

FINDING OF NO SIGNIFICANT IMPACT

Use of Outer Continental Shelf Sand from the Borrow Areas A and C in the Town of Kitty Hawk (North Carolina) Shore Protection Project

Pursuant to the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500), the Town of Kitty Hawk in Dare County, North Carolina (NC), under the direction of the Bureau of Ocean Energy Management (BOEM), prepared an environmental assessment (EA) to determine whether authorizing use of Outer Continental Shelf (OCS) sand from Borrow Area A (BAA) and Borrow Area C (BAC) in the Town of Kitty Hawk Shore Protection Project would have a significant effect on the human environment and whether an environmental impact statement (EIS) should be prepared. Pursuant to the Department of the Interior (DOI) regulations implementing NEPA (43 CFR 46), BOEM has independently reviewed the EA and has determined that the potential impacts of the proposed action have been adequately addressed.

Proposed Action

BOEM's proposed action is the issuance of a negotiated agreement to authorize use of BAA and BAC so that the project proponent, Dare County, on behalf of the Town of Kitty Hawk, can obtain up to 2,118,000 cubic yards of sand for a beach restoration project along the Town of Kitty Hawk beaches. The borrow areas range from 4.1 to 6.5 miles offshore of Dare County. The borrow areas were developed in conjunction with the Towns of Duck and Kill Devil Hills, which are concurrently proposing nourishment projects. All three projects will be constructed within the same year, and it is possible that construction will be concurrent for all three Towns. The main placement area for the Town of Kitty Hawk Shore Protection Project begins at in vicinity of the north town limit which is approximately 120 ft. north of the Kitty Hawk Pier located at the Hilton Garden Inn. The main placement area extends 18,900 ft. along the entire length of the Kitty Hawk ocean shoreline ending at approximately the Kitty Hawk/Kill Devil Hills town limits. The total linear extent of the sand placement coverage is approximately 20,900 ft. (3.96 mi.)

Alternatives to the Proposed Action

The EA considers three alternatives, including abandon and retreat, authorization to use the OCS Borrow Area and the no action alternative. Based upon a combination of economic, engineering, and environmental factors, the Town prefers use of the OCS Borrow Area to renourish the beach as the alternative that would best meet its needs for the Town of Kitty Hawk (North Carolina) Shore Protection Project. This EA considers a one-time leasing action for a single beach nourishment project covering the area determined to be at-risk for both long-term erosion and storm damage; a new borrow area was necessary to provide the fill material for the project.

The only practical alternative to the BOEM's proposed action is to not issue the negotiated agreement. The potential impacts resulting from the BOEM no action actually depend on the course of action subsequently pursued by the local sponsor, which could include identification of a different offshore or upland sand source. In the case of the no project option, coastal erosion

would continue, sea turtle and shorebird nesting habitat would deteriorate, and the likelihood and frequency of property and storm damage would increase.

Environmental Effects

The EA evaluates potential environmental effects resulting from the issuance of a negotiated agreement for the BAA and BAC along with the connected actions of conveyance and placement of the sand along the shoreline. The EA and 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 the use of the BAA and BAC. A subset of mitigation, monitoring, and reporting requirements, specific to activities under BOEM jurisdiction, will be incorporated into the negotiated agreement to avoid, minimize, and/or reduce and track any foreseeable adverse impacts.

Significance Review

Pursuant to 40 CFR 1508.27, BOEM evaluated the significance of potential environmental effects considering both the 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. No long-term 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. A beneficial effect of the proposed action will be an increase in knowledge of the geologic structure of the project area.*

