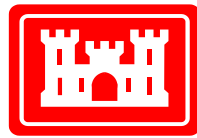


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**ATLANTIC COAST OF MARYLAND,
SHORELINE PROTECTION PROJECT**

2025 SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT



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Appendix B	2023 Weaver Shoal Bathymetric Survey
Appendix C	Air Quality Analysis
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SELECT ACRONYMS AND TERMS USED IN THIS REPORT

Acronym or Term	Explanation
BOEM	Bureau of Ocean Energy Management
CSDR	Coastal Storm Damage Reduction
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DNREC	Delaware Department of Natural Resources and Environmental Control
EA	Environmental assessment
EFH	Essential Fish Habitat
EIS	Environmental impact statement
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
LTSM	Long-Term Sand Management
MD SHPO	MD State Historic Preservation Officer
MD DNR	MD Department of Natural Resources
MGS	Maryland Geological Survey
MHT	Maryland Historic Trust
NAVD88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OCS	Outer Continental Shelf
ROD	Record of Decision
sEA	Supplemental Environmental Assessment
sEIS	Supplemental Environmental Impact Statement
USACE	U.S. Army Corps of Engineers
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
WEA	Wind Energy Area
WQC	Water Quality Certification

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) *Atlantic Coast of Maryland Shoreline Protection Project* (Atlantic Coast Project) is designed to reduce the risk of coastal flooding and erosion to coastal communities in Ocean City, Maryland (MD) from a one percent annual exceedance probability (“100-year”) storm. The project includes maintaining the beach from 4th Street to the MD/Delaware (DE) line (about 8.2 miles), with an additional 0.3-mile transition into DE that connects to the separate USACE *Delaware Coast from Cape Henlopen to Fenwick Island, Fenwick Island DE Coastal Storm Damage Reduction (CSDR) Project*. The MD portion of the nourished beach lies in Worcester County, MD. The transition area into DE lies in Sussex County. By design, periodic re-nourishment and maintenance of the beach are required to maintain the design level for storm damage reduction. Each re-nourishment provides an estimated four years of advanced nourishment so that the design level of storm damage reduction will be maintained for the next four years. After initial beach re-establishment by the State of MD in 1988, USACE has placed approximately 13 million (M) cubic yards of sand on Ocean City Beach within the construction template from the years 1990 to 2021 (“contract volume” in Table 1). USACE obtained this sand from Borrow Areas 2, 3, and 9 within state waters from 1990 to 2017, and from Weaver Shoal in 2021. USACE Baltimore District has requested to enter into a non-competitive negotiated three party agreement with the U.S. Department of Interior, Bureau of Ocean Energy Management (BOEM), and the Maryland Department of Natural Resources (MD DNR) for the use of sand resources from the Outer Continental Shelf (OCS) for the next scheduled periodic renourishment of the Atlantic Coast of Maryland Shoreline Protection Project located in the town of Ocean City, Maryland. The requested agreement would represent a continuation of the ongoing collaboration between USACE, BOEM, and DNR that was initiated in 2021, through BOEM Negotiated Agreement No. OCS-A 0536, executed 04 May 2021. The proposed request is nearly identical, asking for use of the same borrow area and removal of a similar quantity of OCS sand resources for the same shoreline protection project in 2025.

In March of 2024, USACE sent re-initiation / request for updated resource information letters to stakeholders based on past coordination efforts relevant to this project. Electronic letters were sent to the U.S. Environmental Protection Agency (USEPA), Maryland Department of the Environment (MDE), Maryland Historical Trust (MHT), National Oceanic and Atmospheric Administration (NOAA), U.S. Fish and Wildlife Service (USFWS), Delaware Division of Climate, Coastal and Energy, and several tribal nations (Appendix A). The purpose of this sEA is to review prior environmental documents and articulate what (1) new circumstances, (2) new information, (3) changes to the proposed action, or (4) impacts not previously analyzed that could result in significantly different effects from those previously analyzed. New information and recommendations were provided by EPA and MDE for this Supplemental Environmental Assessment (sEA).

Because USACE and BOEM evaluated multiple offshore borrow sites in 2008, this sEA focuses solely on dredging of Weaver Shoal for the action alternative. BOEM is a cooperating agency with USACE in preparation of this sEA for the proposed action in accordance with National Environmental Policy Act (NEPA) requirements, with USACE serving as the lead agency.

2.0 HISTORY OF BEACH RENOURISHMENT AT OCEAN CITY, MD

The Atlantic Coast Project places sand on the beach of Ocean City, generally every four years, to reduce risk of coastal storm damage. The next sand placement is anticipated by the year 2026-2027. USACE and MD Department of Natural Resources (MD DNR) have sometimes placed sand on Ocean City beach more frequently than every four years following severe storms. USACE and the Bureau of Ocean Energy Management (BOEM) prepared an Environmental Impact Statement (EIS) in 2008 evaluating four offshore shoals as sources of sand for the Atlantic Coast Project: Weaver Shoal, Isle of Wight Shoal, Shoal A, and Shoal B (also known as Bass Grounds and First Lump) and are incorporated herein by reference (USACE, 2008). Offshore shoals contain large quantities of suitable sand that can be cost-effectively obtained. The offshore shoals lie in federal waters (beyond three nautical miles from shore) on the Outer Continental Shelf.

Because sand sources in state waters had been exhausted and more than 11 years had elapsed since the 2008 EIS, USACE and BOEM prepared a Finding of No Significant Impact (FONSI) and Supplement Environmental Assessment sEA in 2020, incorporated herein by reference (USACE, 2020). In 2020, USACE and BOEM conducted a National Environmental Policy Act (NEPA) analysis that evaluated the potential effects of dredging sand from four offshore borrow sources located on the outer continental shelf to place on the beach in Ocean City, MD. The NEPA analysis recommended Weaver Shoal as the sand source for the 2021 beach re-nourishment cycle and up to one additional cycle. As of April 2025, the Atlantic Coast Project has utilized the Weaver Shoal for one dredging and placement event in 2021 due to its sufficient sand source and limited physical, natural, and human impacts.

During the winter of 2021, 937,437 cubic yards of sand was dredged from Weaver Shoal using a hopper dredge and placed along 44,500 linear feet of beach. Bathymetric surveys of the Weaver Shoal were completed in 2021 (pre-dredge) and 2023 (post-dredge). Bathymetric surveys were conducted based on prior mitigative commitments to ground truth whether established dredging guidelines to minimize long term dredging impacts to offshore shoal habitats are sufficient and confirm continued dredging at Weaver Shoal for future events. Surveys were conducted before and after and analyzed to re-assess the mitigative dredging constraints and plan future dredging. The findings of this analysis are considered new information for the purpose of this EA as stated below. Table 2 documents that the mitigative constraints were met during the 2021-2022 dredging event, and Section 2 states that these same constraints will continue to be applied for future events. Table 4 documents how removal of the extra volume will not exceed the 5% constraint. The results of the bathymetric surveys were used to confirm that the 2021-2022 dredge event was conducted in compliance with the Weaver Shoal dredging guidelines and constraints listed in Table 2. Provided that the conditions will stay the same and consistent within the dredging guidelines and constraints, Weaver Shoal can continue to be dredged for future beach re-nourishment events. The next beach re-nourishment event and dredging of Weaver Shoal is proposed to occur in the winter of 2026 - 2027.

