Record of Decision

Atlantic Shores Offshore Wind South Project
Construction and Operations Plan

July 1, 2024

U.S. Department of the Interior

Bureau of Ocean Energy Management

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

U.S. Department of Defense
U.S. Army Corps of Engineers

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
ADLS	Aircraft Detection Lighting System
AIS	Automatics Identification System
AOC	Area(s) of Concern
ASLF	ancient submerged landform features
BiOp	Biological Opinion
BOEM	Bureau of Ocean Energy Management
BPU	Board of Public Utilities
BSEE	Bureau of Safety and Environmental Enforcement
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COP	Construction and Operations Plan
CR	conservation recommendation(s)
CWA	Clean Water Act
DA	Department of the Army
DOI	Department of the Interior
EA	Environmental Assessment
EFH	essential fish habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FLiDAR	floating light and detection ranging buoy
FONSI	Finding of No Significant Impact
ft	foot/feet
GHG	greenhouse gas
GIS	geographic information system
GW	gigawatts
GWh	gigawatt hours
HDD	horizontal directional drilling

HPTP	historic property treatment plans
HRG	high-resolution geophysical
ITR	Incidental Take Regulation
ITS	Incidental Take Statement
km	kilometer(s)
LEDPA	least environmentally damaging practicable alternative
LOA	Letter of Authorization
m	meter(s)
met	meteorological
mi	miles
MMPA	Marine Mammal Protection Act
MPRSA	Marine Protection, Research, and Sanctuaries Act
MW	megawatts
MWh	megawatt hours
NARW	North Atlantic right whale
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NJDEP	New Jersey Department of Environmental Protection
NMFS	National Marine Fisheries Service
nmi	nautical mile(s)
NOA	notice of availability
NOAA	National Oceanic and Atmospheric Administration
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act
O&M	operations and maintenance
OREC	Offshore Wind Renewable Energy Certificate
OSS	offshore substations
OWEDA	Offshore Wind Development Act
PAM	Passive Acoustic Monitoring
POI	Point(s) of Interconnection
RDP	Post Review Discovery Plans
PSO	Protected Species Observers
RHA	Rivers and Harbors Act
ROD	Record of Decision
ROW	right-of-way
RTO	regional transmission organization
SAP	Site Assessment Plan
SAR	search and rescue
SFV	sound field verification
USACE	United States Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USFWS	United States Fish & Wildlife Service
WEA	Wind Energy Area
WTA	wind turbine area
WTG	wind turbine generators

1 INTRODUCTION

This document constitutes the Bureau of Ocean Energy Management's (BOEM), the National Ocean and Atmospheric Administration (NOAA) National Marine Fisheries Service's (NMFS),[1] and the United States Army Corps of Engineers' (USACE) joint record of decision (ROD) for the final Environmental Impact Statement (EIS) prepared for the Atlantic Shores Offshore Wind South (Atlantic Shores South) Project construction and operations plan (COP)[2] submitted to BOEM by Atlantic Shores Offshore Wind Project 1, LLC and Atlantic Shores Offshore Wind Project 2, LLC (hereinafter collectively referred to as Atlantic Shores).[3] The ROD addresses BOEM's action to approve the COP under Subsection 8(p)(4) of the Outer Continental Shelf Lands Act (OCSLA), 43 USC § 1337(p)(4)); NMFS' action to issue a Letter of Authorization (LOA) to Atlantic Shores Offshore Wind Project 1, LLC (Atlantic Shores Project 1 Company) under Section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA), as amended, 16 USC § 1371(a)(5)(A); and USACE's action to issue a permit under Section 10 of the Rivers and Harbors Act of 1899 (RHA; 33 USC § 403), Section 404 of the Clean Water Act (CWA; 33 USC § 1344), and Section 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA; 33 USC § 1413), as well as to grant permission under Section 14 of the RHA (33 USC § 408). This ROD was prepared following the requirements of the National Environmental Policy Act (NEPA), 42 USC §§ 4321 *et seq*. and 40 CFR §§ 1500-1508.[4]

BOEM prepared the final EIS with the assistance of a third-party contractor, ICF Jones & Stokes, Inc. The Bureau of Safety and Environmental Enforcement (BSEE), NMFS, USACE, U.S. Coast Guard (USCG), U.S. Environmental Protection Agency (EPA), and U.S. Fish and Wildlife Service (USFWS) were cooperating agencies during the development and review of the document. Cooperating state agencies included the New Jersey Board of Public Utilities (BPU), New Jersey Department of Environmental Protection (NJDEP), and New York State Department of State. The Advisory Council on Historic Preservation (ACHP) and National Park Service supported the environmental review as participating agencies.

NMFS received a request for authorization to take marine mammals incidental to construction activities related to the Project, which NMFS may authorize under the MMPA. NMFS' issuance of an MMPA incidental take authorization in the form of a LOA issued pursuant to the promulgation of Incidental Take Regulations (ITRs) is a major federal action and, in relation to BOEM's action, is considered a connected action (40 CFR § 1501.9(e)(1)). The purpose of NMFS' proposed action—which is based on Atlantic Shores Project 1 Company's request for authorization to take marine mammals incidental to specified activities associated with the

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1 For purposes of this ROD, NMFS is exercising authority under the Marine Mammal Protection Act to promulgate marine mammal incidental take regulations.

2 The COP submitted by Atlantic Shores Offshore Wind Project 1, LLC (Atlantic Shores Project 1 Company) and Atlantic Shores Offshore Wind Project 2, LLC (Atlantic Shores Project 2 Company) covers two offshore wind energy facilities (Project 1 and Project 2), known collectively as the Atlantic Shores Offshore Wind South Project (Project).

3 Partial assignment of Lease OCS-A 0499 to Atlantic Shores Offshore Wind Project 1, LLC and Atlantic Shores Offshore Wind Project 2, LLC (each holding 50% Record Title Interest in Lease OCS-A 0499) was approved by BOEM on April 18, 2022; https://www.boem.gov/sites/default/files/documents/renewable-energy/OCS-A-0549_OCS-A-0499-Lease-Segregation.pdf. Atlantic Shores Offshore Wind, LLC is the owner and an affiliate of both Atlantic Shores Offshore Wind Project 1, LLC and Atlantic Shores Offshore Wind Project 2, LLC.

4 The associated Final EIS was prepared using the 2020 Council on Environmental Quality (CEQ) NEPA Regulations. Therefore, this ROD follows the 2020 CEQ Regulations.

Project (i.e., pile driving and high-resolution geophysical (HRG) site and characterization surveys)—is to evaluate Atlantic Shores Project 1 Company's request pursuant to specific requirements of the MMPA and its implementing regulations administered by NMFS, considering impacts of the applicant's activities on relevant resources, and if appropriate, issue the authorization. NMFS needs to render a decision regarding the request for authorization due to NMFS' responsibilities under the MMPA (16 USC § 1371(a)(5)(A)) and its implementing regulations.

In addition to analyzing potential impacts resulting from BOEM's approval of the COP pursuant to Subsection 8(p)(4) of OCSLA, the final EIS also analyzes impacts resulting from the proposed action that are relevant to USACE permitting actions under Section 10 of the RHA, 33 USC § 403; Section 14 of the RHA, 33 USC § 408; Section 404 of the CWA, 33 USC § 1344; Section 103 of the MPRSA, 33 USC § 1413; and NMFS' action of promulgating regulations and issuing an LOA for incidental harassment of small numbers of marine mammals during construction activities to Atlantic Shores Project 1 Company under the MMPA, 16 USC § 1371(a)(5)(A). See also (40 CFR § 1501.9(e)(1)).

1.1 Background

In 2009, the U.S. Department of the Interior (DOI) announced final regulations for the Outer Continental Shelf (OCS) Renewable Energy Program, which was authorized by the Energy Policy Act of 2005.[5] The Energy Policy Act provisions implemented by BOEM provide a framework for issuing renewable energy leases, easements, and rights-of-way (ROWs) for OCS activities (see final EIS Section 1.3). BOEM's renewable energy program occurs in four distinct phases: (1) regional planning and analysis, (2) lease issuance, (3) site assessment, and (4) construction and operations. The history of BOEM's planning and leasing activities offshore New Jersey is summarized in Table 1-1.

Table 1-1: History of BOEM Planning and Leasing Offshore New Jersey Related to Lease OCS-A 0499

Year	Milestone
2009	In 2009, BOEM formed the BOEM/New Jersey Renewable Energy Task Force for coordination among affected federal agencies, Tribal Nations, state agencies, and local governments through the leasing process. The first Task Force meeting was held on November 24, 2009, with subsequent meetings occurring on May 12, 2010, November 19, 2010, December 18, 2012, January 28, 2014, April 22, 2014, and May 19, 2016. The BOEM/New Jersey Task Force was integrated into the New York Bight Task Force in December 2017.
2011	On April 20, 2011, BOEM published a Call for Information and Nominations for Commercial Leasing for Wind Power (hereinafter "Call") on the OCS Offshore New Jersey in the *Federal Register* (76 Fed. Reg. 22,130). The public comment period for the Call closed on June 6, 2011. In response, BOEM received 11 commercial indications of interest. After analyzing AIS data and holding discussions with stakeholders, BOEM removed OCS Blocks Wilmington NJ18–02 Block 6740, Block 6790 (A, B, C, D, E, F, G, H, I, J, K, M, N) and Block 6840 (A) to alleviate navigational safety concerns resulting from vessel transits out of New York Harbor.
2012	On February 3, 2012, BOEM published a Notice of Availability of a final EA and FONSI in the *Federal Register* (77 Fed. Reg. 5560) for commercial wind lease issuance and site assessment activities on the Atlantic OCS offshore New Jersey, Delaware, Maryland, and Virginia.

[5] Public Law No. 109-58, 119 Stat. 594 (2005).

Year	Milestone
2014	On July 21, 2014, BOEM published a Proposed Sale Notice in the *Federal Register* (79 Fed. Reg. 42,361) requesting public comments on the proposal to auction two leases offshore New Jersey for commercial wind energy development.
2015	On September 25, 2015, BOEM published a Final Sale Notice, which stated a commercial lease sale would be held November 9, 2015, for the WEA offshore New Jersey. The New Jersey WEA was auctioned as two leases. RES America Developments, Inc. was the winner of Lease Area OCS-A 0498 and US Wind Inc. was the winner of Lease Area OCS-A 0499.
2016	On March 17, 2016, BOEM received a request to extend the preliminary term[6] for commercial lease OCS-A 0499, from March 1, 2017, to March 1, 2018. BOEM approved the request on June 10, 2016.
2018	On January 29, 2018, BOEM received a second request to extend the preliminary term for commercial Lease Area OCS-A 0499, from March 1, 2018, to March 1, 2019. BOEM approved the request on February 14, 2018.
2018	On November 16, 2018, BOEM received an application from U.S. Wind Inc. to assign 100 percent of Lease Area OCS-A 0499 to EDF Renewables Development, Inc. BOEM approved the assignment on December 4, 2018.
2019	On April 29, 2019, BOEM received an application from EDF Renewables Development, Inc. to assign 100 percent of commercial lease OCS-A 0499 to Atlantic Shores Offshore Wind, LLC. BOEM approved the assignment on August 13, 2019.
2021	On March 25, 2021, Atlantic Shores submitted its COP for the construction and installation, operations and maintenance, and conceptual decommissioning of the Project within the Lease Area. Updates to the COP, supporting appendices, and GIS data were submitted in August, September, October, and December 2021; January, March, April, August, September, October, November, and December 2022; January, February, March, April, May, August, September, October, November, and December 2023; and January, February, March, and May 2024.
2021	On December 8, 2019, Atlantic Shores submitted a Site Assessment Plan (SAP) for commercial wind lease OCS-A 0499, which was subsequently revised on February 4, 2020; March 26, 2020; April 6, 2020; August 21, 2020; September 17, 2020; and November 16, 2020. BOEM approved the SAP on April 18, 2021. The SAP approval allowed for the installation of two met buoys.
2021	On September 28, 2021, BOEM received an application from Atlantic Shores to assign 100 percent interest of the southern portion of Lease Area OCS-A 0499 (which contains the Atlantic Shores South Project 1 and 2 areas) to Atlantic Shores Offshore Wind Project 1, LLC and Atlantic Shores Offshore Wind Project 2, LLC with each entity having a 50 percent interest.
2021	On September 30, 2021, BOEM published a Notice of Intent to Prepare an EIS for the Atlantic Shores Offshore Wind South Project offshore New Jersey.
2022	On April 19, 2022, BOEM approved a partial assignment that effected a segregation of lease OCS-A 0499. The northern portion of OCS-A 0499 was retained by Atlantic Shores Offshore Wind, LLC and given a new lease number (OCS-A 0549) by BOEM, while the southern portion retains the original lease number assigned by BOEM: OCS-A 0499.
2023	On May 18, 2023, BOEM published an NOA of the draft EIS in the *Federal Register* (88 Fed. Reg. 32,242), initiating a 45-day public comment period for the draft EIS.
2023	On December 1, 2023, USFWS issued a BiOp for Endangered Species Act (ESA)-listed species within its jurisdiction. On December 18, 2023, NMFS issued a BiOp for ESA-listed species and designated critical habitat within its jurisdiction.
2024	On May 31, 2024, BOEM published an NOA for a final EIS in the *Federal Register* (89 Fed. Reg. 47,174), initiating a minimum 30-day mandatory waiting period, during which BOEM is required to pause before issuing a ROD.
2024	On June 25, 2024, BOEM published an errata on its website that included certain edits to Chapter 2, Chapter 3, and Appendix G: Mitigation and Monitoring Table G-2. None of these edits are substantive or affect the analysis or conclusions in the final EIS.

Notes: AIS = Automatics Identification System; BiOp = Biological Opinion; EA = Environmental Assessment; FLiDAR = floating light and detection ranging buoy; FONSI = Finding of No Significant Impact; GIS = geographic information system; SAP = Site Assessment Plan; NOA = notice of availability; WEA = Wind Energy Area.

[6] Per 30 CFR § 585.235(a)(1), each commercial lease will have a preliminary term of 12 months, within which the Lessee must submit a Site Assessment Plan (SAP) or a combined SAP and COP. The preliminary term begins on the effective date of the lease.

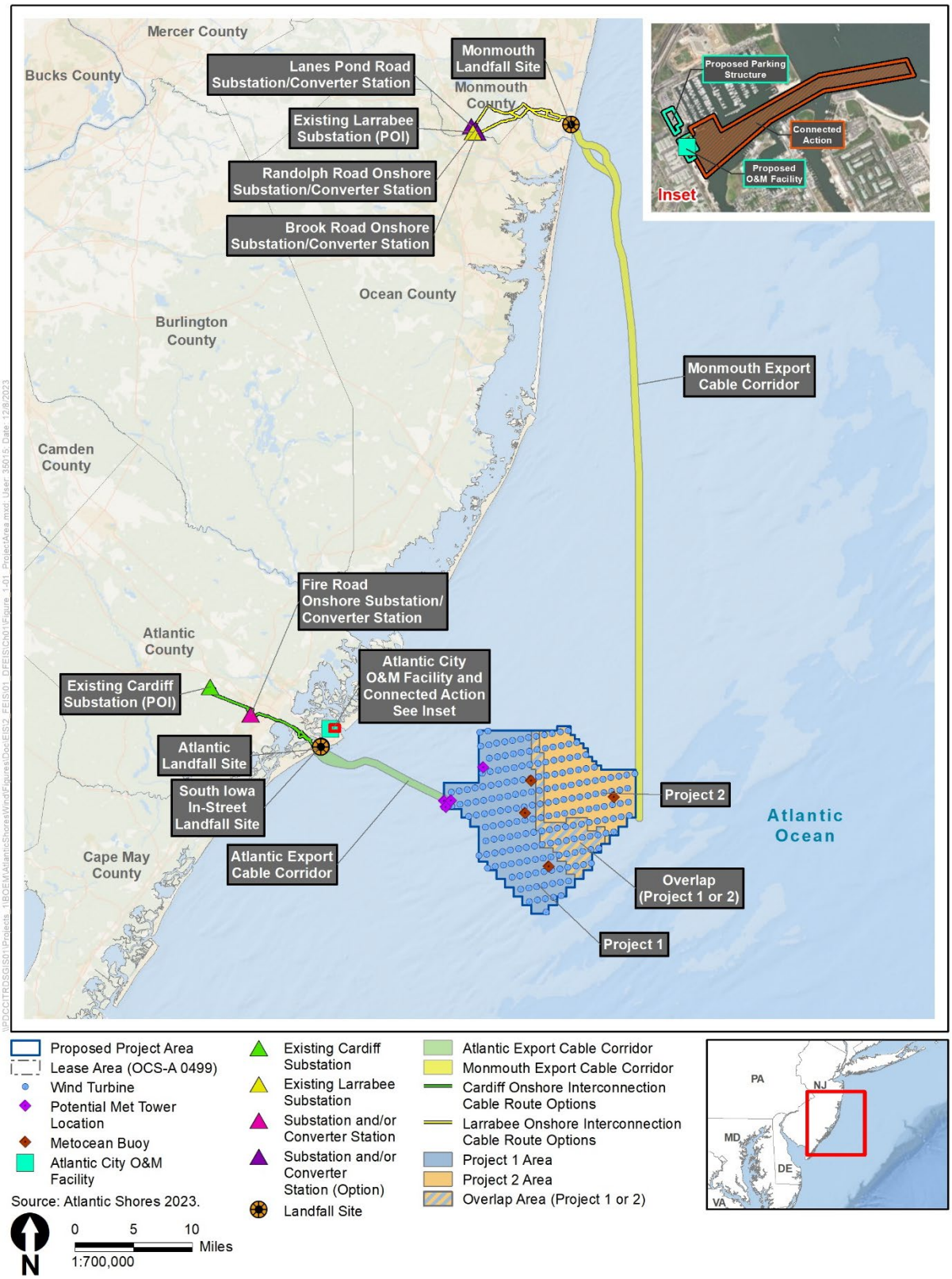

Figure 1-1: Proposed Project Area and Facilities

1.2 Authorities

The following summarizes BOEM's authority regarding the approval of the proposed Project; NMFS' authority to authorize the take, by harassment, of marine mammals incidental to the proposed Project; and USACE's authority under Section 10 of the RHA to authorize work and structures within navigable waters of the United States and structures affixed to the OCS,[7] and to authorize a permit under Section 404 of the CWA to allow for the discharge of dredged or fill material into waters of the United States. The final EIS includes a list of approvals, authorizations, and permits for the Project in Appendix A, Table A-1, and a description of consultations in Appendix A, Section A.2. The agencies adopting the final EIS are those agencies that have defined authorizations and permitting responsibilities for the Project itself or for effects related to the Project. The NMFS MMPA LOA is briefly discussed here; its decision and supporting rationale are discussed in Section 5.2 of this ROD. NMFS is serving as a cooperating agency pursuant to 40 CFR § 1501.8 because the scope of the Proposed Action and alternatives involves activities that could affect marine resources, and due to its jurisdiction by law and special expertise. Promulgation of an ITR and issuance of an LOA under the MMPA triggers independent NEPA compliance obligations, which may be satisfied by adopting the final EIS prepared by BOEM. USACE is serving as a cooperating agency pursuant to 40 CFR § 1501.8 because the scope of the Proposed Action, connected action, and alternatives involve activities that could affect resources and due to its jurisdiction by law and due to its special expertise pursuant to Section 10 of the RHA, Section 404 of the CWA, and Section 103 of the MPRSA. Issuance of Section 10, 404, and 103 permits, as well as Section 408 permission, requires NEPA compliance, which will be met via adoption of BOEM's final EIS and issuance of the ROD. The USACE permitting action is briefly discussed here; its decision and supporting rationale are discussed in Section 5.3 of this ROD. Other agencies either are not required to authorize the Project or have completed any authorizations that are required of them, or their actions are exempt from NEPA (e.g., EPA's Clean Air Act permitting) and are, therefore, reviewed separately.

1.2.1 BOEM Authority

The Energy Policy Act of 2005, Pub. L. No. 109-58, amended OCSLA, (43 USC §§ 1331 *et seq*.) by adding a new Subsection 8(p) to authorize the Secretary of the Interior (Secretary) to issue leases, easements, and ROWs on the OCS for renewable energy development, including wind energy projects.

The Secretary delegated to BOEM the authority to decide whether to approve COPs. Final regulations implementing OCSLA were promulgated by the Department of the Interior on April 29, 2009 (74 Fed. Reg. 19,637).[8] These regulations describe BOEM's process for determining

[7] Section 4(f) of the OCSLA of 1953, as amended, extended USACE's authority to prevent obstructions to navigation in navigable waters of the United States to artificial islands, installations, and other devices located on the seafloor to the seaward limit of the OCS. See 43 USC § 1333(e).

[8] On January 31, 2023, the Department of the Interior (Department) issued the "Reorganization of Title 30-Renewable Energy and Alternative Uses of Existing Facilities on the Outer Continental Shelf" direct final rule, which transferred existing safety and environmental oversight and enforcement regulations governing OCS renewable energy activities from 30 CFR Part 585, under BOEM's purview, to 30 CFR Part 285, under the purview of BSEE. Finally, the Department published the Renewable Energy Modernization Rule on May 15, 2024, which will become effective on July 15, 2024. This final rule not only finalized amendments to the Department's existing renewable regulations administered by BOEM, but also regulatory amendments previously proposed by BOEM that are now administered by BSEE.

whether to approve, approve with modifications, or disapprove the Atlantic Shores South COP. In accordance with Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Part 1501), BOEM served as the lead federal agency for the preparation of the EIS.

