

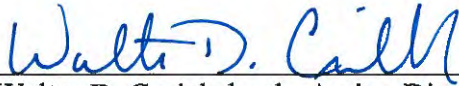


Record of Decision

Use of Outer Continental Shelf Sand Resources in the Martin County Hurricane and Storm Damage Reduction Project, Hutchinson Island, Martin County, Florida

July 2017

**U.S. Department of the Interior
Bureau of Ocean Energy Management**


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Bureau of Ocean Energy Management

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I. Introduction

The U.S. Army Corps of Engineers – Jacksonville District (Corps) and Martin County Board of Commissioners (non-federal sponsor) have requested that the Bureau of Ocean Energy Management (BOEM) authorize the use of up to 1,000,000 cubic yards (CY) of Outer Continental Shelf (OCS) sand resources in the Martin County Hurricane and Storm Damage Reduction (HSDR) Project. The project proponents propose to nourish a four mile stretch of Hutchinson Island, Florida, creating a sea-turtle friendly beach template using sand from shoal C1-B, located approximately 5-7 miles offshore southeast Martin County. The Martin County HSDR Project is authorized by the Water Resources Development Act (WRDA) of 1990. The proposed emergency work is being performed to provide disaster response and support under Public Law (PL) 84-99, Flood Control and Coastal Emergency Act (FCCE). In this Record of Decision (ROD), BOEM documents the bureau’s consideration and decision to enter into a negotiated agreement for the purpose of making available OCS sand for placement on the beach to restore portions of the Martin County HSDR Project area. This decision applies to the proposed use of OCS sand for the Martin County HSDR Project in 2017 and also includes future nourishment projects using OCS sand resources as described by the Corps in the 1986 Feasibility Report and Final EIS and 1994 General Design Memorandum and Environmental Assessment, discussed below, as long as BOEM determines the existing NEPA analysis is still adequate and supplementation is not warranted.

The environmental impacts of dredging and the placement of OCS sand along the Martin County shoreline are evaluated in several National Environmental Policy Act (NEPA) documents. The most recent document titled, “Final Limited Re-evaluation Report (LRR) and Supplemental Environmental Impact Statement (SEIS)” was prepared in 2011 by the Corps with BOEM as a cooperating agency. The SEIS tiered directly from the Corps’ 1986 Feasibility Report and Final EIS and 1994 General Design Memorandum and Environmental Assessment and evaluated the effects of using OCS sand resources to support up to three 13-year nourishment intervals for the remaining life of the project through 2046. The SEIS considered all new environmental information that had become available since the publication of the previous NEPA documents and the analysis of environmental impacts included BOEM’s action. The previous NEPA documents evaluated a suite of structural and non-structural alternatives to address hurricane and storm damage reduction needs in Martin County. The placement of beach fill on the eroded beach has previously been selected by the Corps as the preferred plan. The anticipated periodic nourishment interval changed from 8 years in 1986, to 11 years in 1994, and 13 years in 2011. Though the 2011 SEIS analyzed a 13 year nourishment interval, it also assumed the possibility of emergency needs following significant storm events.

Pursuant to 43 CFR 46.120, BOEM independently reviewed and adopted the SEIS to comply with the requirements of NEPA and the Council on Environmental Quality (CEQ) regulations. BOEM signed a ROD on 23 March 2012, following a request from the Corps and the non-federal sponsor to enter into a negotiated agreement for use of up to 1,000,000 CY of OCS sand from borrow area C1-B to nourish segments of the Martin County HSDR Project. The 2012 BOEM ROD concluded that “*the potential environmental effects of the proposed action were generally reversible over the long term, because they will be minor to moderate in intensity, localized, and short lived.*” All construction activities associated with this prior negotiated agreement (Negotiated Lease Agreement No. OCS-A-0484) were completed in March 2013 and the agreement subsequently expired on 18 September 2014, two-years from the original execution date.

On 24 March 2017, BOEM received a new formal request from the Corps and Martin County for use of additional 1,000,000 CY of OCS sand from borrow area C1-B. The proposed construction is being performed to provide disaster response and support under PL 84-99, FCCE and restore portions of the Martin County HSDR Project following damages received from Hurricane Matthew in 2015. There are no changes to the Proposed Action, purpose and need, operations, etc. associated with the request that have a bearing on the prior analyses described in the 2011 SEIS and ROD signed in 2012. The principal difference in the current proposed action from the analysis in the SEIS is that the nourishment frequency is less than the 13 year interval previously analyzed, as the next dredging event was originally planned for around 2026.

In accordance with 40 CFR 1502.9 and 43 CFR 46.120, BOEM has reviewed all NEPA documents and independently determined that existing environmental analyses adequately assess impacts of the proposed action and alternatives. There are no changes in the proposed action, no new circumstances, or no new information that would result in the potential for significantly different environmental effects and warrant supplementation of the existing SEIS.

II. Purpose and Need for the Proposed Action

Loss of sand from the Nation’s beaches is a serious problem that affects both the coastal environment and local, state, and regional economies. Beach nourishment and other coastal restoration projects are addressing this problem, and sand from the OCS is often used to stem this erosion. The Martin County HSDR Project is authorized to provide storm damage reduction over a 50 year period of analysis to structures that would otherwise be threatened by chronic shoreline retreat and storm-induced erosion and to maintain an area suitable for recreation and wildlife habitat on a developed beach. The authorized project area experienced significant erosion from Hurricane Matthew in October 2016.

The purpose of BOEM’s connected action is to respond to this new request to use OCS sand under the authority granted to the Department of the Interior by the Outer Continental Shelf Lands Act (OCSLA). The Proposed Action would authorize the use of OCS sand resources to provide storm damage protection to structures that would otherwise be threatened by chronic shoreline retreat and storm-induced beach erosion and to maintain an area suitable for recreation and wildlife habitat by performing periodic beach nourishment along the 4-mile project reach. The request for and authorization of the use of OCS sand will also address Martin County's need to counteract beach erosion caused by Hurricane Matthew. Such use is contemplated by OCSLA and the authority granted to the Secretary of the Interior, which has been delegated to BOEM.