Since completion of the 2020 FONSI and sEA, new information has been made available including 2023 bathymetric survey data and updated NEPA guidance. This sEA has been prepared to update this new information and reevaluate the potential effects on certain resources including bathymetry and physiography, air quality, natural seafloor habitats, benthic invertebrates, and cultural resources. Updated agency and tribal coordination, as well as outreach via a project re-initiation

letter sent via e-mail to the local and commercial fishing industry was completed in October 2024. Placement of sand on Ocean City Beach is not considered in this sEA because those impacts were considered in the 2008 EIS (USACE, 2008) and no changes are proposed from the construction practices and impacts evaluated in that document.

Table 1: Total History of USACE Beach Placement at Ocean City, Maryland

Year	Contract Volume* (cubic yards)	Estimated Actual Volume Dredged (cubic yards)
1990	2,199,000	2,419,000
1991	1,623,000	1,785,000
1992	1,592,000	1,751,000
1994	1,245,000	1,370,000
1998	1,290,000	1,419,000
2002	745,000	820,000
2006	932,000	1,025,000
2010	909,000	1,000,000
2014	902,000	992,000
2017	906,000	997,000
2021	894,544	937,437
Total	13,237,544	14,515,437

*Placed on beach within measured construction template.

3.0 DESCRIPTION OF PROPOSED ACTION

The USACE proposed action is to dredge sand from offshore shoals located on the outer continental shelf for the remaining life of the Atlantic Coast Project (through 2044). It is anticipated that the project would utilize Weaver Shoal for the next re-nourishment cycle and one additional cycle. Re-nourishment cycles generally occur every 4 years. The next re-nourishment is proposed for the winter of 2026-2027. It is expected that a hopper dredge comparable to those used in 2021 will be utilized for future dredging events. A detailed explanation of the proposed dredging operations is located in Section 2.1 of the 2020 sEA (USACE, 2020). Sand would be dredged in accordance with the Weaver Shoal dredging guidelines and constraints intended to maintain offshore shoal habitats over the long-term (Table 2). BOEM is authorized under Public Law 103-426 [43 United States Code (U.S.C.) 1337(k)(2)] to negotiate on a non-competitive basis the rights to outer continental shelf sand resources for shore protection projects. BOEM's action is to issue a negotiated agreement (Appendix D) authorizing use of the sand source areas at the request of USACE and the project sponsor, the MD Department of Natural Resources (MD DNR).

Measures to manage potential munitions and explosives of concern (MEC) found in the dredge area, as well as guidelines provided by the U.S. Coast Guard for vessel operations will be followed as identified in the 2020 sEA. Such actions include:

- Screening the intakes at the drag heads on the seafloor to prevent intake of any material with a diameter greater than 1.25 inches.

- Screening outflow onto the beach to prevent discharge of any material with a diameter greater than 0.75 inches.
- Use a robust quality control/quality assurance (QC/QA) program, which includes having an unexploded ordnance (UXO) technician on site during operations.

Based on past dredging events, no UXOs were discovered; therefore, the probability of UXO being found in this area and subsequently being placed on the beach is low. No new information on MEC was discovered during construction in 2021.

Table 2: Weaver Shoal Dredging Guidelines and Constraints.

Mitigation Constraint	Environmental/Fisheries Rationale	Mitigation Constraint Met Following 2021 Dredging
Dredge no more than about 5 percent of the total volume of any shoal	Maintain long-term overall shoal relief and size, and thus habitat value.	Yes, see Table 4 below.
Avoid the crest (within 500 feet of peak line)	Shoal habitat value contingent upon greater relief off seafloor and waves/currents at crest. Shoal crest may also play role in long-term shoal geomorphic maintenance.	Yes, crest was avoided.
Dredge evenly and thinly (generally no more than several feet) over a wide area. (Maximum removal thickness in one nourishment cycle would be 10 feet.)	Maintain overall shoal geomorphic character, avoid creation of pits (which could induce fine-grained sediment deposition or low oxygen conditions).	Yes, dredging was conducted evenly and thinly over a wide area.
Dredge no deeper than ambient depths of the adjacent seafloor	Avoid exposing underlying clay, silt, or gravel (which would change substrate conditions), avoid creation of pits (which could induce mud deposition or be prone to low oxygen conditions).	Yes, dredging was performed no deeper than the ambient depths of the seafloor.

4.0 TOTAL SAND VOLUME NEED RE-ESTIMATION

Volumes placed in the years 2002 to 2021 were less per re-nourishment cycle than those of the years 1990 to 1998. This occurred because initial establishment of the engineered beach in 1988 and the early 1990s required a substantial sand volume, as well as severe storms in the early 1990s. For the purposes of re-estimating future sand needs for this sEA, it is assumed that beach conditions characteristic of the present started in January 1999, and that each re-nourishment volume placed from 2002 onward thus effectively replaces the volume of sand eroded in the period of several years prior to that placement. For example, placement in 2002 provided sand to compensate for sand lost from the beach in the years 1999, 2000, 2001, and 2002.

The long-term record of the Atlantic Coast Project beginning in 1992 (after initial engineered beach establishment in 1990 and 1991) shows the contract volume averaging 1,046,172 cubic yards placed on the beach per re-nourishment cycle, and the volume of sand dredged from borrow sources averaged 1,145,715 cubic yards per re-nourishment cycle. Assuming that future re-nourishment would occur every four years at the volume of approximately 1.2M cubic yards (contract volume) in the years 2026, 2030, 2034, 2038, and 2042, then total future sand need within the construction template and dredging volume would be approximately 6M cubic yards (Table 3).

Dredging Individual Shoals

Table 2 stipulates that no more than 5 percent of the total volume of sand from any offshore shoal can be dredged. Total shoal volumes were provided in the 2008 sEIS. Table 4 shows the remaining amount of sand that can be dredged from each shoal as of year 2025.

Table 3: Total Shoal Volumes, Maximum Volumes Based on Dredging Constraints, and Remaining Volumes Following Dredge Events.