The Secretary's actions must comply with OCSLA Subsection 8(p)(4) (43 USC § 1337(p)(4)), which "imposes a general duty on the Secretary to act in a manner providing for the subsection's [various] goals."[9] According to M-Opinion 37067, "[t]he subsection does not require the Secretary to ensure that the goals are achieved to a particular degree, and she retains wide discretion to determine the appropriate balance between two or more goals that conflict or are otherwise in tension."[10]

1.2.2 NMFS Authority

Sections 101(a)(5)(A) and (D) of the MMPA allow NMFS to authorize, upon request, the incidental, but not intentional, take of small numbers of marine mammals, including incidental take by harassment, provided certain determinations are made and statutory and regulatory procedures are met. 16 USC § 1371(a)(5)(A), (D). To authorize the incidental take of marine mammals, NMFS evaluates the best available scientific information to determine whether the take would have a negligible impact on affected species or stocks and whether the activity would have an unmitigable adverse impact on the availability of the species or stocks for subsistence use (if applicable). NMFS cannot issue an authorization if NMFS finds the taking would result in more than a negligible impact on marine mammal species or stocks or would result in an unmitigable adverse impact on the species or stocks for subsistence uses. NMFS must also prescribe the permissible methods of take and other means of effecting the least practicable adverse impact on the species or stocks of marine mammals and their habitat, paying particular attention to rookeries, mating grounds, and other areas of similar significance. All incidental take authorizations include additional requirements pertaining to monitoring and reporting. Pursuant to Section 7(a)(2) of the Endangered Species Act (ESA), NMFS must also ensure that issuing the marine mammal incidental take authorization is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. 16 USC § 1536(a)(2).

For those marine mammal species that are listed under the ESA, NMFS Office of Protected Resources (NMFS-OPR) must also consult with NMFS Greater Atlantic Regional Fisheries Office (GARFO) Protected Resources Division (GARFO-PRD) to receive an exemption for the incidental take of those species and adhere to the requirements listed under Section 7 of the ESA to ensure that the MMPA-authorized incidental take is not likely to jeopardize the continued existence of those species. The ESA Section 7 consultation for this action resulted in issuance of a BiOp that concluded the proposed federal actions are not likely to jeopardize the continued existence of any ESA-listed species or result in the destruction or adverse modification of any critical habitat. The BiOp includes an Incidental Take Statement (ITS), which exempts an identified amount and extent of incidental take from the ESA Section 9 prohibitions on take subject to specified reasonable and prudent measures and implementing terms and conditions considered necessary and appropriate for that action agencies including NMFS OPR, to

[9] Sol. Op. M-37067, "Secretary's Duties under Subsection 8(p)(4) of the Outer Continental Shelf Lands Act When Authorizing Activities on the Outer Continental Shelf" (Apr. 9, 2021).

[10] M-Opinion 37067 at p. 5, http://doi.gov/sites/doi.gov/files/m-37067.pdf.

minimize the effects of take on ESA-listed marine mammals. The BiOp and ITS also identify measures, which may be specific to the regulatory authorities of each action agency, to ensure compliance with the MMPA ITA with respect to the incidental take of ESA-listed marine mammals (i.e., measures in the Proposed Action and those identified as reasonable and prudent measures and terms and conditions, respectively).

NMFS promulgated regulations to implement the MMPA (50 CFR Part 216), including application instructions for incidental take authorizations. Applicants must comply with these regulations, application instructions, and the MMPA. The decision being made by NMFS, including its decision to adopt BOEM's final EIS, is discussed in Section 5.2 of this ROD.

1.2.3 USACE Authority

This permit action is being undertaken through authority delegated to the District Engineer by 33 CFR § 325.8 pursuant to Section 10 of the RHA, Section 404 of the CWA, and Section 103 of the MPRSA. Section 10 of the RHA prohibits the obstruction or alteration of navigable waters of the United States without a permit from USACE. USACE also issues permits under Section 404 of the CWA authorizing the discharge of dredged or fill material into waters of the United States. In addition, USACE issues permits for the ocean disposal of dredged materials under Section 103 of the MPRSA. The applicant proposes to perform work and place structures below the mean high-water line of navigable waters of the United States, and to discharge fill below the high tide line of waters of the United States. These activities require authorization from USACE under Section 10 of the RHA and Section 404 of the CWA.

In addition, USACE received a request for a "Section 408 permission," which is required pursuant to Section 14 of the RHA for any proposed alterations that have the potential to alter, occupy, or use any federally authorized civil works projects. USACE's Regulatory and Section 408 Programs perform distinct but concurrent reviews for the Section 10, 404, and 103 permits and the Section 408 permission, respectively. USACE considers issuance of permits under these four delegated authorities a major federal action connected to BOEM's action (40 CFR § 1501.9(e)(1)).

USACE participated in development of the Atlantic Shores South EIS as a cooperating agency under the CEQ NEPA regulations. USACE has reviewed and evaluated the information in the final EIS, including all supplemental data provided, in accordance with 40 CFR § 1506.3, and 33 CFR § 325, Appendix B. USACE found the information to be a sufficient and accurate assessment. Therefore, USACE adopts the final EIS, as appropriate, for the purposes of NEPA, Section 404(b)(1) guidelines evaluation, and the public interest review required by 33 CFR § 325, Appendix B, 40 CFR § 230, and 33 CFR § 320.4.

2 PROPOSED PROJECT

2.1 Project Description

The Proposed Action would include the construction and installation, operation and maintenance (O&M), and eventual decommissioning of the Atlantic Shores South Project, which consists of two wind energy facilities (Project 1 and Project 2) on the OCS offshore of New Jersey. The Atlantic Shores South Project would include up to 200 wind turbine generators (WTGs)

(between 105 and 136 for Project 1, and between 64 and 95 for Project 2), up to 10 offshore substations (OSSs) (up to 5 in each Project), up to 1 permanent meteorological (met) tower (Project 1), up to 4 temporary meteorological and oceanographic (metocean) buoys (up to 3 metocean buoys in Project 1, 1 metocean buoy in Project 2), interarray and interlink cables for both Projects, 2 onshore substations, 1 O&M facility, and up to 8 transmission cables making landfall at two New Jersey locations (Figure 1-1). The proposed landfall locations are the Monmouth landfall in Sea Girt, New Jersey, with an onshore route to the existing Larrabee Substation Point of Interconnection (POI) and the Atlantic landfall in Atlantic City, New Jersey, with an onshore route to the existing Cardiff Substation, which would be upgraded to accommodate the Project's POI. Project 1 would have a capacity of 1,510 megawatt (MW). Project 2's capacity is not yet determined, but Atlantic Shores has a goal of 1,327 MW, which would align with the interconnection construction and service agreements Atlantic Shores intends to execute in the future with the regional transmission organization (RTO), PJM. The Project would be built within the range of the design parameters outlined in the Atlantic Shores South COP (Atlantic Shores 2024), as found on BOEM's webpage at https://www.boem.gov/renewable-energy/state-activities/atlantic-shores-south, subject to applicable mitigation measures.

2.2 Purpose and Need for the Proposed Action

Through a competitive leasing process under 30 CFR § 585.211, Atlantic Shores was awarded commercial Renewable Energy Lease OCS-A 0499 covering an area offshore New Jersey (Lease Area). Under the terms of the lease, Atlantic Shores has the exclusive right to submit a COP for activities within the Lease Area. Atlantic Shores submitted a COP to BOEM proposing the construction and installation, O&M, and conceptual decommissioning of two offshore wind energy facilities in the Lease Area in accordance with BOEM's COP regulations under 30 CFR §§ 585.620-585.628.

The Project would contribute to New Jersey's goal of 11 gigawatts (GW) of offshore wind energy generation by 2040 as outlined in New Jersey Governor's Executive Order No. 307, issued on September 21, 2022. Furthermore, Atlantic Shores' goal is to construct and operate two commercial-scale offshore wind energy facilities in the Lease Area to provide clean, renewable energy to the New Jersey. Project 1 is intended to fulfill BPU's September 10, 2020, solicitation for 1,200 to 2,400 MW of offshore wind capacity. The solicitation and a corresponding Offshore Wind Renewable Energy Certificate (OREC) allowance of 6,181 gigawatt hours (GWh) per year were awarded to Atlantic Shores Offshore Wind Project 1 via BPU on June 30, 2021, and redistributed on January 7, 2022 (BPU Docket No. QO21050824, In the Matter of the Board of Public Utilities Offshore Wind Solicitation 2 for 1,200 to 2,400 MW – Atlantic Shores Offshore Wind Project 1, LLC).[11]

The BPU Order identifies 1,509.6 MW of offshore wind energy as the required capacity of the Project and requires as a term and condition of the award that the Project be funded through OREC, as defined by the New Jersey Offshore Wind Economic Development Act of 2010. For each megawatt hour (MWh) delivered to the transmission grid, the Project will be credited and

[11] BPU's June 30, 2021, Order, Docket No. Q021050824, is available at: https://www.nj.gov/bpu/pdf/boardorders/2021/20210630/ORDER%20Solicitation%202%20Board%20Order%20ASOW%20Revised.pdf.

subsequently compensated for one OREC. Atlantic Shores Offshore Wind Project 1's annual OREC allowance is 6,181 GWh per year per the 2021 award by BPU. According to the BPU Order, unmet OREC allowances in a given year may be carried forward for up to two years to provide a reasonable opportunity to meet the Atlantic Shores South Project's total production. Atlantic Shores may not exceed the Annual OREC allowance of 6,181 GWh.

Atlantic Shores' goal is to routinely meet the OREC allowance in order to obtain the maximum possible annual payment from BPU for operation of Project 1. An annual output has yet to be determined for Project 2. Atlantic Shores has a goal of 1,327 MW for Project 2, which would align with the interconnection construction and service agreements Atlantic Shores intends to execute in the future with the RTO, PJM.

Based on BOEM's authority under the OCSLA to authorize renewable energy activities on the OCS, and Executive Order 14008; the shared goals of the federal agencies to deploy 30 GW of offshore wind energy capacity in the United States by 2030, while protecting biodiversity and promoting ocean co-use;[12] and in consideration of Atlantic Shores' goals, the purpose of BOEM's action is to determine whether to approve, approve with modifications, or disapprove Atlantic Shores' COP. BOEM will make this determination after weighing the factors in Subsection 8(p)(4) of the OCSLA that are applicable to plan decisions and in consideration of the above goals. BOEM's action is needed to fulfill its duties under the lease in accordance with the applicable regulations in 30 CFR Part 585, which require BOEM to make a decision on Atlantic Shores' plan to construct and operate two commercial-scale offshore wind energy facilities within the Lease Area.

NMFS, which has MMPA authorization decision responsibilities and is serving as a cooperating agency, has reviewed BOEM's purpose and need statement above, and has determined that it aligns with NMFS' purpose and need (more specific statements of the purpose and need for the actions by NMFS are found in Section 5.2 of this ROD).

USACE, which has Sections 10 and 14 RHA, Section 404 CWA, and Section 103 of the MPRSA authorization decision responsibilities and is serving as a cooperating agency, has reviewed BOEM's purpose and need statement above, and has determined that it aligns with USACE's purpose and need (more specific statements of the purpose and need for the actions by USACE are found in Section 5.3 of this ROD).

3 ALTERNATIVES

The final EIS considered a reasonable range of alternatives to the Proposed Action.[13] BOEM considered a total of 21 alternatives (inclusive of the No Action Alternative) during the preparation of the EIS and carried forward for detailed analysis 5 action alternatives and the No

[12] Fact Sheet: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs | The White House. Interior, Energy, Commerce, and Transportation Departments Announce New Leasing, Funding, and Development Goals to Accelerate and Deploy Offshore Wind Energy and Jobs: https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/. See also § 207 of E.O. 14008, Tackling Climate Change at Home and Abroad, 86 Fed. Reg. 7619 (Feb. 1, 2021) ("doubling offshore wind by 2030 while ensuring robust protection for our lands, waters, and biodiversity and creating good jobs").

[13] The Department of the Interior's implementing NEPA regulations state that the term "reasonable alternatives" "includes alternatives that are technically and economically practical or feasible and meet the purpose and need of the proposed action." 43 CFR § 46.420(b).

Action Alternative. The other 15 alternatives were not further analyzed because they did not meet the purpose and need or did not meet other screening criteria. Refer to final EIS, Section 2.2, *Alternatives Considered but not Analyzed in Detail.*

3.1 Alternatives Carried Forward for Detailed Analysis

Table 3-1: Description of Alternatives

Alternative	Description
Alternative A – No Action	Under Alternative A, the No Action Alternative, BOEM would not approve the COP, the Project's construction and installation, O&M, and eventual decommissioning would not occur, and no additional permits or authorizations for the Project would be required.[14] Any potential environmental and socioeconomic impacts, including benefits, associated with the Project as described under the Proposed Action would not occur. The current resource conditions, trends, and effects from ongoing activities under the No Action Alternative serve as the existing baseline against which all action alternatives are evaluated. Over the life of the proposed Project, other reasonably foreseeable future impact-producing offshore wind and non-offshore wind activities are expected to occur, which would cause changes to the existing baseline conditions even in the absence of the Proposed Action. The continuation of all other existing and reasonably foreseeable future activities described in the final EIS, Appendix D (*Ongoing and Planned Activities Scenario)* without the Proposed Action serves as the baseline for the evaluation of cumulative impacts.
Alternative B – Proposed Action	Under Alternative B, the Proposed Action (Figure 1-1), the construction and installation, O&M, and eventual decommissioning of the Atlantic Shores South Project, which consists of two wind energy facilities (Project 1 and Project 2) on the OCS offshore of New Jersey, would be built within the range of the design parameters outlined in the Atlantic Shores South COP (Atlantic Shores 2024), subject to applicable mitigation measures. The Atlantic Shores South Project would include up to 200 total WTGs (between 105 and 136 WTGs for Project 1, and between 64 and 95 WTGs for Project 2), up to 10 OSSs (up to 5 in each Project), up to 1 permanent met tower, and up to 4 temporary metocean buoys (up to 1 met tower and 3 metocean buoys in Project 1, and 1 metocean buoy in Project 2), interarray and interlink cables for both Projects, 2 onshore substations, 1 O&M facility, and up to 8 transmission cables making landfall at 2 New Jersey locations. The proposed landfall locations are the Monmouth landfall in Sea Girt, New Jersey with an onshore route to the existing Larrabee Substation POI and the Atlantic landfall in Atlantic City, New Jersey, with an onshore route to the existing Cardiff Substation, which would be upgraded to accommodate the Project's POI. Project 1 would have a capacity of 1,510 MW. Project 2's capacity is not yet determined, but Atlantic Shores has a goal of 1,327 MW, which would align with the interconnection construction and service agreements Atlantic Shores intends to execute with the RTO, PJM.[15]
Alternative C – Habitat Impact Minimization/Fisheries	Under Alternative C, the construction and installation, O&M, and eventual decommissioning of two wind energy facilities (Project 1 and Project 2) on the OCS offshore New Jersey would occur within the range of the design parameters outlined in the COP, subject to applicable mitigation measures. However, the layout and maximum number of WTGs and OSSs would be adjusted to avoid and

[14] Under the No Action Alternative, impacts on marine mammals incidental to construction activities would not occur. Therefore, NMFS would not issue the requested authorization under the MMPA to the Applicant.

[15] Atlantic Shores plans to enter into interconnection construction and service agreements with PJM to fund improvements to the onshore Cardiff and Larrabee substations, along with required grid updates. These agreements are distinct from PPAs (applicable in Connecticut, Massachusetts, and Rhode Island) and ORECs (applicable in Maryland, New Jersey, and New York). An OREC represents the environmental attributes of one MWh of electric generation from an offshore wind project. BPU awards ORECs through a competitive bidding process and they represent a long-term contract with the State of New Jersey.

Alternative	Description
Habitat Impact Minimization[16]	minimize potential impacts on important habitats. NMFS identified two areas of concern (AOCs) within the Lease Area that have pronounced bottom features and produce habitat value. AOC 1 is part of a designated recreational fishing area called "Lobster Hole." AOC 2 is part of a sand ridge (ridge and trough) complex. Alternative C1: Lobster Hole Avoidance Up to 16 WTGs, 1 OSS, and associated interarray cables within the Lobster Hole designated area as identified by NMFS would be removed. Alternative C2: Sand Ridge Complex Avoidance Up to 13 WTGs and associated interarray cables within the NMFS-identified sand ridge complex would be removed. Alternative C3: Demarcated Sand Ridge Complex Avoidance Up to 6 WTGs and associated interarray cables within 1,000 feet (ft) (305 meters (m)) of the sand ridge complex area identified by NMFS, but further demarcated through the use of the NOAA's Benthic Terrain Modeler and bathymetry data provided by Atlantic Shores, would be removed. Alternative C4: Micrositing This alternative, proposed by Atlantic Shores, consists of micrositing up to 29 WTGs[17], 1 OSS, and associated interarray cables outside of 1,000 foot (305 meter) buffers of ridges and swales within AOC 1 and AOC 2.
Alternative D – No Surface Occupancy at Select Locations to Reduce Visual Impacts[14]	Under Alternative D, the construction and installation, O&M, and eventual decommissioning of two wind energy facilities (Project 1 and Project 2) on the OCS offshore New Jersey would occur within the range of the design parameters outlined in the COP, subject to applicable mitigation measures. However, the no surface occupancy would occur at select WTG positions to reduce the visual impacts of the proposed Project. Alternative D1: No Surface Occupancy of Up to 12 Miles (19.3 Kilometers (km)) from Shore: Removal of Up to 21 Turbines This alternative would exclude placement of WTGs up to 12 miles (mi) (19.3 km) from shore, resulting in the removal of up to 21 WTGs from Project 1 and associated interarray cables. The remaining turbines in Project 1 would be restricted to a maximum hub height of 522 ft (159 m) above mean sea level (AMSL) and maximum blade tip height of 932 ft (284 m) AMSL. Alternative D2: No Surface Occupancy of Up to 12.75 Miles (20.5 Kilometers) from Shore: Removal of Up to 31 Turbines The up to 31 WTGs sited closest to shore would be removed, as well as the associated interarray cables. The remaining WTGs in Project 1 would be restricted to a maximum hub height of 522 ft (159 m) AMSL and maximum blade tip height of 932 ft (284 m) AMSL. Alternative D3: No Surface Occupancy of Up to 10.8 Miles (17.4 Kilometers) from Shore: Removal of Up to 6 Turbines The up to 6 WTGs sited closest to shore would be removed, as well as the associated interarray cables. The remaining WTGs in Project 1 would be restricted to a maximum hub height of 522 ft (159 m) AMSL and maximum blade tip height of 932 ft (284 m) AMSL.

[16] The number of WTGs that could be removed may be reduced if this alternative is selected and combined with another alternative that requires removal of additional WTG positions, and if that combination of alternatives would fail to meet the purpose and need, including any awarded offtake agreement(s).

[17] Micrositing would not materially change the grid layout. No microsited permanent structures would be placed in a way that narrows any linear rows and columns to fewer than 0.6 nautical mile (1.1 kilometers) by 1.0 nautical mile (1.9 kilometers), with the exception of WTGs AX01, AZ08, BA09, BC07, BE10, BE12, BE14, BE15, BE16, BF14, BF15, and BG13 as shown in Figure 2.1-10-C4 of the final EIS, or in a layout that eliminates two distinct lines or orientation in a grid pattern.

Alternative	Description
Alternative E – Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1[14]	Under Alternative E, the construction and installation, O&M, and eventual decommissioning of two wind energy facilities (Project 1 and Project 2) on the OCS offshore New Jersey would occur within the range of the design parameters outlined in the COP, subject to applicable mitigation measures. However, modifications would be made to the wind turbine array layout to create a 0.81 nautical-mile (1,500 meter) to 1.08 nautical-mile (2,000 meter) setback range between WTGs in the Atlantic Shores South Lease Area (OCS-A 0499) and WTGs in the Ocean Wind 1 Lease Area (OCS-A 0498) to reduce impacts on existing ocean uses, such as commercial and recreational fishing and marine (surface and aerial) navigation. There would be no surface occupancy along the southern boundary of the Atlantic Shores South Lease Area through the exclusion or micrositing of up to 4 to 5 WTG positions to allow for a 0.81 nautical-mile (1,500 meter) to 1.08 nautical-mile (2,000 meter) separation between WTGs in the Atlantic Shores South Lease Area and WTGs in the Ocean Wind 1 Lease Area.
Alternative F – Foundation Structures	Under Alternative F, the construction and installation, O&M, and eventual decommissioning of two wind energy facilities (Project 1 and Project 2) on the OCS offshore New Jersey would occur within the range of the design parameters outlined in the COP, subject to applicable mitigation measures. This includes a range of foundation types (of monopile and piled jacket, suction bucket, and gravity-based). To assess the extent of potential impacts of each foundation type for up to 211 foundations (inclusive of WTGs, OSSs, and 1 permanent met tower [Project 1]), this final EIS analyzes the following: Alternative F1: Piled Foundations The use of monopile and piled jacket foundations only is analyzed for the maximum extent of impacts. Alternative F2: Suction Bucket Foundations The use of the mono-bucket, suction bucket jacket, and suction bucket tetrahedron base foundations only is analyzed for the maximum extent of impacts. Alternative F3: Gravity-Based Foundations The use of gravity-pad tetrahedron and gravity-based structure foundations only is analyzed for the maximum extent of impacts.
Preferred Alternative	Under the Preferred Alternative, the construction and installation, O&M, and eventual decommissioning of two wind energy facilities (Project 1 and Project 2) on the OCS offshore New Jersey would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, modifications would be made to the wind turbine array layout to require the proposed OSSs, met tower, and WTGs to be aligned in a uniform grid with rows in an east-northeast to west-southwest direction spaced 1.0 nautical mile (nmi) (1.0 km) apart and rows in an approximately north to south direction spaced 0.6 nmi (1.1 km) apart; remove a single turbine approximately 150 to 200 ft (45.8 to 61 m) from the observed Fish Haven (Atlantic City Artificial Reef Site); microsite up to 29 WTGs[15], 1 OSS, and associated interarray cables outside of the 1,000 foot (305-meter) buffer of the ridge and swale features within the NMFS-identified AOC 1 and AOC 2, restrict the height of WTGs in Project 1 to a maximum hub height of 522 ft (159 m) AMSL and maximum blade tip height of 932 ft (284 m) AMSL, and provide a minimum 0.81-nmi (1,500 meter) setback between the WTGs in Atlantic Shores South and the WTGs in Ocean Wind 1 (Lease Area OCS-A 0498) by removing two WTGs and micrositing one WTG from Project 1. The total number of permanent structures constructed (WTGs, OSSs, and/or met tower) may not exceed 197.