No impacts to hardbottom communities are expected from dredging operations, beach fill equilibration or alongshore spreading. Temporary displacement of birds near the borrow area or beach placement could occur. Birds may be attracted to feeding near the hopper dredge as it is being filled at the borrow area or near discharge pipelines on the beach. Impacts would be short-term, localized and temporary and should have no lasting effects on bird populations in the area. Temporary reduction of water quality is expected due to turbidity during dredging and placement operations. Small, localized, temporary increases in concentrations of air pollutant emissions are expected but the short-term impact by emissions from the dredge 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 vicinity of the dredging operation would temporarily be unavailable for public use. There are three areas containing potentially historically significant anomalies within the BAC and twelve areas containing potentially historically significant anomalies within BAA. These have been recommended for avoidance and buffering, and have therefore been established as "No Work Zones" within the borrow areas. An unexpected finds clause would be implemented in the case an archaeological resource is discovered during operations. GPS-positioning equipment will be used to ensure the dredge is operating in the authorized location. Other effects to sensitive biological resources are discussed below. Effects to sea turtles, marine mammals, sturgeon, nesting and courting shorebirds, and water quality will be monitored.

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.

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, designated Wild and Scenic reaches, or wetlands would be impacted by implementation of this project. The National Marine Fisheries Service (NMFS) considers offshore sandy habitats to be important, although not unique fish habitat. The morphology in the region extending from False Cape, VA to Kitty Hawk, NC consists of shore-oblique ridges composed of Holocene sand, that are oriented to the north-northeast. These irregularly spaced ridges are up to 4 meters higher than the surrounding bathymetry. The borrow areas are located in proximity of Oregon shoal – a triangular shaped shoal 15 km long and 3 km wide. This shoal field features numerous, comparable sand bodies which have not been disturbed and may function as equivalent benthic and fish habitat. Dredging will locally modify the overall geomorphology of several sand ridges. Similar microhabitat will exist pre- and post dredging although topographic relief will be reduced. 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 will return following benthic re-colonization. A portion of BAA has also been designated as the *North Carolina Constricted Migratory Corridor* for loggerhead sea turtles by NMFS. This project will not adversely modify that critical habitat. In addition, various measures will be employed to minimize impacts to sea turtles including trawling and draghead turtle deflectors.

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 mid- and southeast Atlantic coast 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 North Carolina coast. The project design is typical of beach nourishment activities. These new borrow areas are similar to other sand ridges dredged offshore the mid- to south-Atlantic coast. Although the proposed activities are similar to those previously undertaken, this project will allow dredging

outside of previously permitted timeframes. Over the past 5 years, two projects completed within Dare County (Nags Head) and in neighboring Carteret County (Bogue Banks) had zero captures or takes during either their relocation trawling or their dredging operations. Although the risk of entrainment, strike, and degradation of nesting habitat cannot be entirely eliminated, the risk of lethal and sub-lethal take is greatly diminished through adoption and effective implementation of the mitigation required by NMFS and the US Fish and Wildlife Service (USFWS). 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 use of BAA and BAC for this construction cycle. BOEM considers each use borrow areas on the OCS as a new federal action. The Bureau's authorization of the use of the borrow areas 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 BAA and BAC, 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 sites.

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.

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. As previously mentioned, there are three potentially historically significant anomalies within the BAC and twelve potentially historically significant anomalies within BAA. These have been recommended for avoidance and buffering, and have therefore been established as "No Work Zones" within the borrow areas. No bottom-disturbing activities will occur on the OCS outside of the surveyed borrow areas. If any activities are deemed necessary outside of the borrow areas, Dare County must conduct a cultural resource survey and allow for BOEM review prior to any bottom disturbance activities. Archival research did not identify any other historic resources are in the project area. BOEM has coordinated with the North Carolina State Historic Preservation Office (SHPO). The North Carolina SHPO concurred with BOEM's no effects determination within the surveyed areas provided the buffer

areas were implemented. 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 so they can 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.

