MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Record of Decision and Statement of Findings for the Above-Referenced Standard Individual Permit Application

In accordance with 40 C.F.R. § 1505.2, this document constitutes the Record of Decision (ROD) of the Department of the Army, New York District, Corps of Engineers (Corps), for the Empire Wind 1 (EW1 or the Project) proposed by Empire Offshore Wind, LLC. This document is prepared in accordance with the Council on Environmental Quality's (CEQ) regulations implementing the National Environmental Policy Act (NEPA) (40 C.F.R. Parts 1500-1508). It also constitutes the Clean Water Act (CWA) Section 404(b)(1) Guidelines Evaluation (40 C.F.R. Part 230), and the Public Interest Review (33 C.F.R. § 320.4) under the authority delegated to the District Engineer by 33 C.F.R. § 325.8 and pursuant to Section 404 of the CWA.

This ROD incorporates by reference the U.S. Department of Interior, Bureau of Ocean Energy Management (BOEM) 2022 Draft Environmental Impact Statement (DEIS), the 2023 Final Environmental Impact Statement (FEIS), and ROD for the "Empire Wind Project". The Corps has been a Cooperating Agency, with BOEM as Lead Agency, for purposes of complying with the NEPA and for the purposes of complying with the Endangered Species Act (ESA), the National Historic Preservation Act (NHPA), and the Magnuson-Stevens Fishery Conservation and Management Act.

It is noted that the BOEM DEIS, FEIS, and ROD cover three separate USACE actions, the Empire Wind 1 (EW1) project and the Empire Wind 2 (EW2) (DA Application NAN-2022-00902-EMI) project proposed by Empire Offshore Wind, LLC, and a connected action by New York City Economic Development Corporation (NYCEDC) which would involve port facility upgrades at the South Brooklyn Marine Terminal (SBMT) in Brooklyn, New York (DA Application NAN-2022-00900-EMI). This decision document is specific only to the EW1 project.

Note: On February 14, 2024, the applicant withdrew their USACE application for the Empire Wind 2 project (NAN-2022-00902-EMI). The applicant previously had previously terminated their Offshore Wind Renewable Energy Certificate (OREC) Agreement with the New York State Energy Research and Development Authority (NYSERDA) on January 3, 2024. The applicant withdrew the application for EW2 as a result of issues and delays in siting the projects planned transmission line within state waters and onshore. The BOEM ROD and Construction and Operation Plan (COP) approval are inclusive of both EW1 and EW2.

References: References used in this memorandum include the following:

a. Empire Offshore Wind, Empire Wind Projects (EW1 and EW2) Final Environmental Impact Statement (FEIS), OCS EIS/EA BOEM 2020-057 dated September 2023, prepared by U.S. Department of the Interior Bureau of Ocean Energy Management (BOEM);

b. Empire Offshore Wind: Empire Wind Project (EW1 and EW2), Joint Record of Decision (ROD), prepared by U.S. Department of the Interior Bureau of Ocean Energy Management (BOEM) and U.S. Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS), dated November 20, 2023;

c. Empire Offshore Wind Construction and Operations Plan (COP) Approval dated February 21, 2024;

d. Endangered Species Act Section 7 Consultation "Biological Opinion on the Effects of the Empire Wind 1 and Empire Wind 2 Projects on the Federally Listed Piping Plover (*Charadrius melodus*; threatened) and rufa Red Knot (*Calidris canutus rufa*; threatened) within the Jurisdiction of the Long Island Field Office, Shirley, New York", prepared by the U.S. Fish and Wildlife Service (USFWS), and dated June 2023;

e. Endangered Species Act Section 7 Consultation "National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological Opinion", prepared by the NMFS, and dated September 8, 2023;

f. National Historic Preservation Act of 1966 (NHPA) Section 106 Memorandum of Agreement (MOA), entitled "Memorandum of Agreement among the Bureau of Ocean Energy Management, the Delaware Tribe of Indians, the Delaware Nation, the Mashantucket (Western) Pequot Tribal Nation, the Mashpee Wampanoag Tribe, the Shinnecock Indian Nation, the Stockbridge-Munsee Community Ban of Mohican Indians, the Wampanoag Tribe of Gay Head (Aquinnah), the State Preservation Officers of New York and New Jersey, the New Jersey Historic Trust, Empire Wind LLC, and the Advisory Council on Historic Preservation Regarding the Empire Wind Offshore Wind Farm Projects (Lease Number OCS-A 0512)", executed on November 20, 2023;

g. Applicant Alternatives Table from application "Table 3.3-1 Cable Landfall and Submarine Export Cable Route Alternative Comparison"; and

h. Section 408 MFR for Empire Wind 1 – 408-NAN-2023-0001

1.0 Introduction and Overview

Information about the proposal subject to one or more of the United States Army Corps of Engineers' (Corps') regulatory authorities is provided in Section 1, detailed evaluation of the activity is found in Sections 2 through 11 and findings are documented in Section 12 of this memorandum. Further, summary information about the activity including administrative history of actions taken during project evaluation is attached (ORM2 Summary) and incorporated in this memorandum.

1.1 Applicant name

Empire Offshore Wind, LLC

1.2 Activity location

BOEM Renewable Energy Lease Area OCS-A 0512 with a submarine export cable route through the Atlantic Ocean, New York Harbor, and Bay Ridge Channel with landfall at the South Brooklyn Marine Terminal (SBMT) in the Borough of Brooklyn, Kings County, City of New York, New York.

1.3 Description of activity requiring permit

The applicant, Empire Offshore Wind, LLC, has requested Department of the Army authorization for the construction of an offshore wind energy farm, referred to as Empire Wind 1 at the BOEM Renewable Energy Lease Area OCS-A 0512 with a submarine export cable making landfall in the Borough of Brooklyn, Kings County, City of New York, New York.

Empire Wind 1 Offshore Lease Area: Construct a wind farm in the Atlantic Ocean on the Outer Continental Shelf (OCS) within the approximately 79,350-acre BOEM Renewable Energy Lease Area OCS-A 0512. Lease Area OCS-A 0512 is located approximately 14 miles south of Long Island, New York and approximately 19.5 miles east of Long Branch, New Jersey. The Empire Wind 1 (EW 1) Wind Farm Development Area (WFDA), within OCS-A 0512, is approximately 28,733 acres. The wind farm will consist of up to fifty-seven (57) offshore wind turbine generators (WTGs) on steel monopile foundations located at up to seventy-eight (78) potential locations, scour protection around the base of the WTGs, up to approximately 116 nautical miles (nm) of submarine interarray cables connecting the WTGs and one (1) offshore substation (OSS) with a pile jacketed foundation. Each monopile foundation diameter would be up to approximately 36 feet in base diameter and installed by pile driving with a hydraulic hammer. Each monopile foundation would be protected with rock scour protection up to 207 feet in diameter (inclusive of the monopile foundation). With scour protection, the proposed footprint of each monopile foundation would be approximately 39,902 square feet. The total maximum footprint for the monopile foundations would be approximately 52.2 acres. The OSS will be constructed on a four- or six-legged pile jacketed foundation which would consist of up to twelve piles in total. Each pile for the OSS piled jacket foundation would be up to approximately 8 feet in diameter. The OSS would be

protected with rock scour protection over approximately 93,560 square feet (inclusive of the piled jacket foundation).