3.2 Environmental Consequences of Alternatives

Table 3-2 summarizes and compares the impacts from the proposed Project under each action alternative assessed in Chapter 3 of the final EIS. Under the No Action Alternative, BOEM

would not approve the COP and any potential environmental and socioeconomic impacts associated with the Project, including both adverse impacts and benefits, would not occur.[18] However, as described under the cumulative impact analysis in Chapter 3, impacts from other activities could still occur.

[18] As part of the proposed Project, Atlantic Shores intends to develop a shoreside parcel in Atlantic City as an O&M facility. BOEM and USACE have determined that the dredging work and repair activities for the bulkhead repair are connected actions. Atlantic Shores will complete maintenance dredging for the O&M facility under an existing Nationwide Permit #3 as approved by USACE (CENAP-OPR-2021- 0573-95) and NJDEP Dredge Permit No. 0102-20-0001.1 LUP 210001 and issued to the Atlantic City municipal government. The repair activities for the bulkheads will be permitted separately through USACE by Atlantic Shores Nationwide 13 Permit pursuant to CWA Sections 10 and 404.

Table 3-2: Summary and Comparison of Impacts by Action Alternative with No Mitigation Measures[19]

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
3.4.1 Air Quality	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **minor to moderate adverse** impacts on air quality. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all other planned activities (including other offshore wind activities) would result in **minor to moderate adverse** impacts due to emissions of criteria pollutants, volatile organic compounds, hazardous air pollutants (HAPs), and greenhouse gases (GHG), mostly released during construction and installation and decommissioning, and **minor to moderate beneficial** impacts on regional air quality after offshore wind projects are operational.	*Proposed Action:* The Proposed Action would have **minor to moderate adverse** impacts attributable to air pollutant, GHG emissions and accidental releases. The Project may lead to reduced emissions from fossil-fueled power-generating facilities and consequently **minor to moderate beneficial** impacts on air quality and climate. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would result in **minor to moderate adverse** impacts and **minor to moderate beneficial** impacts.	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor to moderate adverse** and **minor to moderate beneficial**. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor to moderate adverse** and **minor to moderate beneficial**. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor to moderate adverse** and **minor to moderate beneficial**. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative F:* Emissions from construction and installation of different foundation types would not differ substantially among the sub-alternatives and would be similar to the Proposed Action. The impact magnitude would remain **minor to moderate adverse** and **minor to moderate beneficial**. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Preferred Alternative:* This alternative could have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor to moderate adverse** and **minor to moderate beneficial**. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.4.2 Water Quality	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **moderate adverse** impacts on water quality.	*Proposed Action:* The Proposed Action would result in **moderate adverse** impacts on water quality primarily due to sediment resuspension, discharges, and accidental releases. The impacts are likely to be temporary or small in	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse**.	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse**.	*Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse**.	*Alternative F:* Water quality impacts from construction and installation of different foundation types would not differ substantially among the sub-alternatives and would be similar to the Proposed Action. The	*Preferred Alternative:* This alternative could have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse**.

[19] All sub-alternatives were deemed to have similar impacts unless otherwise stated within the applicable column.

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	Cumulative Impacts of the No Action Alternative: The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **moderate adverse** impacts primarily driven by the unlikely event of a large-volume, catastrophic release.	proportion to the geographic analysis area. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **moderate adverse** primarily due to short-term, localized effects from increased turbidity and sedimentation due to anchoring and cable emplacement during construction, and alteration of water currents and increased sedimentation during operations due to the presence of structures.	*Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	impact magnitude would remain **moderate adverse**. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.5.1 Bats	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **negligible** impacts on bats. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **negligible** impacts on bats because bat presence on the OCS is anticipated to be limited and onshore bat habitat impacts are expected to be minimal.	*Proposed Action:* The Proposed Action would result in **negligible** impacts on bats. The most significant sources of potential impact would be collision mortality from operation of the offshore WTGs (although BOEM anticipates this to be rare because offshore occurrence of bats is low) and potential onshore removal of habitat. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **negligible**. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **negligible**. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **negligible**. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative F:* This alternative would not change the number of structures within the OCS, and thereby would not have the potential to significantly reduce or increase impacts on bats. The overall impact level would be the same as for the Proposed Action: **negligible**. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Preferred Alternative:* This alternative could have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **negligible**. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
		offshore wind activities, would be **negligible**.					
3.5.2 Benthic Resources	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **moderate adverse** impacts on benthic resources. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **moderate adverse** impacts from habitat degradation and conversion and **moderate beneficial** impacts from emplacement of structures (habitat conversion to hard substrate).	*Proposed Action:* The Proposed Action would result in **moderate adverse** impacts from habitat disturbance; permanent habitat conversion; and behavioral changes, injury, and mortality of benthic fauna. **Moderate beneficial** impacts would result from new hard surfaces that could provide new benthic habitat. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **moderate adverse** and **moderate beneficial**.	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. The removal, or micrositing of up to 29 WTGs and 1 OSS under Alternative C would result in a proportional decrease in the amount of electromagnetic field (EMF) and noise impacts and benthic habitat disturbance and conversion related to the installation of foundations, interarray cables, and scour protection. With Alternatives C1 and C2, the Project could avoid impacts on one or both (if Alternatives C1 and C2 were combined) NMFS AOCs, both of which have pronounced bottom features and produce habitat value. Although impacts on benthic resources would be reduced under Alternative C, overall impacts on benthic resources would be similar to those under the Proposed Action: **moderate adverse** impacts, with some **moderate beneficial** impacts. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. The removal of up to 31 WTGs under Alternative D would result in a proportional decrease in the amount of EMF and noise impacts and benthic habitat disturbance and conversion related to the installation of foundations, interarray cables, and scour protection. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** impacts, with some **moderate beneficial** impacts. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as the Proposed Action.	*Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action. The removal of up to 5 WTGs under Alternative E would result in a proportional decrease in the amount of EMF and noise impacts and benthic habitat disturbance and conversion related to the installation of foundations, interarray cables, and scour protection. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** impacts, with some **moderate beneficial** impacts. Cumulative Impacts of Alternative E: Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as the Proposed Action.	*Alternative F:* Alternative F1 would result in similar impacts as the Proposed Action from installing only piled foundations: **moderate adverse** impacts, with some **moderate beneficial** impacts. Under Alternatives F2 and F3, there would be no underwater noise impacts on benthic resources due to impact pile driving. The avoidance of impact pile-driving noise impacts would reduce overall construction and installation impacts on benthic resources under Alternatives F2 and F3 compared to the Proposed Action. Alternatives F2 and F3 would avoid pile-driving noise impacts from installing suction bucket and gravity-based foundations but would result in increased habitat conversion from larger foundations. The overall impact level for Alternatives F2 and F3 would be **minor adverse** impacts. Due to the reduction in scour protection and the beneficial hard-bottom habitat it provides, Alternatives F2 and F3 could include only **minor beneficial** impacts. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from	*Preferred Alternative:* This alternative could have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** impacts with some **moderate beneficial** impacts. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
			offshore wind activities, would be the same as the Proposed Action.			ongoing and planned activities, including the connected action and other offshore wind activities, would be **moderate adverse** and **moderate beneficial**.	
3.5.3 Birds	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **minor adverse** impacts on birds primarily through construction of ongoing activities and climate change. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **moderate adverse** impacts on birds due to habitat loss from increased onshore construction and interactions with offshore developments, and **minor beneficial** impacts because of the presence of offshore structures.	*Proposed Action:* The Proposed Action would result in **moderate adverse** impacts on birds. The most significant sources of potential impact would be collision mortality from operation of the offshore WTGs and long-term but minimal habitat loss and conversion from onshore construction. The Proposed Action would also result in potential **minor beneficial** impacts associated with foraging opportunities for marine birds. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **moderate adverse**, as well as **minor beneficial**, primarily through the permanent impacts from the presence of structures.	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** impacts and **minor beneficial** impacts. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** impacts and **minor beneficial** impacts. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** impacts and **minor beneficial** impacts. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative F:* This alternative would not change the number of structures within the OCS, and thereby would not have the potential to significantly reduce or increase impacts on birds. The overall impact level would be the same as for the Proposed Action: **moderate adverse** impacts and **minor beneficial** impacts. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Preferred Alternative*: This alternative could have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** impacts and **minor beneficial** impacts. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.5.4 Coastal Habitat and Fauna	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **moderate adverse**	*Proposed Action:* The Proposed Action would result in **moderate adverse** impacts on coastal habitats and fauna due to the developed and urbanized	*Alternative C:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for coastal	*Alternative D:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for coastal	*Alternative E:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for coastal	*Alternative F:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for coastal	*Preferred Alternative:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for coastal

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	impacts on coastal habitat and fauna, primarily through onshore construction and climate change. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **moderate adverse** impacts on coastal habitat and fauna through onshore construction and climate change.	landscape that dominates the geographic analysis area and measures taken to avoid sensitive habitat, but with consideration of climate change. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **moderate adverse** due to impacts on wildlife habitat in the geographic analysis area, but with consideration of climate change.	habitat and fauna. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	habitat and fauna. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	habitat and fauna. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	habitat and fauna. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	habitat and fauna. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.5.5 Finfish, Invertebrates, and Essential Fish Habitat	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **moderate adverse** impacts on finfish, invertebrates, and essential fish habitat. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **moderate adverse** and **minor beneficial** impacts on finfish, invertebrates, and essential fish habitat.	*Proposed Action:* The Proposed Action would result in **moderate adverse** and **minor beneficial** impacts on finfish, invertebrates, and essential fish habitat, primarily due to the disturbance of seafloor during cable emplacement and the presence of structures. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **moderate adverse** and **minor beneficial**.	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** and **minor beneficial**. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** and **minor beneficial**. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** and **minor beneficial**. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative F:* This alternative would not change the number of structures within the OCS, and thereby would significantly reduce or increase most impacts on finfish, invertebrates, and essential fish habitat. Impacts due to pile-driving noise would be eliminated under Alternative F; therefore, impacts due to noise would be reduced to negligible under Alternative F compared to the moderate levels determined under the Proposed Action. The overall impact levels would still be **moderate adverse** and **minor beneficial**. *Cumulative Impacts of Alternative F:* Impacts of	*Preferred Alternative*: The reduction in number of WTGs and micrositing under this alternative would reduce impacts due to fewer disturbances of bottom habitats. The reduction in disturbances to complex habitats in the NMFS-identified AOCs would also benefit finfish and invertebrates that are known to be productive in these areas. These reductions of impacts are not sufficient to change the impact determinations made under Alternative B; however, avoidance and/or reduction of impacts to these resources within the AOCs is ecologically valuable. The impacts due to the Preferred

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
						Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as the Proposed Action.	Alternative would be **moderate adverse** with some **minor beneficial** impacts. *Cumulative Impacts of the Preferred Alternative*: The cumulative impacts of the Preferred Alternative with ongoing and planned activities including the connected action and other offshore wind activities, would be the same as the Proposed Action.
3.5.6 Marine Mammals	Incremental Impacts[20]: None *No Action Alternative Impacts:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **moderate adverse** impacts on pinnipeds, odontocetes, and mysticetes (except for NARW) and **major adverse** impacts on NARW and could include **minor beneficial** impacts on odontocetes and pinnipeds. The No Action Alternative would have no additional incremental effect on marine mammals. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities)	*Incremental Impacts:* Minor for NARW; minor to moderate for other mysticetes, odontocetes, and pinnipeds *Proposed Action:* Including the baseline, the Proposed Action would result in **moderate adverse** impacts on mysticetes (except for NARW), odontocetes, and pinnipeds and **major adverse** impacts on NARW. **Minor beneficial** impacts on odontocetes and pinnipeds could result from the presence of structures. These beneficial effects have the potential to be offset by risk of entanglement from derelict fishing gear and/or reduced feeding potential (prey concentrations) for some marine mammal species. The incremental impact of the Proposed	*Incremental Impacts:* Minor for NARW; minor to moderate for other mysticetes, odontocetes, and pinnipeds *Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact level, including the baseline, would be the same as for the Proposed Action: **moderate adverse** impacts on mysticetes (except for NARW), odontocetes, and pinnipeds, and **major adverse** impacts on NARW, and could include **minor beneficial** impacts on odontocetes and pinnipeds. These beneficial effects have the potential to be offset by risk of entanglement from derelict fishing gear and/or	*Incremental Impacts:* Minor for NARW; minor to moderate for other mysticetes, odontocetes, and pinnipeds *Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact level, including the baseline, would be the same as for the Proposed Action: **moderate adverse** impacts on mysticetes (except for NARW), odontocetes, and pinnipeds, and **major adverse** impacts on NARW, and could include **minor beneficial** impacts on odontocetes and pinnipeds. These beneficial effects have the potential to be offset by risk of entanglement from derelict fishing gear and/or reduced feeding potential	*Incremental Impacts:* Minor for NARW; minor to moderate for other mysticetes, odontocetes, and pinnipeds *Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action. However, the overall impact level, including the baseline, would be the same as for the Proposed Action: **moderate adverse** impacts on mysticetes (except for NARW), odontocetes, and pinnipeds, and **major adverse** impacts on NARW, and could include **minor beneficial** impacts on odontocetes and pinnipeds. These beneficial effects have the potential to be offset by risk of entanglement from derelict fishing gear and/or reduced feeding potential	*Incremental Impacts:* Minor for NARW; minor to moderate for other mysticetes, odontocetes, and pinnipeds *Alternative F:* Alternative F1 would not result in measurably different impacts, inclusive of the baseline, from the Proposed Action: **moderate adverse** impacts on mysticetes (except for NARW), odontocetes, and pinnipeds, and **major adverse** impacts on NARW, and could include **minor beneficial** impacts on odontocetes and pinnipeds. These beneficial effects have the potential to be offset by risk of entanglement from derelict fishing gear and/or reduced feeding potential (prey concentrations) for some marine mammal species.	*Incremental Impacts:* Minor for NARW; minor to moderate for other mysticetes, odontocetes, and pinnipeds *Preferred Alternative*: This alternative could have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level, inclusive of the baseline, would be the same as for the Proposed Action: **moderate adverse** impacts on mysticetes (except for NARW), odontocetes, and pinnipeds, and **major adverse** impacts on NARW and could include **minor beneficial** impacts on odontocetes and pinnipeds. The incremental impact of the Preferred Alternative would be the same as the Proposed Action.

[20] Incremental impacts (i.e., alternative impacts without the baseline) were included at NMFS' request in order to support determinations under the MMPA.

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	would result in **moderate adverse** impacts on pinnipeds, odontocetes, and mysticetes (except for NARW) and **major adverse** impacts on NARW and could include **minor beneficial** impacts due to increased foraging opportunities for odontocetes and pinnipeds. However, these effects may be offset by risk of entanglement from derelict fishing gear and/or reduced feeding potential (prey concentrations) for some marine mammal species.	Action when compared to the No Action Alternative would be **minor to moderate** for mysticetes (except for NARW), odontocetes, and pinnipeds, and **minor** for NARW. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **moderate** for mysticetes (except for NARW), odontocetes, and pinnipeds, and **major** for NARW, and would also include **minor beneficial** impacts on odontocetes and pinnipeds. These beneficial effects have the potential to be offset by risk of entanglement from derelict fishing gear and/or reduced feeding potential (prey concentrations) for some marine mammal species.	reduced feeding potential (prey concentrations) for some marine mammal species. The incremental impact of Alternative C would be the same as the Proposed Action. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	(prey concentrations) for some marine mammal species. The incremental impact of Alternative D would be the same as the Proposed Action. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	(prey concentrations) for some marine mammal species. The incremental impact of Alternative E would be the same as the Proposed Action. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	Alternatives F2 and F3 would result in measurably different impacts from the Proposed Action due to the avoidance of impact pile-driving noise. However, given the baseline, Alternatives F2 and F3 would still result in **moderate** adverse impacts on pinnipeds, odontocetes, and mysticetes (except for NARW) and **major adverse** impacts on NARW and could include **minor beneficial** impacts on odontocetes and pinnipeds. The incremental impact of Alternative F would be the same as the Proposed Action. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.5.7 Sea Turtles	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **minor adverse** impacts on sea turtles. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned	*Proposed Action:* The Proposed Action would result in **minor adverse** impacts on sea turtles, primarily due to pile-driving noise, vessel noise, and presence of structures. **Minor beneficial** impacts could result from the presence of structures allowing for increased foraging opportunities.	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor adverse** impacts, with some **minor beneficial** impacts.	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor adverse** impacts, with some **minor beneficial** impacts.	*Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor adverse** impacts, with some **minor beneficial** impacts.	*Alternative F:* Alternative F1 would not result in measurably different impacts from the Proposed Action: **minor adverse** impacts, with some **minor beneficial** impacts. Alternatives F2 and F3 would result in measurably different impacts from the Proposed Action due to the avoidance of impacts	*Preferred Alternative:* This alternative could have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor adverse** impacts with some **minor beneficial** impacts.

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	activities (including other offshore wind activities) would result in **minor adverse** impacts on sea turtles and could include **minor beneficial** impacts. Adverse impacts would result mainly from pile-driving noise, presence of structures, and vessel traffic. Beneficial impacts could result from the presence of structures allowing for increased foraging opportunities.	*Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **minor adverse** and would also include **minor beneficial** impacts.	*Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	associated with pile-driving noise. However, given that impacts are still expected due to vessel noise, displacement of sea turtles into higher-risk areas associated with the presence of structures, and vessel traffic, construction and installation, O&M, and decommissioning of Alternatives F2 and F3 would still result in **minor adverse** impacts on sea turtles and could include **minor beneficial** impacts. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.5.8 Wetlands	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **moderate adverse** impacts on wetlands, primarily driven by land disturbance. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **moderate**	*Proposed Action:* The Proposed Action would result in **moderate adverse** impacts on wetlands, primarily due to land disturbance. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **moderate,** primarily due to cable	*Alternative C:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for wetlands. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the	*Alternative D:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for wetlands. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the	*Alternative E:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for wetlands. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the	*Alternative F:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for wetlands. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the	*Preferred Alternative:* This alternative could have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse**. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	adverse impacts, primarily driven by land disturbance.	emplacement and onshore construction activities.	connected action and other offshore wind activities, would be the same as for the Proposed Action.	connected action and other offshore wind activities, would be the same as for the Proposed Action.	connected action and other offshore wind activities, would be the same as for the Proposed Action.	connected action and other offshore wind activities, would be the same as for the Proposed Action.	wind activities, would be the same as for the Proposed Action.
3.6.1 Commercial Fisheries and For-Hire Recreational Fishing	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **major adverse** impacts on commercial fisheries and for-hire recreational fishing. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **major adverse** impacts on commercial fisheries and for-hire recreational fishing. These impacts would primarily result from fisheries use and management and the increased presence of offshore structures. The impacts could also include **minor beneficial** impacts for some for-hire recreational fishing operations due to the presence of structures and the artificial reef effect.	*Proposed Action:* The Proposed Action would result in **major adverse** impacts on commercial fisheries and for-hire recreational fisheries, primarily due to fisheries use and management and long-term impacts from the presence of structures, including navigational hazards, gear loss and damage, and space use conflicts. **Minor beneficial** impacts could result from the presence of structures and the artificial reef effect. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **major adverse** and would also include **minor beneficial** impacts on for-hire recreational fisheries.	*Alternative C:* This alternative would have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact levels would be the same as for the Proposed Action: **major adverse** for commercial fisheries and for-hire recreational fisheries, with the potential for **minor beneficial** impacts on for-hire recreational fisheries. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative D:* This alternative would have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact levels would be the same as for the Proposed Action: **major adverse** for commercial fisheries and for-hire recreational fisheries, with the potential for **minor beneficial** impacts on for-hire recreational fisheries. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative E:* This alternative would have up to 5 fewer WTGs compared to the Proposed Action. However, the overall impact levels would be the same as for the Proposed Action: **major adverse** for commercial fisheries and for-hire recreational fisheries, with the potential for **minor beneficial** impacts on for-hire recreational fisheries. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative F:* Alternative F2 (suction bucket foundations) would result in the greatest area of habitat conversion from scour protection and was evaluated under the Proposed Action. Alternative F1 (piled foundations) and Alternative F3 (gravity-based foundations) would result in a reduction in scour protection compared to the Proposed Action. However, the overall impact levels under Alternatives F1, F2, and F3 would be the same as for the Proposed Action: **major adverse** for commercial fisheries and for-hire recreational fisheries, with the potential for **minor beneficial** impacts on for-hire recreational fisheries. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Preferred Alternative:* This alternative would have at least 5 fewer WTGs compared to the Proposed Action and would modify the layout of offshore structures. However, the overall impact levels would be the same as for the Proposed Action: **major adverse** for commercial fisheries and for-hire recreational fisheries, with the potential for **minor beneficial** impacts on for-hire recreational fisheries. *Cumulative Impacts of Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.6.2 Cultural Resources	*No Action Alternative:* Continuation of existing environmental trends and activities under the No	*Proposed Action:* The Proposed Action would result in **major adverse** impacts on cultural	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action.	*Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action.	*Alternative F:* The severity of impacts on cultural resources increases with the size of the foundation type	*Preferred Alternative*: This alternative would include at least 5 fewer WTGs, in addition to a WTG height