III. Authority

The legal authority for the issuance of negotiated noncompetitive agreements for OCS sand and gravel is provided by OCSLA (43 U.S.C. § 1337(k)(2)). In 1994, OCSLA was amended to allow BOEM to convey, on a noncompetitive basis, the rights to OCS sand, gravel, or shell resources for use in a program for shore protection, beach restoration, or coastal wetlands restoration undertaken by a Federal, state, or local government agency (43 U.S.C. § 1337(k)(2)(A)(i)).

IV. Project Location and Setting

Martin County is located on Florida's east coast, approximately 100 miles north of Miami along the south Atlantic coast. The project area consists of Hutchinson Island, an elongated barrier island approximately 24.5 miles long and generally only a mile or less wide, and the inner shelf area offshore the barrier island. Hutchinson Island is separated from mainland Florida by the Ft. Pierce and St. Lucie Inlets and the Indian River Lagoon. Martin County's ocean-front beaches extend 21.5 miles between St. Lucie County and Palm Beach County, however only 4 miles are being considered for nourishment from the St. Lucie-Martin County boundary south to Stuart Public Park. The project area also includes the diverse inner shelf habitat offshore of St. Lucie and Martin Counties, including the physically dominated surf zone, nearshore sand and hard bottom habitat, and offshore sand borrow areas that were considered for beach fill.

The Corps identified C1-B, a low-relief, poorly defined shoal complex, as the source of sand in its preferred alternative in the 2011 SEIS to minimize environmental conflicts, while obtaining the necessary volume at reasonable cost. The C1-B borrow area was identified as the preferred source to support the remaining life of the Federal project through 2046. Borrow area C1-B is located approximately 5-7 miles southeast of the beach fill area. The water depth in the dredge areas ranges from about 12-15 meters. The coordinates for C1-B are presented in Table 1.

Table 1: Florida State Plane Coordinates Delineating Borrow Area C1-B

Point	Easting (Ft)	Northing (Ft)
1	948093.30	1078737.58
2	948132.39	1080095.24
3	952436.95	1081963.30
4	953836.93	1079763.30
5	951810.11	1076952.30
6	950026.78	1077634.16

V. Alternatives Including the Proposed Action

The 2011 SEIS considered a range of alternatives to implement the Corps' previously-selected plan of beach nourishment. The alternatives considered by the Corps in the SEIS included: beach nourishment using C1-B, beach nourishment using a combination of upland sand sources, and no action. In its February 2012 ROD, the Corps selected its preferred alternative to construct the Martin County HSDR Project, including use of OCS sand from C1-B for the remaining life of the Federal project. In October 2016, the Project experienced significant erosion from Hurricane Matthew. In accordance with PL 84-99, FCCE reporting requirements, the Corps prepared a Project Information Report (PIR) and analyzed two alternatives including: (1) FCCE

restoration to design template only and (2) simultaneous FCCE rehabilitation and restoration to the authorized dimensions of the full construction template. The PIR recommended= the second alternative requiring a total placed volume of 596,857 CY (~800,000 CY dredged volume). The additional 200,000 CY requested in the negotiated agreement is needed to cover dredging related losses and any additional beach erosion that may occur before and during construction.

The BOEM has considered two alternatives in context of the Corps' decision: (1) the Proposed Action and (2) No Action. The Proposed Action is the preferred alternative of BOEM following a comprehensive evaluation of any new environmental impacts since 2011 and implementation and enforcement of mitigation measures, as described below.

Proposed Action – Enter into a Negotiated Agreement

BOEM would negotiate a new agreement with the Corps and Martin County Board of Commissioners that would allow use of up to 1,000,000 CY of OCS sand for placement at the Martin County shoreline between the St. Lucie-Martin County line south to Stuart Public Park. The agreement will be in the form of a 3-party Memorandum of Agreement (MOA) between the Corps, the Martin County Board of Commissioners, and BOEM. As previously described, the Corps' proposed action in the 2012 SEIS evaluates 13-year nourishment intervals for the remaining project life through 2046, each using comparable volumes. BOEM is deciding to enter into this new MOA and potential future agreements provided BOEM determines that the existing NEPA analysis is still adequate and supplementation is not warranted. The Corps and the non-federal sponsor have committed to implementing the mitigation measures and monitoring requirements identified in this ROD. BOEM will require implementation of the mitigation measures, monitoring, and reporting requirements identified in this ROD that are under its jurisdiction. The proposed negotiated agreement would stipulate that the Corps is the lead Federal agency on behalf of the Federal government to ensure that activities comply with applicable environmental laws, including but not limited to the ESA, Magnuson-Stevens Fishery Management and Conservation Act (MSA), NHPA, and CZMA. The following sections of this MFR document the adequacy of impact analyses and demonstrate compliance with other environmental statutes.

In the proposed action the Corps will use a hydraulic dredge to obtain and transport the OCS sand. To the extent practicable, dredging will occur in areas of the shoal that are accreting and avoiding areas subject to erosion. The dredged depth would be approximately 2-3 m. Pump-out locations and dedicated pipeline corridors will be established and used in the near-shore (approximately 0.5-1 mile offshore of the placement area) to avoid negative impacts to nearshore benthic habitat and submerged cultural resources. The initial discharge of material will occur into a shore-parallel dike that will advance alongshore ahead of the construction template backfill. The dike will help contain the discharge effluent and minimize nearshore turbidity. Heavy construction equipment will be used to shape the dewatering sediment to the sea-turtle friendly design template. A 35-foot-wide protective berm will be constructed at elevation 8.0 feet above Mean Sea Level (MSL), with a 1 foot Vertical: 8.5 feet Horizontal foreshore slope to Mean Low Water, then a 1V:20H slope to the existing bottom. The Corps preferred alternative also includes restoration of the primary dune as needed to an elevation of 12.5 feet above MSL and a dune width of 20 feet.

The construction sequencing for this project is unique in that construction must be completed, including mobilization and demobilization, between November 1st and May 1st to avoid overlap with the sea turtle nesting season. No construction equipment may be stored on the beach outside of this window. The total time for the dredging activities is expected to be about 4 months.