The submarine interarray cables between the WTGs and the OSS will consist of 66kV 170 millimeter (mm) diameter HVAC cables and will total up to approximately 116 nm over a total maximum footprint of 534 acres. The cables have a target burial depth of six feet below the existing seabed. The interarray cables are proposed to be installed using jetting, plowing, and/or trenching methods. If the six-foot-burial depth is not achievable, cable protection measures may be used. It is estimated that approximately 10% of the interarray cable length (approximately 11.6 nm) would require remedial cable protection, over a total footprint of up to approximately 25.9 acres. The cable protection would be approximately 16 feet wide at the base and three feet wide at the top with a depth of approximately three feet. The OSS would collect the electric energy generated by the WTGs through the interarray cables for transmission through the EW 1 export cables and interconnection cables to the onshore interconnection facility at the existing Gowanus 345-kV Substation in Brooklyn, New York.

Empire Wind 1 Export Cables: Install two (2) approximately 300 mmm diameter 230kV HVAC submarine export cables. The submarine export cables would be approximately 40 nm in length within a single corridor from the OSS to the South Brooklyn Marine Terminal (SBMT) in Brooklyn, New York. Approximately 25 nm would be located in federal waters and approximately 15 nm would be located in New York State (NYS) waters. The target burial depth for the export cables in areas located outside of Federal Navigation Channels is six feet below the seabed. The target burial depth for the export cables within Federal Navigation Channels and/or Anchorages is 15 feet below the authorized depth or depth of existing seabed (whichever is deeper). The total maximum footprint for the export cables would be 236 acres in federal waters and the total maximum footprint for the export cables in NYS waters would be 138 acres. The export cables are proposed to be installed using jetting, plowing, trenching, and/or dredging methods. If the six-foot burial depth is not achievable, cable protection measures may be used. It is estimated that up to approximately 10% of the export cable length would require remedial cable protection (approximately 2.5 nm along each of the two cables in federal waters and approximately 1.5 nm along each of the two cables in NYS waters). The cable protection would be approximately 36 feet wide at the base and five feet wide at the top with a depth of approximately five feet. The proposed temporary seabed disturbance for the export cable protection, beyond the disturbance for cable installation, would be approximately 2.1 acres in federal waters and approximately 1.2 acres in NYS Waters. Approximately 80,770 cubic yards of scour protection would be discharged below the plane of Spring High Water over approximately 15.7 acres for remedial cable protection measures within NYS waters.

The proposed cable route would cross nineteen (19) in- and out-of- service existing cables and/or pipelines within NYS waters. The applicant estimates that twelve (12) of the 19 existing cables and pipelines may require pre-installation sediment disturbance and/or cable protection measures, which shall be subject to final crossing agreement with the crossed asset owner(s). Cable protection at cable and pipeline crossings could

be approximately 53 feet wide at the base and 6.6 feet wide at the top with a depth of approximately 6.6 feet. Alternatively, marine mattressing with either rock or concrete could be used for protection of the existing utility either by laying a protective mattress on top of the utility or both on top of the utility and above the cable. Approximately 10,774 cubic yards of sediment may be disturbed around asset crossings and approximately 14,688 cubic yards of scour protection below the plane of Spring High Water may be placed in these existing cable and pipeline areas.

The submarine export cable corridor is approximately 500 feet wide to allow the applicant to microsite the cables based on preferable conditions. The two export cables will be spaced between 33 to 300 feet apart within the 500-foot-wide corridor. The total submarine export cable siting corridor in federal waters is approximately 1,598 acres and in NYS Waters is approximately 1,081 acres.

In certain areas along the export cable route, pre-sweeping activities are necessary for cable laying activities where megaripples and sandwaves are present. Pre-sweeping will occur in up to an approximately 164-foot width along the length of the megaripples and sandwaves; the length of clearance will vary along the submarine export cable route. Megaripple and sandwave height vary depending on localized seabed and current characteristics. Along the submarine export cable route, approximately 116,044 cubic yards of sediment is anticipated to be disturbed as a result of these pre-sweeping activities. Sediment disturbance for both pre-sweeping activities and existing utility crossings would be performed using a mass flow excavator from a construction vessel.

Additional activities include pre-trenching along the submarine export cable route in areas where deeper burial depths are not suitable for traditional cable burial methods. Pre-trenching involves running cable burial equipment over portions of the route to soften the seabed and/or by using a suction hopper dredge to excavate additional sediment. It is anticipated that the applicant will pre-trench areas with medium to high strength clay and where burial requirements are a minimum of 15-feet.

Empire Wind 1 Landfall at SBMT: Remove an existing low level relieving platform and install a new steel bulkhead landward of the existing. Replace the low-level relieving platform with a new high level platform ranging from approximately 29.5 to 35 feet wide by approximately 208 feet long supported by approximately sixteen (16) 24-inch diameter hollow steel pipe piles between 32nd Street north to the southwestern corner of the 29th Street Pier. A new approximately 74-foot long sheet pile toe wall will be installed in front of the platform.

Three areas at SBMT on the north side of 35th Street Pier and will be mechanically dredged to allow for the landfall segment of the export cable to be installed. A total of approximately 98,350 cubic yards will be dredged to depths ranging from over approximately 2.79 acres and placed in a scow, dewatered onsite and transported for disposal at an approved upland facility. The three dredge area include an approximately 0.079 acres area at the seaward end of the 35th Street Pier that will be dredged to -57.86 feet NAVD88 with two feet of additional over dredge depth for the transition of the

cable from beneath the Bay Ridge Channel, the main 2.79 acres area for the export cable which will be dredge to -39.36 feet NAVD88 with two feet of additional over dredge depth, and an approximately 12-foot-wide by 82-foot-long dredge pit to a depth of 22 feet NAVD88 for the installation of the conduit at the landfall area along the 32nd Street Bulkhead. Once the cable is installed the approximately 2.79 acre dredge area would be backfilled with approximately 62,650 cubic yards of clean fill to protect the cable.

Approximately 298 cubic yards of material will be dredged immediately in front of the existing relieving platform and bulkhead over approximately 1,370 square feet for the cable landfall and will be backfilled with clean stone and scour protection to create a foundation to support the lower, seaward end of the conduits. Two (2) 30-inch diameter conduits are proposed to be installed beneath the platform and into the approximately 12-foot-wide by 82-foot-long dredge pit. Additional stone fill will be placed around and above the opening of the conduit. The export cables will then be pulled through the angled steel conduits and extend from the shoreline to the cable terminations or to a vault within the onshore substation approximately 263 feet onshore. Approximately 202 cubic yards of scour protection would be discharged below the plane of Spring High Water for the cable landfall protection. An approximately 100-foot-wide area of additional stone and scour would be placed over the cables extending from the edge of the relieving platform.

In front of the existing outfall approximately 112 cubic yards of riprap scour will be placed over an approximately 24-foot-wide by 26.5-foot-long area.