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	Action Alternative would result in **moderate adverse** impacts on cultural resources, primarily through the presence of structures. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **major adverse** impacts on cultural resources.	resources because a notable and measurable impact requiring mitigation is anticipated. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **major adverse**.	Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **major adverse**. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	However, the reduction in impact severity on cultural resources would not avoid visual adverse effects as compared to the Proposed Action, resulting in the same overall impact level as the Proposed Action: **major adverse**. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	However, the overall impact level would be the same as for the Proposed Action: **major adverse**. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	and anticipated seabed disturbance. However, the nature of physical activities proposed under this alternative would result in the same level of impacts as for the Proposed Action: **major adverse**. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	restriction in Project 1, compared to the Proposed Action and would modify the layout of offshore structures. This would lessen the overall severity of physical and visual impacts on a limited proportion of identified cultural resources; however, the impact level would be the same as for the Proposed Action: **major adverse**. *Cumulative Impacts of Preferred Alternative*: Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.6.3 Demographics, Employment, and Economics	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **minor adverse** and **minor beneficial** impacts on demographics, employment, and economics, primarily driven by land disturbance and additional employment opportunities. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities)	*Proposed Action:* The Proposed Action would result in **minor adverse** and **minor beneficial** impacts on demographics, employment, and economics, primarily due to job and revenue creation. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **minor adverse** and **moderate beneficial**.	*Alternative C:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for demographics, employment, and economics. Thus, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned	*Alternative D:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for demographics, employment, and economics. Thus, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned	*Alternative E:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for demographics, employment, and economics. Thus, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned	*Alternative F:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for demographics, employment, and economics. Thus, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned	*Preferred Alternative:* This alternative would include at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **minor beneficial** impacts. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	would result in **minor adverse** and **moderate beneficial** impacts, the latter of which would be on ocean-based employment and economics.	The beneficial impacts would primarily be associated with the investment in offshore wind, job creation and workforce development, income and tax revenue, and infrastructure improvements, while the adverse impacts would result from aviation hazard lighting on WTGs, new cable emplacement and maintenance, the presence of structures, vessel traffic and collisions/allisions during construction, and land disturbance.	activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	same as for the Proposed Action.
3.6.4 Environmental Justice	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **minor adverse** impacts on environmental justice populations, primarily driven by ongoing population growth and new development. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **moderate adverse** impacts, primarily due to short-term impacts from cable emplacement, construction-phase noise, and vessel traffic, as well as the long-term presence of structures. **Minor beneficial** impacts could result through	*Proposed Action:* The Proposed Action would result in **moderate adverse** impacts on environmental justice populations, primarily due to land disturbance, and noise. The Proposed Action would result in **minor beneficial** impacts on environmental justice populations, primarily due to port utilization and presence of structures. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **moderate adverse** impacts and **moderate beneficial** impacts. The adverse effects are primarily	*Alternative C:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for environmental justice populations. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative D:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for environmental justice populations. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative E:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for environmental justice populations. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative F:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for environmental justice populations. Thus, the overall impact level would be the same as for the Proposed Action: **moderate adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Preferred Alternative:* This alternative would have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **moderate adverse** and **minor beneficial**. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	economic activity, job opportunities, and reductions in air emissions.	driven by land disturbance, and noise and the beneficial impacts are primarily driven by port utilization, presence of structures, and air emissions.					
3.6.5 Land Use and Coastal Infrastructure	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **minor adverse** and **minor beneficial** impacts on land use and coastal infrastructure. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **minor adverse** impacts, primarily driven by land disturbance, noise, and traffic. **Major beneficial** impacts would result from productive use of ports and related infrastructure for offshore wind activity.	*Proposed Action:* The Proposed Action would result in **minor adverse** and **moderate beneficial** impacts on land use and coastal infrastructure. Adverse impacts are primarily due to land disturbance, noise, and traffic during onshore construction. Beneficial impacts are primarily due to supporting designated uses and infrastructure improvements at ports. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **minor adverse** and **major beneficial**. The adverse impacts would primarily be driven by land disturbance, noise, and traffic. The beneficial impacts would primarily be associated with port utilization.	*Alternative C:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for land use and coastal infrastructure. Thus, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **moderate beneficial** impacts. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative D:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for land use and coastal infrastructure. Thus, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **moderate beneficial** impacts. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative E:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for land use and coastal infrastructure. Thus, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **moderate beneficial** impacts. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Alternative F:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for land use and coastal infrastructure. Thus, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **moderate beneficial** impacts. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	*Preferred Alternative:* This alternative would differ only in terms of the offshore components, which would be outside of the geographic analysis area for land use and coastal infrastructure. Thus, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **moderate beneficial** impacts. *Cumulative Impacts of the Preferred Alternative:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.6.6 Navigation and Vessel Traffic	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would	*Proposed Action:* The Proposed Action would result in **major adverse** impacts on navigation and vessel traffic, primarily due	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However,	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact	*Alternative E:* This alternative would involve a 0.81-nmi (1,500-meter) to 1.08-nmi (2,000-meter) setback between WTGs in	*Alternative F:* This alternative would involve installing a range of foundation types, which has little to no impact on	*Preferred Alternative:* This alternative would have at least 5 fewer WTGs compared to the Proposed Action and would modify

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	result in **moderate adverse** impacts on navigation and vessel traffic. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **moderate adverse** impacts primarily due to the presence of offshore wind structures, which would increase the risk of collisions, allisions, and accidental releases, as well due to port utilization and vessel traffic.	to changes in navigation routes, delays in ports, degraded communication and radar signals, and increased difficulty of offshore search and rescue (SAR) or surveillance missions. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **major adverse**, primarily due to the increased possibility for marine accidents.	the overall impact level would be the same as for the Proposed Action: **major adverse**. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	level would be the same as for the Proposed Action: **major adverse**. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	the Ocean Wind 1 Lease Area (OCS-A 0498) and the Atlantic Shores South Lease Area (OCS-A 0499). This alternative would result in the exclusion or micrositing of up to 5 WTGs. The setback would be an improvement to vessel navigation and search and rescue considerations, but due to the presence of off-grid structures, the impact level would remain the same as for the Proposed Action: **major adverse**. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	navigation and traffic. Furthermore, the number of structures within the OCS would not change under this alternative. Thus, the overall impact level would be the same as for the Proposed Action: **major adverse**. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	the layout of offshore structures. This modification would lessen potential impacts to vessel navigation. Thus, the overall impact level would be reduced when compared to the Proposed Action: **moderate adverse**. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be reduced from the Proposed Action: **moderate**.
3.6.7 Other Uses (Marine Minerals, Military Use, Aviation, and Scientific Research and Surveys)	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **negligible** impacts for military and national security uses except USCG SAR operations, aviation and air traffic, cables and pipelines, and radar systems; **minor adverse** impacts for marine mineral extraction and USCG SAR operations, and **moderate adverse** impacts for scientific research and surveys.	*Proposed Action:* The Proposed Action would result in **minor adverse** impacts for marine mineral extraction, military and national security uses except for USCG SAR operations, aviation and air traffic, and cables and pipelines; **moderate adverse** impacts for radar systems; and **major adverse** impacts for USCG SAR operations and scientific research and surveys. The presence of structures associated with the Proposed Action and	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact level for the individual IPFs would be the same as for the Proposed Action and range from: **minor to major adverse**. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the	*Alternative D:* This alternative could have up to 31 fewer WTGs compared to the Proposed Action. However, the overall impact level for the individual IPFs would be the same as for the Proposed Action and range from **minor to major adverse**. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the	*Alternative E:* This alternative would involve a 0.81-nmi (1,500-meter) to 1.08-nmi (2,000-meter) setback between WTGs in the Ocean Wind 1 Lease Area (OCS-A 0498) and the Atlantic Shores South Lease Area (OCS-A 0499). This alternative would result in the exclusion or micrositing of up to 5 WTGs. The overall impacts would be the same as for the Proposed Action except for USCG SAR operations. The setback would be an	*Alternative F:* This alternative would involve installing a range of foundation types, which has little to no impact on navigation and traffic. Furthermore, the number of structures within the OCS would not change under this alternative. Thus, the overall impact level would be the same as for the Proposed Action and range from: **minor to major adverse**. *Cumulative Impacts of Alternative F:* Impacts of	*Preferred Alternative:* This alternative would have at least 5 fewer WTGs compared to the Proposed Action and would modify the layout of offshore structures. The overall impacts would be the same as for the Proposed Action except for USCG SAR operations. The modified layout would be an improvement to vessel navigation and SAR considerations and would lead to reduced impacts for USCG SAR operations

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	Cumulative Impacts of the No Action Alternative: The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **minor adverse** impacts for marine mineral extraction, military and national security uses except for USCG SAR operations, aviation and air traffic, cables and pipelines and radar systems; and **moderate adverse** impacts for USCG SAR operations and **major adverse** scientific research and surveys.	increased risk of allisions are the primary drivers for impacts on USCG SAR operations. Impacts on scientific research and surveys would qualify as major because entities conducting surveys and scientific research would have to make significant investments to change methodologies to account for unsampleable areas, with potential long-term and irreversible impacts on fisheries and protected-species research as a whole, as well as on the commercial fisheries community. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **minor adverse** for marine mineral extraction, military and national security uses except for USCG SAR operations, aviation and air traffic, and cables and pipelines; **moderate adverse** for radar systems; and **major adverse** for USCG SAR operations and scientific research and surveys.	connected action and other offshore wind activities, would be the same as for the Proposed Action.	connected action and other offshore wind activities, would be the same as for the Proposed Action.	improvement to vessel navigation and SAR considerations and would lead to reduced impacts for USCG SAR operations when compared to the Proposed Action: **moderate adverse**. The overall impact range would remain **minor to major adverse**. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would the same as for the Proposed Action except for USCG SAR operations, which would be **moderate adverse**. The overall impact range would remain **minor to major**.	Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	when compared to the Proposed Action: **moderate adverse**. The overall impact range would remain **minor to major adverse**. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action except for USCG SAR operations, which would be **moderate adverse**. The overall impact range would be **minor to major adverse.**
3.6.8 Recreation and Tourism	*No Action Alternative:* Continuation of existing environmental trends and activities under the No	*Proposed Action:* The Proposed Action would result in **minor adverse** and **minor beneficial** impacts on	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the	*Alternative D:* Alternative D1 would exclude placement of WTGs up to 12 mi (19.3 km) from shore,	*Alternative E: Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed	*Alternative F:* This alternative would involve installing a range of foundation types, which	*Preferred Alternative:* This alternative would have at least 5 fewer WTGs compared to the Proposed

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	Action Alternative would result in **minor adverse** impacts on recreation and tourism. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **minor adverse** impacts, primarily driven by land disturbance, cable emplacement and maintenance, noise, traffic, anchoring, lighting, and the presence of structures. **Minor beneficial** impacts would result from the anticipated artificial reef effect resulting from installation of offshore structures.	recreation and tourism. Adverse impacts are primarily due to anchoring, land disturbance, lighting, cable emplacement and maintenance, noise, traffic, and the presence of structures. Beneficial impacts are primarily due to the presence of structures and the potential for the artificial reef effect. *Cumulative Impacts of the Proposed Action:* Impacts of the Proposed Action when combined with the impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be **minor adverse** and **minor beneficial**.	Proposed Action. However, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	resulting in the removal of up to 21 WTGs. Alternative D2 would exclude placement of WTGs up to 12.75 mi (20.5 km) from shore, resulting in the removal of up to 31 WTGs. Alternative D3 would exclude placement of WTGs up to 10.8 mi (17.4 km) from shore, resulting in the removal of up to six WTGs. Alternatives D1 and D2 may substantially reduce the visual impacts on historic aboveground resources. Alternative D3 is not anticipated to result in a substantial reduction. Though the visual impact may be reduced for Alternatives D1 and D2, the overall impact level for Alternative D would be the same as for the Proposed Action: **minor adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	Action. However, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	would not have measurable impacts on recreation and tourism that are materially different from the impacts of the Proposed Action: **minor adverse** and **minor beneficial** impacts. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	Action. However, the overall impact level would be the same as for the Proposed Action: **minor adverse** and **minor beneficial**. *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.
3.6.9 Scenic and Visual Resources	*No Action Alternative:* Continuation of existing environmental trends and activities under the No Action Alternative would result in **major adverse**	*Proposed Action:* Effects of Offshore Project elements on high- and moderate-sensitivity seascape character units, open ocean character units, and	*Alternative C:* This alternative could have up to 29 fewer WTGs and 1 fewer OSS compared to the Proposed Action. However, the overall impact level	*Alternative D:* Alternative D1 would exclude placement of WTGs up to 12 mi (19.3 km) from shore, resulting in the removal of up to 21 WTGs. Alternative	*Alternative E: Alternative E:* This alternative could have up to 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the	*Alternative F:* This alternative would involve installing a range of foundation types, which would not have measurable impacts on scenic and visual	*Preferred Alternative:* This alternative would have at least 5 fewer WTGs compared to the Proposed Action. However, the overall impact level would be the

Resource	Alternative A No Action	Alternative B Proposed Action	Alternative C Habitat Impact Minimization/ Fisheries Habitat Impact Minimization	Alternative D No Surface Occupancy at Select Locations to Reduce Visual Impacts	Alternative E Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1	Alternative F Foundation Structures	Preferred Alternative
	impacts on scenic and visual resources. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all planned activities (including other offshore wind activities) would result in **major adverse** impacts due to the addition of new structures, nighttime lighting, onshore construction, and increased vessel traffic.	landscape character units would be **major adverse**. Onshore facilities would result in **major adverse** impacts on scenic and visual resources. *Cumulative Impacts of the Proposed Action:* Overall, impacts from ongoing and planned activities, including other offshore wind activities, would be **major adverse**.	would be the same as for the Proposed Action: **major adverse** impacts. *Cumulative Impacts of Alternative C:* Impacts of Alternative C when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	D2 would exclude placement of WTGs up to 12.75 mi (20.5 km) from shore, resulting in the removal of up to 31 WTGs. Alternative D3 would exclude placement of WTGs up to 10.8 mi (17.4 km) from shore, resulting in the removal of up to 6 WTGs. Alternatives D1 and D2 may substantially reduce the visual impacts on historic aboveground resources. Alternative D3 is not anticipated to result in a substantial reduction. Though the visual impact may be reduced for Alternatives D1 and D2, the overall impact level for Alternative D would be the same as for the Proposed Action: **major adverse** impacts. *Cumulative Impacts of Alternative D:* Impacts of Alternative D when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	same as for the Proposed Action: **major adverse** impacts. *Cumulative Impacts of Alternative E:* Impacts of Alternative E when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	resources that are materially different from the impacts of the Proposed Action: **major adverse** impacts. *Cumulative Impacts of Alternative F:* Impacts of Alternative F when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.	same as for the Proposed Action: **major adverse.** *Cumulative Impacts of the Preferred Alternative:* Impacts of the Preferred Alternative when combined with impacts from ongoing and planned activities, including the connected action and other offshore wind activities, would be the same as for the Proposed Action.

3.3 Environmentally Preferable Alternatives

BOEM is required by CEQ regulations to identify in the ROD the *environmentally preferable alternative(s)* (40 CFR § 1505.2). Upon consideration and weighing of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources (43 CFR § 46.30), the DOI's responsible official, who is approving this ROD, has determined that the environmentally preferable alternatives are the No Action Alternative (Alternative A), Alternative C1 – C3 (Habitat Impact Minimization/Fisheries Habitat Impact Minimization), and Alternative D (No Surface Occupancy at Select Locations to Reduce Visual Impacts).

Adverse environmental impacts in the Project area would generally be less under the No Action Alternative because construction and installation, O&M, and decommissioning activities and disturbances related to the proposed Project would not occur and, hence, impacts on physical, biological, or cultural resources from the Proposed Action would be avoided. Nonetheless, the No Action Alternative would likely result in minor to moderate, long-term, adverse impacts on regional air quality because other energy generation facilities would be needed to meet future power demands. These facilities might be fueled with natural gas, oil, or coal, which would emit more pollutants than wind turbines and would have more adverse impacts on air quality and contribute greenhouse gases that cause climatic change. Adverse impacts on air quality also tend to disproportionally impact environmental justice communities, which often include low-income and minority populations. These air quality impacts might be compounded by other impacts because selection of the No Action Alternative could negatively impact future investment in U.S. offshore wind energy facilities, which in turn could result in the loss of beneficial cumulative impacts, such as increased employment, improvements in air quality, and reductions in greenhouse gas emissions. As noted in the final EIS, Section 3.6.3, *Demographics, Employment, and Economics,* public and private investors have committed substantial amounts of new funding to offshore wind development, including commitments to develop manufacturing facilities, and that advancement of the Project is critical to continue to attract investment in the United States offshore wind market.

Alternative C was developed in response to comments received through the EIS scoping process. Alternative C includes four sub-alternatives, three of which would avoid entirely, or in part, two AOCs identified by NMFS within the Lease Area that have pronounced bottom features and produce valuable habitat. AOC 1 is part of a designated recreational fishing area called "Lobster Hole," and AOC 2 is part of a sand ridge (ridge and swale) complex.

- Alternative C1: Up to 16 WTGs, 1 OSS, and associated interarray cables within the Lobster Hole designated area (AOC 1) as identified by NMFS would be removed.

- Alternative C2: Up to 13 WTGs and associated interarray cables within the NMFS-identified sand ridge complex in the southernmost portion of the Lease Area (AOC 2) would be removed.

- Alternative C3: Up to 6 WTGs located within 1,000 ft (305 m) of the sand ridge complex area identified by NMFS and further demarcated using NOAA's Benthic Terrain Modeler and bathymetry data provided by Atlantic Shores would be removed.

- Alternative C4 was proposed by Atlantic Shores and would involve the micrositing of up to 29 WTGs, 1 OSS, and associated interarray cables outside of the 1,000-ft (305-mr) buffer of the ridge and swale features within two AOCs identified by NMFS within the Lease Area.

In comparison to the Proposed Action, Alternative C1 – C3 would reduce the potential impacts on benthic resources, benthic foraging sea turtles, and marine mammals due to the avoidance and minimization of impacts on sensitive habitats and the potential removal, relocation, or micrositing of up to 29 WTGs, 1 OSS, and associated interarray cables; and avoidance of impact pile-driving noise. Alternative C1 – C3 would remove turbines from the two AOC's and their associated scour protection and interarray cables, thereby reducing impacts on these habitats. Alternative C4 would not avoid impacts to the two AOCs, which are landscape-scale features, though Alternative C4 would reduce impacts on complex habitat to the extent that micrositing is feasible.

Alternative D was developed through the scoping process for the EIS in response to public comments concerning the visual impacts of the Atlantic Shores South Project. Under Alternative D, no surface occupancy would occur within defined distances to shore to reduce the visual impacts of the proposed Project. Alternatives D1, D2, and D3 would result in the exclusion of up to 21, 31, and 6 WTG positions in Project 1 that are sited closest to shore, respectively. The remaining turbines in Project 1 would be restricted to a maximum hub height of 522 ft (159 m) AMSL and maximum blade tip height of 932 ft (284 m) AMSL. While a reduction in horizontal and vertical field of view and contrasts would occur, the reduced impacts under Alternatives D1, D2, and D3 would not be sufficient to change the level of impacts as compared with the Proposed Action. The height restriction would soften the overall visibility but does not reach the threshold to shift impacts from major to moderate. Nonetheless, these alternatives present small but potentially meaningful changes to local communities to soften visibility.

In comparison to the Proposed Action, Alternative D would reduce the potential impacts on benthic resources, finfish, invertebrates, essential fish habitat, marine mammals, and sea turtles due to the potential removal of up to 31 WTGs and associated interarray cables.

Offshore wind has been identified as a key factor for Atlantic states to reach their greenhouse gas emission reduction goals. It is presently an irreplaceable component in state, federal, and international strategies to reduce and reverse global climate change over the coming decades. In comparison to the No Action Alternative, the Alternatives C and D would allow for the generation of electricity from sources that do not adversely affect the air quality in the region. Also, in contrast to the No Action Alternative, selection of the Alternatives C and D could encourage investment in U.S. offshore wind energy facilities, which could in turn result in beneficial cumulative impacts such as increased employment, improvements in air quality, and reductions in greenhouse gas emissions.

4 MITIGATION, MONITORING, AND REPORTING

Appendix G of the final EIS[21] identifies measures to avoid, minimize, and mitigate adverse environmental impacts that could result from the proposed activities and identifies the anticipated enforcing agency. BOEM is adopting all the measures identified in Tables G-2, G-3, and G-4 of Appendix G of the final EIS, except for the measures identified below and those that are identified in Tables G-2, G-3, and G-4 as outside of BOEM's or BSEE's authority to enforce.

1. Essential Fish Habitat (EFH) Conservation Recommendation #17: Any debris encountered during a site preparation grapnel run should be retained and discarded at an appropriate upland facility. Debris should not be returned overboard.

   BOEM is not adopting the recommendation as proposed. BOEM will require the Lessee to submit a Pre-lay Grapnel Run Plan that must include a description of debris removal and disposal methods to ensure that debris is disposed of in a responsible manner.

2. EFH Conservation Recommendation #29: *Continuous pile driving for 24 hours/day should not be permitted; minimum mandatory quiet periods of at least 4 hours should be required per 24 hours*.

   BOEM is not adopting the recommendation as proposed. Pursuant to the Biological Opinion, nighttime pile driving may be authorized with the concurrence of a nighttime monitoring plan. Regarding continuous pile driving for 24 hours, BOEM notes this is extremely unlikely to occur. It is not likely to be logistically nor technically feasible to pile continuously for 24 hours. BOEM is not aware of any offshore wind energy project that has piled continuously for 24 hours without a break in activity.

The mitigation, monitoring, and reporting measures that BOEM intends to include as conditions of approval are identified in this ROD in Appendix A. Consultation under Section 106 of the National Historic Preservation Act (NHPA) was concluded after publication of the final EIS, and stipulations included in the executed Memorandum of Agreement (MOA) for Section 106 are included in Appendix A. Appendix A also clarifies the language of certain measures that were identified in the final EIS to ensure that they are enforceable, or to reflect updates to measures being considered by NMFS for the final ITR and associated LOA.