No Action Alternative – Deny Request for Use of OCS Sand

Under BOEM's No Action alternative, an agreement for use of OCS sand would not be negotiated. Under BOEM's No Action alternative, the Corps and Martin County Board of Commissioners would be unable to use OCS sand from the C1-B borrow area, and the feasibility and effectiveness of the Martin County HSDR Project following Hurricane Matthew could be jeopardized. If the Martin County HSDR Project is not constructed, the barrier beach can be expected to continue to erode and coastal infrastructure would be increasingly vulnerable to storm damage. Negative impacts to tourism and the local economy would be expected because of a narrowing beach. The Corps could potentially obtain sand from another distant OCS area, but such an area and viable source of compatible sand (including any other potential source of OCS sand) has not been identified or evaluated for environmental impacts. Project economics could be severely impacted if the transport distance and resultant construction costs were increased by the need to obtain sand from alternative sources. The Corps evaluated the most reasonable and likely sand sources during the 2011 SEIS.

VI. Environmental Consequences

The 2011 SEIS provides a detailed summary of potential environmental effects that could result from the different alternatives. There are no significant changes to the Proposed Action that has a bearing on the prior analyses of impacts. The borrow area design, fill area templates, and pump-out corridors remain the same as those previously evaluated. The principal difference in the current proposed action from the analysis in the SEIS is that the nourishment frequency is less than the 13-year interval previously analyzed, as the next dredging event was originally planned for around 2026. However, the SEIS states that more frequent nourishments may be required if storm activity erodes the beach faster than anticipated. Though this proposed nourishment event will occur within a shorter interval (5-years vs. 13-years) than originally proposed, this proposed dredging event is within the scope of the previous analysis as it relates to the total number of dredging events and cumulative volume for the 50-year life of the Federal project. The incremental change in the Proposed Action would not change the type of impacts or impact level determinations. This shorter time between nourishment intervals would still allow for the recovery of benthic invertebrates communities in the borrow area and placement sites as analyzed in the SEIS. Additionally, the portion of the C1-B borrow area proposed for this dredging event would be mostly outside of the previously dredged site; thus, repetitive impacts would be avoided to the maximum extent practicable.

In accordance with 40 CFR 1502.9 and 43 CFR 46.120, BOEM has reviewed all existing NEPA documents and independently determined that existing environmental analyses adequately assess impacts of the Proposed Action. The occurrence and condition of physical, biological, and sociocultural resources in the affected environment are similar to that evaluated in the 2011 SEIS and BOEM's 2012 ROD. BOEM searched for, but did not discover any new or significant information relevant to reasonably foreseeable adverse impacts associated with the Project. There are no changes in the proposed action, no new circumstances, or no new information that would result in the potential for significantly different environmental effects and warrant supplementation of the existing SEIS.

Proposed Action

The beach fill is expected to have a beneficial effect in terms of reducing erosion along Hutchinson Island and restoring the project construction template following damages received from Hurricane Matthew. Restoration of the construction template will reduce storm damages, increase recreational opportunity, and restore habitat for nesting sea turtles and shorebirds.

Dredging and beach construction operations and associated equipment would occur within a shorter interval than previously analyzed. However, the type and magnitude of impacts to the benthic forage base for birds and fish would not be significantly different than those previously considered. The five-year period between the 2012 and 2017 dredging events is sufficient to allow for recovery of most prey species based on recovery rates documented in the 2011 SEIS. The temporal impact is not expected to lead to a significant reduction in foraging potential because there is available foraging habitat adjacent to the dredging and placement area and impacts are recoverable. A short-term impact on beach and surf zone fauna may occur due to burial, turbidity, and sedimentation impacts associated with beach placement activities. However, given the sandy nature of the material, turbidity and sedimentation-related impacts would be short-term and localized. To minimize turbidity and nearshore sedimentation, a shore-parallel dike will be constructed during placement operations to promote sediment settling.

Dredging the offshore shoals will change shoal topography and could adversely affect benthic communities, fish habitat, seabird foraging areas. However, impacts are not expected to be significant because of the abundance of shoals or comparable habitat on a regional scale. Additionally, specific mitigations for dredging related activities will be implemented to minimize biological and physical impacts and allow for rapid recruitment and quick recovery of the benthic invertebrate community. No dredging is expected to occur in the vicinity of sensitive hardbottom habitat; a buffer will be established around any such feature to minimize or avoid impacts from other operations. Adverse effects are expected to occur to bottom dwelling communities within the dredging area; however, a rapid recovery would be expected after the project is completed.

Air quality and noise effects would be highly localized and short-term. The type of equipment, the volume of sediment dredged, and the duration of the construction event is consistent with the prior analysis and emissions associated with the project are small, localized, and temporary. Temporary noise disturbances from construction machinery could adversely affect beach nesting and foraging birds. However, the duration of noise-producing events, types of equipment used,

resulting intensity of project-related sounds, and response of potentially affected animals would not be significantly different than those considered in the 2011 SEIS.

Short-term disturbance to the recreational use of beach area is expected, but longer-term improvements outweigh that disturbance. There could be some temporary minor adverse effects on commercial and recreational fishing due to dredge entrainment, elevated turbidity levels, sedimentation, and disruption of fish and benthos. However, the scale of impacts would be short term and recoverable and are consistent with those previously analyzed.

Potential adverse impacts on marine mammals may occur due to physical disturbance of habitat and increased noise from vessels. With the implementation of endangered species observers, avoidance requirements, and speed restrictions, impacts will be minimized to the extent possible. Marine mammals may show some avoidance behavior due to underwater noise. Marine mammal observers will be onboard the dredge plant to ensure listed whales are not present within 1 km (0.62 miles) of the dredge to avoid injury from noise and vessel strike. Any potential adverse impacts on right, fin, humpback whales or manatees, which are threatened or endangered species, will also be mitigated using observers and following speed restrictions.

Adverse impacts, including sublethal and lethal injury, to protected sea turtles, could occur during dredging. The U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) have concurred that the Proposed Action will not jeopardize the continued existence of turtle species or modify critical habitat at this time (*see* the U.S. FWS Biological Opinion and NMFS Biological Opinion in the SEIS appendices). Effects will be mitigated using draghead deflectors to minimize the risk of dredge-turtle interactions and endangered species observers onboard dredges to document activities.

Temporary adverse impacts on shorebirds (including temporary sublethal effects to endangered piping plovers), seabirds and migratory birds known to breed, nest, and forage along the shoreline of Hutchinson Island are anticipated. To minimize impacts, the Corps will implement its Migratory Bird and Shorebird Protection Policy and monitor nesting during construction activities. Over the long term, an increase in potential habitat is expected because of the increase in beach area.