Volume (cubic yards)	Offshore Shoal			
	Weaver	Isle of Wight	A	B
Total Sand Volume from 2008 sEIS	93,000,000	136,000,000	103,000,000	50,000,000
Maximum 5 percent acceptable to dredge	4,650,000	6,800,000	5,150,000	2,500,000
Estimated actual volume dredged as of year 2025	937,437	0	0	0
Remaining amount acceptable to dredge	3,712,563	6,800,000	5,150,000	2,500,000

Based on the remaining amount of sand acceptable to be dredged from Weaver Shoal and the amount of actual dredged volume estimated for future re-nourishment cycles (both minimum and maximum estimations), it is estimated that sand from Weaver Shoal can be used for one more future re-nourishment event (2030) after the 2026 cycle. The possibility exists that parts of Weaver Shoal may have experienced shoaling since the shoal was dredged in 2021 and since completion of the 2023 bathymetric survey. Therefore, more (or less) sand may be present at Weaver Shoal than USACE has estimated.

A substantial portion of the sand from Weaver Shoal is very similar to the sand on the engineered beach at Ocean City. While these offshore shoals do contain a small percentage of gravel, dredging would be conducted to match as well as possible the mean grain size of the Ocean City engineered beach. Multiple sub-areas have been delineated on each shoal based on sand characteristics and their suitability for use on Ocean City beach (Figure 1). In 2021, sand was dredged evenly from all Weaver Shoal sub-areas. The contractor will determine which sub-areas to use prior to each

dredge event in coordination with USACE and BOEM and based on the results of the previous event's bathymetric survey data and the Weaver Shoal dredging constraints. All dredging activities will comply with the dredging constraints outlined in Table 2.

Bathymetric surveys of the offshore shoals will be conducted within one year following the completion of dredging. These surveys will provide a means to verify that dredging was conducted in accordance with the dredging constraints. Comparison of bathymetric records from multiple years will be conducted to determine whether dredging under the dredging constraints is effectively maintaining longer-term geomorphologic integrity of the offshore shoals, and thus their habitat values. Bathymetric records comparison will focus on overall coarse scale bathymetric character of the shoals. The dredging process is anticipated to leave small scale temporary furrows that would not be monitored, as those furrows would not pose a long-term threat to shoal geomorphic character.

In compliance with the dredging constraints and guidelines highlighted in this sEA as well as the 2020 sEA, USACE performed a before and after dredging bathymetric survey across the borrow area on Weaver Shoal in 2020 (Figure 1).

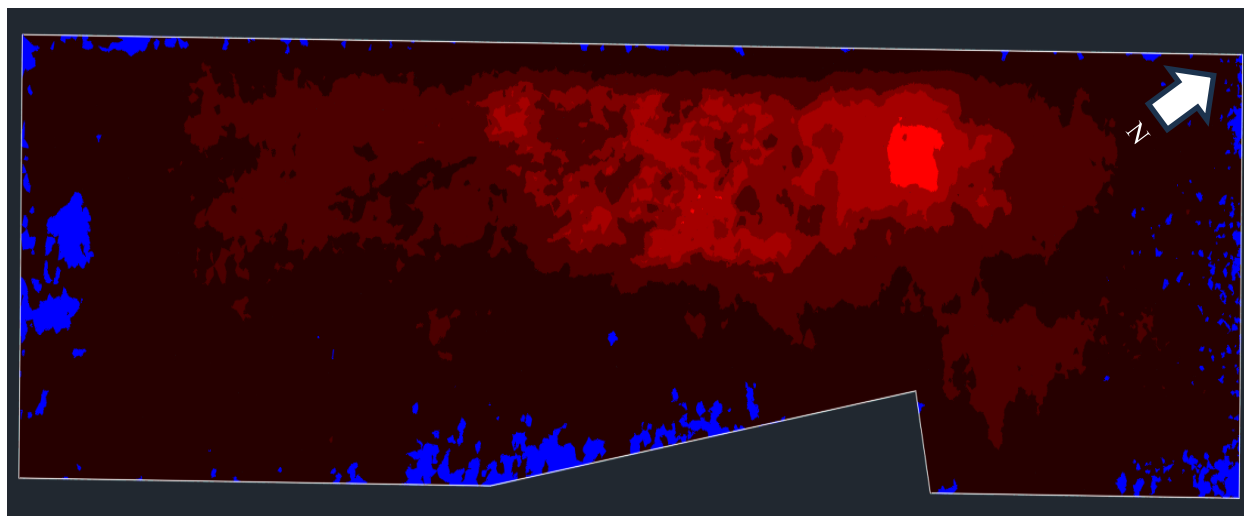


Figure 1: 2020 Before and After Survey of Dredging Event

Figure 1 displays an overlay of the before dredge survey (blue) and after dredge survey (red). The elevation differences were banded into 1 ft increments with the before and after dredging events overlaying one another. The dull/faint red areas demarcated on the figure indicate areas where sand was removed, i.e., the west-northwest section of the approved borrow area. Conversely, areas with brighter red indicate areas that were avoided during the dredging event.

In 2023, Weaver Shoal was surveyed again to assess where the sediment may have relocated across the Weaver Shoal borrow area. The 2023 bathymetric survey was overlaid across the 2020 after dredging survey. Figure 2 shows areas where the 2023 surface is greater than the 2020 after dredging surface. Color banding is in 1 ft increments with depths varying from 0 to 3 ft in difference. The darker blue represents the deepest areas of accretion. Accretion is observed to be greatest in areas where previous dredging occurred.

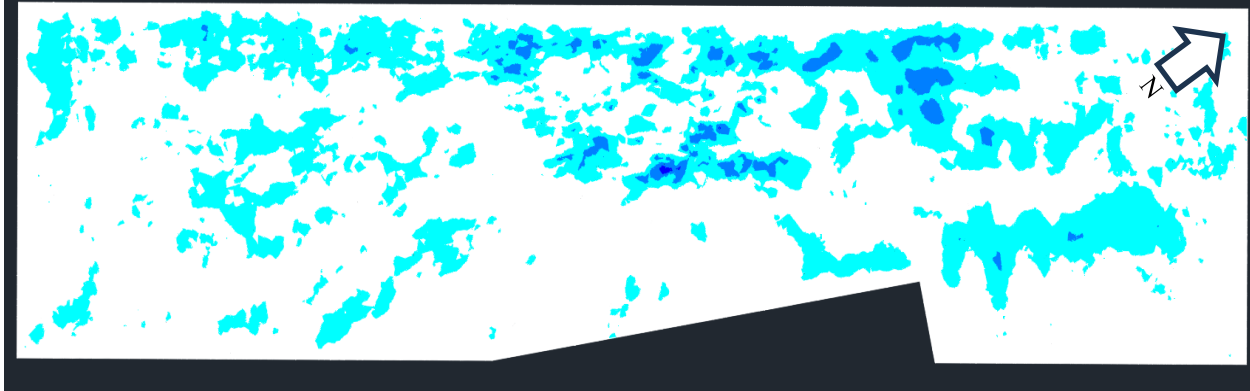


Figure 2: 2023 Bathymetric Survey Overlayed with 2020 After Dredging Event Survey