5 FINAL AGENCY DECISIONS

5.1 The Department of the Interior Decision

After carefully considering the final EIS alternatives, including comments from the public on the draft EIS, DOI has decided to approve, with modifications, the COP for Atlantic Shores by adopting the Preferred Alternative. By selecting the Preferred Alternative (hereinafter the "selected alternative"), DOI will allow for the construction, operation, maintenance, and eventual decommissioning of two offshore wind energy facilities (Project 1 and Project 2) together

[21] Appendix G separately identifies measures proposed by the Lessee as a part of its COP. The Lessee is required, as a condition of BOEM's approval, to conduct activities as proposed in its approved COP, which includes all the applicant-proposed mitigation measures identified in Appendix G.

consisting of up to 195[22] WTGs and up to 10 OSSs on the OCS offshore New Jersey within Lease Area OCS-A 0499, with transmission cables making landfall at Sea Girt, Monmouth County, New Jersey, and Atlantic City, New Jersey. The selected alternative would generate approximately 1,510 MW for Project 1 and an undetermined output for Project 2. Atlantic Shores has a goal of 1,327 MW for Project 2,[23] which would align with the interconnection construction and service agreements Atlantic Shores intends to execute for both projects with the RTO, PJM.[24]

The selected alternative combines aspects of Alternatives B, C4, D3, and E. The selected alternative will locate all permanent structures into the uniform grid spacing, microsite up to 29 WTGs, 1 OSS, and associated interarray cables outside of the 1,000-f~~oo~~t (305-m~~eter~~) buffer of the ridge and swale features within the NMFS-identified AOCs 1 and 2, restrict the height of WTGs in Project 1 to a maximum hub height of 522 ft (159 m) AMSL and maximum blade tip height of 932 ft (284 m) AMSL, ~~and~~ provide a minimum 0.81-nmi (1,500-m) setback between the WTGs in Atlantic Shores South and the WTGs in Ocean Wind 1 (Lease Area OCS-A 0498) by removing two WTGs and micrositing one WTG from Project 1, and remove a single WTG approximately 150 to 200 ft (46 to 61 m) from the observed Fish Haven (Atlantic City Artificial Reef Site).[25] The total number of permanent structures constructed (WTGs, OSSs, and/or met tower) may not exceed 197.

Selection of Alternative B would have resulted in the construction and installation, O&M, and eventual decommissioning of up to 200 WTGs (a 1,510 MW wind energy facility with between 105 and 136 WTGs for Project 1, and a wind energy facility with between 64 and 95 WTGs generating 1,327 MW for Project 2), up to 10 OSSs (up to 5 in each Project), up to 1 permanent met tower (Project 1), up to 4 temporary metocean buoys (up to 3 metocean buoys in Project 1, 1 metocean buoy in Project 2), interarray and interlink cables, 2 onshore substations, 1 O&M facility, and up to 8 transmission cables making landfall at two New Jersey locations; built within the range of the design parameters outlined in the Atlantic Shores South COP (Atlantic Shores 2024), subject to applicable mitigation measures. WTGs would be placed in all 200 positions in the Lease Area, including the NMFS-identified habitat AOC and within proximity to Ocean Wind 1's WTGs. Permanent structures (i.e., OSSs and one met tower) would be placed off-grid, and in a way that narrows linear rows and columns for navigational purposes to fewer than 0.6 nmi by 1 nmi. Alternative B would have had more permanent seafloor alteration compared to the selected alternative and would result in more total impacts on resources of concern than the selected alternative. Alternative B would allow for additional energy production

[22] 195 WTGs assumes that 197 total positions are available and that a minimum of 1 OSS is constructed in each project, with 195 remaining positions available for WTGs. Fewer WTGs may be constructed to allow for placement of additional OSSs and/or a met tower on grid.

[23] The State of New Jersey announced an OREC solicitation that seeks to aware between 1200 MW and up to approximately 4000 MW, for which Atlantic Shores intends to compete for Project 2. This solicitation (https://bpuoffshorewind.nj.gov/fourth-solicitation/) was released April 30, 2024.

[24] Atlantic Shores plans to enter into interconnection construction and service agreements with PJM to fund improvements to the onshore Cardiff and Larrabee substations, along with required grid updates. These agreements are distinct from purchase power agreements (applicable in Connecticut, Massachusetts, and Rhode Island) and ORECs (applicable in Maryland, New Jersey, and New York). An OREC represents the environmental attributes of one MWh of electric generation from an offshore wind project. New Jersey Board of Public Utilities awards ORECs through a competitive bidding process and they represent a long-term contract with the State of New Jersey.

[25] Figure 2.1-10-C4 of the final EIS depicts the unique identifier for each position in the WTG array layout. The selected alternative removes positions AX01, BB05 and BC06 from the layout. Positions AZ08, BA09, BC07, BE10, BE12, BE14, BE15, BE16, BF14, BF15, BG13 have been deemed acceptable for micrositing by BOEM and USCG.

compared to the other action alternatives. However, the action alternatives still allowed Atlantic Shores to meet Project 1's OREC 1,510 MW nameplate capacity, and sufficient energy production for Project 2 to meet the goal of 1,327 MW. Project 2 is anticipated to provide a supply of offshore wind energy to meet future state renewable energy goals. Therefore, BOEM has not selected the Proposed Action as the selected alternative.

Selection of Alternative C would exclude up to 16 WTGs and 1 OSS from the Lobster Hole designated area as identified by NMFS (Alternative C1), up to 13 WTGs within the NMFS-identified sand ridge complex (Alternative C2), up to 6 WTGs within 1,000 ft of the demarcated sand ridge complex (Alternative C-3), and/or micrositing of up to 29 WTGs, and 1 OSS, outside of the 1,000-ft buffers of sand ridges and swales within AOC 1 and 2. The sand ridge complex features are found throughout the OCS in the mid-Atlantic and provide important habitat for several species.

While Alternative C would exclude WTGs and their associated inter-array cables, the reduction to long-term impacts in comparison to the selected alternative equates to 1.1 to 2.9 percent and 1.7 to 4.4 percent reductions in the maximum temporary and permanent impacts on benthic habitat, respectively, compared to Alternative B. Eliminating the need for cable installation and the associated seabed preparation activities, such as boulder clearance, sandwave clearance, pre-lay grapnel run and disturbance from installation vessels, would reduce short-term impacts. The reduction in impacts would not be sufficient to change the level of impacts as compared with Alternative B. In conditions similar to the Project, the disturbances resulting from seabed preparation and cable installation activities have been shown to reduce in magnitude over relatively short time periods through natural processes, typically within a year or following a storm event. In contrast, the loss in annual energy production if Alternatives C1–C3 were selected, in comparison with the selected alternative, is substantial and will not be reduced over time.

BOEM considered the economic consequences of selecting a SubAlternative with fewer than 195 positions, which further informed the selection of the selected alternative. From an economics perspective, choosing fewer than 195 WTGs would make the Atlantic Shores South projects less profitable to the developer and the developer has asserted to BOEM that it needs all 195 positions to achieve economic viability. Therefore, BOEM has not selected Alternatives C in its entirety, but is incorporating Alternative C4.

Selection of Alternative D would eliminate between 6 and 31 WTG positions nearest to coastal communities. For example, for shoreline viewers of the Lease Area, the distance to the nearest WTG would increase from 8.7 mi under the selected alternative to between 10.8 (Alternative D3) and 12.75 (Alternative D2) mi under Alternative D. The analysis conducted in the final EIS indicates that Alternative D-2 and the selected alternative would have essentially the same presence on the horizon. While a reduction in horizontal and vertical field of view and contrasts would occur, the reduced impacts under Alternatives D1, D2, and D3 would not be sufficient to change the level of impacts as compared with Alternative B (Proposed Action). The height restriction in each alternative would soften the overall visibility but does not reach the threshold to shift impacts from major to moderate. Nonetheless, these alternatives present small but potentially meaningful changes to local communities to soften visibility. In addition, since the selection of Alternative D would eliminate WTGs, BOEM considered the economic

consequences of selecting a SubAlternative with fewer than 195 positions that further informed the selection of the selected alternative. From an economics perspective, choosing fewer than 195 WTGs would make the Atlantic Shores South Project less profitable to the developer and the developer has asserted to BOEM that it needs all 195 positions to achieve economic viability. Therefore, BOEM has not selected Alternative D3 in its entirety as the selected alternative, but is incorporating the height restriction for Project 1.

Selection of Alternative E would modify the WTG array layout by either excluding or micrositing up to five WTG positions. Separation between the WTGs in Ocean Wind 1 and Atlantic Shores South, as proposed by USCG and adopted by Atlantic Shores, is provided under the selected alternative. Excluding 2 additional WTG positions and the micrositing of 1 could allow for additional maneuverability for mariners transiting between the lease areas. The analysis conducted in Section 3.6.6 (Navigation and Vessel Traffic) of the final EIS indicates that there would be little difference in impacts on safety and the use of the sea for navigation between the selected alternative and Alternative E because the mutually agreeable separation scenario under the selected alternative provides sufficient maneuverability for mariners transiting between the lease areas. However, selection of Alternative E and exclusion of all 5 WTG positions would result in some waste of OCS resources when compared to the selected alternative. Therefore, BOEM has not selected Alternative E in its entirety as the selected alternative but is incorporating the negotiated setback, as agreed to with Ocean Wind 1 and USCG as part of the selected alternative.

Selection of Alternative F would have resulted in narrowing of the PDE to the use of piled foundations (Alternative F1), suction bucket foundations (Alternative F2), and/or gravity-based foundations (Alternative F3). Selection of Alternatives F1 through F3 would narrow the PDE for the WTG foundations and could create financial feasibility risks for Project 1 and Project 2 because the current supply chain for WTG foundations and installation vessels is highly constrained. In particular, suction bucket and gravity foundations for WTG foundations are not anticipated to be commercially viable for Projects 1 and 2 in the anticipated construction timeframe due to lack of fabrication capability and capacity in the region. Therefore, BOEM has not selected Alternative F as part of the selected alternative.

Under Alternative A (the No Action Alternative), DOI would not approve the Atlantic Shores South Project. In addition, no other permits or authorizations for this proposed Project would be issued. Adverse environmental impacts across resources would generally be less under the No Action Alternative as no construction, operation, maintenance, or decommissioning activities would occur on the OCS. As a result, impacts on physical, biological, social, or cultural resources from the selected alternative would be avoided. However, the No Action Alternative would still be expected to result in minor to moderate, long-term, adverse impacts on regional air quality because other energy generation facilities would be needed to meet future power demands. These facilities might be fueled with natural gas, oil, or coal, which would emit more pollutants than wind turbines and would have more adverse impacts on air quality and contribute greenhouse gases that cause climate change. The No Action Alternative was not selected in this ROD because it would not allow for the development of DOI-managed resources and would not meet the purpose and need.

In summary, DOI considered the action alternatives that would result in fewer environmental impacts and use conflicts, while meeting the purpose and need for the action. The final EIS found that the selected alternative would result in fewer impacts than other action alternatives considered and is consistent with the purpose and need. Accordingly, DOI has selected the selected alternative in this ROD.

DOI coordinated with NMFS and USACE and weighed all concerns in making decisions regarding this Project and has determined that all practicable means within its authority have been adopted to avoid or minimize environmental and socioeconomic harm associated with the selected alternative and the approval of the COP. Appendix A of this ROD identifies the mitigation, monitoring, and reporting requirements that will be adopted as terms and conditions of COP approval. The mitigation and monitoring measures identified in Appendix A are representative of those included in Appendix G of the final EIS. Concurrent with the NEPA process, BOEM conducted a thorough National Historic Preservation Act Section 106 review of the Project with federally recognized Tribal Nations, the New Jersey State Historic Preservation Office, the ACHP, and consulting parties and, through the Section 106 review, identified and assessed potential effects to historic properties, and identified measures to resolve adverse effects. Draft measures to resolve adverse effects were described and analyzed in the draft EIS. After the final EIS was made available to the public, BOEM addressed consulting party comments on the MOA and distributed the MOA for signature by the consulting parties. The Section 106 review concluded with the execution and implementation of the MOA, which was signed by BOEM; the New Jersey State Historic Preservation Office; ACHP; the Lessee; and the New Jersey Historic Trust on June 27, 2024. The following concurring parties also signed the MOA: City of Atlantic City, Save Lucy Committee, Chicken Bone Beach Historical Foundation, Borough of Longport, and BSEE. The MOA memorializes measures that will resolve the selected alternative's adverse effects to historic properties including avoidance, minimization, and mitigation measures.

Moreover, BOEM consulted with federally recognized Tribes regarding renewable energy leasing and development on the OCS. The following federally recognized Tribes were invited to consult: Eastern Shawnee Tribe of Oklahoma; Shawnee Tribe; Absentee-Shawnee Tribe of Indians of Oklahoma; Stockbridge-Munsee Community Band of Mohican Indians; The Delaware Nation; Delaware Tribe of Indians; The Shinnecock Indian Nation; The Narragansett Indian Tribe; Wampanoag Tribe of Gay Head (Aquinnah); The Mashpee Wampanoag Tribe; and The Mashantucket (Western) Pequot Tribe. BOEM held government-to-government and Tribal consultation meetings on the Atlantic Shores South NOI on November 15, 2021, and the draft EIS on June 27, 2023. The Delaware Tribe of Indians and The Shinnecock Indian Nation participated in the government-to-government meeting on November 15, 2021. The Stockbridge-Munsee Community Band of Mohican Indians, Mashantucket (Western) Pequot Tribal Nation, and Wampanoag Tribe of Gay Head (Aquinnah) participated in the Tribal consultation meeting on June 27, 2023. BOEM leaders also met the Houlton Band of Maliseet Indians; Mashantucket; Mashpee; Narragansett; Passamaquoddy Tribe, Indian Township; Passamaquoddy Tribe, Pleasant Point; Penobscot Indian Nation; Shinnecock; and Aquinnah at the Tribal Leaders Summit on April 10, 2023.

As set forth in the final EIS, all alternatives, including the selected alternative, except where noted, are anticipated to have major adverse impacts to the following resource areas:

Marine Mammals, North Atlantic Right Whale (NARW): Under all alternatives, including the No Action alternative, when considering ongoing and planned activities, major adverse impacts to NARWs could occur due to the risk of vessel strikes and fishing gear entanglement posed by those activities. The incremental impacts of the Project alone are not expected to include entanglements or vessel strikes. Mitigation measures such as vessels maintaining a safe distance from marine mammals and reduced vessel speeds are designed to avoid vessel interactions with marine mammals. The incremental impacts of all action alternatives to NARWs would be minor due to implementation of several mitigation measures, e.g., clearance and shutdown zones for pile driving and HRG surveys, use of sound attenuation measures during impact pile driving, numerous vessel strike avoidance measures, and use of Protected Species Observers (PSO) and Passive Acoustic Monitoring (PAM).

Commercial Fisheries and For-Hire Recreational Fishing: Major adverse impacts are anticipated to occur, primarily because of the presence of structures (e.g., through gear loss, navigational hazards, space use conflicts, potential impacts on fisheries surveys) (see final EIS Section 3.6.1). Such adverse impacts will be mitigated through a requirement for Atlantic Shores to establish and implement a direct fisheries compensation and mitigation fund for commercial and for-hire recreational fishermen impacted by the Project, through a requirement for Atlantic Shores to maintain a fisheries gear loss claims procedure throughout the life of the Project, and through a survey mitigation agreement between Atlantic Shores and NMFS that will describe how Atlantic Shores will mitigate Project impacts on NMFS scientific surveys. BOEM anticipates including conditions of COP approval (see ROD Appendix A, Sections 6.1 and 6.2) to address this issue.

Cultural Resources: Mitigation was developed with consulting parties through the NHPA Section 106 consultation process to resolve adverse effects on historic properties pursuant to 36 CFR § 800.6 and are stipulated in the MOA. Mitigation that would reduce major impacts on onshore and offshore cultural resources include Atlantic Shores' compliance with stipulations outlined in the MOA, such as the implementation of protective buffers to avoid marine archaeological resources per Stipulation I; completion of construction monitoring to avoid terrestrial archaeological resources per Stipulation I; implementation of measures in historic property treatment plans (HPTPs) for resolving adverse effects on ancient submerged landform features (ASLFs) and aboveground historic properties per Stipulation III; contributions to a mitigation fund for resolving adverse effects on aboveground historic properties per Stipulation III; and implementation of actions that are consistent with the Post Review Discovery Plans for marine and terrestrial archaeology per Stipulation XIII.

Navigation and Vessel Traffic: Major impacts would arise from the presence of structures, which increase the risk of collision/allision and navigational complexity. Impacts on non-Project vessels would include changes in navigation routes, delays in ports, degraded communication and radar signals, and increased difficulty of offshore search and rescue (SAR) or surveillance missions within the Wind Turbine Area (WTA), all of which would increase navigational safety risks. The OSS and met tower positioning outside of the gridded WTG layout increases risk of allision for vessels transiting through the WTA. Some commercial fishing, recreational, and other vessels would choose to avoid the WTA altogether, leading to some potential funneling of vessel traffic along the Project area borders. In addition, the increase in potential for marine accidents, which may result in injury, loss of life, and property damage, could produce disruptions for ocean users in the geographic analysis area. The selected alternative includes a

modification that would require the proposed OSSs, met tower, and WTGs to be aligned in a uniform grid with rows in an east-northeast to west-southwest direction spaced 1.0 nmi (1,900 m) apart and rows in an approximately north to south direction spaced 0.6 nmi (1,100 m) apart with the exception of WTGs AX01, AZ08, BA09, BC07, BE10, BE12, BE14, BE15, BE16, BF14, BF15, and BG13. This modification would lessen potential impacts to vessel navigation, thereby reducing the overall impact from major to moderate.

Other Uses, Military and National Security Uses: While potential impacts on most military and national security uses are anticipated to be minor, installation of WTGs, OSSs, and the met tower throughout the geographic analysis area would hinder USCG SAR operations across a larger area, resulting in a major impact on SAR operations. Additionally, mariners may not be aware that there are up to 11 structures whose placement does not conform with the gridded layout of the WTGs. As described in Section 3.6.7 of the final EIS, Project structures would be marked as a navigational hazard per Federal Aviation Administration, BOEM, and USCG regulations and guidelines, and WTGs, OSSs, and the met tower would be visible on military and national security vessel and aircraft radar, minimizing the potential for allision and increased navigational complexity. The Preferred Alternative includes a modification that would require the proposed OSSs, met tower, and WTGs be aligned in a uniform grid with rows in an east-northeast to west-southwest direction spaced 1.0 nmi (1,900 m) apart and rows in an approximately north to south direction spaced 0.6 nmi (1,100 m) apart. This modification would lessen potential impacts to SAR operations from major to moderate.

Other Uses, Scientific Research and Surveys: As set forth in the final EIS, the selected alternative is anticipated to have major adverse effects to NMFS Northeast Fisheries Science Center scientific surveys (hereinafter "NMFS surveys"). NMFS and BOEM have developed the *NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region* (Hare et al. 2022)[26] to address the adverse impacts. BOEM and NMFS are of the view that the solution is a collaborative effort between both agencies and the offshore wind industry to establish project specific monitoring programs that follow specific guidelines, thereby allowing the information to be combined regionally into a programmatic approach (see final EIS section 3.17). There are 14 NMFS scientific surveys that overlap with wind energy development in the northeast region. Eleven of these surveys overlap with the Project. BOEM anticipates including a condition of COP approval (see ROD Appendix A, Section 6.3) to address this issue. Consistent with NMFS and BOEM Survey Mitigation strategy actions 1.3.1, 1.3.2, 2.1.1, and 2.1.2 in the *NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region*, the Lessee must submit to BOEM a survey mitigation agreement between NMFS and the Lessee. The survey mitigation agreement must describe how the Lessee will mitigate the Project's impacts on the eleven NMFS surveys. The Lessee must conduct activities in accordance with such agreement. If the Lessee and NMFS fail to reach a survey mitigation agreement, then the Lessee must submit a survey mitigation plan to BOEM and NMFS.

Scenic and Visual Resources: Due to distance, extensive field of views, strong contrasts, large scale of change, and level of prominence, as well as heretofore undeveloped ocean views, major impacts are anticipated on the open ocean character unit and viewer boating and cruise ship

[26] *See* Hare, J.A., Blythe, B.J., Ford, K.H., Godfrey-McKee, S., Hooker, B.R., Jensen, B.M., Lipsky, A., Nachman, C., Pfeiffer, L., Rasser, M. and Renshaw, K., 2022. NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region. NOAA Technical Memorandum 292. Woods Hole, MA. 33 pp.

experiences. The daytime presence of offshore WTGs and OSSs, as well as their nighttime lighting, would change perception of ocean scenes from natural and undeveloped to a developed wind energy environment characterized by WTGs and OSSs. In clear weather, the WTGs and OSSs would be an unavoidable presence in views from the coastline, with minor to moderate effects on seascape character and landscape character, and major effects on open ocean character. In coordination with BOEM, the Lessee must prepare and implement a scenic and visual resource monitoring plan (see Appendix A 7.2.1) that monitors and compares the visual effects of the wind farm during construction and O&M (daytime and nighttime) to the findings in the COP Visual Impact Assessment and verifies the accuracy of the visual simulations (photo and video). The monitoring plan must include monitoring and documenting the meteorological influences on actual WTG visibility over a duration of time from selected onshore key observation points, as determined by BOEM and the Lessee. In addition, the Lessee must include monitoring of the operation of Aircraft Detection Lighting System (ADLS) in the monitoring plan. The Lessee must monitor the ADLS operations, documenting when (dates and time) the aviation warning lights are in the on position and the duration of each event. Details for monitoring and reporting procedures must be included in the plan.