Archaeological surveys relevant to the proposed action were previously conducted between 2007 and 2008 to clear OCS borrow areas, including C1-B. Analysis of the remote sensing data confirmed that no potentially significant submerged cultural resources, including shipwrecks and submerged prehistoric landforms that might contain prehistoric sites, or sensitive hard-bottom habitat were identified in the vicinity of the proposed C1-B borrow area. All previously cleared pipeline corridors and anchor point locations described in the SEIS would be adhered to.

No Action

Under the BOEM's No Action alternative, use of OCS sands from C1-B would not be authorized. Under the BOEM's No Action alternative, the Corps and Martin County Board of Commissioners could choose to use an upland borrow area for beach fill, which is fully analyzed in the SEIS. The beach area effects are comparable to those described above. Effects associated with transporting upland sand to the beach area would be greater, such as increased traffic and

associated air emissions and noise levels owing to the use of heavy trucks. If the Corps chose another borrow area for the beach fill, including any other distant area on the OCS not already considered, the area would need to be thoroughly reviewed and analyzed for environmental impacts. Under the BOEM's No Action, the Corps would likely choose not to, or would otherwise be unable to, undertake, the Martin County HSDR Project at the same scale because of constraints with project costs or availability of beach compatible sand. Without a beach fill, the environmental impacts of dredging on the C1-B would be eliminated. Other disturbance effects could occur in the vicinity of alternative upland borrow areas. Shorter-term adverse and longer-term beneficial impacts along the shoreline from beach fill would be reduced or eliminated. The remaining impacts would result from needed emergency repairs to the beach using upland fill sources. The Hutchinson Island shoreline would continue to retreat, resulting in a notable decrease in storm damage protection, the continued deterioration of the quality of nesting habitat along the Barrier Island, as well as loss of recreational beach.

VII. Consultation and Coordination

The proposed project was fully coordinated with the U.S. FWS, NMFS, U.S. Environmental Protection Agency, Florida Department of Environmental Protection (FDEP), Florida Fish and Wildlife Conservation Commission (FWCC), and other state agencies. The Corps served the role of the lead agency in environmental coordination and consultations with Federal and state agencies. BOEM was an active participant in these efforts, and all resource agencies were notified of BOEM's involvement.

The 2011 SEIS includes all the nondiscretionary mitigation under the terms of the ESA Section 7 South Atlantic Regional Biological Opinion (SARBO) and associated incidental take statement issued by NMFS. All Section 7 responsibilities with NMFS have been satisfied to date based on the following: (1) the Corps is lead agency for all ESA Section 7 requirements for the proposed action (BOEM serving a cooperating role), (2) the Corps has received prior approval from NMFS to proceed under the 1997 SARBO for dredging activities while under re-initiation (via letter dated 25 October 2007), and (3) the Corps (lead agency) and BOEM (joint consulting agency), while under reinitiation, have incrementally prepared and transmitted effects analyses for all new listed species and/or critical habitat since 2007. All Reasonable and Prudent Measures (RPM's) and Terms and Conditions (T&C's) outlined in the SARBO will be implemented as a component of the Proposed Action.

The Corps has assumed the role of lead Federal agency for ESA Section 7 compliance concerning threatened and endangered species under the purview of USFWS. The Proposed Action is covered under the Florida Statewide Programmatic Consultation dated 22 August, 2011 and revised document dated 13 March, 2015 (Consultation Code: 41910-2011-F-0170). Sand placement as an associated authorization of sand extraction from the OCS by BOEM was considered in the Statewide Programmatic Assessment (dated June 15, 2010) and both subsequent SPBO's. The potential impacts to piping plovers are covered under the USFWS's Programmatic Piping Plover Biological Opinion (P3BO) dated 22 May 2013 (Consultation Code: 04EF1000-2013-F-0124).

In accordance with requirements outlined in the SPBO and P3BO, the Corps (BOEM serving as a cooperating agency) initiated coordination with USFWS via letter dated 2 February 2017

documenting that the project can appropriately be applied to both programmatic opinions and that all minimization measures, RPMs and T&Cs will be applied, as appropriate. USFWS provided a response on 31 March, 2017, documenting concurrence with (1) the Corps' and BOEM's effect determination for piping plovers, red knot, sea turtles, loggerhead sea turtle critical habitat, and the west Indian manatee and (2) that the Proposed Action would be covered by the SPBO and P3BO. All Section 7 responsibilities with USFWS have been satisfied to date.

The Corps and BOEM consulted with NMFS on Essential Fish Habitat (EFH) during preparation of the 2011 SEIS. The 2011 EFH assessment evaluated the effects of periodic nourishments for the remaining period of Federal participation. NMFS responded with their EFH conservation recommendations via letters dated 7 January 2011 and 3 October 2011. Since the Proposed Action has not changed and the previous EFH assessment covered periodic nourishments for the remaining period of Federal participation, the project is in compliance with this Act and EFH coordination is complete. All prior commitments related to EFH conservation recommendations outlined in the 2011 FSEIS would be adhered to.

Archaeological surveys relevant to the proposed action were previously conducted between 2007 and 2008 to clear OCS borrow areas, including C1-B. BOEM's analysis of the remote sensing data confirmed that no potentially significant submerged cultural resources, including shipwrecks and submerged prehistoric landforms, were identified in the vicinity of the C1-B borrow area. All previously cleared pipeline corridors and anchor point locations described in the SEIS would be adhered to avoid impacts to submerged resources. Therefore, no significantly different effects to historic resources are expected from those previously analyzed

The State of Florida has concurred with the Corps' determination that the proposed work is consistent with the State's Coastal Management Program. This determination was made with issuance (11 August 2011) of the State permit (0295380-001-JC) for this project that expires 11 August 2021.

A Clean Water Act Section 404(b) analysis has been previously completed and coordinated with the State and appropriate stake holders during completion of the 2011 SEIS and the Corps has water quality certification that expires August 11, 2021.

VIII. Mitigation, Monitoring, and Reporting

Adopted through this ROD and identified below are the means deemed practicable by the Corps and BOEM to avoid, minimize, reduce, or eliminate adverse environmental effects that could result from the proposed activities. These mitigation, monitoring, and reporting requirements were developed during preparation of the 2011 SEIS, through consultation and coordination with Federal and state governmental agencies, and on the basis BOEM's experience with similar beach nourishment projects.

