FINDING OF NO SIGNIFICANT IMPACT

Issuance of a Negotiated Agreement for Use of Outer Continental Shelf Sand from Canaveral Shoals II in the Brevard County Shore Protection Project (North Reach and South Reach)

Pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508) and Department of the Interior (DOI) regulations implementing NEPA (43 CFR 46), the Bureau of Ocean Energy Management (BOEM) prepared an environmental assessment (EA) to determine whether the issuance of a negotiated agreement for the use of Outer Continental Shelf (OCS) sand from Canaveral Shoals II (CS II) in the Brevard County (North and South Reach) Shore Protection Project would have a significant effect on the human environment and whether an environmental impact statement (EIS) should be prepared.

Several NEPA documents have been previously prepared by both USACE and BOEM evaluating impacts of the project. In 1996, prior to initial construction, an EIS was prepared by the USACE which described the affected environment, evaluated potential environmental impacts resulting from the proposed action, and described alternatives to the proposed action (USACE, 1996)[1]. An EA was subsequently prepared by USACE in 1998 to evaluate the potential impacts of using the CS II borrow area, which was not previously considered in the 1996 EIS (USACE, 1998). In 2005, 2009, and 2013 BOEM (previously the Minerals Management Service) prepared additional EAs to support leasing decisions for use of OCS sand from the CS II borrow area, which tiered from and/or incorporated by reference the 1996 EIS (MMS, 2005; MMS, 2009; BOEM, 2013).

This 2017 EA incorporates by reference the previous effects analyses that were determined to still be valid and augments a subset of analyses in light of new information. BOEM has reviewed all prior analyses, supplemented additional information as needed, and determined that the potential impacts of the current proposed action have been adequately addressed. No major revisions to prior impact analyses are needed; thus, preparation of an EIS is not required.

Proposed Action

The USACE and Brevard County (project sponsor) have requested use of OCS sand resources from the CS II borrow area (up to 2.0 million cubic yards [cy]) to undertake a beach nourishment project along Brevard County's shoreline, including approximately 9.4 miles of the North Reach and 3.4 miles of the South Reach. BOEM's proposed action is the issuance of a negotiated agreement. The Brevard County Shore Protection Project was authorized for initial and maintenance construction by Section 101(b)(7) of the Water Resources Development Act of 1996, Public Law 104-303. The proposed project is being constructed using Flood Control and Coastal Emergency (FCCE) rehabilitation funding following impacts from Hurricanes Matthew (October 2016) and Irma (September 2017).

[1] All references contained herein can be found in Section 7 of the EA (Attachment 2).

Alternatives to the Proposed Action

The 1996 EIS considered in detail a range of potential shore protection alternatives, including structural and non-structural options, varying beach berm widths, and multiple sources of fill material. Based upon a combination of economic, engineering, and environmental factors, the USACE selected beach nourishment as the non-structural alternative that would best meet its needs for the Brevard County Shore Protection Project (North Reach and South Reach). The project was initially constructed in 2001, and maintenance construction cycles were completed in 2005, 2010, and 2013. This EA considers the fourth maintenance cycle in order to return the Brevard County shoreline to the condition described in the 1996 EIS preferred alternative.

In addition to considering the effect of authorizing use of the CS II borrow area on the OCS, BOEM considered a No Action alternative. If BOEM decided not to authorize use of the CS II borrow area, the project proponents could either:

(a) re-evaluate the project to choose another alternative method or sand source to restore the North and South Reaches,
(b) locate an onshore source of comparable high-quality sand, or
(c) do not undertake the project at this time.

Option (a) may be viable if another sand source, such as CS I, is considered. However, the CS I borrow area has several constraints that limit this as a cost-effective option. First, the water depth is too shallow to utilize a hopper or cutterhead dredge. Therefore, a cut would need to be made through the borrow area to allow for vessel usage. This extra effort would not only be a financial burden, but could also lead to additional environmental concerns from loss of benthic resources and disturbance of habitat previously undisturbed. Second, while the sand in CS I has been deemed beach quality, the sand in CS II has been shown to be better suited for beach nourishment and sea turtle nesting. Option (b) is not considered to be viable as sources of approved onshore sand are limited. Even if a sufficient amount of high-quality sand is located onshore, option (b) is likely to result in increased environmental disruption and effect from onshore excavation and overland transport. In the case of no project under option (c), coastal erosion would continue, sea turtle and shorebird nesting habitat would deteriorate, the recreational amenity associated with the public beach would be severely affected, and the likelihood and frequency of property and storm damage would increase.