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.* The potential impacts on swimming sea turtles (loggerhead, leatherback, Kemp's ridley, and green), whales (humpback and North Atlantic right whales), Atlantic sturgeon, and shortnose sturgeon, and designated critical habitat for loggerhead sea turtles have been coordinated with the NMFS and are covered under the "Endangered Species Act Biological Opinion for Dredging within the Dare County (Consultation Number SER-2015-15988)" (<http://www.boem.gov/SER-2015-15988-BOEM-NC-BO>). Nesting and swimming sea turtles present in the project area during and after construction operations may be adversely affected. If a hopper dredge is used for the dredging operations, potential impacts to sea turtles (loggerhead and Kemp's ridley) could occur. To minimize the risk to swimming sea turtles, standard sea turtle protection conditions will be implemented such as the use of a state-of-the-art rigid deflector draghead at all times, inflow screens (if no UXO screening is present), abundance and relocation trawling, and observer monitoring of the operations. The potential impacts to nesting sea turtles (loggerhead, leatherback, Kemp's ridley, and green), piping plover and red knot are analyzed under the 2015 USFWS BO "Batched Biological Opinion- Shoreline Protection Projects Dare County, North Carolina". To minimize the risk to nesting sea turtles, standard sea turtle protection conditions will be implemented such as daily monitoring surveys, sand compaction monitoring, and lighting restrictions.

North Atlantic right whales, humpback whales, leatherback, green and hawksbill sea turtles, Atlantic and shortnose sturgeon occur only rarely in the project area and therefore the likelihood of adverse impacts are very low and the chances of the proposed action affecting them are discountable by the NMFS. Strike risk for whales is limited in a number of ways, including speed restrictions for the right whale between November 1 and April 30 (if a right whale has been spotted within 15 nautical miles of the activity or transportation route), observer monitoring during transit and dredging operations, mandatory 500 yard separation distance during transit and survey operations, and mandatory participation in the Early Warning System. The lessee has agreed to comply with NMFS's Sea Turtle and Smalltooth Sawfish Construction Conditions (BO Appendix A), NMFS's Vessel Strike Avoidance Measures and Injured or Dead Protected Species Reporting NOAA Fisheries Service, Southeast Region (BO Appendix B) and the 1995/1997 NMFS Regional Biological Opinion on Hopper Dredging Along the South Atlantic Coast (BO Appendix C).

Placement of material on the Dare County shoreline from new borrow area may affect, but is not likely to adversely affect, the piping plover and red knot. The effects on both species may be attributed to (1) decreased fitness and survivorship due to loss and degradation of foraging and

roosting habitat and (2) decreased fitness and survivorship from attempting to migrate to breeding grounds due to loss and degradation of foraging and roosting habitat. These impacts would be short-term and temporary and will not jeopardize either species existence. The USACE and locality have agreed to conditions as defined in the USFWS BO.

BOEM and the USACE have consulted with the USFWS and NMFS. This project was fully coordinated under the ESA and is in full compliance with the Act. 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 be reinitiated.

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

Dare 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 North Carolina Division of Coastal Management (DCM) Permit # 132-15 and the North Carolina Division of Water Quality 401 Water Quality Certification DWR # 15-0459 have been issued for the proposed action. The DCM Permit and Water Quality Certification both include mitigation and monitoring requirements that are applicable to the connected state activities.

The proposed action is in compliance with the Marine Mammal Protection Act. As outlined previously, 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 Dare County beaches.

Consultations and Public Involvement

The USACE issued a 30 day Public Notice for comment on September 18, 2015. In addition, the USACE and BOEM have coordinated with the USFWS, NMFS, NCDCM, NC Division of Water Quality and North Carolina SHPO in support of this leasing decision. Pertinent correspondence with Federal and state agencies are provided in Appendix A of the EA. After signature of this Finding of No Significant Impact (FONSI), the EA and FONSI will be posted to BOEM web site [<http://www.boem.gov/Non-Energy-Minerals/Marine-Minerals-Program.aspx>].

Conclusion

BOEM has considered the consequences of issuing a negotiated agreement to authorize use of OCS sand from the borrow areas (BAA and BAC) in the Town of Kitty Hawk Shore Protection Project. BOEM finds that the attached EA (Attachment 1) complies with the relevant provisions of the CEQ regulations implementing NEPA, DOI regulations implementing NEPA, and other Marine Mineral Program requirements. Appropriate terms and conditions enforceable by BOEM

will be incorporated into the negotiated agreement to avoid, minimize, and/or mitigate any foreseeable adverse impacts.

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.