U.S. Wind Offshore Project

On December 3, 2024, the Department of the Interior announced the approval of the Maryland Offshore Wind Project Construction and Operations Plan. The project is located approximately 10 nautical miles offshore of Ocean City, Maryland, and approximately 9 nautical miles offshore Sussex County, Delaware. The approved 2024 COP includes up to 114 wind turbine generators, four offshore substations, a meteorological tower, and up to four offshore export cable corridors with subsea transmission cables making landfall in Sussex County, Delaware. (BOEM, 2025). (BOEM, 2025). Data acquisition associated with the US Wind Offshore project was leveraged to inform NEPA for this project, where applicable, given their close proximity to one another. On July 30, 2025, BOEM rescinded all Designated Wind Energy Areas. On August 7, 2025, the Department of Interior announced that BOEM would be launching a full review of wind energy regulations and reviewing existing energy projects, and on September 12, 2025 the United States filed motions in pending litigation to remand the Maryland Offshore Wind COP decision to BOEM, and vacate the COP approval. However, the approved borrow area at Weaver Shoal does not impact the proposed US Wind Offshore Project (OCS-A-0490). Weaver Shoal is approximately 3.7 miles west of the lease for the proposed wind farm. Figure 3 depicts the locations of Weaver Shoal, the wind energy project in the 2024 COP, and Ocean City, MD.

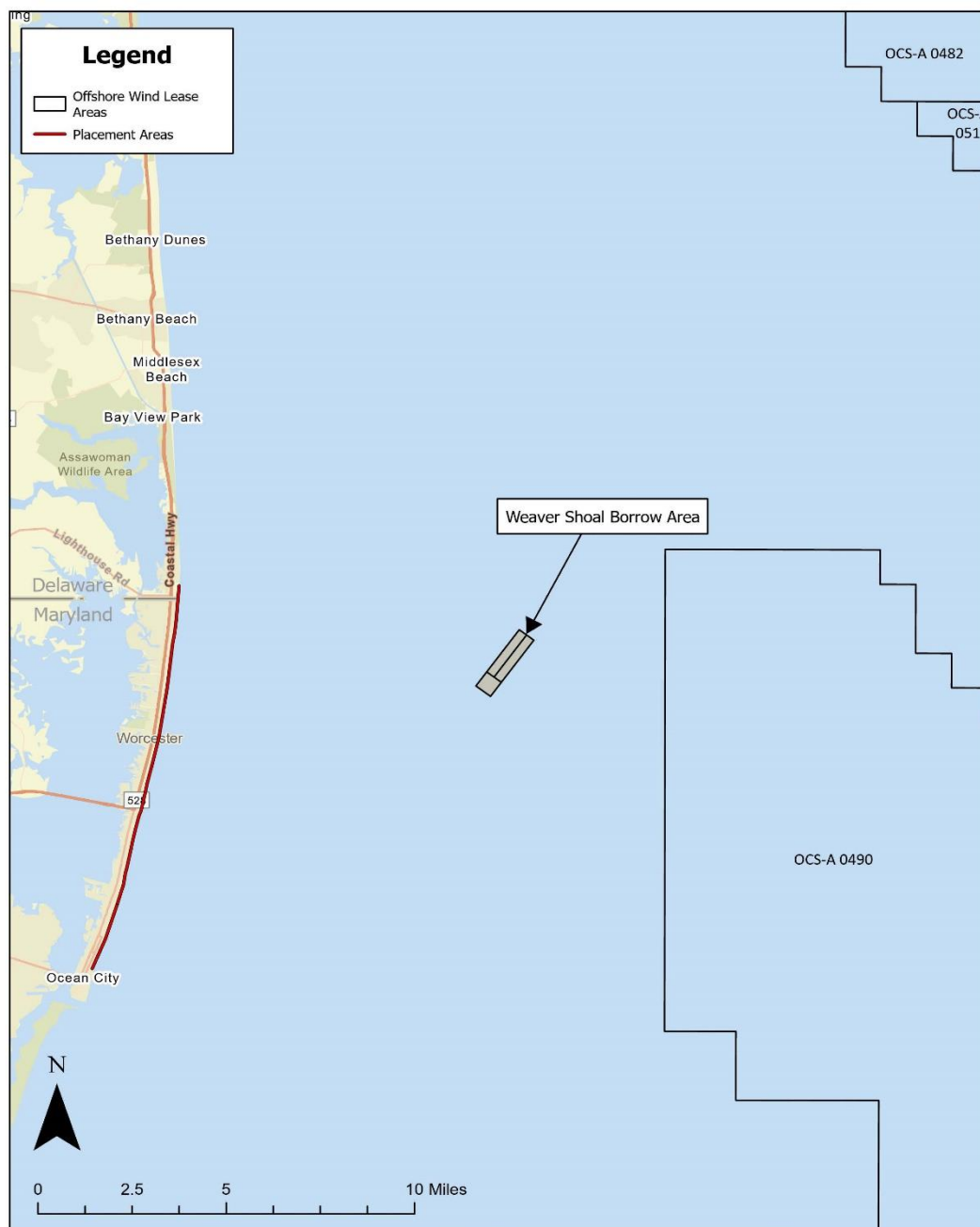


Figure 3: Weaver Shoal Borrow Area in reference to U.S. Wind Project

5.0 ALTERNATIVES CONSIDERED

The formulation of alternatives in the 2020 sEA focused on re-assessment of the four candidate shoals identified in the 2008 sEIS. In the 2020 sEA, Weaver Shoal was recommended as the offshore sand source for the next re-nourishment cycle (2021) and up to one more additional cycle after the 2026-2027 cycle based on the lower fishery value as compared to the Isle of Wight Shoal. Based on the results of the 2020 and 2023 bathymetric surveys and no changes in fishery value

(i.e., no new information from fisherman and no significant geomorphologic change based on analysis of bathymetric surveys), sand will continue to be dredged from Weaver Shoal for up to one more additional cycle after the 2026-2027 cycle. Therefore, this sEA only updates the NEPA effects analysis for the proposed dredging of Weaver Shoal. In the future, dredging of either the Isle of Wight Shoal, Shoal A, or Shoal B could be conducted pending re-assessment of engineering, environmental, and cost considerations. If other offshore borrow areas will be considered for dredging in the future, future NEPA analysis may be needed to update the effects analysis as a result of dredging the other borrow areas.