Environmental Effects

This 2017 EA evaluates potential environmental effects from using OCS sand in the project. The connected actions of conveyance and placement of the sand are considered. The EA and Finding of No Significant Impact (FONSI) identify all mitigation, monitoring, and reporting requirements necessary to avoid, minimize, and/or reduce and track any foreseeable adverse impacts that may result from all phases of construction. A subset of mitigation, monitoring, and reporting requirements, specific to activities under BOEM's jurisdiction, will be incorporated into the negotiated agreement to avoid, minimize, and/or reduce and track any foreseeable adverse impacts (Attachment 1).

The USACE and BOEM identified and reviewed new information to determine if any resources should be re-evaluated, or if the new information would result in significantly different effects determinations. New information was identified that further supports or elaborates on the analyses or information presented in existing NEPA documents. No new significant impacts were identified, nor was it necessary to change the conclusions of the types, levels, or locations of impacts described in those documents.

Significance Review

Pursuant to 40 CFR 1508.27, BOEM evaluated the significance of potential environmental effects considering both CEQ context and intensity factors. The potential significance of environmental effects has been analyzed in both spatial and temporal context. Potential effects are generally considered reversible because they will be minor to moderate, localized, and short-lived. The only long-term effect is on the physical geomorphology due to the removal of sand from the borrow area. No significant or cumulatively significant adverse effects were identified. The ten intensity factors were considered in the EA and are specifically addressed below:

1. Impacts that may be both beneficial and adverse.

Potential adverse effects to the physical environment, biological resources, cultural resources, and socioeconomic resources have been considered. No impacts to hardbottom communities near CS II are expected from beach fill equilibration or alongshore spreading. Temporary reduction of water quality is expected due to turbidity during dredging and placement operations; turbidity will be monitored relative to background levels. Small, localized, temporary increases in concentrations of air pollutant emissions are expected, but the short-term impact by emissions from the dredge or the tugs would not affect the overall air quality of the area. A temporary increase in noise level and a temporary reduction in the aesthetic value offshore during construction in the vicinity of the dredging would occur. For safety reasons, navigational and recreational resources located in the immediate vicinity of the dredging operation would temporarily be unavailable for public use. Archaeological resources (four cultural resource sites) and a scientific acoustic receiver will be avoided during dredging operations by a 300-ft buffer. GPS-positioning equipment will be used to ensure the dredge is operating in the authorized location. An unexpected finds clause would be implemented in case an archaeological resource is discovered during operations. Short-term and local adverse effects to benthic and fishery resources are expected within the dredging and placement areas. Potential dredging entrainment risk of sea turtles has been reduced through the use of sea turtle deflecting dragheads and associated operating parameters. Potential effects to marine mammals have been reduced through vessel speed and avoidance protocols. Temporary displacement or behavior modification of birds near the borrow area and/or along the reach of beach placement could occur through direct construction impacts and/or indirect impacts to benthic prey base. There would be beneficial impacts from increased storm protection and an improved recreational beach. In addition, the nourishment effort would result in the restoration of habitat for nesting sea turtles.

2. The degree to which the proposed action affects public health or safety.

The proposed activities are not expected to significantly affect public health. Construction noise will temporarily increase ambient noise levels and equipment emissions would decrease air quality in the immediate vicinity of placement activities. The public is typically prevented from entering the segment of beach under construction, so recreational activities will not be occurring

in close proximity to operations. Dredging operations will be performed in accordance with an environmental protection plan, addressing marine pollution, waste disposal, and air pollution. The USACE will be conducting inspections to ensure compliance with the plan.