On July 11, 2023, the applicant amended their permit application by informing this office of project advancements including the following:

- The applicant added a “commissioning link cable” to the interarray cable layout in the Lease Area, which will serve as a temporary connection between the EW 1 and EW 2 Projects.
- The applicant refined the method of cable landfall installation for EW 1 to largely remove the use of conduits going through the bulkhead on the SBMT shoreline and is updating information on the cable dredge alternative approaching the cable landfall at SBMT.
- The applicant is additionally incorporating minor routing changes to the EW 1 submarine export cable route to reflect changes based on survey information and further route assessment.

The commissioning link would consist of an approximately 0.87-mile segment of interarray cable which would link one interarray cable on EW1 to the future cable string on EW2.

At the cable landfall, the applicant would replace approximately 208 feet of the existing pile-supported relieving platform with a new pile-supported platform and bulkhead between the 35th and 29th Street Piers. Horizontal Direction Drilling (HDD) was

determined not feasible at the EW1 cable landfall. Approximately 2.79 acres along the export cable route would be dredged to -34.5 feet below Mean Lower Low Water (MLLW) to facilitate cable installation vessels. The final 105 feet before the cable landfall at the shoreline would be sloped gradually upwards. An injector pit of approximately 0.079 acres would be dredged to slope down to -55 feet below MLLW to allow for the transition of the installation tool required for the deeper burial requirements in the Bay Ridge Channel. Approximately 103,000 cubic yards would be dredged and disposed of at an approved upland facility. Following dredging, to ensure proper cable protection, a 12-inch layer of bed rock would be discharged over the cable. Following cable installation, an additional layer of stone protection will be discharged over the area to protect the cable. In total approximately 65,248 cubic yards of rock cable protection would be discharged over a total of 5.52 acres. The proposed pile supported structure would be installed following the cable installation.

Other minor routing changes were made after additional surveys were performed and potential hazards were identified to not be of concern in addition to minor revisions based on input during Section 408 coordination.

These changes were considered minor and were not significant changes to the proposed work and therefore a supplemental public notice was not necessary.

On January 2, 2024, the applicant submitted a final revised set of plans reflecting further project refinements and updating impact quantities as the project has advanced to further design phases.

In an email dated February 1, 2024, the applicant confirmed that the commissioning link was no longer proposed as part of the EW1 project.

The final work description requiring a permit is as follows:

Empire Wind 1 Offshore Lease Area: Construct a wind farm in the Atlantic Ocean on the Outer Continental Shelf (OCS) within the approximately 79,350-acre BOEM Renewable Energy Lease Area OCS-A 0512. Lease Area OCS-A 0512 is located approximately 14 miles south of Long Island, New York and approximately 19.5 miles east of Long Branch, New Jersey. The Empire Wind 1 (EW 1) Wind Farm Development Area (WFDA), within OCS-A 0512, is approximately 28,733 acres. The wind farm will consist of up to fifty-seven (57) offshore wind turbine generators (WTGs) on steel monopile foundations located at up to seventy-eight (78) potential locations, scour protection around the base of the WTGs, up to approximately 116 nautical miles (nm) of submarine interarray cables connecting the WTGs and one (1) offshore substation (OSS) with a pile jacketed foundation. Each monopile foundation diameter would be up to approximately 36 feet in base diameter and installed by pile driving with a hydraulic hammer. Each monopile foundation would be protected with rock scour protection up to 207 feet in diameter (inclusive of the monopile foundation). With scour protection, the proposed footprint of each monopile foundation would be approximately 39,902 square feet. The total maximum footprint for the monopile foundations would be approximately

52.2 acres. The OSS will be constructed on a four- or six-legged pile jacketed foundation which would consist of up to twelve piles in total. Each pile for the OSS piled jacket foundation would be up to approximately 8 feet in diameter. The OSS would be protected with rock scour protection over approximately 93,560 square feet (inclusive of the piled jacket foundation).

The submarine interarray cables between the WTGs and the OSS will consist of 66kV 170 millimeter (mm) diameter HVAC cables and will total up to approximately 116 nm over a total maximum footprint of 534 acres. The cables will be buried a to a target burial depth of six feet beneath the existing seabed. The interarray cables are proposed to be installed using jetting, plowing, and/or trenching methods. If the six-foot-burial depth is not achievable, cable protection measures will be used. Up to 10% of the interarray cable length (approximately 11.6 nm) would require remedial cable protection, over a total footprint of up to approximately 25.9 acres. The cable protection would be approximately 16 feet wide at the base and three feet wide at the top with a depth of approximately three feet. The OSS would collect the electric energy generated by the WTGs through the interarray cables for transmission through the EW 1 export cables and interconnection cables to the onshore interconnection facility at the existing Gowanus 345-kV Substation in Brooklyn, New York.

Empire Wind 1 Export Cables: Install two (2) approximately 300 mm diameter 230kV HVAC submarine export cables. The submarine export cables would be approximately 40 nm in length within a single corridor from the OSS to the South Brooklyn Marine Terminal (SBMT) in Brooklyn, New York. Approximately 25 nm would be located in federal waters and approximately 15 nm would be located in New York State (NYS) waters. The two export cables will be spaced between 33 to 300 feet apart within an approximately 500-foot-wide cable corridor. The submarine export cable corridor is typically approximately 500 ft wide, and up to approximately 900 ft wide in certain locations to allow the applicant to microsite the cables based on preferable conditions. The total submarine export cable siting corridor in federal waters is approximately 1,598 acres and in NYS Waters is approximately 1,081 acres.

The cables will be buried to a target burial depth of six feet below the seabed in areas located outside of Federal Navigation Channels and Anchorages. Within Federal Navigation Channels and/or Anchorages the cables will be buried a minimum of 15 feet below the authorized depth or depth of existing seabed (whichever is deeper). The total maximum footprint for the export cables would be 236 acres in federal waters and the total maximum footprint for the export cables in NYS waters would be 138 acres. The export cables are proposed to be installed using jetting, plowing, trenching, and/or dredging methods. If the six-foot burial depth is not achievable, cable protection measures may be used. It is estimated that up to approximately 10% of the export cable length would require remedial cable protection (approximately 2.5 nm along each of the two cables in federal waters and approximately 1.5 nm along each of the two cables in NYS waters). The cable protection would be approximately 36 feet wide at the base and five feet wide at the top with a depth of approximately five feet. The proposed temporary seabed disturbance for the export cable protection, beyond the disturbance for cable

installation, would be approximately 2.1 acres in federal waters and approximately 1.2 acres in NYS Waters. Approximately 80,770 cubic yards of scour protection would be discharged below the plane of Spring High Water over approximately 15.7 acres for remedial cable protection measures within NYS waters.

The proposed cable route would cross nineteen (19) in- and out-of- service existing cables and/or pipelines within NYS waters. Eleven (11) of the 19 existing cables and pipelines will require pre-installation sediment disturbance and/or cable protection measures, which shall be subject to final crossing agreement with the crossed asset owner(s). Cable protection at cable and pipeline crossings could be approximately 53 feet wide at the base and 6.6 feet wide at the top with a depth of approximately 6.6 feet. Alternatively, marine mattressing with either rock or concrete could be used for protection of the existing utility either by laying a protective mattress on top of the utility or both on top of the utility and above the cable. Approximately 10,774 cubic yards of sediment may be disturbed around asset crossings and approximately 14,688 cubic yards of scour protection below the plane of Spring High Water may be placed in these existing cable and pipeline areas.