Jill K. Lewandowski

Jill K. Lewandowski
Chief, Division of Environmental Assessment

7/6/2016

Date

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for*

Appendix A 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

Dare County will ensure that all operations at the Borrow Areas are conducted in accordance with the final approved Plan and all terms and conditions in this Lease, as well as all applicable statutes, regulations, orders and any guidelines or directives specified or referenced herein. Dare County will send BOEM a copy of the plans and its modification when publically available.

The dredging method from the Borrow Areas will be consistent with the project proposal analyzed in the supporting NEPA documents, and the method identified in other authorizing documents and all associated State and Federal permits. Dare County 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 will be delivered in a timely fashion in order to not delay Dare County's construction contract or schedule.

If dredging and/or conveyance methods are not wholly consistent with those evaluated in the relevant NEPA documents and environmental and cultural resource consultations, and those authorized by the USACE and NC State Permits, additional environmental review may be necessary. If additional NEPA analysis, consultations, coordination and/or Federal or State Permits would impact or otherwise require supplementation of the provisions of this Lease, an amendment may be required.

Prior to the commencement of construction, Dare County will provide a summary of the construction schedule. Dare County, at the reasonable request of BOEM or the Bureau of Safety and Environmental Enforcement (BSEE), will allow access, at the site of any operation subject to safety regulations, to any authorized Federal inspector and will provide BOEM or BSEE any documents and records that are pertinent to occupational or public health, safety, or environmental protection as may be requested.

Endangered Species Act (ESA) Compliance with NMFS Biological Opinion and Incidental Take Statement/Recommendations

BOEM is the lead agency on behalf of the Federal government to ensure the Project complies with all terms, conditions and recommendations of the NMFS Biological Opinion (SER-2015-15988, dated May 16, 2016, available at <http://www.boem.gov/Marine-Mineral-Projects/>). For all activities undertaken pursuant to the Project, Dare County agrees to implement all terms, conditions and recommendations in the NMFS Biological Opinion, which are incorporated by reference as terms and conditions of the Lease (extracts of which are provided in Lease

Attachments 2 and 3; to the extent the extracts or this Lease differ from or conflict with the Biological Opinion, the Biological Opinion governs). The County will instruct its contractor(s) to implement those mitigation terms, conditions, and measures required or recommended by NMFS in the Biological Opinion. The County will notify BOEM prior to conducting any activity with adequate time for BOEM to complete the required inspection of the turtle deflector. In addition to any reporting requirements or recommendations in the Biological Opinion, copies of all relevant correspondence, monitoring, and reporting must be provided to BOEM within 14 days of issuance at dredgeinfo@boem.gov. The County agrees to respond to all reasonable requests from and cooperate with BOEM and NMFS in meeting their obligations under the ESA.

Dare County acknowledges and agrees that, even where it is otherwise in compliance with the terms and conditions of this Lease and other required authorizations, incidental take of sea turtles or other endangered species by Dare County or its authorized contractors, within federal waters, may require suspension of this Lease by BOEM and reinitiation of consultation with NMFS. The amount and severity of incidental take that will trigger suspension, and the need for any such suspension or reinitiated consultation will be determined in the sole discretion of BOEM. Depending on the results of an assessment of the take or reinitiated consultation, BOEM in its sole discretion may reinstate this Lease, revoke and terminate this Lease, negotiate with Dare County an amendment to the existing Lease or enter into a new lease with additional terms and conditions to protect threatened or endangered species. Dare County understands and agrees on behalf of itself, its agents, contractors, and other representatives, that no claim, legal action in equity for damages, adjustment, or other entitlement against BOEM will arise as a result as a result of any suspension or related action.

Environmental Compliance

BOEM must ensure that the project complies with applicable environmental laws, including but not limited to ESA, Magnuson Stevens Act, Migratory Bird Treaty Act, NHPA, and CZMA. Dare County agrees to include in its Plan and implement all proposed avoidance and minimization measures identified and analyzed in the underlying NEPA documents related to this project: EA for the Town of Duck Shoreline Protection Project, June 2016; EA for the Town of Kitty Hawk Shore Protection Project, June 2016; and EA for the Town of Kill Devil Hills Shore Protection Project, June 2016.