3. *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

No prime or unique farmland, park lands, designated Wild and Scenic reaches, or wetlands would be impacted by implementation of this project. Critical habitat has been designated within and/or in the vicinity of the CS II borrow area for both loggerhead sea turtles (breeding and migratory critical habitat) and North Atlantic right whales (calving). USACE and BOEM have previously consulted with NMFS on the potential effects of dredging activities on these critical habitat designations and have concluded that the proposed activities will not adversely affect designated critical habitat. The South Atlantic Fishery Management Council (SAFMC) has designated CS II as Essential Fish Habitat (EFH). Impacts to EFH would occur in CS II, but the limited spatial and temporal extent of dredging suggests these impacts will not adversely affect EFH on a broad scale. Dredging will locally modify the overall seafloor geomorphology within the CS II Borrow Area. Similar microhabitat will exist pre- and post-dredging and benthic re-colonization should occur within a few years given recruitment from adjacent undisturbed communities. Demersal and pelagic fishes may temporarily avoid the dredged area because of locally reduced prey availability, but are expected to return following benthic re-colonization. Potential impacts to nearshore hardbottom will be avoided by placing pipeline corridors in areas devoid of hardbottom.

4. *The degree to which the effects on the quality of the human environment are likely to be highly controversial.*

No effects are expected that are scientifically controversial. Effects from beach nourishment projects, including dredging on the OCS, are well studied. The effects analyses in the EA has relied on the best available scientific information, including information collected from previous dredging and nourishment activities in and adjacent to the project area. Numerous studies and monitoring efforts have been undertaken along the coast of Florida evaluating the effects of dredging and beach nourishment on shoreline change, benthic communities, nesting and swimming sea turtles, and shorebirds.

5. *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

Beach nourishment is a common solution to coastal erosion problems along the South Atlantic coast. Federally-authorized beach nourishment in Brevard County has been ongoing since the 1980's. This borrow area has been dredged on eight prior occasions for renourishing Brevard County beaches, including six times for the North and South Reach segments in 2000/01 through 2013/14, and twice for the Patrick Air Force Base shoreline in 2000/01 and 2005. Approximately 20 million cy of sand are currently available within the existing permitted limits of CS II. No significant adverse effects have been documented during or as a result of these past operations. Prior dredge events at CS II (April/May 2005 and December-April 2013/2014) have entrained and killed three loggerhead sea turtles each for a total take of six loggerheads, but such take was considered in the applicable biological opinion and determined not to jeopardize the continued

existence of the species. NMFS provided concurrence on August 3, 2017 that the proposed project was covered under the 1995/1997 South Atlantic Regional Biological Opinion (SARBO) (http://dqm.usace.army.mil/odess/#/technicalInfo), assuming implementation of protective measures. The effects of the proposed action are not expected to be highly uncertain, and the proposed activities do not involve any unique or unknown risks.

6. *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*

No precedent for future action or decision in principle for future consideration is being made in BOEM's decision to authorize re-use of the CS II for this nourishment cycle. BOEM considers each use of a borrow area on the OCS as a new federal action. The Bureau's authorization of the use of the borrow area does not dictate the outcome of future leasing decisions. Future actions will also be subject to the requirements of NEPA and other applicable environmental laws.

7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*

Significance may exist if it is reasonable to anticipate cumulatively significant impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The EA and previous NEPA documents conclude that the activities related to the proposed action are not reasonably anticipated to incrementally add to the effects of other activities to the extent of producing significant effects. Because the seafloor is expected to equilibrate and moving sand will slowly accumulate in CS II, the proposed project provides an incremental, but localized effect on the reduction of offshore sand resources. Although there will be a short-term and local decline in benthic habitat and populations, both are expected to recover within a few years. Therefore, no significant cumulative impacts to benthic habitat are expected from the use of the borrow site.