5.1 NO FEDERAL ACTION ALTERNATIVE

Under the no federal action, USACE would not dredge sand and beach placement would not occur for the Atlantic Coast Project at all in 2026. Resources discussed in Section 6.0 would not have a long-term positive or negative affect as no dredging would occur for the 2026 renourishment cycle. Effects to bathymetry and physiography, air quality, natural seafloor habitats, invertebrates, cultural resources and historical structures would remain consistent with the natural occurring processes.

5.2 RECOMMENDED ALTERNATIVE

Dredging Weaver Shoal for the next beach re-nourishment cycle (2026) and up to one additional cycle after the 2026-2027 cycle is the recommended alternative. Neither Isle of Wight nor Shoal A nor Shoal B would be dredged for the next one or more cycles. The recommended alternative would be conducted in accordance with the dredging guidelines and constraints identified in Table 2. The recommended alternative would not impose any time of year restrictions on dredging. Within one year following the completion of dredging for each nourishment event, USACE will conduct bathymetric monitoring of Weaver Shoal to verify how dredging impacted shoal evolution and whether the dredging constraints are maintaining shoal geomorphic integrity. USACE will conduct volumetric and depth change analyses, prepare seafloor change maps, and coordinate the findings with BOEM, the National Marine Fisheries Service (NMFS), and the MD Geological Survey (MGS). In particular, future monitoring should reassess whether or not dredging should be focused on the leading edge of the shoal but avoid the trailing edge as recommended by various investigators. Whether or not additional dredging constraints should be utilized in planning shoal dredging should also be considered in the future.

6.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section provides a summary of new information and/or changes since the 2020 sEA. Potential effects of the no-action and the recommended alternative are described to the degree applicable in terms of type (direct, indirect, cumulative; context; duration (short- or long-term) and intensity (negligible, minor, moderate, major). This sEA does not analyze the effects of all resources analyzed in the 2020 sEA if no new information on those resources has been made available since the 2020 sEA, or NEPA law or policy regarding how to analyze effects to those resources has not changed since 2020. This sEA only analyzes effects on bathymetry/physiography, air quality, natural seafloor habitats, benthic invertebrates, and cultural resources.

Coordination with federal and state agencies was conducted in March 2024 to determine if there was new information available or if the agencies had any comments on the upcoming nourishment event and the continued use of Weaver Shoal as the offshore borrow site. In response to the March 2024 agency re-initiation letters, USACE and BOEM included new information based on requests from USEPA and in response to updated air quality and greenhouse gas emission guidelines. USACE re-engaged the fishing community in October 2024 to reintroduce the project and its intent; however, no responses were received. USACE will hold a public meeting at a future date to discuss the project with the public, local community and stakeholders.

NMFS had no updated information or data to share and recommended that USACE follow the agreed-upon Essential Fish Habitat (EFH) conservation recommendations and best management practices from previous coordination efforts. NMFS also stated that no re-initiation of consultation under the Endangered Species Act (ESA) regarding potential impacts on federally listed species under their jurisdiction was necessary. Previous analysis and finding of effects of the Atlantic Coast Project by NMFS on shortnose sturgeon (*Acipenser brevirostrum*), sea turtles, and whales have not changed.

To maintain compliance with Section 106 of the National Historic Preservation Act (NHPA) for this sEA, USACE sent consulting party letters to the following state agencies and tribal nations: MD Historical Trust (MHT), Cayuga Nation, Chickahominy Indian Tribe, Chickahominy Indian Tribe Eastern Division, Delaware Nation, Delaware Tribe of Indians, Eastern Shawnee Tribe of Oklahoma, Monacan Indian Nation, Nansemond Indian Nation, Oneida Indian Nation, Oneida Nation of Wisconsin, Onondaga Nation, Pamunkey Indian Tribe, Rappahannock Indian Tribe, Seneca Nation, Seneca-Cayuga Tribe, Shawnee Tribe, St. Regis Mohawk Tribe, Stockbridge Munsee Community of Mohican Indians, Tonawanda Band of Seneca, Tuscarora Nation, and the Upper Mattaponi Tribe. The MHT maintained their view that the project would have no effect on cultural resources. The Delaware Nation requested to review the 2019 Phase I archaeological investigation report; however, did not provide comments. No other responses have been received.

6.1 BATHYMETRY AND PHYSIOGRAPHY

The 2008 sEIS provided a regional overview of the offshore shoals and ocean seafloor offshore of Ocean City. The bathymetry of the study area is essentially a smooth underwater plain with a number of large shoals that rise gently up from the seafloor.

Table 4: Weaver Shoal Characteristics.

Shoal (N to S)	Distance Offshore – Shoal Centroid (miles)	Area (square miles)	Base Length (miles)	Maximum Width (miles)	Relief Off Seafloor (feet)
Weaver Shoal	7.2	3.8	4.1	1.4	31

USACE conducted a bathymetric survey of Weaver Shoal in 2023 in accordance with the USACE Hydrographic Manual EM-1110-2-1003. Updated Weaver Shoal characteristics are shown in Table 5 based on the updated bathymetric survey. The highest elevation (where the shallowest waters occur) was -31 feet. The lowest elevations (where water depths are the greatest) was approximately -48 feet.

Direct Effects

Adverse direct effects to bathymetry are considered moderate due to the potential for dredging to create long furrows that could be deepened up to 10 feet. These effects could be short term or long-term depending on the rate of natural shoaling over time. The 2008 sEIS stated that furrows would gradually fill in. The sEIS also stated that overall, shoal height over the long-term would gradually be reduced by up to about 1 foot caused by a loss of up to 5 percent of each shoal’s volume, based upon the relationship of volume to height. In the 2020 sEA, USACE forecasted that overall shoal height may not change under certain conditions if the crest is avoided during dredging (one of the dredging constraints). To mitigate the adverse effects to offshore shoal bathymetry, the proposed action will be conducted in compliance with the dredging constraints identified in Table 2. Section 4 of this sEA describing the before and after bathymetric survey data confirms adherence to the mitigation requirements and supports some of these assumptions. USACE will include stipulations in the dredging contract that incorporate the constraints, and thus defines the boundaries of the area to be dredged and limits the thickness of material that can be removed from any one place during a single dredging cycle, effectively spreading impacts over a wide area during each cycle. Bathymetric surveys of the borrow area will be conducted within one year upon completion of dredging to verify that the borrow activity was conducted in accordance with dredging guidelines and constraints. The rate of sand to return to the shoal through naturally occurring processes depends on various environmental factors and continued use of the shoal. The dredging constraints should mitigate any adverse effects as confirmed in the analysis of data collected in association with the prior event.

Indirect Effects

Indirect effects may occur through increased turbidity within the water column. Localized changes in wave action may occur around the shifting elevation of the shoal.