Additional anticipated engineering and technical conditions of COP approval are included in Appendix A of this ROD.[27] Atlantic Shores will be required to certify annually that it complies with the terms and conditions of its approved COP (30 CFR § 285.633(b)). BOEM is aware that Atlantic Shores has not yet secured necessary rights and authorizations to construct Project 2. Accordingly, BOEM anticipates imposing condition of COP approval 1.1.3 stating that the Lessees must not install on the OCS any facilities (as defined in 30 CFR § 585.113) that are solely part of Project 2 prior to issuance of all necessary federal, state and local approvals and conveyance of rights necessary for construction of Project 2. Atlantic Shores must also comply with all other applicable requirements of 30 CFR Parts 285 and 585, including, but not limited to, the submission of a Facility Design Report and a Fabrication and Installation Report, before beginning construction activities.

Today's decision balances the orderly development of OCS renewable energy with the prevention of interference with other uses of the OCS and the protection of the human, marine, and coastal environments. A decision that balances these goals where they conflict and does not hold one as controlling over all others is consistent with the duties required under subsection 8(p)(4) of OCSLA, which requires the Secretary to ensure that approved activity is carried out in a manner that provides for Congress's 12 enumerated goals.

My approval of this decision constitutes the final decision of the Department of the Interior. The action taken herein is pursuant to an existing delegation of authority.

Steven H. Feldgus
Principal Deputy Assistant Secretary
Land and Minerals Management

[27] All mitigation measures and terms and conditions adopted by BOEM as part of this ROD will be included in the COP authorization letter to be issued to Atlantic Shores.

5.2 NMFS' Decision

This section documents NMFS' planned determination to promulgate ITR and issue an incidental take authorization in the form of a LOA to Atlantic Shores Project 1 Company pursuant to its authorities under the MMPA, if specific findings are made. It also references NMFS' decision to adopt the BOEM final EIS to support NMFS' anticipated decision to promulgate the ITR and issue the associated LOA. NMFS prepared and signed a separate memorandum independently evaluating the sufficiency and adequacy of the BOEM final EIS. That memorandum provides NMFS' rationale to adopt the final EIS to satisfy its independent NEPA obligations related to the potential ITR and LOA. In that memorandum, NMFS concluded: (i) the action analyzed in the final EIS covers NMFS' proposed decision to issue an LOA to Atlantic Shores Project 1 Company and meets all NEPA requirements under 40 CFR § 1506.3 (adopting an EIS); (ii) the analysis includes the appropriate scope and level of environmental impact evaluation for NMFS' proposed action and alternatives; and (iii) NMFS' comments and suggestions related to primary environmental effects of concern from the proposed action (i.e., effects to marine mammals), submitted in its role as a cooperating agency, have been satisfied.

On February 28, 2022, NMFS received an application from Atlantic Shores Project 1 Company pursuant to MMPA Section 101(a)(5)(A) for an authorization to take small numbers of marine mammals, by harassment, incidental to the construction of an offshore wind energy project on the OCS offshore New Jersey in Lease Area OCS-A 0499, for a period of five years.[28] NMFS reviews applications and, if specific findings are made, promulgates regulations and issues incidental take authorizations pursuant to the MMPA. Incidental take authorizations may be issued as either: (1) ITR and associated LOAs under Section 101(a)(5)(A) of the MMPA or (2) Incidental Harassment Authorizations under Section 101(a)(5)(D) of the MMPA. In addition, 40 CFR §§ 1500-1508 and NOAA policy and procedures require all proposals for major federal actions to be reviewed with respect to their effects on the human environment. Issuance of an incidental take authorization to Atlantic Shores Project 1 Company is a major federal action, triggering NMFS' independent NEPA compliance obligation. When serving as a cooperating agency, NMFS may satisfy its independent NEPA obligations by either preparing a separate NEPA analysis for its issuance of an incidental take authorization or, if appropriate, by adopting the NEPA analysis prepared by the lead agency. On August 25, 2022, after NMFS determined Atlantic Shores Project 1 Company's application was adequate and complete, it had a corresponding duty to determine whether and how to authorize take of marine mammals incidental to the activities described in the application in accordance with standards and determinations set forth in the MMPA and its implementing regulations. Thus, the purpose of NMFS' proposed action—which was based on Atlantic Shores Project 1 Company's request for authorization to take marine mammals incidental to specified activities associated with the Project (e.g., pile driving, marine site assessment and characterization surveys)—is to evaluate Atlantic Shores Project 1 Company's request under requirements of the MMPA (16 USC § 1371(a)(5)(A)) and its implementing regulations (50 CFR Part 216) administered by NMFS and to determine whether the findings necessary to promulgate the ITR and issue the LOA can be made, based on the best available information. NMFS must render a decision regarding the request for authorization under its MMPA responsibilities (16 USC § 1371(a)(5)(A)) and its

[28] The application was originally received by the parent company, Atlantic Shores Offshore Wind, LLC, and the applicant subsequently requested that the name be changed to Atlantic Shores Project 1 Company.

implementing regulations. In addition to its opportunity to comment on the draft EIS, the public was also involved in the MMPA decision-making process through its opportunity to comment on NMFS' Notice of Receipt of Atlantic Shores Project 1 Company's incidental take request, which was published in the *Federal Register* (87 Fed. Reg. 59,061 [September 29, 2022]), and NMFS' proposed rulemaking that was published in the *Federal Register* (88 Fed. Reg. 65,430 [September 22, 2023])[29]. NMFS' final action considers those comments, as well as the corresponding formal consultation process under Section 7 of the ESA for promulgation of the final ITR and issuance of the associated LOA.

5.2.1 NMFS Decision (40 CFR § 1505.2(a)(1))

Pending completion of all statutory processes, NMFS intends to promulgate an ITR and issue an LOA to Atlantic Shores Project 1 Company, if specific findings are made, which would authorize take of marine mammals incidental to specified construction activities associated with the proposed Project (i.e., pile driving and HRG site and characterization surveys) for five years. NMFS' final decision to promulgate the ITR and issue the requested LOA will be documented in separate Decision Memoranda prepared in accordance with internal NMFS' policy and procedures. The LOA would authorize the incidental take of marine mammals while prescribing the amount and means of incidental take, as well as mitigation, monitoring, and reporting requirements, including those mandated by the BiOp that completes the formal Section 7 consultation process under the ESA. A final rule promulgating the regulations would describe NMFS' final determinations. Separately, NMFS would publish a notice in the *Federal Register* announcing an LOA has been issued, within 30 days of the action, in accordance with the MMPA.

5.2.2 Alternatives NMFS Considered (40 CFR § 1505.2(a)(2))

NMFS is required to consider a reasonable range of alternatives to a proposed action in accordance with NEPA and 40 CFR §§ 1502.10(a)(5) and 1502.14. NMFS considered two alternatives, the No Action Alternative in which NMFS would deny Atlantic Shores Project 1 Company's request for an authorization and an action alternative in which it would issue the requested LOA to Atlantic Shores Project 1 Company with mitigation, monitoring, and reporting requirements.

Consistent with BOEM's No Action Alternative, NMFS, under its No Action Alternative, would not issue the requested authorization to Atlantic Shores Project 1 Company, in which case, NMFS assumes Atlantic Shores Project 1 Company would not proceed with the proposed project as described in the application since it would be likely to cause harassment of marine mammals that is prohibited under the MMPA without an authorization. Since NMFS is also required by 40 CFR § 1505.2(a)(2) to identify an environmentally preferable alternative, NMFS considers the No Action Alternative to be the environmentally preferable alternative as the incidental take of marine mammals would be avoided since no construction activities resulting in harassment would occur.

[29] *See* https://www.federalregister.gov/documents/2023/09/22/2023-19733/takes-of-marine-mammals-incidental-to-specified-activities-taking-marine-mammals-incidental-to-the

The other alternative NMFS considered was its Proposed Action, the promulgation of regulations and issuance of the LOA to Atlantic Shores Project 1 Company, which would authorize take of marine mammals incidental to five years of specified construction activities as noted above, subject to specified mitigation, monitoring, and reporting measures. As part of that alternative, and through the public and agency review process, NMFS considered a range of mitigation measures to carry out its duty to identify other means of effecting the least practicable adverse impact on the species or stocks. These measures were initially identified in the proposed rule (88 Fed. Reg. 65,430 [September 22, 2023]) and may be modified in the final rule and LOA, if issued, in response to public comment, agency review, and ESA Section 7 consultation. The regulations and LOA, if issued, would also include monitoring and reporting requirements, as mandated under the MMPA. The Proposed Action alternative evaluated by NMFS (i.e., the promulgation of regulations and issuance of the LOA to Atlantic Shores Project 1 Company) will provide the incidental take authorization necessary to undertake the activities identified in the Preferred Alternative evaluated by BOEM in the final EIS and selected in this ROD.

5.2.3 Primary Factors NMFS Considers Favoring Selection of the Proposed Action (40 CFR § 1505.2(a)(2))

As noted earlier, NMFS must promulgate regulations and issue an LOA to Atlantic Shores Project 1 Company in response to its request for an incidental take authorization, if specific findings are made after consideration of public comments. NMFS' Proposed Action to promulgate regulations and issue an LOA for specified activities included as part of BOEM's selected alternative effectively meets NMFS' stated purpose and need.

5.2.4 Mitigation, Monitoring and Reporting Considered by NMFS (40 CFR § 1505.2(a)(3))

NMFS has a statutory requirement to prescribe the permissible methods of take and other means of effecting the least practicable adverse impact on the species or stocks of marine mammals and their habitat, paying particular attention to rookeries, mating grounds, and other areas of similar significance. All incidental take authorizations must also include requirements pertaining to monitoring and reporting. Mitigation, monitoring, and reporting requirements related to marine mammals were preliminarily identified in the proposed ITR and LOA (88 Fed. Reg. 65,430 [September 22, 2023]). If NMFS promulgates and issues the LOA to the applicant, the regulations and LOA will include the necessary mitigation to have the least practicable adverse impact on marine mammals, as well as monitoring and reporting requirements to be implemented by Atlantic Shores Project 1 Company. In summary, the mitigation, monitoring, and reporting measures generally include, but are not limited to, the following: vessel strike avoidance measures; seasonal moratorium on foundation pile driving; usage of PSOs and PAM operators; establishment of clearance and shutdown zones; soft-start and ramp-up procedures for impact pile driving and acoustic source use during high-resolution geophysical surveys, respectively; use of sound attenuation measures and PAM during foundation pile driving; requirements to conduct sound field verification (SFV) during foundation pile driving; fishery survey mitigation to avoid interactions and entanglements; and various situational and incremental (i.e., weekly, monthly, annual) reporting requirements. Appendix A of this ROD includes a listing of mitigation, monitoring, and reporting measures that have been considered by BOEM in formulating its NEPA analysis. Many of these measures align with those included in the

proposed ITR and LOA; however, if issued, the final LOA may contain modified or additional measures that are more protective than those listed in Appendix A.

Samuel D. Rauch, III
Deputy Assistant Administrator for Regulatory Programs

Date

5.3 USACE's Decision

In accordance with 40 CFR § 1505.2, this section constitutes the ROD of the USACE Philadelphia District to issue Department of the Army (DA) permits pursuant to Section 10 of the Rivers and Harbors Act of 1899 (RHA; 33 USC § 403) and section 404 of the Clean Water Act (CWA; 33 USC § 1344) for the construction and maintenance of the Atlantic Shores South (Project 1 and Project 2) proposed by Atlantic Shores Offshore Wind, LLC. This document is prepared in accordance with the CEQ regulations implementing the NEPA (42 USC §§ 4321 et seq., 40 CFR Parts 1500-1508, and 33 C.F.R. §325 Appendix B).[30] This section also constitutes the USACE's CWA Section 404(b)(1) Guidelines Evaluation (40 CFR Part 230), and the Public Interest Review (33 CFR § 320.4) under the authority delegated to the District Engineer by 33 CFR § 325.8.

This ROD incorporates by reference the U.S. DOI, BOEM 2023 draft EIS and the 2024 final EIS for the Atlantic Shores Offshore Wind Project. USACE has been a cooperating agency under 40 CFR § 1501.8, with BOEM as lead agency under 40 CFR § 1501.7, for purposes of complying with NEPA. Additionally, BOEM has been the lead agency for the purposes of complying with Section 7 of the Endangered Species Act (ESA), Section 106 of the NHPA, and Section 305 of the Magnuson-Stevens Act.

USACE concurs with BOEM that this project constitutes a major federal action significantly affecting the quality of the human environment and that, therefore, an EIS was required. As a cooperating agency in accordance with NEPA, USACE provided appropriate input and review comments during the EIS process. USACE has independently reviewed the EIS and concludes, that its comments and suggestions have been satisfied. USACE has reviewed and evaluated the information in the final EIS in accordance with 40 CFR § 1506.3, and 33 CFR Part 325, Appendix B, and finds that the actions covered by the final EIS and those regulated by USACE under Section 10 of the RHA and Section 404 of the CWA are substantially the same. The final EIS and associated NEPA documents prepared by BOEM, with referenced materials, and comments received in response to them, are hereby adopted in full and in accordance with 40 CFR § 1506.3, for purposes of NEPA, the public interest review required by 33 CFR § 320.4, and the 404(b)(1) Guidelines analysis required by 40 CFR Part 230.

This section documents the decision of USACE to issue DA permits pursuant to Section 404 of the CWA and Section 10 of the RHA to Jennifer Daniels, representing Atlantic Shores Offshore Wind LLC. The DA permits will authorize the construction and maintenance of the energy generation facility including turbine generator towers, offshore substations, metocean towers, metocean buoys, passive acoustic monitoring devices, inter-array cables, interlink cables and transmission cables within BOEM's Renewable Energy Lease Area OCS-A 0499; as well as transmission cables carrying energy to shore, any installed nearshore cable protection, conduits under nourished beaches, transition joint bays, cables and associated vaults onshore, specialized converter substations and grid interconnections.

[30] The associated final EIS was prepared using the 2020 CEQ NEPA regulations; therefore, this ROD follows those regulations.

5.3.1 USACE Authorities and Jurisdictional Activities

5.3.1.1 USACE Authority and Jurisdiction under Section 404 of the CWA

Under Section 404 of the CWA, USACE regulates the discharge of dredged or fill material into the waters of the United States. The USACE's Section 404 jurisdiction in tidal waters extends from the high tide line to the seaward limits of the territorial seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three NM (see 33 CFR § 328.4(a) & (b)). The baseline from which the three NM limit of the territorial seas is measured is generally the line on the shore reached by the ordinary low tides but may also lie across the mouth of bays or elsewhere when the coast is not in direct contact with the open sea. For this project, the USACE's Section 404 jurisdiction in tidal waters coincides with the limits of New Jersey state waters.

The limit of Section 404 jurisdiction in non-tidal waters (33 CFR § 328.4(c)) is as follows: (1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high-water mark, or (2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high-water mark to the limit of the adjacent wetlands. When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

5.3.1.2 USACE Section 10 Jurisdiction in Navigable Waters of the U.S.

Under Section 10 of the RHA, USACE regulates construction of any structures and work that are located in or that affect "navigable waters of the U.S." In tidal waters, the shoreward limit of navigable waters extends to the mean high-water mark while the seaward limit coincides with the limit of the territorial seas as described above.

For this project, USACE has determined that the proposed structures and work within navigable waters subject to Section 10 jurisdiction will occur within the export cable corridor, and selected sections of the onshore cable route.

5.3.1.3 USACE Section 10 Jurisdiction on the Outer Continental Shelf

The USACE's authority to prevent obstructions to navigation in navigable waters of the United States was extended to artificial islands, installations, and other devices located on the seafloor, to the seaward limit of the OCS, by Section 4(f) of the OCSLA of 1953 as amended (43 USC 1333 and 33 CFR 320.2). Structures proposed to be located on the seafloor of the OCS and therefore regulated under Section 10 of the RHA include WTGs, OSSs, meteorological towers or buoys, passive acoustic monitoring devices attached to the seafloor, inter-array cables, interlink cables, and transmission export cables.

5.3.1.4 USACE Section 404 Jurisdiction and NJDEP 404 Assumption

In accordance with 40 CFR 233 and with the approval of EPA, the NJDEP has assumed the Section 404 permit program from the EPA under Section 404(g) (33 USC 1344(g)) of the CWA. USACE has retained authority for tidal waters, other waters affected by interstate and foreign commerce, and their adjacent wetlands. A 1993 Memorandum of Agreement between the Corps and the state of New Jersey, pursuant to 40 CFR 233.14, outlines the relevant spatial extent, joint

processing procedures, and other administrative considerations pertinent to assumption by the state program.

5.3.2 USACE Public Notice and Comments

USACE issued a public notice on May 19, 2023, soliciting comments and recommendations concerning issuance of a DA Permit for the proposed facility and supporting infrastructure; expanding the traditional comment period to 45 days given the unprecedented scope of materials referenced and to align with BOEM's comment period. The notice made explicit reference to the draft EIS and planned public meetings, encouraging public input through those mechanisms preferably to consolidate federal consideration. USACE received two directed comment letters that were forwarded to BOEM for inclusion in the EIS. USACE was represented at public meetings and directly engaged with members of the public to address questions and concerns. Comments and any relevant responses can be found in Appendix N of the final EIS.

5.3.3 Alternatives Considered by the USACE under the National Environmental Policy Act (NEPA)

5.3.3.1 Determination of USACE scope of analysis for NEPA

The analysis below covers the footprint of specialized substations, onshore export cable corridors where they intersect wetlands or tidally influenced flowing water bodies, staging or cable pulling areas in the immediate vicinity of those intersections, transition joint bays where cable is joined or spliced, staging or cable pulling areas in the immediate vicinity of transition joint bays or related horizontal directional drilling (HDD) equipment, dredge or excavation footprints sited below mean high water, subaqueous buried cable corridors for the purpose of carrying generated energy to shore, the footprint of scour protection placed over cables installed between high tide line at the shore and the 3-nmi, subaqueous buried array cable corridors for interconnection of WTGs and OSSs, the footprint of passive acoustic monitoring devices, and the footprint of WTGs and OSSs.

Each of these aspects of the project satisfy two or more of the four factors in 33 CFR 325 Appendix B and would thus be the responsibility of this office to consider.

5.3.3.2 Determination of Purpose and Need for USACE NEPA Review

Project purpose and need for the project as provided by the applicant and reviewed by the USACE:

The purpose of the Projects is to develop offshore wind energy generation facilities within Lease Area OCS-A 0499 to provide clean, renewable energy to the Northeastern U.S. by the mid-to-late 2020s. The Projects will help both the United States and New Jersey achieve their renewable energy goals, diversify the State's electricity supply, increase electricity reliability, and reduce greenhouse gas (GHG) emissions. The Projects will also provide numerous environmental, health, community, and economic benefits, such as the creation of substantial new employment opportunities, including within disadvantaged communities.

Presidential Executive Order 14008 (Tackling the Climate Crisis at Home and Abroad), signed on January 27, 2021, directs the Secretary of the Interior, in consultation with other federal agencies, to review siting and permitting processes to identify steps to double offshore wind energy production by 2030 (see Section 207; White House 2021). The State of New Jersey has also set ambitious renewable energy goals and mandates. New Jersey's Global Warming Response Act of 2007, as amended in 2019, mandates a reduction in the State's GHG emissions to 80 percent below its 2006 levels by 2050. New Jersey's renewable energy goals also include reaching 11,000 MW of offshore wind energy capacity by 2040, as outlined in Executive Order 307, and achieving 100 percent clean energy by 2050, as described in the 2019 Energy Master Plan (Ramboll 2020; NJDEP 2020).

In accordance with the New Jersey Offshore Wind Economic Development Act (OWEDA), on June 30, 2021, the New Jersey Board of Public Utilities (NJBPU) awarded Atlantic Shores an OREC allowance to deliver 1,510 megawatts (MW) of offshore renewable energy into the State of New Jersey. Project 1 that will be developed under this OREC award, referred to as Project 1, will be owned and operated by Atlantic Shores Offshore Wind Project 1, LLC (Atlantic Shores Project 1 Company). Pursuant to New Jersey Executive Orders #8 and #92, the State will be awarding additional OREC allowances to offshore wind energy projects through a competitive solicitation process every 2 years through 2026. Project 1 is being developed such that it could support the above-referenced solicitation. Project 2 is seeking NJBPU solicitation.

For purposes of USACE NEPA review, the basic project purpose is to construct and maintain two commercially viable offshore wind energy generation facilities and supporting infrastructure within Lease Area OCS-A 0499 providing energy to the New Jersey power grid. The overall project purpose is addressed above in section 2.2.

5.3.3.3 USACE Identification of Alternatives Under NEPA

The applicant is constrained to the assigned lease and directed point(s) of interconnection. As such, offsite alternatives for siting of the energy generation facility and points of interconnection were not available for consideration.

For purposes of NEPA, the above-described alternatives reflect those considered by USACE.

5.3.3.4 USACE Specification of Environmentally Preferable Alternatives

The Preferred Alternative analyzed in the final EIS is composed of a combination of Alternative B (the Proposed Action), Alternative C4 (Habitat Impact Minimization/Fisheries Habitat Impact Minimization: Micrositing), Alternative D3 (No Surface Occupancy of Up to 10.8 Miles (17.4 Kilometers) from Shore; Removal of Up to 6 Turbines), and Alternative E (Wind Turbine Layout Modification to Establish a Setback between Atlantic Shores South and Ocean Wind 1), as well as two proposed mitigation measures that require WTG removal identified in final EIS Appendix G, Mitigation and Monitoring, Table G-23 (BOEM-Proposed Mitigation Measure #5 and NOAA/NMFS-Proposed Mitigation Measure #1).