In certain areas along the export cable route, pre-sweeping activities are necessary for cable laying activities where megaripples and sandwaves are present. Pre-sweeping will occur in up to an approximately 164-foot width along the length of the megaripples and sandwaves; the length of clearance will vary along the submarine export cable route. Megaripple and sandwave height vary depending on localized seabed and current characteristics. Along the submarine export cable route, approximately 116,044 cubic yards of sediment is anticipated to be disturbed as a result of these pre-sweeping activities. Sediment disturbance for both pre-sweeping activities and existing utility crossings would be performed using a mass flow excavator from a construction vessel.

Additional activities include pre-trenching along the submarine export cable route in areas where deeper burial depths are not suitable for traditional cable burial methods. Pre-trenching involves running cable burial equipment over portions of the route to soften the seabed and/or by using a suction hopper dredge to excavate additional sediment. Pre-trenching is anticipated in areas with medium to high strength clay and where burial requirements are a minimum of 15-feet.

Empire Wind 1 Landfall at SBMT: Remove an existing approximately 3,330 square foot low level relieving platform and install a new steel bulkhead landward of the existing bulkhead. Two (2) 30-inch diameter pipe conduits would be installed through the bulkhead for the export cables. Replace the low-level relieving platform with a new high level platform ranging from approximately 29.5 to 35 feet wide by approximately 208 feet long supported by approximately sixteen (16) 24-inch diameter steel pipe piles between 32nd Street north to the southwestern corner of the 29th Street Pier. A new approximately 74-foot long sheet pile toe wall will be installed in front of the platform.

In front of the existing outfall approximately 112 cubic yards of riprap scour will be placed over an approximately 24-foot-wide by 26.5-foot-long area.

To facilitate the export cable's approach to the conduits along the bulkhead at SBMT, approximately 103,000 CY of material will be dredged to a depth of 34.5 feet below the plane of Mean Lower Low Water (MLLW) over approximately 6.89 acres to create a trench for the cable approach. An injector pit near at the western end of Pier 35 near the Bay Ridge Channel would be dredged to 55 feet below MLLW to facilitate the transition from deeper burial depth beneath the federal channel. The dredged material would be placed in a scow, dewatered onsite and transported for disposal at an approved upland facility. A 12-inch layer of bedding stone may be placed within the trench before cable installation. Following cable installation the trenched area would be backfilled to cover the cable and restore the area to grade. In total approximately 5.52 acres of the dredged/trenched area would be backfilled with approximately 62,650 cubic yards of clean fill to protect the cable.

1.3.1 Proposed avoidance and minimization measures

The applicant has designed the project to avoid and minimize impacts to Waters of the United States. No impacts to onshore wetlands are proposed as part of the Project. Impacts are anticipated to consist of structures, fills, and temporary construction impacts with minimal permanent losses of Waters of the United States. Best Management Practices including turbidity reduction measures will be utilized to minimize impacts. Timing restrictions for in-water work will be implemented as specified by permit conditions and/or in coordination with state and federal agencies.

BOEM, the lead federal agency, has completed its National Environmental Policy Act (NEPA) review process pursuant to Title 23 of the Code of Federal Regulations (CFR) Part 771 and Title 40 of the CFR Part 1500-1508. BOEM signed a Record of Decision (ROD) on November 21, 2023, that officially documented the selection of its Preferred Alternative and, as appropriate, the mitigation measures to be incorporated into the Empire Wind Offshore Wind Energy Project that will avoid, minimize, and/or mitigate adverse impacts. As mentioned above, the Corps has adopted the EIS in accordance with 40 C.F.R. 1506.3, inclusive of these mitigation measures.

1.3.2 Proposed compensatory mitigation

In accordance with 33 CFR Part 332.3 (a)(1), "the fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to water of the United States authorized by Department of the Army (DA) permits. The district engineer must determine the compensatory mitigation to be required in a DA permit, based on what is practicable and capable of compensating for the aquatic resource functions that will be lost as a result of the permitted activity."

Compensatory mitigation is not required as the proposed work within the EW1 portion of the lease area, along the export cable route and at the landfall location does not fall within any mapped wetlands or special aquatic sites.

1.4 Existing conditions and any applicable project history

Site History:
Renewable Energy Lease Area OCS-A 0512: The lease area was auctioned on December 15-16, 2016. Statoil Wind US, LLC was the winning bidder of the lease area. A commercial wind energy lease was signed and executed by BOEM on March 15, 2017. In 2018, Statoil changed the company name to Equinor. Equinor is the parent company of Empire Offshore Wind, LLC. The lease area was then referred to as the Empire Wind Project consisting of two wind farms EW1 and EW2.

Landfall: The SBMT had historically served as an intermodal shipping, warehousing and manufacturing facility in Brooklyn, New York consisting of multiple solid filled piers and along the Bay Ridge and Red Hook Channels along Gowanus Bay. The SBMT in recent years has been largely unused with the exception of the Sims Municipal Recycling facility along the 29th Street Pier. The proposed landfall at the SBMT is located between 35th Street Pier and the 29th Street Pier. The SBMT is owned by the City of New York and is managed by the NYCEDC. The NYCEDC has proposed to port upgrades including construction of bulkhead improvements, new pile supported and floating platforms, new fenders for vessel mooring, and dredging at the SBMT.

BOEM's EIS & ROD is inclusive of three (3) DA Permit Applications: EW1, EW2, and the NYCEDC proposed port facility upgrades at the SBMT. Each project was assigned a separate application number as the two wind farm projects have independent utility and can operate independently of each other, but are located within the same lease area. EW2 was assigned DA Permit Application number NAN-2022-00902-EMI and the NYCEDC Port Upgrades at SBMT was assigned DA Permit Application Number NAN-2022-00900-EMI. The SBMT port upgrades were included in BOEM's EIS & ROD as a connected action pursuant to 40 CFR 1508.25. The SBMT Port Upgrades were included as a connected action because Equinor and NYCEDC have an agreement for Equinor to use the SBMT as an Operations & Maintenance (O&M) facility for the construction of Equinor's offshore wind projects in the North Atlantic. These projects include EW1, EW2, Beacon Wind 1 (BW1), and Beacon Wind 2 (BW2). As of the date of this SOF, applications have not yet been submitted for the BW1 and BW2 projects.

Past Permitting Relevant to the Project:
Various types of sampling activities have occurred within BOEM's Renewable Energy Lease Area OCS-A 0512 by the applicant to collect necessary data for the proposed construction of the EW1 project. Most sampling activities within the lease area on the OCS are not jurisdictional under Section 10 of the RHA. Additional sampling including geotechnical work has been conducted by the applicant along potential export cable routes and near the lease area. Prior Nationwide Permit 6 verifications issued to the applicant for various sampling activities and geotechnical work within state waters include NAN-2020-01298-EVI, NAN-2023-00282-EMI, and NAN-2023-00735-EMI.

Other Information:
The submarine export cable crosses over nineteen (19) existing utilities (in- and out- of service utilities) within the seabed to make landfall at the SBMT. The export cable additionally enters, crosses and/or approaches into the following Federal Navigation

Channels (including the theoretical 3:1 side slope): Ambrose Channel, Gravesend Anchorage, and the Bay Ridge and Red Hook Channels.