6.2 AIR QUALITY

The U.S. Environmental Protection Agency’s (USEPA) “Green Book” lists Worcester County, MD, as being in attainment with the National Ambient Air Quality Standards (NAAQS), and Sussex County, DE as being in marginal non-attainment for 8-hour ozone (2008 standard) (USEPA, 2025). The waters of the project area lie offshore of the Eastern Shore Air Quality Control Region (AQCR 114) as designated by the USEPA. DE is also part of the Ozone Transport Region, which includes states in the northeast United States that must adhere to stricter conformity

thresholds for nitrogen oxides and volatile organic compounds, which are precursors for ozone. An air quality analysis conducted as part of the 2020 sEA found that emission quantities from the project were vastly smaller than the emission quantities of concern that would require a General Conformity Analysis. Therefore, while the project is expected to temporarily degrade air quality during each beach re-nourishment cycle, effects will not undermine regional efforts to improve air quality as captured in the State Implementation Plan. Accordingly, no mitigation measures that could reduce or minimize impacts of air pollution are required.

Additionally, in March 2024, USEPA suggested USACE perform an air quality analysis that analyzes emissions of carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) from construction equipment. This analysis was not conducted in the 2020 sEA. Results this analysis were completed in February 2025 and are located in Appendix C. USACE is aware that Executive Order (EO) 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, has been rescinded, and that on 29 July 2025, EPA announced a proposed rulemaking that will revisit regulations interpreting Section 202 of the Clean Air Act. The completed February 2025 analysis for this project is included unaltered.

Direct Effects

Direct emissions relative to the recommended alternative include emissions from construction equipment used to dredge the material as well as equipment used to place the pipeline. No long-term emissions are expected since the recommended alternative does not include the construction of buildings or equipment that would produce additional emissions after the conclusion of the project. The direct, short-term emissions calculated for the recommended alternative are not expected to substantially decrease air quality. The results of the air quality analysis indicate that short-term, direct project emissions could reach roughly 2,342 metric tons of carbon dioxide equivalents (CO₂e). The recommended alternative was compared to the State of MD and State of DE predicted emissions for 2025, i.e., 60 MMT CO₂e and 18 MMT CO₂e, respectively. Emissions estimated for the recommended alternative was 2,342 metric tons CO₂e. Calculated emissions in CO₂e is roughly 0.004 percent of the overall State of MD emissions goal for 2025, and 0.013 percent of the State of DE emissions goal for 2025. These percentages assume that the entire recommended alternative takes place in either the State of MD or the State of DE. However, project emissions will occur between both states resulting in a lower percentage. Therefore, the recommended alternative would not have a significant impact on air quality.

6.3 INVERTEBRATES

Invertebrates range from sessile (fixed position) organisms such as barnacles, to weakly mobile organisms such as mollusks, to highly mobile crustaceans. Benthic invertebrates are an important food source for many fish species and include animals that live in the substrate (infauna), such as worms and clams, as well as animals that live on the surface of the seafloor (epifauna), such as crabs. Invertebrates also include organisms that swim freely in the water column and that don't typically occur on the bottom known as pelagic invertebrates. The 2008 sEIS included information from multiple regional and shoal specific studies of animal life of the offshore shoal areas that had been conducted up to that time. Generally, these studies found that offshore shoals tend to possess lower numbers of benthic organisms, species, and biomass than adjacent deeper intershoal areas.

BOEM (USACE, 2020) contains findings of several investigations of the MD WEA conducted over the period of 2003-2012 that captured and photographed benthic invertebrates (BOEM, 2017). The western and southern portions of the MD WEA have ridge and swale topography and water depths similar to that of the offshore shoal area of interest. (Conversely, the eastern side of the MD WEA contains seafloor plains at greater depths). BOEM (USACE, 2020) reports 72 taxa of benthic infauna taken in trawl samples in the MD WEA. Benthic infauna were dominated by polychaetae worms. BOEM (2017) reports that 38 taxa of benthic epifauna were taken in trawl samples (BOEM, 2017).

Direct Effects

Overall impacts to invertebrates are anticipated to be similar to the forecast presented in the 2008 sEIS, which stated that dredging would destroy non-motile benthos by direct entrainment during dredging, or by burial concomitant with bottom slumping into furrows created by the dredge. Invertebrates that would be most impacted are ones that are immobile or nearly so during at least one life stage and are thus unable to escape from habitats subject to possible anthropogenic disturbance. Sand dollars, moon snails, and other abundant benthic invertebrates would be destroyed in large numbers. A variety of juvenile and adult shellfish of importance commercially would be impacted, including sea scallops, calico scallops, surf clams, and ocean quahogs. (These anticipated significant impacts to benthic invertebrates were one of the principal reasons the 2008 EIS was prepared.)

A review of benthic community recovery following dredging of sand by Brooks et al. (2006), reported “general faunal recovery in 3 months to 2.5 years” in the U.S. Gulf and Atlantic east coasts. This same review also revealed that while biomass recovered during these durations, taxonomic composition and species diversity could differ from pre-dredging conditions for more than 3-5 years. BOEM’s literature review of impacts associated with dredging offshore sand (2013) found that re-colonization with comparable total abundance and diversity occurs within several years of dredging.

The 2008 sEIS did not address impacts to egg masses of longfin squid that may be present on the offshore shoals. Because dredging would not occur during summer, it is anticipated that only negligible or minor impacts to longfin egg masses would occur (USACE, 2020).

Indirect Effects

Indirect impacts to invertebrates are anticipated to be negligible, as stated in the 2008 EIS. BOEM (BOEM, 2017), in a review of dredging impacts, found that benthos generally recover within several years to pre-project conditions on sandy substrates. Because the post-borrow substrate would remain sandy with good water quality and change in depth of only several feet, it is anticipated that benthos would largely recover to pre-project condition within a several year period.

6.4 CULTURAL RESOURCES AND HISTORICAL STRUCTURES

Section 106 consultation was initiated with the MHT and federally recognized tribal nations as part of the 2020 sEA. A Phase I maritime archaeological investigation was conducted in 2019 to identify potential submerged cultural resources within the Area of Potential Effects, including Weaver and Isle of Wight Shoals. Surveys were conducted in accordance with guidelines provided

by the Maryland State Historic Preservation Office (SHPO) in a letter dated December 4, 2018 (Appendix A). No remote-sensing targets resembling potential submerged cultural resources were documented during the investigation and borrow areas located within Weaver and Isle of Wight Shoals are located within modern reworked sandy marine deposits. The survey utilized a cesium marine magnetometer, a side-scan sonar, and a sub-bottom profiler to investigate the possible occurrence of shipwrecks, aircraft, and other submerged cultural resources. The MHT concurred with USACE's no effect determination, while the Delaware Tribe of Indians and the Nansemond Nation responded with an interest in consulting on the project. To this end, USACE continued coordination with the Delaware Tribe of Indians and the Nansemond Nation and sent the 2019 archaeological investigation for their review and comment. Neither tribe commented on the results of the archaeological investigation; and therefore, USACE considered the consultation sufficient and closed.