8. *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.*

The proposed action is not expected to adversely affect historic or pre-contact resources. Seafloor-disturbing activities (e.g., dredging, anchoring, pipeline emplacement and relocation) may occur during proposed construction activities. The greatest risk to cultural resources exists in the borrow area where dredging will occur. Archaeological clearance surveys have been performed within both the CS II borrow area and beach nourishment locations. Four sites of cultural significance were identified within the CS II borrow area. An additional site with an acoustic receiver to support ongoing research is also located within the borrow area. These five identified sites shall be protected by providing a location map to the dredging contractor and requiring them to maintain a 300-foot buffer zone around each of these sites. BOEM will also work with Division of Historical Resources (DHR) and State Historic Preservation Officer (SHPO) should shipwreck remains or other cultural resources be unexpectedly discovered (30 CFR 250.194 and 30 CFR 250.1010). No significant impacts to cultural resources in the project area (borrow, placement or pump-out areas), as result of the proposed action, are anticipated with implementation of the measures to protect existing identified resources, cease of work if an unexpected discovery occurs, and immediate notification to DHR/SHPO. If an unexpected site is discovered, the SHPO may then determine if the resource is significant or not and make the

determination of the best means to protect the resource. All of these activities have been completed in accordance with the National Historic Preservation Act (NHPA), as amended; the Archeological and Historic Preservation Act (AHPA), as amended; and Executive Order 11593. The project is in full compliance with the NHPA as well as the AHPA and E.O. 11593.

9. *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*

Brevard County will comply with all requirements of biological opinions associated with this project provided under the Endangered Species Act (ESA) including the USFWS State Programmatic Biological Opinion (SPBO), USFWS Programmatic Piping Plover Biological Opinion (P3BO), and NMFS SARBO.

Nesting and swimming sea turtles, the North Atlantic Right Whale, and manatees present in the project area during and after construction operations may be adversely affected. The most common sea turtle species in the CS II vicinity include loggerhead, green, Kemp's ridley, and leatherback sea turtles. Hawksbill sea turtles are not common in the area, so effects are expected to be negligible. The U.S. Fish and Wildlife Service (FWS) was notified by letter on June 12, 2017 that the USACE intended to utilize the SPBO for Section 7 coverage for manatees and nesting sea turtles; FWS provided concurrence by letter on September 21, 2017. If a hopper dredge is used for the dredging operations, potential in-water impacts to sea turtles could occur. To minimize the risk to swimming sea turtles, standard sea turtle protection conditions according to the SARBO will be implemented such as the use of a state-of-the-art rigid deflector draghead at all times, inflow screens, voluntary non-capture sweep trawling, and/or observer monitoring of the operation. To minimize the risk to nesting sea turtles, standard sea turtle protection conditions will be implemented such as environmental windows, monitoring surveys, sand compaction monitoring, and lighting restrictions. Brevard County will implement the Standard Manatee Construction Protection Specifications to ensure manatee protection.

North Atlantic right whales occur only rarely in the project area and, with mitigation measures, the likelihood of adverse impacts from the proposed action are minor. Humpback whales are no longer listed under the ESA but would benefit from protections for the North Atlantic right whale. Strike risk for whales is limited in a number of ways including: participation in the Early Warning System, implementation of established protocols when dredging within North Atlantic right whale critical habitat from 1 December to 30 March, observer monitoring during transit and dredging operations, and a 500-yard separation distance from sighted animals.

In 2009 and 2013, NMFS provided written concurrence that the dredging and construction operations for the respective renourishment projects may affect, but is not likely to adversely affect smalltooth sawfish, contingent upon mitigation. BOEM and the USACE have come to the same conclusion for the proposed project. Effects on smalltooth sawfish include the risk of injury or harassment associated with dredging, rehandling, and pipeline emplacement and retrieval. Due to the location of the project, the species' mobility, and the implementation of NMFS' Sea Turtle and Smalltooth Sawfish Construction Conditions, the risk of injury and harassment is minor. Critical habitat does not occur in the project area.

Placement of material on the Brevard County shoreline from CS II may affect, but is not likely to adversely affect, the piping plover. Impacts would be short-term and temporary and should have no lasting effects on the wintering piping plover population of Brevard County. Brevard County has agreed to conditions as defined in P3BO. FWS concurred that applying these conditions will also mitigate impacts to the rufa red knot, a shorebird that uses similar habitat as the piping plover. The USACE initiated consultation with the FWS on June 12, 2017, then clarified BOEM's involvement on August 1, 2017, for piping plovers, making a may affect, is not likely to adversely affect determination and seeking to apply the P3BO and its associated terms and conditions to the proposed activities. Mitigation and monitoring efforts, detailed in Attachment 1, are similar to that undertaken for past projects and have been demonstrated to be effective.