1.4.1 Jurisdictional Determination

Is this project supported by a jurisdictional determination? No Jurisdictional Determination was requested by the applicant. No wetlands or special aquatic sites are proposed to be impacted by the project.

1.5 Permit authority

Table 1 – Permit Authority	
Section 10 of the Rivers and Harbors Act (33 USC 403)	X
Section 404 of the Clean Water Act (33 USC 1344)	X
Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 USC 1413)	

2.0 Scope of review for National Environmental Policy Act (i.e., scope of analysis), Section 7 of the Endangered Species Act (i.e., action area), and Section 106 of the National Historic Preservation Act (i.e., permit area)

2.1 Determination of scope of analysis for National Environmental Policy Act (NEPA)

The scope of analysis always includes the specific activity requiring a Department of the Army permit that is located within the Corps' geographic jurisdiction. In addition, we have applied the four factors test found in 33 CFR Part 325, Appendix B to determine if there are portions of the larger project beyond the limits of the Corps' geographic jurisdiction where the federal involvement is sufficient to turn these portions of an essentially private action into a federal action.

In accordance with 33 CFR 325 (Appendix B) (7)(b)(2), factors to be considered in determining whether the U.S. Army Corps of Engineers has sufficient "control and responsibility" include:

(i) Whether or not the regulated activity comprises "merely a link" in a corridor type project (e.g., a transportation or utility transmission project);

(ii) Whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity;

(iii) The extent to which the entire project will be within Corps jurisdiction; and

(iv) The extent of cumulative Federal control and responsibility.

Based on our application of the guidance in Appendix B, we have determined that the scope of analysis for this review includes the Corps geographic jurisdiction and upland portions beyond the Corps geographic jurisdiction.

These upland components include between the landfall of the export cables and the final Point of Interconnection (POI).Other portions of the entire project are included because USACE does have sufficient control and responsibility to warrant Federal review. These components have been determined to be within our scope of analysis as the extent of federal involvement is sufficient to turn these portions of an essentially private action into a federal action with the resulting environmental consequences of the larger project essentially being products of the Corps' permit action.

BOEM's action associated with the project increases the cumulative Federal control and responsibility over the project. The final scope of analysis was included in the FEIS that BOEM prepared as Lead Federal Agency for this Project, and in which the Corps participated as a Cooperating Agency.

Final description of scope of analysis: The final scope of analysis includes the EW1 portion of BOEM's Renewable Energy Lease Area OCS-A 0512 that will be impacted by the installation of WTGs, inter-array cables, scour protection, an OSS, the export cables, the onshore transmission cable route, onshore substation and the final POI at the Gowanus substation. In addition, under NEPA reasonably foreseeable activities within the larger overall wind energy area were considered to account for potential cumulative effects.

2.2 Determination of the Corps' action area for Section 7 of the Endangered Species Act (ESA)

(i) Action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action

(ii) Determined scope: As per the NMFS Biological Opinion (BO), entitled "National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological Opinion", dated September 8, 2023, the action area includes SBMT and the Wind Development Area (WDA) where construction, operations and maintenance, and decommissioning activities will occur and the surrounding areas ensonified by noise from project activities; the cable corridors; and the areas where high-resolution geophysical surveys (HRG) and biological resource surveys will take place. Additionally, the action area includes the vessel transit routes between the WDA (and SBMT) and ports in New York (Albany, Coeymans, South Brooklyn Marine Terminal, inclusive of the Hudson River) and the routes used by vessels transporting manufactured components from ports in Charleston, SC to the project site. The action area also includes the US EEZ along the Atlantic coast south of Long Island, New York to Charleston, South Carolina where project vessels may transit. The scope does not include a portion of the vessel transit routes between the WDA and ports in eastern Canada, Europe, and/or Asia outside the US Economic Exclusion Zone (EEZ) as NMFS determined that the effects of vessel transit from those ports are not effects of the proposed action as defined in 50 CFR 402.17.

Additionally, as per the USFWS BO, entitled “Biological Opinion on the Effects of the Empire Wind 1 and Empire Wind 2 Projects on the Federally Listed Piping Plover (*Charadrius melodus*; threatened) and rufa Red Knot (*Calidris canutus rufa*; threatened) within the Jurisdiction of the Long Island Field Office, Shirley, New York”, prepared by the USFWS, and dated June 2023, the action area is characterized by urban and suburban areas in the New York metropolitan area and Long Island. The onshore export and interconnection cables, onshore substations, and O&M facility would be primarily along or within existing roadway corridors. The offshore portion of the Action Area includes open coastal waters associated with the New York Bight, New York Harbor, and New York Bay. The offshore action area lies in between major shipping channels and includes fishing grounds frequented by commercial and recreational boats.

The USACE action area has been addressed within the larger ESA action area defined by BOEM.

2.3 Determination of Corps’ permit area for Section 106 of the National Historic Preservation Act (NHPA)

The permit area includes those areas comprising waters of the United States that will be directly affected by the proposed work or structures, as well as activities outside of waters of the U.S. because all three tests identified in 33 CFR 325, Appendix C(g)(1) have been met.

The following three tests must all be satisfied for an activity undertaken outside the waters of the United States to be included within the “permit area”:

(i) Such activity would not occur but for the authorization of the work or structures within the waters of the United States:

(ii) Such activity must be integrally related to the work or structures to be authorized within waters of the United States. Or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program; and

(iii) Such activity must be directly associated (first order impact) with the work or structures to be authorized.

From the November 20, 2023 MOA, “BOEM has defined the Area of Potential Effects (APE) for the undertaking as the depth and breadth of the seabed potentially impacted by any bottom-disturbing activities, constituting the marine archaeological resources portion of the APE (marine APE); the depth and breadth of the terrestrial areas potentially impacted by any ground disturbing activities, constituting the terrestrial archaeological resources portion of the APE (terrestrial APE); the viewshed from which offshore or onshore renewable energy structures would be visible, constituting the visual portion of the APE (visual APE); and any temporary or permanent construction or staging areas that may fall into any of the aforementioned offshore or onshore portions of the APE”.

The USACE permit area has been addressed within the larger “area of potential effect” defined by BOEM. The Corps, which participated in the NHPA 106 consultation process, signed the MOA dated November 20, 2023 as a Concurring Party.

The permit area includes the EW1 portion of the lease area which includes the WTGs, inter-array cables, scour protection, and an OSS, in addition to the export cables, the onshore transmission cable route, onshore substation and the final POI at the Gowanus substation.

3.0 Purpose and Need

3.1 Project purpose and need

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

The purpose of the EW1 Project is to develop a commercial-scale offshore wind energy facility in Lease Area OCS-A 0512 (Lease Area) with wind turbine generators, an offshore substation, and electric transmission cables making landfall in Brooklyn, New York to support the achievement of New York’s renewable energy goals.

3.2 Basic project purpose

Basic project purpose, as determined by the Corps: The basic project purpose is offshore wind energy generation.