To minimize the severity of benthic impact, Dare County will require dredge contractors to leave undisturbed areas to allow the relatively intact benthic communities between the furrows to be a source of colonists to adjacent disturbed areas (the undisturbed areas shall include cultural resource areas or the no dredge area in Borrow Area C)

Dare County is responsible for compliance with all Federal and State permits related to the Project, including but not limited to the Specific Conditions of the State Coastal Area Management Act and Water Quality Permits, which require among other things implementation of sediment compatibility and compaction monitoring, marine turtle conditions, and marine mammal special conditions,. Construction will not commence until the pre-construction requirements have been completed.

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

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

Dare County, after receiving notification from its contractor(s), will notify BOEM at dredgeinfo@boem.gov within 72 hours prior to the commencement of and no later than 24 hours after termination of operations at the Borrow Areas. BOEM will notify Dare County in a timely manner of any OCS activity within the jurisdiction of the DOI that may adversely affect Dare County's ability to use OCS sand for the Project.

Dredge Positioning

During all phases of the Project, Dare County 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. During dredging operations, Dare County and/or its agents 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, except for immediate concerns of safety, navigation risks or emergency situations. Should any booster pump, submerged pipelines or anchoring be anticipated outside of the borrow area, Dare County must obtain authorization from BOEM. The County will ensure a marine remote sensing survey is performed at the site of any booster pump, submerged pipeline locations, and/or any anchoring locations outside of the borrow area in advance of operations in or along the OCS prior to the activity and will provide the results of the survey to BOEM for review. If markers indicative of prehistoric or historic resources are identified during the survey, a minimum of a 100-ft buffer will be established around each potential prehistoric or historic resource. All bottom disturbing activities, including anchoring or spudding, in the vicinity of any such historic resources will be avoided and the buffer will be strictly maintained. To minimize the risk of inadvertent damage to undiscovered archeological or historic resources, Dare County shall ensure that no equipment is dragged outside the borrow area. Dare County may contact Brian Jordan, the BOEM Federal Preservation Officer, at (703) 787-1748 for further information on BOEM requirements for disturbances outside the borrow area. Dare County shall be responsible for any damage resulting from bottom disturbing activities not authorized outside of the approved borrow area on the OCS.

Dare County and/or its agents, in collaboration with the USACE, will provide BOEM all Dredging Quality Management (DQM) data acquired during the project using procedures jointly developed by the USACE's National Dredging Quality Management Data Program Support Center and BOEM. Dare County will submit the DQM data to dredgeinfo@boem.gov biweekly. A complete DQM dataset, Dredge Pack, or equivalent data will be submitted within 45 days of completion of the Project. If available, Dare County 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.

Submittal of Production and Volume Information

Dare County and/or its agents, in cooperation with the dredge operator, will submit to BOEM 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 will show dredge status: hoteling, dredging, transiting, or unloading. This map will be provided in PDF format.

Dare County and/or its agents will provide at least a biweekly update of the construction progress including estimated volumetric production rates to BOEM. 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

Dare County and/or its agents must 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

Dare County and/or its agents 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. 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. Dare County and/or its agents will notify BOEM of any occurrences and remedial actions and provide copies of reports of the incident and resultant actions at dredgeinfo@boem.gov.

Munitions and Explosives of Concern (MEC)

Due to information gained during NEPA analysis of the Borrow Areas, BOEM believes there is a possibility that the dredge contractor may potentially encounter some Munitions and Explosives of Concern (MEC) in the Borrow Areas. While BOEM highly recommends that the County requests MEC screening following the USACE Baltimore District's prevention measures (i.e., 1.25" screens on intakes and 0.75" screens on outflow basket), we defer to the County to render the final decision.

If any ordnance is encountered while conducting dredging activities in the OCS, Dare County and/or its agents will report the discovery within 24 hours to: Chief, BOEM Marine Minerals Branch, at (703) 787-1851 and dredgeinfo@boem.gov.