First, mitigation, monitoring, and reporting requirements of BOEM are identified. The second part summarizes mitigation and monitoring to be implemented by other agencies under other authorities. These are not BOEM-enforceable requirements, but are identified here because they are relevant in addressing impacts to the whole project, including the BOEM's proposed action.

The Corps, as the lead Federal agency, will be responsible for implementing and enforcing all other mitigation and monitoring commitments identified in the 2011 SEIS and adopted in their ROD. The Corps, in its ROD, has committed to implementing the mitigation measures and monitoring requirements identified in this ROD. These mitigation and monitoring requirements apply to dredging and construction operations and the Corps will report to BOEM on the implementation and effectiveness of the mitigation.

BOEM Requirements

The negotiated agreement will stipulate that the Corps is the lead Federal agency on behalf of the Federal government to ensure that activities comply with applicable environmental laws, including but not limited to the ESA, Magnuson-Stevens Fishery Management and Conservation Act (MSA), Migratory Bird Treaty Act, NHPA, and CZMA. The Corps will instruct the contractor(s) to implement the mitigation terms, conditions, and measures required by the USFWS, NMFS, and FDEP pursuant to applicable Federal and state laws and regulations. The required mitigation terms, conditions, and measures are reflected in the Biological Opinions, Conservation Recommendations, and Joint Coastal Permit Final Order. Specific mitigation, monitoring, and reporting required by BOEM is provided in Attachment 1. The terms and conditions in Attachment 1 will be incorporated into the negotiated agreement. Mitigation measures were identified to reduce potential effects to habitat and sand resources in the borrow area, water quality, and cultural resources. The suite of relevant notification and reporting requirements are also summarized in Attachment 1.

Use of C1-B Borrow Area

BOEM will require the Corps to continuously record dredge location, draghead depth, and dredge activity data and transmit the data to BOEM on a biweekly basis. Dredge track lines and draghead depths will be provided in a format so that BOEM can ensure the activity is limited to the approved area and dredging cut depths. The Corps will be required to undertake pre- and post- bathymetric surveys to document the nature of seafloor changes in the C1-B borrow area. BOEM also recommends that the Corps perform additional bathymetric surveys one year and three years after construction to document morphologic changes within the borrow area.

The profile and volume of the shoal will be reduced by dredging. Based on the best available science sponsored by BOEM, the Corps has developed a dredging plan designed to minimize adverse effects to the extent practicable. Dredging will occur preferentially in naturally accreting areas and dredging will be avoided in erosional areas of the shoal to the extent practicable. Dredging will not exceed a maximum overall cut depth of 2-3 m. The Corps will use the contour method to the extent possible to maintain the relative profile and shape of the sand ridge. Anchoring, spudding, or other bottom-disturbing activity is otherwise prohibited outside the approved borrow area. The Corps must immediately notify BOEM if dredging occurs outside of the approved borrow area.

Water Quality

The Corps will be required to prepare and implement a marine pollution control plan to address and ensure proper treatment of waste and prevent disposal of debris.

Cultural Resources

No cultural resources have been identified in or within the immediate vicinity of the borrow area. If an unanticipated discovery of archaeological resources occurs on the OCS, the dredge would immediately halt operations within 305 m (1,000 ft) of the area of the discovery. The Corps must report the discovery to BOEM. If investigations determine that the resource is significant, the parties shall together determine how best to protect it.

Additional Notification and Reporting

Prior to construction, the Corps will be required to submit a final construction plan and contract specifications, including design drawings, to the BOEM. During construction, the Corps or their agents, at the reasonable request of the BOEM, will allow BOEM or Bureau of Safety and Environmental Enforcement (BSEE) access at the site of any operation subject to safety and environmental regulations and shall provide the BOEM or BSEE any documents and records that are pertinent to occupational or public health, safety, or environmental protection as may be requested. The Corps will notify mariners of construction activities through a Local Notice to Mariners, report all pollution incidents should any accidentally occur, and report findings of ordnance or munitions on the OCS. Upon completion of construction operations, the Corps will prepare and submit to the BOEM a detailed project completion report, describing all phases of construction, including duration, equipment use, and project costs. The completion report will be accompanied by as-built drawings, dredged and placed volume calculations, pre- and post-bathymetric comparison, and all environmental reports.

Mitigation and Monitoring Adopted by the Corps

In the 2011 SEIS, the Corps identified a comprehensive list of mitigation and monitoring measures by resource and phase of construction. The SEIS includes a comprehensive series of measures to avoid, minimize, reduce, or otherwise monitor effects to water quality, coastal habitat, essential fish habitat (including hardbottom), shorebirds, nesting and in-water sea turtles, marine mammals, and cultural resources. These measures were either proposed by the Corps as design measures or were required by other Federal or State authorities. BOEM is not responsible for the implementation or enforcement of mitigation or monitoring requirements directly required under other Federal or State authorities. Likewise, BOEM does not have jurisdiction over the nearshore pump-out and submerged pipeline conveyance, or beach fill placement. On February 15, 2012, the Corps adopted all mitigation and monitoring components identified in the Final SEIS in its ROD. The Corps committed in its own ROD to implement the same mitigation measures and monitoring requirements identified in this ROD. Key mitigation and monitoring components are identified below.

- To minimize impacts on nesting habitat for shorebirds and sea turtles, the inter-tidal and sub-aerial beach will be restored using sand of a grain size and color comparable to existing beach material and using a design template that promotes successful nesting.
- Sediment control and spill prevention best management practices will be implemented to minimize erosion of placed material, turbidity, and impairment of water quality due to

accidental spills from heavy equipment used during construction. A biological monitoring plan has been developed to assess direct, secondary, and long-term effects to subaerial beach and nearshore hardbottom habitat associated with the proposed project. A sedimentation and turbidity monitoring plan has been established to assess, avoid, and/or minimize impacts to reef communities adjacent to the proposed borrow areas during project construction.