3.3 Water dependency determination under 404(b)(1) Guidelines:

This activity does not require access or proximity to or siting within a special aquatic site to fulfill its basic project purpose. By definition, offshore wind would be located in water and would require access or proximity to or siting within water but not specifically within special aquatic sites. The project’s onshore components which entail transmission of the wind energy generated from the project to the state power grid does not require access or proximity to a special aquatic site and is therefore not water dependent. Under the 404(b)(1) Guidelines, 40 C.F.R. § 230.10(a)(3), if a proposed activity is not water dependent, practicable alternatives not involving special aquatic sites are presumed to be available unless the permittee clearly demonstrates otherwise. There are no proposed discharges of dredged or fill material proposed into a special aquatic site. Refer to Section 6.0 for evaluation for compliance with the Section 404(b)(1) guidelines.

3.4 Overall project purpose

The overall project purpose is the construction and operation of a commercial scale offshore wind energy project for renewable energy generation and distribution to NYS’s energy grid.

4.0 Coordination

The FEIS describes the public involvement process for the FEIS, including resource agency roles and coordination meetings, public meetings, public hearings, consulting parties, and the project website. The comments received on the DEIS and the responses by the Applicant and BOEM are provided in Appendix P of the FEIS.

4.1 Public Notice Results

The results of coordinating the proposal on public notice are identified below, including a summary of issues raised, any applicant response and the Corps' evaluation of concerns.

Public notice number NAN-2022-00901-EMI, describing the proposed activity and requesting public comment, was published on November 7, 2022, with a comment period ending on January 6, 2023. An electronic version of the Public Notice was posted on USACE's New York District website (http://www.nan.usace.army.mil). 62 printed copies of the Public Notice were sent by regular mail and 219 parties were notified by email of a link to the Public Notice on USACE's New York District website. The Public Notices were sent to the adjacent property owners as identified by the applicant, to interested members of the public, and to Federal, state and local officials or agencies included in USACE's New York District computerized public notice mailing list for New York State Department of Environmental Conservation (NYSDEC) Region 1 & 2.

On November 18, 2022, BOEM published a Notice of Availability (NOA) for the Empire Wind Farm DEIS opening a 60-day comment period ending on January 17, 2023, for the public to comment on the DEIS. BOEM received a total of submissions during the comment period. The comments received on the DEIS and the responses by the Applicant and BOEM are provided in Appendix P of the FEIS. It is noted that in response to comments on the USACE public notice, the USACE public comment period was extended to January 17, 2023 to match the comment period of the BOEM DEIS.

Were comments received in response to the public notice? Yes. A total of three (3) written comments were received including one (1) from NMFS and two (2) from the public.

Were comments forwarded to the applicant for a response? Yes.

Was a public meeting and/or hearing requested, and if so, was one conducted?

No, no public hearing or meeting was requested. However, this office participated in three (3) joint virtual public hearings with BOEM on December 7, 2022, December 13, 2022, and December 15, 2022. Eighteen (18) verbal comments were made over the course of the three public hearings.

Comments received in response to the public notice:

Comment 1: Clean Ocean Action (COA) – COA requested an extension of the public comment period to match the BOEM DEIS comment period. COA commented that there was confusion regarding the BOEM public comment process in addition to the USACE public comment process and that it was confusing that there were three (3) public notices published for the EW1, EW2, and SBMT projects. Additionally, COA commented that USACE should consider cumulative impacts with other offshore wind projects.

Applicant's Response: N/A

Corps' Evaluation: USACE extended the public notice comment period to match the BOEM FEIS. USACE notes that BOEM has included a cumulative impacts analysis in the DEIS and this analysis will be incorporated into the subject permit decision.

Comment 2: NRPA (James Scarcella) – Mr. Scarcella requested an extension of the public comment period to March 1, 2023. This comment requested that USACE direct the applicant to reduce the scope of the project and further analyze impacts to marine mammals, seabirds and expand seabed mitigation.

Applicant's Response: The applicant provided a response to comments explaining that the scope of the project is designed to meet the needs of the power purchase agreement (PSA) that Equinor entered into with the New York State Energy Research and Development Authority (NYSERDA). The applicant noted that they conducted numerous studies and surveys as part of the development of the project and the results of these surveys and studies are included in the analyses in the BOEM DEIS. The applicant additionally proposed numerous mitigation measures and BOEM has included numerous mitigation measures in the DEIS.

Corps' Evaluation: USACE extended the public notice comment period to match the BOEM DEIS comment period. USACE notes that BOEM has included numerous studies, analyses, and numerous mitigation measures in the DEIS to minimize impacts to marine mammals, seabirds and the aquatic environment.

Additionally mitigation measures were developed and incorporated through the various consultations with resource agencies.

Agency Comments:

On January 19, 2023, NMFS provided a technical assistance letter in response to the public notice. The purpose of this letter was to highlight information that NMFS would be looking for in the Essential Fish Habitat and Endangered Species Act consultations. This technical assistance letter was provided to the applicant and BOEM to ensure that issues raised in the letter were addressed.

4.2 Additional issues raised by the Corps

N/A

4.3 Comments regarding activities and/or effects outside of the Corps' scope of review

N/A. See Public Interest Review Section 7.0 for further summary.

5.0 Alternatives Analysis

(33 CFR Part 325 Appendix B, 40 CFR 230.5(c), 40 CFR 1501, and RGL 88-13). An evaluation of alternatives is required under NEPA for all jurisdictional activities. NEPA requires discussion of a reasonable range of alternatives, including the no action alternative, and the effects of those alternatives. An evaluation of alternatives is required under the Section 404(b)(1) Guidelines for projects that include the discharge of dredged or fill material to waters of the United States. Under the Section 404(b)(1) Guidelines, practicability of alternatives is taken into consideration and no alternative may be permitted if there is a less environmentally damaging practicable alternative.

5.1 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:

The proposed discharges of dredged and fill material are directly related to the installation and protection of the export cable route through state waters and its approach to the cable landfall per the NY State agreement. The specific routing and siting specific information would determine how much of the cables would require the discharge of fill for secondary cable protection and the location of the cable landfall.

Depending on the alternative, there could also be non-tidal waters or wetland impacts associated with the onshore work. USACE has determined that any alternative regarding the cable route and associated onshore work must meet the following criteria:

(i) Type of energy. Any proposed alternative must be renewable energy. Empire Offshore Wind, LLC is under contractual obligation with the state of New York to contribute to New York's renewable energy pursuant to a power purchase agreement awarded on February 29, 2024.

(ii) Energy production must be located in the area covered by BOEM Renewable Energy Lease Number OCS-A 0529, within which Empire Offshore Wind, LLC holds a lease and the exclusive right to submit a Construction and Operations Plan for activities within the lease area.

(iii) The production of renewable energy must be from the use of wind turbines. BOEM has designated these offshore development areas specifically for renewable wind energy, therefore, to evaluate alternatives, all alternatives must consider only renewable wind energy and no other renewable energy producing projects such as solar or hydropower.

(iv) Empire Offshore Wind's contractual obligation with the state of New York to deliver the generated energy to the New York power grid was used as criteria for the evaluation of alternatives as the ability to deliver to the power grid limits where the project can be located geographically.

(v) In addition to supplying power to New York, the project must also deliver a minimum of 816 MW to the New York power grid to meet pre-established agreements.