This project was fully coordinated under the ESA and is in full compliance with the Act. BOEM and the USACE have consulted with the USFWS and NMFS. If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action, consultation will need to be reinitiated.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The USACE and Brevard County must comply with all applicable Federal, State, and local laws and requirements. The dredging contractor is required to provide an environmental protection plan that verifies compliance with environmental requirements. BOEM and the USACE have undertaken the necessary consultations with NMFS, USFWS, and relevant state agencies. A Joint Coastal Permit (JCP) and consistency concurrence from the Florida Department of Environmental Protection (FDEP) has been issued for the proposed action. The JCP includes mitigation and monitoring requirements that are applicable to the connected state activities, but not to BOEM's proposed action.

The proposed action is in compliance with the Marine Mammal Protection Act. Marine mammals are not likely to be adversely affected by the project and incorporation of safeguards to protect threatened and endangered species during project construction would also protect marine mammals in the area. Migratory birds are not likely to be adversely affected by the proposed action. No recent nesting of migratory birds has been reported on the North and South Reach beaches. Water quality will be monitored to ensure state water quality standards are not violated.

Consultations and Public Involvement

The USACE, serving as the lead Federal agency, and BOEM, in a consulting role, has coordinated with the USFWS, NMFS, FDEP, and Florida SHPO in support of this leasing decision. Pertinent correspondence with Federal and state agencies are provided in Appendices A-E of the EA. After signature of this FONSI, the EA and FONSI will be posted to BOEM's website (https://www.boem.gov/Florida-Projects/).

Conclusion

BOEM has considered the consequences of issuing a negotiated agreement to authorize use of OCS sand from CS II in the Brevard County Shore Protection Project (North Reach and South Reach). BOEM prepared the attached EA (Attachment 2) and finds that it complies with the

relevant provisions of the CEQ regulations implementing NEPA, DOI regulations implementing NEPA, and other Marine Mineral Program requirements. Based on the NEPA and consultation process, appropriate terms and conditions enforceable by BOEM will be incorporated into the negotiated agreement to avoid, minimize, and/or mitigate any foreseeable adverse impacts (Attachment 1).

Based on the evaluation of potential impacts and mitigating measures discussed in the EA, BOEM finds that entering into a negotiated agreement, with the implementation of the mitigating measures, does not constitute a major Federal action significantly affecting the quality of the human environment, in the sense of NEPA Section 102(2)(C), and will not require preparation of an EIS.

J Lewandowski

Jill Lewandowski
Chief, Division of Environmental Assessment

9/26/17

Date

Attachment 1

Mitigation, Monitoring, and Reporting Requirements

The following mitigation measures, monitoring requirements, and reporting requirements are proposed by BOEM to avoid, minimize, reduce, or eliminate environmental impacts associated with the Proposed Action (herein referred to as the "Project"). Mitigation measures, monitoring requirements, and reporting requirements 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 USACE will include this MOA as a reference document in the advertised "Construction Solicitation and Specifications Plan" (hereinafter referred to as the "Plan"). The USACE will ensure that all operations at CS II are conducted in accordance with the final approved Plan and all terms and conditions in this MOA, as well as all applicable statutes, regulations, orders and any guidelines or directives specified or referenced herein. The USACE will send BOEM a copy of the plans and its modification when publically available.

The dredging method for removing sand from CS II will be consistent with those evaluated in all applicable NEPA documents and approved in the authorizing documents, as well as project permits. The USACE will allow BOEM to review and comment on modifications to the Plan that may affect the borrow area or pipeline corridors on the OCS, including the use of submerged or floated pipelines to directly convey sediment from the borrow area to the placement site. Said comments will be delivered in a timely fashion so as to not unnecessarily delay the USACE's construction contract or schedule.