Bathymetric Surveys

Dare County and/or its agents will provide BOEM with pre- and post-dredging bathymetric surveys of the Borrow Areas. As agreed to by the County, the County will provide any future bathymetric surveys completed by the County (within the next 3 years) to BOEM. The pre-dredging survey will be conducted within the 60 days prior to dredging. The post-dredging survey will be conducted within 60 days after the completion of dredging. BOEM recommends that Dare County provide BOEM with additional bathymetric surveys within one (1) year and three (3) years following the completion of dredging. Hydrographic surveys will be performed in accordance with the USACE Hydrographic Surveying Manual EM 1110-2-1003, providing 100 percent seamless coverage using interferometric swath or multibeam bathymetry. All bathymetric data will be roll, pitch, heave, and tide corrected using accepted practices. Survey lines of the specific dredge area, within the Borrow Areas, will be established at intervals necessary to provide 100 percent coverage. Three equidistant cross-tie lines will be established parallel to the principal survey baseline. All survey lines will extend at least 100 meters beyond the edge of the dredge areas. All data will be collected in such a manner that post-dredging bathymetry 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 nature of post-dredging bathymetric change.

Surveys will be conducted using kinematic GPS referenced to 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 referenced to a water-level gauge deployed within the vicinity of the project area, 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).

Copies of post-dredging hydrographic data will be submitted to BOEM via dredgeinfo@boem.gov within thirty (30) days after each survey is completed. The delivery format for data submission is an ASCII file containing x, y, z data. The horizontal data will be provided in the North American Datum of 1983 (NAD '83) North Carolina State Plane, U.S. survey feet. Vertical data will be provided in the North American Vertical Datum of 1988 (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 individual survey points, and/or vessel track lines, as well as contour lines at appropriate elevation intervals. These plots will be in PDF format. Images and descriptions of side scan sonar or bathymetric anomaly targets will be included and identified on an index map. A methods and uncertainty analysis report, field notes, and metadata must be submitted to BOEM with the processed bathymetric data products.

Archaeological Resources

Onshore Prehistoric or Historic Resources

If Dare County discovers any previously unknown historic or archeological resources while accomplishing activity onshore, Dare County will notify BOEM of any finding. Dare County 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, and appropriate action for the resolution of adverse effects.

Offshore Prehistoric or Historic Resources

The 29 anomalies (listed in Lease) must be avoided during dredging operations by at least 300 feet. In the event that the dredge operators discover any archaeological resource while conducting dredging operations in the Borrow Areas or in the vicinity of pump-out operations, Dare County will require that dredge and/or pump-out operations be halted immediately within 305 m (1000 ft) of the area of discovery. Dare County will immediately report the discovery to Dr. Jill Lewandowski, Chief, Division of Environmental Assessment, BOEM, at (703) 787-1703 and the NC SHPO Office. Notification should address the exact location, where possible, the nature of material exposed by the project activities, and options for immediate archaeological inspection and assessment of the site(s). If investigations determine that the resource is significant, the parties will together determine how best to protect it.

Project Completion Report

A project completion report will be submitted by Dare County to BOEM within 120 days following completion of the activities authorized under this Lease. This report and supporting materials must be sent to: Chief, Marine Minerals Branch, BOEM Leasing Division (VAM-LD), 45600 Woodland Road, Sterling, Virginia 20166 and dredgeinfo@boem.gov. The report must contain, at a minimum, the following information:

- the names and titles of the project managers overseeing the effort (for Dare County, 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 areas 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 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 County;
- 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	
Inspections/Contract Administration	
Total	

- a table, an example of which is illustrated below, showing the various phases of Project 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 Dare County;
- digital appendices containing the as-built drawings, beach-fill cross-sections, and survey data;

- metadata appropriate to electronic deliverables; and
- any additional pertinent comments.

Environmental and Reporting Compliance

Dare County and/or their agents will designate in advance of construction a single point of contact responsible for facilitation of compliance with all Lease 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 Dare County to BOEM for an authorization to use OCS sand resources.