(vi) Within tidal waters, any alternative must have geological substrate characteristics that would allow for adequate burial of the cable below the substrate. However, it is expected that there would be a small percentage of the route that might not allow for adequate burial.

Furthermore, as it pertains to specific project components, the following criteria were also used and considered to refine alternatives:

Wind Turbine Generators and Offshore Substations

- It is outside the jurisdiction of the Lead Agency, including resulting in activities that are not allowed under the lease (e.g., requiring locating part or all of the wind energy facility outside of the Lease Area, or constructing and operating a facility for another form of energy).
- It would not respond to the purpose and need of BOEM's action, including not furthering the United States' policy to make OCS energy resources available for expeditious and orderly development, subject to environmental safeguards.
- It would require a major change to an existing law, regulation, or policy.
- It would not be responsive to the Applicant's goals, lease constraints, and obligations, such as alternatives that would:
    - Partially or completely relocate the Project outside of the defined geographic area where it was proposed; or
    - Result in the development of a Project that would not allow the developer to satisfy contractual obligations (e.g., resulting in a Project with a nameplate capacity that is less than what is required under a Power Purchase Agreement; result in significant implementation delays that would prevent the Project from initiating commercial operations by the contractually required date in the Power Purchase Agreement).
- It is technically infeasible, meaning implementation of the alternative is unlikely given past and current practice, technology (e.g., experimental turbine design or

foundation type), or site conditions (e.g., presence of boulders) as determined by BOEM's technical experts.
- It is economically infeasible, meaning implementation of the alternative is unlikely due to unreasonable costs as determined by BOEM's technical experts; while this does not require cost-benefit analysis or speculation about an applicant's costs and profits, there must be a reasonable basis.
- It cannot be analyzed because its implementation is remote or speculative, or it is too conceptual in that it lacks sufficient detail to meaningfully analyze impacts.
- It is substantially similar in design to an alternative that is or will be analyzed in detail.
- It is environmentally infeasible, meaning implementation of the alternative would not be allowed by another agency from which a permit or approval is required, or implementation results in an obvious and substantial increase in impacts on the human environment.
- It does not address a specific environmental or socioeconomic concern or issue.

Point(s) of Interconnection (POI)
- Capable of accepting all or a portion of the power from the Project with minimal upgrades.
- Located within 10 miles of the coastline to minimize environmental impacts and optimize cable route length.
- Avoid or minimize impacts to environmental features (e.g., critical habitat, wetlands, cultural resources, existing contamination).
- Consistency with, and reduced or low potential impacts on, adjacent land uses.
- Constructability (e.g., land use, slopes, access, temporary staging areas, and utility locations).
- Availability of suitable landfall locations (i.e., those that minimize environmental impacts and are within 10 miles of the POI).

Onshore Substation(s)
- Proximity to POI (within 10 miles) to minimize environmental impacts and optimize cable route length.
- Avoid or minimize impacts to environmental features (e.g., critical habitat, wetlands, cultural resources, existing contamination).
- Proximity to the export cable route to minimize environmental impacts, neighborhood disruption (e.g., disturbances, interruptions, or changes), and costs associated with the cable connections to the POI).
- Sufficient land available (a minimum of 6 acres).
- Consistency with, and reduced or low potential impacts on, adjacent land uses.
- Constructability (e.g., land use, slopes, access, temporary staging areas, and utility locations).
- Optimization of cable route lengths.
- Availability of suitable landfall locations (i.e., those that minimize environmental impacts and are within 10 miles of the substation).

Export Cable Landfall(s) (landfall)

- Avoid or minimize impacts to environmental features (e.g., critical habitat, shellfish lease areas, fish spawning areas, cultural resources, and existing contamination) by leveraging existing conditions (i.e., existing roadways or parking lots or previously disturbed areas)
- Prioritize property availability, including State- and county-owned roadways, and existing utility ROW
- Consistency with, and reduced or low potential impacts on, adjacent land uses.
- Constructability (e.g., land use, slopes, access, temporary staging areas, and utility locations)
- Optimization of cable route lengths
- Availability of suitable landfall locations (i.e., are within 10 miles of the substation to minimize onshore impacts to local communities and sensitive natural resources)
- Use of existing ROWs to access the water when a parcel for the landfall location was not adjacent to the water.

Offshore Export Cable Route within NY State Waters

- Minimize extreme changes in slope and water depths.
- Coarse grain sediments of sufficient depth to meet target cable burial depths while avoiding pockets of contaminated sediments and organic sediments.
- Optimization of cable route lengths
- Avoid or limit crossing navigation channels and anchorage areas.
- Avoid known submerged shipwrecks and other cultural resources.
- Avoid mining and or dredge spoil areas.
- Minimize number of infrastructure (e.g., utility) crossings
- Minimize impacts to aquatic communities and sensitive habitats.
- Constructability (e.g., habitat type, depths, slopes, access, and utility locations)

Onshore Export Cable Route

- Minimize extreme changes in slope.
- Prioritize property availability, including State- and county-owned roadways, and existing utility ROW.
- Avoid known Superfund Sites or sites designated as hazardous.
- Avoid known locations of historic or archaeological resources.
- Avoid or minimize number of infrastructure (e.g., roads, bridges, culverts) crossings to reduce impacts to existing onshore infrastructure.
- Minimize impacts to wetlands and floodplains.
- Minimize the overall length of the route to minimize impacts to terrestrial communities, wildlife species, and sensitive habitats.
- Minimize impacts to aesthetic resources.
- Minimize impacts to sensitive receptors such as hospitals, schools, and

Churches.

5.2 Description of alternatives

BOEM's FEIS considered a total of eight (8) alternatives that were analyzed in detail in addition to the no action alternative. An additional seventeen (17) alternatives were considered but not analyzed in detail. Alternatives not analyzed in detail included alternatives related to wind turbine array layout and spacing, wind turbine technology, offshore export cables, alternative landfalls for EW1, onshore export cables, and a no action alternative.

BOEM determined that all off-site action alternatives would not meet particular screening criteria nor BOEM's purpose and need to respond to the Project COP and to determine whether to approve, approve with modifications, or disapprove the COP to construct, operate, and conceptually decommission a commercial-scale wind energy facility within Lease Area OCS-A 0529. Therefore, further detailed analysis was not conducted by BOEM. BOEM's regulations require BOEM to analyze Empire Offshore Wind, LLC's proposal to build a commercial wind energy facility on Lease OCS-A 0529. See Empire Wind FEIS, Section 2. Each of the alternatives, including the no action alternative, is detailed below in sections 5.2.1 through 5.2.3.

It is noted that the BOEM FEIS's alternatives analysis included the EW2 project as well and some alternatives were specific to EW1 and others specific to EW2.

5.2.1 No action alternative

Under this alternative, the project would not be constructed. Any potential environmental and socioeconomic impacts, including benefits, associated with the Project as described under the proposed action would not occur.

As described in BOEM's FEIS & ROD, Under the No Action Alternative, BOEM would not approve the COP. Construction and installation, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project would not occur, and no additional permits or authorizations for the Projects would be required. Any potential environmental and socioeconomic impacts, including benefits, associated with the Projects as described under the Proposed Action would not occur. The current resource condition, trends, and effects from ongoing activities under the No Action Alternative serve as the baseline against which all action alternatives are evaluated.