If dredging and/or conveyance methods are not wholly consistent with those evaluated in relevant NEPA documents prepared by BOEM for this Project, and environmental and cultural resource consultations, and those authorized by the Joint Coastal Permits (JCPs), 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 USACE must electronically provide BOEM with a summary of the construction schedule consistent with Paragraph 15. The USACE, at the reasonable request of BOEM or the Bureau of Safety and Environmental Enforcement (BSEE), must allow access, at the site of any operation subject to safety regulations, to any authorized Federal inspector and must provide BOEM or BSEE any documents and records that are pertinent to occupational or public health, safety, environmental protection, conservation of natural resources, or other use of the OCS as may be requested.

Environmental Responsibilities and Environmental Compliance

The USACE 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 ESA, MSA, MBTA, NHPA, and CZMA, and any consultations or limitations imposed thereunder. Brevard

County is responsible for compliance, with the specific conditions of the JCPs, as authorized by the CZMA.

The USACE will serve as the lead Federal agency for ESA Section 7 consultation concerning protected species under the purview of the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). The USACE will instruct its contractor(s) to implement the mitigation terms, conditions, and measures required by the USFWS, NMFS, Florida DEP, and BOEM pursuant to applicable Federal and State laws and regulations prior to commencement of activities authorized under this MOA, including extraction, transportation and placement of sand resources from CS II. The required mitigation terms, conditions, and measures are reflected in the relevant Biological Opinions, Conservation Recommendations, Consistency Determinations, and JCPs. Electronic copies of all relevant correspondence, monitoring data, and reports related to the activities covered by this MOA, will be provided electronically to BOEM within 14 days of issuance (including observer, FDEP, and dredging reports). The County is responsible for compliance with the Specific Conditions of the JCP. Construction may not commence until the pre-construction requirements have been completed.

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

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

The USACE will notify BOEM electronically at least 72 hours prior to the commencement, and within 24 hours after termination, of operations at CS II. BOEM will electronically notify the USACE in a timely manner of any OCS activity within the jurisdiction of the DOI that may adversely affect the USACE's ability to use OCS sand for the Project.

Dredge Positioning

During all phases of the Project, the USACE 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 hydraulic dredge as is practicable or must use appropriate instrumentation to accurately represent the position of the hydraulic dredge. During dredging operations, the USACE will immediately notify BOEM electronically if dredging occurs outside of the approved borrow area. Such notification will be made as soon as possible after the time USACE becomes aware of dredging 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, except for immediate concerns of safety, navigation risks or emergency situations.

The USACE will provide BOEM, electronically, with all appropriate Dredging Quality Management (DQM) data acquired during the Project using procedures jointly developed by the USACE's National Dredging Quality Management (DQM) Data Program Support Center and BOEM. The USACE will submit the DQM data, including draghead, cutterhead, or other hydraulic or mechanical dredging device depth biweekly. A summary DQM dataset will be submitted within 90 days of completion of the Project. If available, the USACE 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 CS II and dredging will be avoided in erosional areas of the shoal to the extent possible. If a hopper dredge is used, dredging will be performed so that the hopper dredge excavates material using relatively shallow, uniform passes to an overall cut depth not to exceed that permitted under the Florida JCP Final Order addressing sand compatibility requirements. The USACE will use the methods necessary to maintain the relative profile and shape of the sand shoal complex to the extent practicable, as determined by the USACE, to avoid creating deep depressions or pits.

Submittal of Production and Volume Information

The USACE, in cooperation with the dredge operator, must submit to BOEM a summary of the dredge track lines, outlining any deviations from the original Plan on a biweekly basis. A color-coded plot of the draghead, cutterhead, or other hydraulic or mechanical dredging device will be submitted, showing any horizontal or vertical dredge violations. The dredge track lines must show dredge status: hotelling, dredging, transiting, or unloading. This map will be provided in PDF format.

The USACE will electronically provide at least a biweekly report of the construction progress including estimated volumetric production rates to BOEM. The project completion report, as described below, will also include production and volume information, including Daily Operational Reports.