To maintain compliance with Section 106 of the NHPA for this sEA, USACE sent additional consulting party letters on November 12, 2024 to the following: MHT, Cayuga Nation, Chickahominy Indian Tribe, Chickahominy Indian Tribe Eastern Division, Delaware Nation, Delaware Tribe of Indians, Eastern Shawnee Tribe of Oklahoma, Monacan Indian Nation, Nansemond Indian Nation, Oneida Indian Nation, Oneida Nation of Wisconsin, Onondaga Nation, Pamunkey Indian Tribe, Rappahannock Indian Tribe, Seneca Nation, Seneca-Cayuga Tribe, Shawnee Tribe, St. Regis Mohawk Tribe, Stockbridge Munsee Community of Mohican Indians, Tonawanda Band of Seneca, Tuscarora Nation, and the Upper Mattaponi Tribe. The MHT maintained their view that the project would have no effect on cultural resources. The Delaware Nation requested to review the 2019 Phase I archaeological investigation report; however, did not provide comments. No other responses have been received.

Direct Impacts

Because the offshore shoals consist of modern reworked sediment, they do not contain intact archaeological resources associated with any precontact groups that may have lived in the project area at time of lower sea level. Landforms that could contain such features are being avoided. Additionally, no potential submerged cultural resources were documented during the 2019 investigation. Thus, the project has no potential to effect precontact archaeological resources. This was confirmed by the 2019 Phase I archeological survey. Prior to pipeline placement, the contractor will adhere to the standards put in place by MHT and the SHPO. Additional language will be added into the contract documents and specifications.

Another project component that could cause direct impacts to cultural resources is the placement of pipes that pump sand onto Ocean City beach and their associated anchor points. Composed of welded steel, the pipes are typically between 30 and 36 inches in diameter and can be between 2,000 and 3,000 feet long. These are positioned in four to five different locations perpendicular to the beach. In a letter dated December 4, 2018, USACE consulted with MHT regarding specific pipeline corridors. The letter states that,

“MHT understands the Corps does not plan to designate specific pipeline corridors which will be reused throughout the life of the project but will site these temporary pipelines on an as needed basis over a broad area of hard bottom. Four-to-five temporary pipeline placements are expected per renourishment episode with each

lasting less than two weeks and potentially impacting an area measuring up to 2000 ft x 100 ft. Therefore, MHT recommends that targeted pre-installation side scan sonar surveys are integrated into the overall project workflow to identify objects and areas for avoidance which represent or contain potential submerged archeological historic properties”.

The placements could cause a direct impact to cultural resources if they were placed on top of any shipwrecks or sunken craft; however, the pipe corridors are surveyed via multi-beam sonar prior to pipe placement. Additionally, the pipe corridors are only placed on smooth bottom where they have no likelihood of contacting any objects on the seafloor to ensure that the pipe is not damaged. Direct impacts to cultural resources from placement of pipes are not anticipated as the same routes are being proposed for the next renourishment cycle.

Indirect Impacts

While the proposed dredging would affect the bathymetric and geologic evolution of the offshore shoals from which dredging is conducted, no intact cultural or historic resources are known to be located in close proximity to the borrow areas. The seafloor in the vicinity of pipes through which sand would be pumped is naturally dynamic, and the pipes would not cause any indirect impacts beyond changes that would naturally occur. Thus, it is anticipated that there would be negligible indirect impacts to cultural resources. As stated in the section above, the same pipeline routes are being proposed for the next renourishment cycle.

7.0 COMPLIANCE WITH ENVIRONMENTAL STATUTES

Magnuson-Stevens Fishery Conservation and Management Act. USACE informally coordinated with NMFS Habitat & Ecosystem Services Division in March 2024. NMFS responded in an email on April 30, 2024, stating that the Division has no updated data to share relevant to the Atlantic Coast Project. As planning for this effort continues, NMFS requested that USACE continue to follow the agreed upon conservation recommendations and best management practices from previous coordination efforts in 2008 and 2020. Additionally, USACE sent re-initiation letters to the local and commercial fishing industry in October 2024. The outreach list was based on previous contact information from the 2020 sEA. No responses were received from any of the recipients.

Endangered Species Act (USFWS). On November 21, 2018, the U.S. Fish and Wildlife Service (USFWS) provided a Planning Aid Report to support USACE compliance with the Fish and Wildlife Coordination Act. The report concluded that there are no USFWS-listed species or critical habitat in Weaver Shoal. The Planning Aid Report is provided as an appendix of the 2020 sEA. Additionally, USACE coordinated with USFWS in March 2024 to request updated information and data as necessary relevant to the next re-nourishment cycle. USFWS responded in an email on June 4, 2024, recommending that USACE coordinate with NMFS for updated assessments. In addition, it was recommended that USACE update the USFWS Information for Planning and Consultation (IPaC) screening. The IPaC report identified the roseate tern (*Sterna dougallii dougallii*) as an endangered species that could occur in the project area. The 2020 sEA evaluated the effects of dredging Weaver Shoal on the roseate tern. No effect would occur to the roseate tern as a result of the proposed action.

Endangered Species Act (NMFS). NMFS stated that no re-initiation of consultation under the ESA regarding potential impacts on federally listed species under their jurisdiction was necessary. Previous analysis and finding of effects of the Atlantic Coast Project by NMFS on shortnose sturgeon, sea turtles, and whales have not changed.

Coastal Zone Management Act (CZMA). Both DE and MD determined that the proposed action is consistent with their state coastal zone management programs and are valid. A copy of the DE Coastal Zone Consistency Determination is located in Appendix D the 2020 sEA. The most recent MD consistency determination is contained within the MD Board of Public Works Wetlands License, provided in Appendix F in the 2020 sEA. Since the project scope within DE's coastal zone has not changed from that described in the conditional concurrence issued by the Delaware Coastal Management Program dated January 3, 2019, then that conditional concurrence would still be in effect.

Clean Water Act (CWA). Water Quality Certificates (WQC) pursuant to Section 401 of the CWA have been routinely obtained from the States of MD and DE for project actions in state waters. The MD WQC and Tidal Wetlands Authorization expires in March 2026. An updated authorization will be acquired by USACE as necessary and before the current permit expires. The current Delaware Department of Natural Resources and Environmental Control WQC and Subaqueous Lands Permit expire in 2029. The MD DNR is the holder of these DE permits and is responsible to obtain new ones when these expire. A copy of the MD WQC is in Appendix E of the 2020 sEA and a copy of the DE WQC is in Appendix G of the 2020 sEA. A copy of the MD Board of Public Works Wetland License is included in Appendix F of the 2020 sEA.