- During initial construction in 1995, an estimated 1.3 acres of hardbottom habitat were buried by placement of sand in the construction template. To mitigate for this effect, a nearshore artificial reef was constructed during the summer of 2000 on three sites totaling approximately six acres. Construction of the Proposed Action is not anticipated to directly affect hardbottom habitat outside of the initial construction template. The non-federal sponsor has prepared a contingency mitigation plan to be implemented if unanticipated secondary effects were to occur as a result of sand down-drift or post-construction sand equilibration outside of the seaward toe of the beach fill.
- Nesting shorebirds and sea turtles may be adversely impacted by the proposed activities. A training program for construction personnel, routine surveys and remote monitoring for shorebirds, nesting sea turtles, survey and monitoring results reporting, and coordination procedures are non-discretionary mitigation under the terms of the ESA Section 7 Biological Opinion and associated Incidental Take Statement issued by the USFWS. The SEIS contains a complete description of the mitigation measures.
- Protected sea turtles, manatees, and right whales may be adversely impacted by the proposed activities. To avoid entrainment and strike, the Corps will require the use of trained observers for sea turtles and bridge watch for marine mammals. If species are observed, dredging activities will cease in those areas and avoidance buffers be established. Rigid deflectors will be installed on dragheads to minimize entrainment. The Corps will implement all reporting requirements and follow preservation and sampling procedures in the case of incidental take. The SEIS includes all the non-discretionary mitigation under the terms of the ESA Section 7 Biological Opinion and associated Incidental Take Statement issued by NMFS.
- The non-federal sponsor will stabilize dunes using sand fencing and native plants to maximize sand retention and reduce overall frequency and volume requirements for subsequent maintenance.
- The non-federal sponsor will implement a comprehensive biological and physical monitoring program. The biological monitoring program includes construction window, shorebird and sea turtle nesting surveys and avoidance protocols, 3 years of scarp and compaction monitoring, turbidity monitoring, and 2 years of nearshore hardbottom monitoring surveys. The physical monitoring program would consist of data collection, including sub-aerial beach cross-section surveys, subaqueous beach profile surveys, annual lidar surveys and aerial photography, and storm data summaries. The monitoring program would also compare the post-construction data with the preconstruction data and evaluate the performance of the sea-turtle friendly design.

Adoption of All Practical Means to Minimize Environmental Harm

BOEM has determined that all practical means have been adopted to avoid or minimize environmental harm from the Proposed Action.

IX. Environmentally Preferred Alternative

BOEM's environmentally preferred alternative is the No Action alternative. Negative environmental impacts would generally be less under the No Action alternative, since no OCS sand would be used and dredging would not occur on the OCS. Therefore no dredging-related changes to the physical, biological, and cultural resources would be expected. However, if the Martin County HSDR Project is not constructed because of BOEM's decision not to authorize access to OCS sand resources, the infrastructure and coastal environment on Hutchison Island would continue to be at risk from storm damage and coastal erosion. The availability and quality of nesting habitat at the southern end of the barrier island would likewise be expected to continue to deteriorate. The environmentally preferred alternative would not meet the Corps' purpose and need, and after consideration of the beneficial and adverse environmental consequences of both alternatives and the available mitigation measures to be implemented under the Corps' Proposed Action, BOEM has decided that the Corps' Proposed Action is the preferable option in this ROD.

X. Decision

It is my decision to enter into a negotiated agreement with the Corps and Martin County that will authorize use OCS sand in the Martin County HSDR Project, implementing the Proposed Action. BOEM finds that the potential environmental effects of the Proposed Action are generally reversible over the long term, because they will be minor to moderate in intensity, localized, and short-lived. Potential longer-term beneficial effects include improved storm damage reduction, improved recreational opportunity, and increased nesting and foraging habitat for protected sea turtles and migratory birds, especially with the sea-turtle friendly beach template and nearshore mitigation plan. Beach restoration using dredged material from the proposed offshore borrow area C1-B would provide a sufficient amount of beach-compatible sand at a more economical cost and with less transportation complications than beach sand from an upland borrow source or other offshore source. A suite of mitigation and reporting requirements will be incorporated into the negotiated agreement to avoid, minimize, and/or reduce and track any foreseeable adverse impacts. In a separate ROD, the Corps committed to implement a substantial suite of mitigation measures and monitoring requirements identified herein, including those mandated by the BOEM. This ROD may also apply to any proposed use of OCS sand in future beach re-nourishment activities by the Corps and Martin County, as described above in the Introduction, provided BOEM determines the existing NEPA analysis is still adequate and supplementation is not warranted.

Record of Decision Attachment

The following mitigation measures and reporting requirements will be required by the BOEM to avoid, reduce, or eliminate environmental impacts associated with the Proposed Action (herein referred to as the “Project”). Mitigation measures in the form of terms and conditions are added to the negotiated agreement and are considered enforceable as part of the agreement.

Plans and Performance Requirements

The Corps will provide BOEM with a copy of the Project’s “Construction Solicitation and Specifications Plan” prior to solicitation and construction (herein referred to as the “Plan”). No activity or operation authorized by the negotiated agreement (herein referred to as the Memorandum of Agreement or MOA) at C1-B shall be carried out until the BOEM has had an opportunity to review the Plan, thus ensuring that each activity or operation is conducted in a manner that is in compliance with the provisions and requirements of the MOA. BOEM recommends that the Corps include the MOA as a reference document in the advertised Plan. The Corps will ensure that all operations at C1-B are conducted in accordance with the final approved Plan and all terms and conditions in this MOA, as well as all applicable regulations, orders, guidelines, and directives specified or referenced herein.

The dredging method of removing sand from C1-B will be consistent with the NEPA and authorizing documents, as well as project permits. The Corps will allow BOEM to review and comment on modifications to the Plan that may affect the project area, including the use of submerged or floated pipelines to directly convey sediment from the borrow area to the placement site. Said comments shall be delivered in a timely fashion in order to not delay the Corps’ construction contract or schedule.

If dredging and/or conveyance methods are not wholly consistent with those evaluated in relevant NEPA documents and environmental and cultural resource consultations, and authorized by the Joint Coastal Permit (JCP), additional environmental review may be necessary. If the additional NEPA, consultations, or permit modifications would impact or otherwise supplement the provisions of the MOA, an amendment may be required.

Prior to the commencement of construction, the Corps shall provide a summary of the construction schedule. The Corps, at the reasonable request of BOEM or BSEE, shall allow access, at the site of any operation subject to safety regulations, to any authorized Federal inspector and shall provide BOEM or BSEE any documents and records that are pertinent to occupational or public health, safety, or environmental protection as may be requested.

