us that reflects the outcomes of EFH conservation recommendations #2 and #3. This plan should be coordinated for our review and approval prior to the finalization of the EIS.

Response:

The USACE notes the recommendation and refers the NMFS to DEIS Appendix E and DEIS Appendix F). The FEIS will also include a report characterizing the benthic communities of the borrow site and surrounding area.

Comment 20 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 5**

A plan for monitoring the pipeline for leaks at least twice per day and response actions to any leaks detected shall be provided to NMFS for review and approval prior to finalizing the EIS.

Response:

The applicant will mitigate for a potential pipeline corridor impact area measuring 50 ft wide along the length of the pipeline path of the pipeline corridor that unavoidably includes significant hardbottom habitat. While impacts may not occur, the applicant has nonetheless proposed mitigation for potential impacts. Presumption of impact provides a level of security against potential pipe movement sufficient to damage the habitat. Daily survey of the pipeline to verify the location of the pipeline and identify any leaks or other issues that require cessation of the pumping activity will provide verification of compliance with the intent to avoid all impacts. The regular pipeline examination and location mapping will also provide evidence of specific impacts should the pipe move outside the corridor assumed to be impacted. Note that only one of the pipeline corridors required for the project includes hardbottom habitat. The applicant has already offered mitigation for that northernmost pipeline corridor regardless of whether the impact actually occurs.

Note also that the pipeline will reside for at most several weeks in any one location. By nature of using a hopper dredge, pumping will occur between four and six hours daily for an hour or more at a time, not continuously (as would occur in a hydraulic dredging project). The pumping occurs in this fashion because the pipeline serves to empty the hopper dredge (which takes an hour or more) after which the hopper dredge returns to the dredge site. The round trip requires about four hours, with about an hour of dredging at the dredge site before returning to the pipeline location.

Comment 21 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 6**

A physical and biological monitoring plan for the offshore borrow areas shall be provided to NMFS for review and approval before a permit is issued. The objectives of the monitoring shall be to document the rate at which infaunal communities recover from dredging and the fill and grain-size distribution of the material that fills the dredge holes.

Response:

DEIS Appendices E and F include physical and biological monitoring plans. Those plans include monitoring of offshore borrow area activities.

Comment 22 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 7**

Best management practices (BMP) to minimize the adverse impacts associated with mining the shoals shall be developed and integrated into the project design. For example, limiting the dredging to the prevailing downdrift flanks of the shoals and limiting the depths of the dredge cuts to 3 to 6 feet may be good practices. Please provide a list of BMPs to NMFS for review and approval prior to finalizing the EIS.

Response:

See Response to above comments. The dredge template illustrates the limits of dredging. The highest relief of the shoal will be avoided and will remain as a refuge patch. Furthermore, the dredge template illustrates the proposed dredge area is downdrift (landward) of the highest relief of the shoal. The maximum shoal elevation will remain post project.

Comment 23 Provided by NOAA-NMFS: HCD
Provided by V. Fay
Comment date: 7/18/2011

Comment: **Conservation Recommendation No. 8**

A compensatory mitigation plan that describes how unavoidable impacts to hardbottom habitat shall be offset from construction activities and the ETOF. This plan should include performance standards, monitoring protocols and schedule, and a functional assessment (e.g., Unified Mitigation Assessment Method) that demonstrates how mitigation amounts offset the resource impacts.

Response:

DEIS Appendices D, E, and F provide compensatory mitigation plans, monitoring protocols, and monitoring schedules. The FEIS will include UMAM assessments, inadvertently excluded from the DEIS Appendix D. The draft USACE UMAM calculations are provided on the Taylor Engineering ftp site.



24360.06

January 5, 2012

Mr. Garrett Lips, Project Manager
Department of the Army
Jacksonville District Corps of Engineers
4400 PGA Boulevard, Suite 500
Palm Beach Gardens, FL 33410

**RE: St. Lucie County South Dune and Beach Restoration Project
SAJ-2009-03448 (IP-GGL)**

Dear Mr. Lips:

We are writing to advise your office that St. Lucie County has elected to delete the north project segment (R87.7 to R90.3) from the referenced project as a result of letters received by the County from the upland property owners, *Dune Walk by the Ocean* and *Sand Dollars Shores Condominium Association, Inc.* (see attached letters). In addition, we are writing to submit permit sketches (including coordinates) for the proposed mitigation reef. It is our understanding that the USACE permit for the Beach and Dune Restoration project will also include federal authorization for construction of the mitigation reef.

Based upon the Corps' UMAM, as received by us via email on November 3, 2011, the Corps will require approximately 0.83 acres of artificial reefs to be constructed as compensatory mitigation for approximately 0.57 acres of hardbottom impacts in the south project segment. In general, please note that:

- The reefs will comprise a total area of 1.4 acres with 0.97 acres of limestone boulders, to meet FDEP and USACE mitigation requirements.
- The reefs are to be located offshore Ocean Bay Beach Park Access, just north of R-91 in St. Lucie County in areas devoid of benthic or cultural resources. The SHPO concurrence letter for the mitigation reef area will be provided to the USACE upon our receipt.
- The artificial reef materials are expected to consist of clean limestone boulders.
- The limestone boulders are expected to be between about 4 and 6 feet in diameter, and will be placed in cells measuring approximately 20 feet by 40 feet.
- Each cell will be separated from the adjacent modules/cells by an approximate 7-foot sand corridor.
- The limestone boulders will be placed in a single layer – no stacking – on existing sand veneer of approximately 1.5 to 4.5 feet thick, per field investigations conducted during November 2011; see the attached letter size exhibit titled "Sediment- Thickness Survey Results".
- The artificial reefs are expected to be constructed in depths ranging from 10 to 16 feet, leaving at least 6 feet of clearance between the top of the reef and the water's surface for navigation prior to the reef's settlement.
- The rocks shall be free of soils, oils and greases, debris, litter, putrescible substances or other pollutants.

- The rocks shall be placed upon the bottom and shall not be indiscriminately dumped.
- Each Site shall be marked with perimeter buoys during construction to ensure that no rock is deposited outside of the mitigation reef site.
- As indicated in the attached drawings, the size of the boundaries of each site does not exceed 1/4 mile on any side.
- All sites are not located within any shipping lanes.

Please review the attached information and advise us of any additional information you require for the proposed mitigation reefs for this project. If you have any questions, please contact me at 772-562-8580.

Sincerely,

COASTAL TECH



Lois A. Edwards
Sr. Permit Specialist

Attachment: Mitigation Reef Permit Sketches

cc: Richard Bouchard, P.E., St. Lucie County Erosion District w/ attachment
Michael Walther, P.E., Coastal Tech w/out attachment
Walker Dawson, Kim Colstad – Coastal Tech w/out attachment