Because dredging of the offshore shoals would occur within federal waters, state standards of MD and DE do not apply. However, it is anticipated that all dredging within federal waters would conform to requirements of MD and DE WQCs. Because effects of the proposed action on the offshore shoals lie within the parameters of the CWA 404(b)(1) Analysis contained in the 2008 sEIS, no new 404(b)(1) Analysis for offshore shoal dredging was prepared for this sEA. The current WQC will need to be updated prior to construction of the next renourishment cycle anticipated for winter 2026-2027.

Outer Continental Shelf Lands Act. Under this act, the Secretary of Interior is responsible for the administration of mineral exploration and development of the outer continental shelf. BOEM was a cooperating agency in preparation of this sEA with USACE to ensure compliance with the Outer Continental Shelf Lands Act (as well as NEPA) (Appendix A of 2020 sEA). Prior to dredging offshore sands, USACE would obtain a lease from BOEM in accordance with BOEM procedures/requirements. BOEM published regulations on October 3, 2017, that define the process used by the Marine Minerals Program for issuing negotiated, noncompetitive agreements for sand, gravel, and shell resources on the OCS (<https://www.boem.gov/82-FR-45962/>).

Table 5. Permits obtained from State Agencies.

Permitting Agency	Permittee	Type of Permit	Permit Issued/Expires
Maryland State Clearinghouse	USACE Baltimore	MD20180413-0244	N/A
MD Department of Natural Resources/Maryland Department of the Environment	MD DNR	MD Wetlands License No 15-0988	10-Mar-2025 (issued)
Delaware Department of Natural Resources and Environmental Control	USACE Baltimore	Subaqueous Lands Permit (SP-432/18) Water Quality Certification (WQ-432/18)	5-Feb-29 (expires)
*Delaware Coastal Management Program - Federal Consistency Determination	USACE Baltimore	FC 2019.0003	3-Jan-19 (issued)

*Maryland's Federal Consistency Determination (approval) is embedded in the Maryland Water Quality Certification under the General Conditions section (Appendix A).

Table 6: Compliance of the Proposed Action with Statutes.

Federal Statutes	Level of Compliance
Anadromous Fish Conservation Act	Full
Archeological Resources Protection Act	Full
Clean Air Act	Full
Clean Water Act	Full
Coastal Barrier Resources Act	N/A
Coastal Zone Management Act	Full
Comprehensive Environmental Response, Compensation and Liability Act	N/A
Endangered Species Act	Full
Federal Water Project Recreation Act	Full
Fish and Wildlife Coordination Act	Full
Magnuson-Stevens Fishery Conservation and Management Act	Full
Marine Protection, Research and Sanctuaries Act	Full
Marine Mammal Protection Act	Full
Migratory Bird Treaty Act	Full
National Environmental Policy Act	Full
National Historic Preservation Act	Full
Noise Control Act	Full

Federal Statutes	Level of Compliance
Outer Continental Shelf Lands Act	Full
Rivers and Harbors Act	Full
Submerged Land Act	Full
Water Resources Planning Act	Full
Watershed Protection and Flood Prevention Act	Full

Table 7: Compliance of the Proposed Action with Executive Orders.

Executive Order (EO)	Level of Compliance
Protection and Enhancement of Environmental Quality (EO 11514)	Full
Protection and Enhancement of Cultural Environment (EO 11593)	Full
Floodplain Management (EO 11988)	Full
Recreational Fisheries (EO 12962)	Full
Indian Sacred Sites (EO 13007)	Full
Consultation and Coordination with Indian Tribal Governments (EO 13175)	Full
Responsibility of Federal Agencies to Protect Migratory Birds (EO 13186)	Full
Stewardship of the Oceans, Our Coasts and the Great Lakes (E.O. 13547)	Full

8.0 COORDINATION/PUBLIC INVOLVEMENT

Appendix A contains documentation of the agency coordination for this sEA including a copy of the study re-initiation notice and copies of responses from resource agencies.

A public notice of availability (NOA) announcing re-initiation of the next re-nourishment cycle was available for a 30-day public and agency review on the USACE, Baltimore District project website beginning on July 1, 2024. The NOA provided a website link from which the draft could be downloaded. No comments were received during the public involvement period.

9.0 CONCLUSION

Since completion of the 2020 FONSI and sEA, new information has been made available including 2023 bathymetric survey data and updated NEPA guidance. This new information warranted a reevaluation of certain resources including bathymetry/physiography, air quality, natural seafloor habitats, benthic invertebrates, and cultural resources. Updated agency coordination was also completed.

Based on the reevaluation of effects to the resources listed above, the recommended alternative would result in minor to moderate adverse effects to resources. Moderate direct adverse effects would occur to bathymetry; however, to mitigate these effects, the proposed action will be conducted in compliance with the dredging constraints. Direct, short-term air quality emissions calculated for the recommended alternative are not expected to decrease air quality. Approximately

500 acres of bottom habitat would be impacted each dredging cycle (about every 4 years). However, complying with the dredging constraints would minimize effects to offshore shoal geomorphic integrity. General faunal recovery typically occurs within 3 months to 2.5 years based on past BOEM studies and literature (2006 & 2013). Invertebrates that would be most impacted are ones that are immobile or nearly so during at least one life stage and are thus unable to escape from habitats subject to possible anthropogenic disturbance. Based on literature produced by BOEM (2013) re-colonization of benthic species with comparable total abundance and diversity occurs within several years of dredging.

Accordingly, it has been determined that the preparation of an updated EIS is not warranted. A FONSI was prepared, a copy of which is provided at the beginning of this sEA. It should be noted that the environmental reviews for this action were initiated and were substantially completed prior to the issuance of the Department of Defense National Environmental Policy Act Implementing Procedures on June 30, 2025. BOEM has served as a cooperating agency in the development of this sEA, has conducted its own independent review, and will prepare its own decision document prior to authorizing use of outer continental shelf sand resources for the Atlantic Coast Project.

Based on the results of the 2023 bathymetric survey, the 2021 dredge event was conducted in compliance with the Weaver Shoal dredging guidelines and constraints. USACE has determined that Weaver Shoal can continue to be dredged for the 2026 beach re-nourishment event and one additional event after the 2026-2027 cycle. USACE would conduct dredging in accordance with Weaver Shoal dredging guidelines and constraints such that only a minor loss of offshore shoal height and volume would occur over the long term. USACE is committed to monitoring the offshore shoals and evaluating impacts of dredging to ensure that long-term geomorphic integrity, and thus their habitat values, is maintained. USACE will coordinate monitoring with BOEM, NMFS, and MGS. In the future, the value of Weaver Shoal as fishing grounds will be re-assessed in making decisions over which offshore shoal to dredge.

10.0 REFERENCES

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