Local Notice to Mariners

The USACE will 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 USACE 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 or hazardous materials that may impair water quality. In the event of such an occurrence, notification and response will be in accordance with applicable requirements of 40 C.F.R. Part 300. All dredging and support operations must be compliant with U.S. Coast Guard regulations and the U.S. Environmental Protection Agency's Vessel General Permit, as applicable. The USACE will notify BOEM of any noncompliant discharges and remedial actions taken, and will provide copies of reports of the incident and resultant actions electronically.

Encounter of Ordnance

If any ordnance is encountered while conducting dredging activities at CS II, the USACE will report the discovery within 24 hours to Dr. Jeff Reidenauer, Chief, BOEM Marine Minerals Branch, 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 the commencement of dredging and the data will be provided to BOEM for review via dredgeinfo@boem.gov, 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 results before transmitting to BOEM. The post-dredging survey of the Borrow Area will be conducted within 60 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 the National Oceanic and Atmospheric Administration's (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 MOA.

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.

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 USACE discovers any previously unknown historic or archeological resources while accomplishing the activity on Brevard County beaches, the USACE will notify BOEM of any finding. The USACE 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

The following five anomalies (listed in **Table 1**) must be avoided during dredging operations by at least 300 feet:

Table 1. Anomalies to be avoided During Dredging Operations

Target	Area/Block	Amplitude (gammas)	Duration (ft)	FL East State Plane Coordinates NAD 1983 (X / Y Coordinate)	Avoidance Radius (ft)	Note
m57	Canaveral Shoals II	147	140	[redacted]	300	Cultural Resource
m35	Canaveral Shoals II	51	125	[redacted]	300	Cultural Resource
DRE 2	Canaveral Shoals II	NA	NA	[redacted]	300	Acoustic Receiver
m47	Canaveral Shoals II	61	165	[redacted]	300	Cultural Resource
m61	Canaveral Shoals II	52	100	[redacted]	300	Cultural Resource

Targets identified as a "Cultural Resource" are potentially significant historical resources (e.g., debris related to space program). The target identified as an "Acoustic Receiver" is an operational scientific instrument used in a BOEM scientific study. In the event that the parties and/or dredge operators discover any archaeological resources prior to dredging operations in CS II or in the vicinity of pump-out operations, the USACE will report the discovery to the Chief, Leasing Division, BOEM electronically in a timely manner. The Corps Planning Division will coordinate with BOEM on the measures needed to evaluate, avoid, protect, and, if needed, mitigate adverse impacts from an unanticipated discovery. If investigations determine that the resource is significant, the parties will together determine how best to protect it.

If the parties and/or dredge operators discover any archaeological resources while conducting dredging operations, the USACE will require that dredge and/or pump-out operations be halted immediately and avoid the resource per the requirements of the USACE specifications for unanticipated finds. The USACE will then immediately report the discovery to Chief, Division of Leasing, BOEM (Jeffrey.Reidenauer@boem.gov) electronically in a timely manner. The Corps Planning Division will coordinate with BOEM on the measures needed to evaluate, avoid, protect, and, if needed, mitigate adverse impacts from an unanticipated discovery. If investigations determine that the resource is significant, the parties will together determine the necessary further action required and how to best protect the resource.

12. Responsibilities

BOEM does not warrant that the OCS sand resources used in this project are suitable for the purpose for which they are intended by the USACE and the County. BOEM's responsibility under this Project is limited to the authorization of access to OCS sand resources from CS II, as described in this MOA, and therefore BOEM disclaims any and all responsibility for the physical and financial activities undertaken by other Parties in pursuit of the Project.

13. Project Completion Report

Consistent with Paragraph 15, a project completion report will be submitted by the USACE to BOEM within 120 days following completion of the activities authorized under this MOA. This report and supporting materials should be sent in writing and electronically. The report will contain, at a minimum, the following information:

- the names and titles of the project managers overseeing the effort (for the USACE, 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);
- DQM data, in 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 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 USACE;
- 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	
Pre- and Post-Dredging Bathymetric Surveys	
Compilation of Project Completion Report	
Total	

- a table showing the various phases of the project construction, the types of construction equipment used, the nature of their use;
- digital appendices containing the as-built surveys, beach-fill cross-sections, and survey data; and

  any additional pertinent comments.

Attachment 2

Final Environmental Assessment with Appendices