Environmental Responsibilities and Environmental Compliance

The Corps is the lead agency on behalf of the Federal government to ensure the Project complies with applicable environmental laws, including but not limited to the Endangered Species Act (ESA), Magnuson-Stevens Fishery Management and Conservation Act, Migratory Bird Treaty Act, National Historic Preservation Act, and Coastal Zone Management Act.

The Corps will serve as the lead Federal agency for ESA Section 7 compliance concerning protected species under the purview of U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS). The Corps will instruct its contractor(s) to implement the mitigation terms, conditions, and measures required by the U.S. FWS, NMFS, Florida Department of Environmental Protection, and BOEM pursuant to applicable Federal laws and regulations. The required mitigation terms, conditions, and measures are reflected in the Biological Opinions, Conservation Recommendations, and Consistency Determination/JCP. Copies of all relevant correspondence, monitoring, and reporting shall be provided to the BOEM within 14 days of issuance at dredgeinfo@boem.gov (including but not limited to observer, Florida DEP, and dredging reports).

The Corps is responsible for compliance with the specific conditions of the JCP.

Pre-Construction Notification of Activity in or near the Borrow Area

The Corps will invite BOEM to attend a pre-construction meeting that describes the Corps' and/or its agents' plan and schedule to construct the Project.

The Corps will also notify the BOEM at dredgeinfo@boem.gov of the commencement and termination of operations at C1-B within 24 hours after the Corps receives such notification from its contractor(s) for the Project. BOEM will notify the Corps in a timely manner of any OCS activity within the jurisdiction of the DOI that may adversely affect the Corps' ability to use OCS sand for the Project.

Dredge Positioning

During all phases of the Project, the Corps will ensure that the dredge and any bottom disturbing equipment is outfitted with an onboard global positioning system (GPS) capable of maintaining and recording location within an accuracy range of no more than plus or minus 3 meters. The GPS must be installed as close to the cutterhead or draghead as practicable or use appropriate instrumentation to accurately represent the position of the cutterhead or draghead. During dredging operations, the Corps will immediately notify BOEM at dredgeinfo@boem.gov if dredging occurs outside of the approved borrow area.

Anchoring, spudding, or other bottom disturbing activities are not authorized outside of the approved borrow area on the OCS.

The Corps will provide BOEM with all Dredging Quality Management (DQM) data acquired during the project using procedures jointly developed by the U.S. Army Corps of Engineers' National Dredging Quality Management Data Program Support Center and the BOEM. The Corps will submit the DQM data, including draghead depth, to dredgeinfo@boem.gov biweekly. A complete DQM dataset will be submitted within 45 days of completion of the Project. If available, the Corps will also submit Automatic Identification System (AIS) data for vessels qualifying under the International Maritime Organization's (IMO) International Convention for the Safety of Life at Sea.

Dredge Operation

Dredging will occur preferentially in naturally accreting areas of C1-B and dredging will be avoided in erosional areas of the shoal to the extent possible. Dredging will be performed so that the overall cut depth does not exceed that permitted under the Florida Joint Coast Permit Final Order addressing sand compatibility requirements. The Corps will use the contour method to maintain the relative profile and shape of the sand shoal complex to the extent practicable to avoid creating deep depressions or pits.

Submittal of Production and Volume Information

The Corps, in cooperation with the dredge operator, shall submit to the Bureau on a biweekly basis a summary of the dredge track lines, outlining any deviations from the original Plan. A color-coded plot of the cutterhead or drag arms will be submitted, showing any horizontal or vertical dredge violations. The dredge track lines shall show dredge status: hotelling, dredging, transiting, or unloading. This map will be provided in PDF format.

The Corps will provide at least a biweekly update of the construction progress including estimated volumetric production rates to the Bureau.

The biweekly deliverables will be provided electronically to dredgeinfo@boem.gov.

The project completion report, as described below, will also include production and volume information, including Daily Operational Reports.

Local Notice to Mariners

The Corps shall require its contractor(s) for the Project to place a notice in the U.S. Coast Guard Local Notice to Mariners regarding the timeframe and location of dredging and construction operations in advance of commencement of dredging.

Marine Pollution Control and Contingency Plan

The Corps will require its contractor(s) and subcontractor(s) to prepare for and take all necessary precautions to prevent discharges of oil and releases of waste and hazardous materials that may impair water quality. In the event of an occurrence, notification and response will be in accordance with applicable requirements of 40 C.F.R. 300. All dredging and support operations shall be compliant with U.S. Coast Guard regulations and the U.S. Environmental Protection Agency's Vessel General Permit, as applicable. The Corps will notify BOEM of any occurrences and remedial actions and provide copies of reports of the incident and resultant actions at dredgeinfo@boem.gov.

Encounter of Ordinance

If any ordinance is encountered while conducting dredging activities at C1-B, the Corps will report the discovery within 24 hours to Mr. Jeff Reidenauer, Chief, BOEM Leasing Division, at (703) 787-1851 and dredgeinfo@boem.gov.