5.3.3.5 USACE Mitigation, Monitoring, and Reporting (40 CFR § 1505.2(a)(3))

As indicated above in Section 4, Appendix G of the final EIS identifies measures to avoid, minimize, and mitigate adverse environmental impacts that could result from the proposed activities and identifies the anticipated enforcing agency. BOEM is adopting all the measures identified in Tables G-2, G-3, and G-4 of Appendix G of the final EIS, except for those that are identified in those tables as outside of BOEM's or BSEE's authority to enforce. USACE anticipates adopting applicable measures to USACE authorities in considering pending decisions.

5.3.4 Alternatives Evaluations Under Section 404(b)(1) Guidelines

In addition to the alternatives considered above USACE required and reviewed a routing analysis summary detailing the screening criteria applied to select the offshore cable route(s) considered above as well as onshore cable routing.

In summary, Atlantic Shores considered the following constraints and opportunities:

- Threatened, endangered or otherwise protected species and habitat
- Wetlands, waterbodies, and floodways
- Historic and archaeological features
- Land use (residential, commercial, agricultural, etc.)
- Public spaces (schools, places of worship, cemeteries, etc.)
- Parks and recreation areas, including Green Acres encumbered parcels
- Federal and state lands
- Railroads and highways
- Communication infrastructure
- Existing transmission line and pipeline corridors
- Mapped soils
- Length of transmission line
- Width of potential transmission line corridor
- Number of major-minor angles

And the following engineering criteria for feasibility:

- Location. Areas within approximately 1,000 m (3,280 ft) of the coastline (maximum distance for horizontal directional drilling to be able to reach beyond the toe-of-slope of the beach).
- Size. Cable landfall area (transition between submarine cable and onshore cable) of 200 m by 100 m (656 by 328 ft) in size.

- Infrastructure. Areas that were either undeveloped or contained surface development (i.e., parking lots).

These criteria were applied to 15 preliminary submarine cable routes to potential landfall locations and 22 onshore routes to the potential points of interconnection with transmission and distribution networks, divided between the two proposed projects. Using this approach, the applicant has avoided or minimized siting in special aquatic sites as defined at 40 CFR 230.

5.3.4.1 Site Selection/Screening Criteria

In order to be practicable, an alternative must be available, achieve the overall project purpose (as defined by the Corps) and be feasible when considering cost, logistics and existing technology.

Criteria for evaluating alternatives as evaluated and determined by the Corps:

Point(s) of Interconnection (POI), Onshore Substation(s), and Associated Cable Routing

- Shorter route lengths are preferred to reduce overall potential impacts and installation costs.
- A lower number of hard route angles requiring a dead-end or corner transmission structure is preferred since hard route angles are more challenging, potentially disruptive to local traffic, and costly to construct.
- Site characteristics: Routes utilizing established ROWs for larger highways, state routes, existing transmission lines, or railroads are preferred because of the widespread development along the coast that prevents the establishment of a new ROW.
- Existing uses and sensitive areas: Routes that avoid or minimize the distance of the onshore interconnection cable route in or proximate to residential neighborhoods are preferred to reduce temporary, construction-related noise impacts.
- Routes that minimize impacts to mapped threatened and endangered species habitat, tidelands, and wetlands are preferred.

Export Cable Landfall(s) (landfall)

- The landfall sites require adequate open space onshore and proximate to the coastline to accommodate the underground transition vaults and required HDD staging areas.
- Landfall sites with offshore water depths that are deep enough to accommodate a cable laying vessel at the offshore HDD entrance/exit point are preferred.
- Preferred landfall sites are not located proximate to residential communities and other sensitive receptor areas such as wildlife management areas, state parks, and other protected open spaces, which make up most of the open land along the New Jersey coast.
- The projects require areas that are either undeveloped or consist of surface development (i.e., parking lots), without conflicting subsurface infrastructure.

Offshore Export Cable Route within NJ State Waters

Technical considerations:

- The physical attributes of a cable route, such as cable bending radius, length, and distance to installation hazards, were considered in the evaluation of each route.

Site characteristics:

- Water depth maps were used to confirm feasibility for cable installation tools and to identify any areas of steep slopes, which are not preferred due to expected installation constraints.
- Publicly identified surficial and shallow geological characteristics were used to confirm feasibility for cable installation tools and to assess whether mobile sediments were present; areas of mobile sediments are not preferred because they may pose a risk of over-burial or exposure of the cable. Sandy sediments are preferred over rocky, stiff, or very fine sediments to ensure cable burial to a sufficient depth.

Existing uses and sensitive areas:

- Cable routes that avoid mapped shipwrecks are preferred to reduce impacts to cultural resources and potential installation challenges.
- Cable routes that avoid navigation channels or cross such channels as close to perpendicular as possible to minimize the crossing distance are preferred.
- Cable routes that avoid or minimize impacts to sensitive habitats for fish and other marine wildlife, such as artificial and natural reefs and other known critical habitat locations, are preferred.
- Cable routes that avoid or minimize the number of crossings of mapped offshore cables and pipelines, or known future offshore cables, are preferred.
- If a crossing is required, a route that allows the crossing to be as close to perpendicular as possible (to minimize the crossing distance) is preferred.

Hazards:

- Cable routes were selected to avoid known hazards, including rock outcrops, submerged infrastructure, and other structures or objects that present a hazard to vessel navigation.
- Cable routes were selected to avoid mapped munitions and explosives of concern (MEC) (e.g., bombs, bullets, shells, grenades, mines, etc.) and military areas given safety considerations.
- Cable routes were selected to avoid dredged material disposal areas and dumping grounds given the potential for cable installation constraints and the presence of contaminated sediments.

<u>Wind Turbine Generators and Offshore Substations</u>

- Alignment with available wind resources to optimize power production potential.
- Orientation that minimizes impacts to other marine uses, including fisheries and vessel traffic patterns.

- Minimization of visual impacts within the constraints of the designated lease.

5.3.4.2 Description of Section 404 Alternatives and Their Impacts

Refer to Alternatives above in Table 3-1.

5.3.4.3 Determination of the Least Environmentally Damaging Practicable Alternative under the 404(b)(1) Guidelines:

Table 3-2 above summarizes impacts contributed by each evaluated alternative to environmental resources, with the preferred alternative integrating and accounting for selected benefits of the others. The preferred alternative provides for uniform distribution of monopile mounted structures and provides for separation between facilities, improving navigational safety. The preferred alternative avoids and minimizes destruction or adverse modifications to existing habitats. The preferred alternative limits the scale of turbine generators to minimize visibility from the shores of New Jersey's barrier islands. In combination with these considerations, the discharges subject to the 404(b)(1) Guidelines required to construct this facility are principally limited to cable protection that is only deployed where burial to intended depth is obstructed or otherwise infeasible, including up to 34 acres for the transmission cables serving both projects.

Therefore, the Preferred Alternative was determined to be the least environmentally damaging practicable alternative (LEDPA) and meets the criteria specified in 40 C.F.R. 230. All environmental impacts of the preferred alternative were addressed in the NEPA process by BOEM in the final EIS, which USACE has adopted. Other cable route alternatives were not carried forward for analysis under NEPA. They were not permittable by USACE under Section 404 of the CWA because they were not the LEDPA.

5.3.5 Evaluation of the Discharge of Dredged and Fill Material Under the 404(B)(1) Guidelines (40 CFR Part 230, Subparts B through H)

The following sequence of evaluation is consistent with 40 CFR § 230.5. The impact assessment below may differ from the impact assessment in the final EIS in that the NEPA analysis assessed impacts from the Project as a whole, whereas this analysis considers only a subset of the Project, specifically the impacts from the discharge of dredged and fill material into waters of the United States. Thus, the proposed discharges of dredged and fill material under consideration do not include the structures proposed for installation on the OCS. It has been determined that there are no practicable alternatives to the proposed discharge (the preferred alternative) that would be less environmentally damaging (40 CFR § 230.10(a)). There is no practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, and the proposed discharge does not have other significant environmental consequences. Therefore, this section evaluates the discharge proposed in the preferred alternative.

5.3.5.1 Candidate Disposal Site Delineation (Subpart B, 40 CFR § 230.11(f))

The Project includes discharge of crushed stone where cable installation cannot achieve the target depth, such as intersections with existing cables.

5.3.5.2 Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C 40 CFR § 230.20-230.25)

The following has been considered in evaluating the potential impacts on physical and chemical characteristics: substrate; suspended particulates/turbidity, water, current patterns and water circulation, normal water fluctuations, and salinity gradients.

Fills discharged for cable protection are anticipated to permanently alter substrate composition by introducing crushed stone. This alteration is limited to the immediate vicinity of project components. Construction within the Atlantic Ocean will disturb fine sediments, resulting in short term suspension of particles in the water column that should dissipate over the course of a few hours. Water characteristics in the vicinity of operating project components and during construction are anticipated to be altered. Water clarity would be reduced temporarily when construction activities suspend fine sediments. WTGs occupy the full depth of the water column and could subtly alter current patterns and water circulation, though these features are not within the relevant jurisdiction. Given a lack of examples at the project scale, the cumulative change in current patterns and water circulation is estimated to be minor. Normal water fluctuations and salinity gradients are not expected to be affected given that the project is widely spread out and presents no consistent boundary to the tidal cycle and no sufficient chemical alteration to precipitate or add dissolved salt to the aquatic environment.

5.3.5.3 Potential Impacts on the Biological Characteristics of the Aquatic Ecosystem (Subpart D 40 CFR § 230.30-230.32)

The following has been considered in evaluating the potential impacts on biological characteristics: threatened and endangered species; fish, crustaceans, mollusks, and other aquatic organisms; and other wildlife.

Where consultation with the Secretaries of the Interior and of Commerce occurs under Section 7 of the ESA, the conclusions of the Secretaries concerning the impact(s) of the discharge on threatened and endangered species and their habitat shall be considered final. In the immediate vicinity of project components and construction activities, habitat alterations associated with discharges are anticipated to be permanent but strictly localized having a moderate adverse and minor beneficial effect on threatened and endangered species, fish, crustaceans, mollusks, other aquatic organisms, and other wildlife.

5.3.5.4 Potential impacts on special aquatic sites (Subpart E 40 CFR § 230.40-230.45)

The following has been considered in evaluating the potential impacts on special aquatic sites: sanctuaries and refuges; wetlands; mud flats; vegetated shallows; coral reefs; and riffle pool complexes.

There are no sanctuaries and refuges, coral reefs, or riffle pool complexes in the project vicinity for the purposes of this analysis. Mudflats in the project vicinity of the project will be avoided through the use of directional drilling to the maximum practicable extent. Unforeseen and unavoidable wetland impacts not proposed, will be restored to contours observed prior to project implementation and are not anticipated to adversely affect biological productivity or result in smothering, dewatering, permanent flooding, altering substrate elevations, or altering the

periodicity of water movement. The proponent intends to cross special aquatic sites in the project vicinity using only horizontal directional drilling and has routed project features to minimize relevant intersections.

5.3.5.5 Potential impacts on human use characteristics (Subpart F 40 CFR § 230.50-230.54)

The following has been considered in evaluating the potential impacts on human use characteristics: municipal and private water supplies; recreational and commercial fisheries; water-related recreation; aesthetics; and parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves.

No municipal or private water supplies were identified in the project vicinity. Recreational and commercial fisheries will be subjected to a period of adjustment to navigating around the discharges to access some of the prime fishing grounds within nearshore waters. Once placed stone fills for cable protection attract and supplement marine life communities, offsetting benefits would be anticipated to accrue. Numerous parks and historical monuments are in the vicinity but not anticipated to be affected by any discharges. Again, the proposed discharges of dredged and fill material under consideration do not include the structures proposed for installation on the OCS so cumulatively those under consideration would have a negligible effect on aesthetics, national seashores, wilderness areas, research sites, and similar preserves.

5.3.5.6 Evaluation and Testing (Subpart G, 40 CFR § 230.60-230.61)

The following has been considered in evaluating the biological availability of possible contaminants in dredged or fill material: physical substrate characteristics; hydrography in relation to known or anticipated sources of contaminants; results from previous testing of the material or similar material in the vicinity of the project; known, significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated hazardous substances (Section 311 of the CWA); other public records or significant introduction of contaminants from industries, municipalities, or other sources; and known existence of substantial material deposits of substances that could be released in harmful quantities to the aquatic environment by man-induced discharge activities.

Fills are proposed to be sourced only from sources providing clean sand, clean soil, or clean crushed stone, free of any listed contaminants in 40 CFR 230.60-230.61. Dredging associated with the connected action, rehabilitation of a commercial port facility, is planned to be conducted under a previous approval granted to Atlantic City (PERMIT NUMBER NAP-2021-00573-95). No sampling is anticipated to be required beyond what was collected for site assessments.

5.3.5.7 Actions to Minimize Adverse Impacts (Subpart H, 40 CFR §§ 230.70 – 230.77)

The following actions, as appropriate, have been taken through application of 40 CFR 230.70-230.77 to ensure no more than minimal adverse effects of the proposed discharge: actions concerning the location of the discharge; actions concerning the material to be discharged; actions controlling the material after discharge; actions affecting the method of dispersion; actions related to technology; actions affecting plant and animal populations; actions affecting human use; and other actions.

Actions applicable to fill include:

- 40 CFR 230.72 (d) – Timing the discharge to minimize impact, for instance during periods of unusual high-water flows, wind, wave, and tidal actions;

- 230.74 (c & e) - Using machinery and techniques that are especially designed to reduce damage to wetlands. This may include machines equipped with devices that scatter rather than mound excavated materials, machines with specially designed wheels or tracks, and the use of mats under heavy machines to reduce wetland surface compaction and rutting. Employing appropriate machinery and methods of transport of the material for discharge;

- 230.75 (c) - Avoiding sites having unique habitat or other value, including habitat of threatened or endangered species;

- 230.76 (f) - Locating the disposal site outside of the vicinity of a public water supply intake; and

- 230.77 (d) - When a significant ecological change in the aquatic environment is proposed by the discharge of dredged or fill material, the permitting authority should consider the ecosystem that will be lost as well as the environmental benefits of the new system.

Actions applicable to disposal of dredged material include:

- 40 CFR 230.70 (c) - Selecting a disposal site that has been used previously for dredged material discharge;

- 230.70 (f) - Designing the discharge of dredged or fill material to minimize or prevent the creation of standing bodies of water in areas of normally fluctuating water levels, and minimize or prevent the drainage of areas subject to such fluctuations;

- 230.71 (a) - Disposal of dredged material in such a manner that physiochemical conditions are maintained and the potency and availability of pollutants are reduced;

- 230.72 (a)(1) - Using containment levees, sediment basins, and cover crops to reduce erosion;

- 230.72 (c) - Maintaining and containing discharged material properly to prevent point and nonpoint sources of pollution;

- 230.74 (a) - Using appropriate equipment or machinery, including protective devices, and the use of such equipment or machinery in activities related to the discharge of dredged or fill material;

- 230.74 (e) - Employing appropriate machinery and methods of transport of the material for discharge;

- 230.75 (c) - Avoiding sites having unique habitat or other value, including habitat of threatened or endangered species;
- 230.76 (b) - Selecting disposal sites which are not valuable as natural aquatic areas;
- 230.76 (d) - Following discharge procedures which avoid or minimize the disturbance of aesthetic features of an aquatic site or ecosystem;
- 230.76 (e) - Selecting sites that will not be detrimental or increase incompatible human activity, or require the need for frequent dredge or fill maintenance activity in remote fish and wildlife areas; and
- 230.76 (f) - Locating any disposal site outside of the vicinity of a public water supply intake.

5.3.5.8 Factual Determinations (Subpart B, 40 CFR § 230.11)

The following determinations are made based on the applicable information above, including actions to minimize effects and consideration for contaminants: physical substrate; water circulation, fluctuation and salinity; suspended particulates/turbidity; contaminants; aquatic ecosystem and organisms; proposed disposal site; cumulative effects on the aquatic ecosystem; and secondary effects on the aquatic ecosystem.

Factual Determinations of Potential Effects						
Site	**N/A**	**No Effect**	**Negligible Effect**	**Minor Effect (Short Term)**	**Minor Effect (Long Term)**	**Major Effect**
Physical substrate					X	
Water circulation, fluctuation and salinity			X			
Suspended particulates/turbidity				X		
Contaminants			X			

Aquatic ecosystem and organisms					X	
Proposed disposal site					X	
Cumulative effects on the aquatic ecosystem			X			
Secondary effects on the aquatic ecosystem			X			

Discussion: See discussions above.

5.3.5.9 Findings of Compliance or Non-compliance with the Restrictions on Discharges (40 CFR § 230.10(a-d) and 230.12)

Based on the information above, including the factual determinations, the preferred alternative has been evaluated to determine whether any of the restrictions on discharge would occur:

1. As evaluated above, there is no practicable alternative to the proposed discharge that would be less damaging to the environment (any alternative with less aquatic resource effects, or an alternative with more aquatic resource effects that avoids other significant adverse environmental consequences).
2. The discharge will not cause or contribute to violations of any applicable water quality standards.
3. The discharge will not violate any toxic effluent standards (under Section 307 of the CWA).
4. The discharge will not jeopardize the continued existence of endangered or threatened species or their critical habitat.
5. The discharge will not violate standards set by the Department of Commerce to protect marine sanctuaries designated under title III of the MPRSA of 1972.
6. The discharge will not cause or contribute to significant degradation of waters of the United States.
7. All appropriate and practicable steps (Subpart H, 40 CFR § 230.70-230.77) have been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem. The discharge is determined to be compliant with the inclusion of the appropriate and practicable discharge conditions described in Appendix A, to minimize pollution and adverse effects to the affected aquatic ecosystems.

5.3.6 USACE Public Interest Review ((33 CFR § 320.4)

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest as stated at 33 CFR 320.4(a). To the extent appropriate, the public interest review below also includes consideration of additional policies as described in 33 CFR 320.4(b) through (r). The benefits that reasonably may be expected to accrue from the proposal are balanced against its reasonably foreseeable detriments.

5.3.6.1 USACE Review of Public Interest Factors (33 CFR § 320.4(a)(1))

Conservation (beneficial) (including as appropriate consideration for the policy at 33 CFR 320.4(p)): Implementing this activity will defer any anticipated need for development of energy producing facilities in or near communities of the New Jersey coast, to include natural gas burning facilities requiring significant pipeline infrastructure for supply and nuclear generating facilities requiring substantial water intakes for cooling and specialized disposal of radioactive wastes, to name a few.

Economics (beneficial) (including as appropriate consideration for the policy at 33 CFR 320.4(q)): This project will employ a significant workforce to construct and maintain.

Aesthetics (detrimental) (including as appropriate consideration for the policy at 33 CFR 320.4(e)): Approximately half of the north to south oriented coast of New Jersey will have clear view, in most light conditions, of WTGs installed by this project and any others receiving approval in the coming years. This will contribute an aesthetic effect by destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of the area. The proposal includes structures on the OCS of the Atlantic Ocean that will be visible from vantage points along much of the coast of New Jersey.

Wetlands (negligible) (including as appropriate consideration for the policy at 33 CFR 320.4(b)): All proposed wetland crossings are planned to be accomplished using directional drilling techniques that avoid surface disturbance.

Historic Properties (neutral/mitigated) (including as appropriate consideration for the policy at 33 CFR 320.4(e)): Given that ocean views are a contributing factor for listing historic properties, the visibility of project structures has a detrimental effect on the properties identified in Appendix I of the final EIS. The applicant through endorsement of the MOA, has committed to numerous mitigative measures to resolve adverse effects including but not limited to studies, documentation, and contribution of funds.

Fish and Wildlife Values (neutral/mitigated) (including as appropriate consideration for the policy at 33 CFR 320.4(c)): Conservation recommendations, reasonable and prudent measures, as well as the recommendations of the relevant state agency have been implemented by inclusion in the required mitigation and monitoring measures as part of the proposed action (Appendix G of the final EIS).

Flood Hazards(neutral/mitigated): (including as appropriate consideration for the policy at 33 CFR 320.4(k)) NJDEP has applied conditions to the water quality certification that satisfactorily limit and offset any cumulative contribution to flood hazard by this activity.

Floodplain Values (negligible) (including as appropriate consideration for the policy at 33 CFR 320.4(l)): NJDEP has applied conditions to the water quality certification that satisfactorily limit and offset any cumulative contribution to floodplain values by this activity.

Land Use (none) (including as appropriate consideration for the policy at 33 CFR 320.4(j)): The primary responsibility for determining zoning and land use matters rests with state, local and

tribal governments. The district engineer will normally accept decisions by such governments on those matters unless there are significant issues of overriding national importance.

Navigation (neutral/mitigated) (including as appropriate consideration for the policy at 33 CFR 320.4(o)): Mitigation measures include: installation of project features recommended by the United States Coast Guard to minimize impediments, the application of required markings, the notification of mariners of hazards, and the timing of restricted access.

Shoreline Erosion and Accretion (negligible) (including as appropriate consideration for the policy at 33 CFR 320.4(g)): Project features intersecting shorelines have been designed to circumvent entirely or to protect against any contribution to erosion or accretion, except where state and local recommendation favors accretion.

Recreation (neutral/mitigated) (including as appropriate consideration for the policy at 33 CFR 320.4(e)): The applicant has scheduled the construction of all project aspects to minimize conflict with recreation, marine and vehicular traffic, and commercial or recreational fisheries wherever feasible.

Water Supply and Conservation (none) (including as appropriate consideration for the policy at 33 CFR 320.4(m)): This activity will not alter availability or conservation efforts with regard to water supply.

Water Quality (neutral/mitigated) (including as appropriate consideration for the policy at 33 CFR 320.4(d)): The certifying authority is anticipated to evaluate and approve the proposed action conditionally. The Regional Administrator, U.S. EPA, is not anticipated to send notification to neighboring jurisdictions and would confirm processing of the license or permit may proceed without awaiting further action from EPA pursuant to CWA 401(a)(2).