Bathymetric Surveys

The Corps will provide BOEM with pre- and post-dredging bathymetric surveys of the borrow area. The pre-dredging survey of the Borrow Area will be conducted within 60 days prior to dredging and the data will be provided to BOEM for review, allowing for a minimum of 7 working days for BOEM to provide concurrence prior to the commencement of dredging. A qualified hydrographic surveyor, independent from the dredging/construction contractor must conduct, oversee, and approve the survey before transmitting to BOEM. The post-dredging survey of the borrow area will be conducted within 30 days after the completion of dredging. BOEM recommends that the Corps conduct additional bathymetric surveys of the Borrow Area one (1) and three (3) years after the completion of dredging to document borrow area evolution and provide information to inform future decisions and consultations regarding use of OCS sand resources. Surveys, error analysis, and reporting will be performed in accordance with the most recent edition of NOAA's Office of Coast Survey Hydrographic Survey Field Procedure Manual. Survey standards and requirements are specified and can be found on the Coast Survey Document Library (<https://www.nauticalcharts.noaa.gov/hsd/specs/specs.htm>). For bathymetric surveys, one hundred percent coverage using multi-beam bathymetric survey methods is required. All bathymetric data will be roll, pitch, heave, and tide corrected using best practices. Sound velocity corrections will be applied based on measurements made during and throughout the duration of the survey using a profiling sound velocity meter to obtain water column sound velocities with casts that log the entire water column to the seafloor. Survey lines of the specific dredge area will be established at intervals necessary to provide 100 percent coverage. All survey lines will extend at least 100 meters (328 feet) beyond the edge of the Borrow Area limits as defined in this Lease. All data will be collected in such a manner that post-dredging bathymetric surveys are compatible with the pre-dredging bathymetric survey data to enable the latter to be subtracted from the former to calculate the volume of sand removed, the shape of the excavation, and the nature of post-dredging bathymetric change. Pre-dredge bathymetric survey transects will be reoccupied during the post-dredging surveys. Surveys will be conducted using kinematic GPS referenced to a GPS base station occupying an established (NAVD 88 vertical control) monument within 15 kilometers (9 miles) of the survey area, a National Geodetic Survey real-time network, or a water-level gauge deployed within the vicinity of the Borrow Area and referenced to an established monument (NAVD 88 vertical control), unless alternative methods are approved by BOEM. Pre- and post-dredging surveys will be referenced to the same water-level gauge, tide gauge, real-time network, benchmark, or BOEM-approved method. An uncertainty or error analysis will be conducted on the bathymetric dataset based on calculated differences of measured elevations (depths) at all transect crossings (also note that other best practices typically employed to identify potential error or quantify uncertainty, such as daily bar-checks, will be conducted and documented). A methods and results of the uncertainty analysis report, field notes, and metadata must be submitted to BOEM with the processed bathymetric data products.

Copies of processed pre-dredging and post-dredging hydrographic data will be submitted to BOEM via dredgeinfo@boem.gov within 30 days after each survey is completed. Pre-dredging bathymetric survey results and attendant products must be provided to BOEM for approval, and BOEM must review and deem them acceptable prior to commencement of dredging activity. If data accuracy, coverage, quality, or other parameters for either pre- or post-dredging surveys are

not sufficient to provide for accurate comparisons between the pre-dredge and post-dredge surveys (e.g. do not meet specifications and standards discussed or referenced above), BOEM may require that a new survey (at the pre-dredge and/or post-dredge phase) be conducted.

The delivery format for bathymetry data submission is an ASCII file containing x, y, z data and a digital elevation model in a format agreed upon between BOEM and USACE in writing. The horizontal data will be provided in the NAD83 Florida State Plane East, U.S. survey feet. Vertical data will be provided in the NAVD 88, U.S. survey feet unless otherwise specified. An 8.5 x 11 inch plan view plot of the pre- and post-construction data will be provided showing the survey vessel navigation tracks, as well as contour lines at appropriate elevation intervals. A plot of the digital elevation model will also be provided. These plots will be provided in Adobe PDF format. Images and descriptions of side scan sonar or bathymetric anomaly targets will be included and identified on an index map.

Archaeological Resources

Onshore Prehistoric or Historic Resources

If the Corps discovers any previously unknown historic or archeological remains while accomplishing the activity on Hutchinson Island, the Corps will notify the BOEM of any finding. The Corps will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

Offshore Prehistoric or Historic Resources

In the event that the dredge operator discovers any archaeological resource while conducting dredging operations in C1-B or in the vicinity of pump-out operations, the Corps shall require that dredge and/or pump-out operations be halted immediately within 305 m (1000 ft) of the area of discovery. The Corps shall then immediately report the discovery to Jill Lewandowski, Chief, Division of Environmental Assessment, BOEM, at (703) 787-1703. If investigations determine that the resource is significant, the parties shall together determine how best to protect it.

Project Completion Report

A project completion report will be submitted by the Corps to BOEM within 120 days following completion of the activities authorized under this MOA. This report and supporting materials should be sent to Mr. Jeff Reidenauer, Chief, Marine Minerals Branch, BOEM, 45600 Woodland Road, VAM-LD, Sterling, Virginia 20166 and dredgeinfo@boem.gov. The report shall contain, at a minimum, the following information:

- the names and titles of the project managers overseeing the effort (for the Corps, the engineering firm (if applicable), and the contractor), including contact information (phone numbers, mailing addresses, and email addresses);
- the location and description of the project, including the final total volume of material extracted from the borrow area and the volume of material actually placed on the beach or shoreline (including a description of the volume calculation method used to determine these volumes);
- ASCII files containing the x, y, z and time stamp of the cutterhead or drag arm locations;
- a narrative describing the final, as-built features, boundaries, and acreage, including the restored beach width and length;

- a table, an example of which is illustrated below, showing the various key project cost elements;

	Cost Incurred as of Construction Completion (\$)
Construction	
Engineering and Design	
Inspections/Contract Administration	
Total	

- a table, an example of which is illustrated below, showing the various items of work construction, final quantities, and monetary amounts;

Item No.	Item	Estimated Quantity	Final Quantity
1	Mobilization and Demobilization		
2	Beach Fill		
3	Any beach or offshore hard structure placed or removed		

- a listing of construction and construction oversight information, including the prime and subcontractor(s), contract costs, etc.;
- a list of all major equipment used to construct the project;
- a narrative discussing the construction sequences and activities, and, if applicable, any problems encountered and solutions;
- a list and description of any construction change orders issued, if applicable;
- a list and description of any safety-related issues or accidents reported during the life of the project;
- a narrative and any appropriate tables describing any environmental surveys or efforts associated with the project and costs associated with these surveys or efforts;
- a table listing significant construction dates beginning with bid opening and ending with final acceptance of the project by the Corps;
- digital appendices containing the as-built drawings, beach-fill cross-sections, and survey data; and
- any additional pertinent comments.

Environmental and Reporting Compliance

The Corps will designate in advance of construction a single point of contact responsible for facilitation of compliance with all MOA requirements. The contact information will be provided to BOEM at least 30 days in advance of dredging and construction operations at dredgeinfo@boem.gov.

Failure to reasonably comply with these requirements may be a basis for BOEM to refer compliance issues to BSEE for appropriate enforcement measures. Failure to comply with these requirements in a timely and responsible fashion may delay future requests from the Corps and Martin County Board of Commissioners to BOEM for an authorization to use OCS sand resources for the Martin County HSDR Project.