Energy Needs (beneficial) (including as appropriate consideration for the policy at 33 CFR 320.4(n)): The project will supply significant energy to offset consumption of fossil fuels and provide for growing demand.

Safety (not applicable) (including as appropriate consideration for the policy at 33 CFR 320.4(k)): No structures intended for impoundment of water are proposed.

Food and Fiber Production (neutral/mitigated): The facility and supporting infrastructure have been sited to avoid designated fisheries resources to the maximum practicable extent.

Mineral Needs (none): With sand for beach renourishment being the predominant controlling mineral resource in the vicinity of the project, the applicant has sited and routed all project features to avoid deposits of interest, colloquially referred to as borrow areas, designated for such use.

Consideration of Property Ownership (none) (including as appropriate consideration for the policy at 33 CFR 320.4(g)): The applicant will obtain all necessary permission to access and utilize required properties to implement the project including potential conflicts with intersected federal projects.

Other (negligible) (including as appropriate consideration for the policy at 33 CFR 320.4(j) and other applicable policies): WTGs occupy the full depth of the water column and could subtly alter current patterns and water circulation. Given a lack of examples at the project scale, the cumulative change is estimated to be minor. Cables have associated magnetic fields that weaken significantly over a short distance but will be pervasive at the seabed in the immediate vicinity; cables carrying the current anticipated to be generated by the project dissipate heat that will alter temperature in the immediate vicinity that can indirectly affect suspended or dissolved chemical constituents such as oxygen.

5.3.6.2 USACE Evaluation of the Relative Extent of the Public and Private Need for the Proposed Structure or Work (33 CFR § 320.4(a)(2)(i))

The Project is designed to meet in part the need for competitively priced renewable energy and additional capacity in accordance with State and regional renewable energy demands and goals. Under the New Jersey Offshore Wind Development Act (OWEDA), the NJBPU is required to establish an OREC program requiring a percentage of electricity sold in the state be derived from offshore wind energy, in order to support at least 7,500 MW of generation from qualified projects. On June 30, 2021, the NJBPU selected the Atlantic Shores Offshore Wind South project to develop the offshore wind energy facilities proposed in these applications. In terms of the private need, in addition to providing financial gain to the companies investing in the project, the final EIS indicates that the project would have a minor beneficial impact on employment and economics (see Table 3-2).

5.3.6.3 If there are Unresolved Conflicts as to Resource Use, USACE Evaluation of the Practicability of Using Reasonable Alternative Locations and Methods to Accomplish the Objective of the Proposed Structure or Work (33 CFR § 320.4(a)(2)(ii))

There were no unresolved conflicts identified as to resource use.

5.3.6.4 USACE Evaluation of the Extent and Permanence of the Beneficial and/or Detrimental Effects Which the Proposed Structure or Work is Likely to Have on the Public and Private uses to Which the Area is Suited (33 CFR § 320.4(a)(2)(iii))

The tidal waters within which the proposed work would be located are also suited for navigation by vessels as well as recreational and commercial fishing. As indicated in Table 3-2, the project would be expected to have minor to moderate adverse impacts to navigation mitigated sufficiently to support the above neutral finding, and moderate to major adverse impacts to commercial fishing. The project would be expected to have minor to moderate adverse impacts, but also minor beneficial impacts to for hire recreational fishing. The positive impacts would be due to the reef effect created by the structural foundations. The project components that could impact public and private uses would be in place for the life of the project, which is up to 35 years. Thus, detrimental effects are expected to be minor to moderate and permanent. Beneficial effects are expected to be more than minimal and permanent.

The primary detriment of implementing this project is the immutable visibility of the structures, especially in combination with other planned facilities in the vicinity. The offsetting benefits to economics, energy need, environmental integrity, and offsetting land-based energy production outweigh that detriment and reflect a long-term investment in the needs and welfare of the people.

5.3.7 Compliance with Other Laws, Policies, and Executive Orders

5.3.7.1 Section 7(a)(2) of the Endangered Species Act (ESA)

BOEM is the lead federal agency, identifying the USACE as a cooperating agency. The "USACE action area" for Section 7 of the ESA includes all areas in the NEPA scope of analysis. The action area includes all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. Consultation with USFWS and NMFS addressed all species that would likely be affected by the USACE action. USACE accepts the USFWS biological opinion dated December 1, 2023, including its ITS, which states that the proposed action is not likely to jeopardize listed terrestrial species or destroy or adversely modify critical habitat under USFWS jurisdiction. The requirement for the applicant to adhere to the terms and conditions of the ITS will be included as a binding condition of the USACE authorization. The consultation with USFWS has been found to be sufficient to ensure that the activity requiring USACE authorization is compliant with Section 7 of the ESA. USACE accepts the NMFS biological opinion dated December 18, 2023, including its ITS, which states that the proposed action is not likely to jeopardize listed marine species or destroy or adversely modify critical habitat under NMFS jurisdiction. The terms and conditions of the ITS relevant to the USACE action will be included as binding conditions of the USACE authorization. The consultation with NMFS has been found to be sufficient to ensure the activity requiring USACE authorization is complaint with Section 7 of the ESA.

5.3.7.2 Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Essential Fish Habitat (EFH)

1. USACE designated BOEM as the lead federal agency for complying with the consultation requirements of Section 305(b)(2) of the Magnuson-Stevens Act regarding EFH. Accordingly, BOEM consulted with NMFS on USACE's behalf. BOEM and USACE came to the following agreement regarding the analysis of EFH conservation recommendations (CRs) provided by NMFS:
2. USACE agreed to address any EFH CRs that only applied to work within the 3-nmi jurisdictional limit of navigable waters and waters of the United States as this area is outside of BOEM's geographic authority.
3. As the lead federal agency, BOEM agreed to address any EFH CRs that specifically applied to work on the OCS even though BOEM and USACE both have geographic authority in this location.
4. On behalf of USACE, BOEM agreed to communicate responses to NMFS for EFH CRs that only applied to work within the 3-nmi jurisdictional limit of waters of the United States.

NMFS provided BOEM with 46 EFH CRs for the proposed project on January 26, 2024. USACE analyzed 14 of the EFH CRs that were related to work within New Jersey's back bays that are outside of BOEM's geographic authority. For each of these 14 EFH CRs, USACE determined whether to adopt or not adopt the recommendation in a response to BOEM dated May 14, 2024. This USACE response was an enclosure to BOEM's EFH CR response letter that addressed the other EFH CRs. This combined EFH CR response was submitted to NMFS on May 21, 2024.

BOEM's scope covers the USACE action. The NMFS provided the following CRs to BOEM that were forwarded to the USACE, including a selection applicable to the OCS. The indicated numbers below correspond to those used by NMFS in the original document and that pertain to the USACE authorization. The USACE forwarded the recommendations to the applicant. USACE aligns with BOEM's implementation where jurisdictions overlap and has addressed what remains as follows:

32. Avoid in-water work including cable installation, seabed preparation, pile installation (i.e., for bulkheads/cofferdams, wharfs), HDD pit excavation, or other extractive or turbidity/sediment-generating activities from January 1 to May 31 of any given year in estuarine/inshore (back bay) waters of 6 m in depth or less to avoid impacts to winter flounder early life stages (spawning adults, eggs, larvae).

USACE: Adopted

33. Avoid in-water work including cable installation, seabed preparation, pile installation (i.e., for bulkheads/cofferdams, wharfs), HDD pit excavation, or other extractive or turbidity/sediment-generating activities from June 1 through September 15 of any given year in designated sandbar shark EFH-Habitats of Particular Concern - where depths exceed 2.6 ft at mean low water (MLW).

USACE: Adopted

34. In all inshore/estuarine areas where seafloor preparation and cable installation activities will occur, impacts to sensitive benthic habitats should be avoided and minimized through the use of HDD, micrositing, and re-rerouting. All disturbed areas should be restored to pre-construction conditions, inclusive of bathymetry, contours, and sediment types. Pre-construction surveys to determine conditions and post-construction surveys should be conducted to verify restoration has occurred. Survey results should be provided to NMFS HESD at NMFS.GAR.HESDoffshorewind@noaa.gov.

USACE: Adopted

35. Avoid trenching (without immediate backfill/infill), sidecasting, and other open-water disposal in open nearshore/estuarine waters. If open trenching is used, excavated materials should not be sidecast or placed in the aquatic environment. In areas with elevated levels of contaminants, a closed clamshell/environmental bucket dredge should be used. All materials should be stored on uplands or barges and placed back into the trench to restore the excavated areas, or removed to a suitable upland disposal site if the material contains elevated levels of contaminants. Trenched areas should be restored to pre-construction conditions with native and/or clean, compatible material.

USACE: Adopted

36. To minimize impacts to estuarine/nearshore habitats associated with excavation of the HDD pits for any water-to-land (i.e., sea-to-shore) transitions, unconfined dredging, side casting, and open-water material disposal should not be permitted.

USACE: Adopted

37. Entry and exit pits for HDD, pipe jacking, or jack-and-bore cable installation methods should not occur in sensitive benthic habitats, mudflats, or wetlands. Dredged materials from HDD exit pits should not be stored in the aquatic environment, but instead be stored on a barge or on uplands and used to backfill the excavated areas once construction and installation is complete. If the material excavated at the HDD pits contains elevated levels of contaminants, a closed clamshell/environmental bucket dredge should be used, all excavated material should be disposed of at a suitable upland location, and the HDD pit should be backfilled with suitable, clean material.

USACE: Adopted

38. Frac-out plans should be developed for all areas where HDD is proposed to be used. A copy of the final plan should be provided to NMFS HESD at NMFS.GAR.HESDoffshorewind@noaa.gov prior to construction.

USACE: Adopted

39. To minimize impacts from vessel operation in estuarine/nearshore habitats, all vessels should float at all stages of the tide (i.e., avoid vessel grounding); all vessels should be required to follow other EFH CRs associated with anchoring/avoidance.

USACE: Adopted

40. To minimize adverse effects to mapped shellfish habitat at the O&M facility: (1) bulkhead installation should be done in-place unless it can be demonstrated that in-place replacement is not feasible due to engineering considerations; and (2) all structures, including piers/docks (e.g., piles, stringers, etc.), and bulkheads should be not be constructed with treated wood products (e.g., creosote, CCA-C, ACZA, etc.), which are susceptible to leaching contaminants into the waterway unless the materials are coated with an inert polymer at the point of manufacture.

USACE: Adopted

41. Avoid excavation, cable installation, or the staging of equipment within tidal wetlands or mudflats. Where unavoidable impacts to wetlands or mudflats occur, provide compensatory mitigation in accordance with 33 CFR Parts 325 and 332 “Compensatory Mitigation for Losses of Aquatic Resources,” (Mitigation Rule) and NOAA’s Mitigation Policy for Trust Resource). The plan should be submitted to our office for review and include monitoring and maintenance/adaptive management plan, be monitored for a minimum of five years, and annual reports should be provided to our office.

USACE: Adopted

FWCA CRs

1. The project should be required to mitigate the major impacts to NMFS scientific surveys consistent with NMFS-BOEM Federal Survey Mitigation Strategy - Northeast U.S. Region. Atlantic Shores South's plans to mitigate these impacts at the project and regional levels should be provided to NMFS for review and approval prior to BOEM's decision on its acceptance. Mitigation is necessary to ensure that NMFS can continue to accurately, precisely, and timely execute our responsibilities to monitor the status and health of trust resources.

USACE: Adopted

2. Impacts to the Atlantic City Reef, Great Egg Reef, and the Little Egg Reef (NJDEP artificial reefs) should be avoided due to their importance as habitat for a variety of managed species in addition to the strong recreational fisheries they support.

    a. Additional noise attenuating devices such as isolation casings should be used during pile driving of WTGs and OSSs that may impact these artificial reef areas through elevated underwater noise (any pile driving within 11 km of these sites).
    b. The developer should conduct in-situ monitoring of artificial reefs pre-, during, and post-construction to evaluate temporary, short-term and permanent impacts to these habitats and the species (e.g., black sea bass, tautog, weakfish, scup) that use them:

        i. Hydrophones should be used to monitor/ directly measure noise at various reefs throughout the reef sites. This monitoring will provide insights (validations) on the expected noise levels and distances described in the EFH assessment and other documents and will enable comparisons of "observed" (real world) versus "expected" (modeled/predicted). Monitoring should establish ambient noise levels (pre-construction) and determine noise levels from pile installation activities (during) and operation (post-construction) of the WTGs and farm;

        ii. Camera systems (e.g., GoPro's) and other relevant methods (e.g., direct observation via divers) should be used to monitor fish behavior;

        iii. Traps and camera systems should be used to monitor fish species occurrence, community composition, and density/abundance.

        iv. Monitoring data should be analyzed using statistically rigorous methods to evaluate the potential impacts of elevated underwater noise from pile installation and WTG and wind farm operation on artificial reefs.

USACE: A permit condition like what was imposed for the Ocean Wind project will be included to address this recommendation: "Within 1 nmi of NJDEP artificial reef sites, the permittee shall achieve a minimum noise reduction of 15 decibels, applicable to all in-water project activities through either:

    a. Implementing the Protected Species Mitigation and Monitoring Plan, Pile Driving Monitoring Plan, Sound Field Verification Plan, and Passive Acoustic Monitoring Plan, and consistent application of noise mitigation systems, or;

b. Use of additional noise attenuation such as isolation casings during pile driving; in-situ monitoring of artificial reef sites using hydrophones to validate noise reduction, camera systems to monitor fish behavior in response to noise, as well as traps equipped with camera systems to monitor species occurrence and density; Monitoring data should be analyzed using statistically rigorous methods to evaluate the potential impacts of elevated underwater noise from pile installation and WTG and wind farm operation on artificial reefs."

3. Locations of relocated boulders, created berms, and scour protection, including cable protection measures (i.e., concrete mattresses) should be provided to all relevant marine users (including commercial and recreational fishing community), as soon as possible to help inform all interested parties of potential gear obstructions.

USACE: Adopted

4. Locations of cables requiring wet-storage (with or without cable protection such as concrete mattresses) should be provided to all relevant marine users (including commercial and recreational fishing community), as soon as possible to help inform all interested parties of potential gear obstructions to ensure that fishing vessels and other mariners are aware of the obstruction and the approximate length of time the obstruction will be present.

USACE: Adopted

The Corps has reviewed the documentation provided by BOEM and determined it is sufficient to confirm compliance for USACE authorization with the EFH provisions, and additional consultation is not necessary unless and until the proponent proposes a change in the scope or nature of project implementation.

5.3.7.3 Section 106 of the National Historic Preservation Act (NHPA)

BOEM is the lead federal agency, identifying the Corps as a cooperating agency. BOEM's scope covers the USACE action.

The USACE has reviewed the documentation provided by the agency and determined it is sufficient to constitute Section 106 compliance for this decision, and additional consultation is not necessary. Historic properties were added for consideration in response to comments on the draft EIS by the New Jersey Historic Preservation Officer, various organizations, and members of the public. Final EIS Appendix I details the finding of adverse effects. Visual effects documentation was expanded under the final EIS Appendix H as attachments, including comprehensive visual simulations.

Effect determination and basis for that determination: adverse effect, see final EIS Appendix I for determination basis.

Consultation was initiated and completed with the appropriate agencies, tribes and/or other parties. USACE concurs with the stipulations of the MEMORANDUM OF AGREEMENT AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT, THE DELAWARE NATION, THE DELAWARE TRIBE OF INDIANS, THE MASHANTUCKET (WESTERN)

PEQUOT TRIBAL NATION, THE MASHPEE WAMPANOAG TRIBE, THE SHINNECOCK INDIAN NATION, THE STOCKBRIDGE-MUNSEE COMMUNITY BAND OF MOHICAN INDIANS, THE WAMPANOAG TRIBE OF GAY HEAD (AQUINNAH) THE STATE HISTORIC PRESERVATION OFFICER OF NEW JERSEY, THE NEW JERSEY HISTORIC TRUST, ATLANTIC SHORES OFFSHORE WIND PROJECT 1, LLC, ATLANTIC SHORES OFFSHORE WIND PROJECT 2, LLC, AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION REGARDING THE ATLANTIC SHORES OFFSHORE WIND SOUTH PROJECT (LEASE NUMBER OCS-A 0499).

5.3.7.4 Tribal Trust Responsibilities

Refer to Section 5.1 above.

5.3.7.5 Section 401 of the Clean Water Act – Water Quality Certification

An individual WQC is required and anticipated to be granted with conditions.. Those conditions will be made a part of the USACE permit through General Condition 5. Under CWA 401(a)(2), based on the location of the project, the anticipated 401 certification conditions, and the information available to EPA regarding the discharge. EPA is anticipated to direct USACE regarding the need to coordinate with certifying authorities of neighboring jurisdictions.

5.3.7.6 Coastal Zone Management Act

An individual CZMA consistency concurrence is required and is anticipated to be issued by the NJDEP. On April 1, 2024, the NJDEP concurred with the applicant's CZMA consistency certification with conditions. Those conditions would be made a part of the USACE permit.

5.3.7.7 Wild and Scenic Rivers Act

The project is not located in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system.

5.3.7.8 Effects on USACE Civil Works Projects (33 USC 408)

The proposed activity also requires authorization pursuant to Section 408 for potential alterations to the Absecon Island Coastal Storm Risk Management Federal Civil Works Project, Sea Bright to Manasquan, New Jersey Coastal Risk Management and Erosion Control Federal Civil Works Project, the Inside Thorofare portion of the Intracoastal Waterway Federal Navigation Project, and the New Jersey Back Bays Coastal Storm Risk Management Federal Study Area. Anticipated permissions under this authority are reliant on the preceding analysis.

5.3.7.9 USACE Wetland Policy (33 CFR § 320.4(b))

The project does not propose to impact wetlands. The project proponent will utilize horizontal direction drilling or jack and bore installation anywhere conduit needs to intersect wetlands; implementation of the provided Spill Containment plan will minimize any risk of unintended wetland impacts.

5.3.7.10 Presidential Executive Orders (EOs)

EO 11988, Floodplain Management

Alternatives to location within the floodplain, minimization and compensatory mitigation of the effects were considered above.

EO 12898 and EO 14008, Environmental Justice: final EIS Appendix F Section 3.6.4 details BOEM's analysis of the project alternatives with regard to Environmental Justice (EJ). BOEM utilized EPA's EJSCREEN to identify communities meeting specified criteria for minority or income status, and NOAA's social indicator mapping to identify EJ populations that also have a high level of fishing engagement or fishing reliance. Disadvantaged communities been identified within the vicinity of the proposed project. Refer to Figures 3.6.4-1 through 3.6.4-8 for maps of identified communities. Figure 3.6.4-10 depicts saltwater fishing access locations and environmental justice communities in the geographic analysis area and highlights communities with notable engagement and reliance on commercial and recreational fishing. BOEM, being the lead federal agency, was responsible for meaningful involvement. The USACE outlined our responsibility and involvement at the public hearings hosted by BOEM. Impacts on environmental justice communities from the Proposed Action would result from views of WTGs and impacts on shellfish, fish, and marine mammal populations. The Proposed Action would also result in impacts on low-income workers in the commercial/for-hire fishing, marine recreation, and supporting industries. The most impactful IPFs would likely include cable emplacement, vessel traffic during construction, and the presence of offshore structures, due to the potential impacts of these IPFs on submerged landforms, marine businesses (fishing and recreational), views of WTGs, and subsistence fishing.

BOEM concludes that environmental justice populations would not experience disproportionately high and adverse effects related to construction, O&M, and decommissioning of onshore infrastructure. Regional port utilization, use of the operations and maintenance facility in Atlantic City, construction, O&M, and decommissioning of offshore structures could have major impacts on some commercial fishing operations that use the Lease Area, with potential for indirect impacts on employment in related industries that could affect environmental justice populations. Cable emplacement and maintenance and construction noise would also contribute to impacts on commercial fishing. The long-term presence of offshore structures would also have major impacts on scenic and visual resources and viewer experience from some onshore viewpoints that could affect environmental justice populations. The Corps concurs with the findings in the final EIS. The impacts do not fall disproportionately on disadvantaged communities. See the conclusion for the preferred alternative in the final EIS Section 3.6.4.10. Based upon the discussion and analysis in the preceding sections, the Corps has determined that portions of the proposed project within our federal control and responsibility would not have a disproportionately high and adverse human health or environmental effect on disadvantaged communities.

EO 13112, Invasive Species, as amended by EO 13751: Through special conditions or applicable terms and conditions, the permittee will be required to control the introduction and spread of invasive species.

EO 13212 and EO 13302, Energy Supply and Availability: The review was expedited and/or other actions were taken to the extent permitted by law and regulation to accelerate completion of this energy related project while maintaining safety, public health and environmental protections.

5.3.8 U.S. Army Corps of Engineers Approval

I find that the issuance of the USACE decisions, as described by regulations published in 33 CFR Parts 320 through 332, with the scope of work described in this document and the Final EIS for the Atlantic Shores South Project, is based on a thorough analysis and evaluation of all issues set forth in this Joint ROD. Having completed the evaluation above, I have determined that the proposed discharge of dredged or fill material complies with the 404(b)(1) Guidelines. There are no less-environmentally damaging practicable alternatives available to Atlantic Shores South, to construct than under the selected alternative of the Final EIS.

The issuance of these decisions is consistent with national policy, statutes, regulations, and administrative directives; and on balance, issuance of USACE decisions to construct the Atlantic Shores South Project is not contrary to the public interest. As explained above, all practicable means to avoid and/or minimize environmental harm from the selected alternatives have been adopted and will be required by the terms and conditions of the USACE permits**.**

Jeffrey M Beeman, P.E. Lieutenant Colonel, Corps of Engineers District Commander	Date

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Appendix A

ANTICIPATED Conditions of Construction and Operations Plan Approval

Appendix B

OCSLA Compliance Review of the Construction and Operations Plan for the Atlantic Shores Offshore Wind South Project

Appendix B.1

ETRB Review Memorandum