Over the life of the proposed Projects, 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 Final EIS, Appendix F (Planned Activities Scenario) without the Proposed Action serves as the baseline for the evaluation of cumulative impacts.

5.2.2 Off-site alternatives

No off-site action alternatives were considered given the constraints to a federally issued lease by BOEM and designation of interconnection points by New York State.

Export cable routes to other points of points of interconnection are detailed in Section 2.2 of the BOEM FEIS and in the application submitted to USACE. Screening criteria noted above were applied to alternatives listed in the application and in the BOEM FEIS for eliminating routes and points of interconnection that are not feasible which resulted in the selection of alternatives analyzed in the FEIS. The feasible subset is summarized under on-site alternatives.

5.2.3 On-site alternatives

Alternative 1 (BOEM FEIS - Alternative A - Applicant Proposed Project in COP):

Under Alternative A, the Proposed Action, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. EW 1 would consist of up to 57 WTGs, up to 116 nm (214 kilometers) of interarray cable, one OSS, a submarine export cable route of up to 41 nm (76 kilometers), a cable landfall at SBMT, one onshore substation, and interconnection cable to the POI at Gowanus Substation in Brooklyn, New York. EW 2 would consist of up to 90 WTGs, up to 144 nm (267 kilometers) of interarray cable, one OSS, a submarine export cable route of up to 26 nm (48 kilometers), up to two out of four proposed cable landfalls in Long Beach or Lido Beach, New York, onshore cable route options, one of two proposed onshore substations, and interconnection cable to a POI in Oceanside, New York. The Proposed Action wind turbine layout includes the following requirements to reduce impacts on navigation safety and preserve fishing opportunity:

- 1-nm setback from the Traffic Separation Scheme
- Southern perimeter WTG positions aligned with Hudson Canyon to Ambrose traffic lane.
- North-south search and rescue lanes across the Lease Area
- Minimum WTG spacing of 0.65 nm.
- Grid orientation facilitating southwest-to-northeast trawling.
- Open area in the northwestern portion of the Lease Area to reduce conflicts with squid fisheries.

Alternative 2 (BOEM FEIS - Alternative B - Remove Up to Six WTG Positions from the Northwest End of EW 1):

Under Alternative B, Remove Up to Six WTG Positions from the Northwest End of EW 1, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1

Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, the EW 1 turbine layout would be modified to remove up to six WTG positions from the northwestern end of EW 1 to reduce potential impacts at the edge of Cholera Bank on scenic resources and on navigation safety. Alternative B would also establish a No Surface Occupancy area where WTG positions would be excluded. Submarine export and interarray cables are not excluded from the No Surface Occupancy area. Between the Draft EIS and Final EIS, Empire Wind completed additional site investigations and studies to quantify the extent of glauconite deposits across the Lease Area as well as their potential impact on pile drivability. The pile drivability analyses determined that 22 of the 71 positions analyzed in EW 1 pose a high risk of pile refusal, leaving 49 suitable positions for WTG installation that include the six WTG positions identified for removal under Alternative B. BOEM and NREL independently reviewed Empire's analysis and, based on this review, determined that Alternative B would no longer meet the purpose and need because selection of Alternative B would not allow Empire Wind to install the minimum number of WTGs necessary to fulfill Empire's contractual obligations with NYSERDA.

Alternative 3 (BOEM FEIS - Alternative C – EW1 Submarine Export Cable Route):

EW 1 Submarine Export Cable Route, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, BOEM would approve only one of the two EW 1 submarine export cable route options that would traverse either the Gravesend Anchorage Area or the Ambrose Navigation Channel on the approach to SBMT. Each of the below sub-alternatives may be individually selected or combined with any or all other action alternatives or sub-alternatives.

- Alternative C-1: Gravesend Anchorage Area. In the vicinity of Gravesend Bay, the EW 1 submarine export cable route would traverse a charted anchorage area identified on NOAA Chart 12402 for the Port of New York (U.S. Coast Guard Anchorage #25).
- Alternative C-2: Ambrose Navigation Channel. In the vicinity of Gravesend Bay, the EW 1 submarine export cable route would traverse the Ambrose Navigation Channel.

Alternative 4 (BOEM FEIS - Alternative E - Setback between EW 1 and EW 2):

Under Alternative E, Setback between EW 1 and EW 2, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. Alternative E would remove seven WTG positions from EW 2 to create a 1-nm setback between the EW 1 and EW 2 Projects to improve access for fishing.

Between the Draft EIS and Final EIS, Empire Wind completed additional site investigations and studies to quantify the extent of glauconite deposits across the Lease Area as well as their potential impact on pile drivability. BOEM and NREL independently reviewed Empire's analysis and, based on this review, determined that Alternative E would no longer meet the purpose and need because selection of Alternative E would not allow Empire Wind to install the minimum number of WTGs necessary to fulfill Empire's contractual obligations with NYSERDA.

Alternative 5 (BOEM FEIS - Alternative F – Wind Resource Optimization with Modifications for Environmental and Technical Considerations):

Under Alternative F, Wind Resource Optimization with Modifications for Environmental and Technical Considerations, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, the wind turbine layout would be optimized to maximize annual energy production and minimize wake loss while addressing geotechnical considerations. Geotechnical site investigations and laboratory studies have shown that the geotechnical properties of glauconite make it an extremely difficult material to build upon, specifically for the installation of fixed-bottom foundations that support offshore wind turbine towers. Empire Wind performed site investigations and studies to quantify the extent of glauconite deposits across the Lease Area as well as their potential impact on pile drivability. An indicative WTG and interarray cable layout for Alternative F based on the pile drivability analysis is shown on Final EIS. This layout may be further refined (within the limits of the COP PDE) based on additional review of geotechnical constraints related to the presence of glauconite in the Lease Area.

Alternative 6 (BOEM FEIS - Alternative H – Dredging for EW1 Export Cable Landfall):

Under Alternative H, Dredging for EW 1 Export Cable Landfall, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, construction of the EW 1 export cable landfall would use a method of dredge or fill activities (clamshell dredging with environmental bucket) that would reduce the discharge of dredged material compared to other dredging options considered in the Empire Wind PDE (i.e., open cut trenching/jetting, suction hopper dredging, hydraulic dredging) (COP Section 3.4.2.1; Empire 2023).

As documented in the BOEM ROD, BOEM decided to approve with modifications, the COP for Empire Wind adopting the Preferred Alternative which incorporated the applicant's proposed project (Alternative A) with a combination of Alternative C-1, D, F, G, and H (referred to by BOEM as the "selected alternative". Note, BOEM Alternatives D and G were specific to the EW2 project and therefore are not considered in this decision document.

The ”selected alternative” chosen by BOEM is concurrent with the proposed action submitted to USACE for a Section 10 and 404 Permit.

5.3 Alternatives evaluation under the Section 404(b)(1) Guidelines and NEPA

Any discharge of dredged or fill material into waters of the United States authorized under Section 404 of the CWA must comply with guidelines established by the Administrator of the US EPA under Section 404(b)(1) of the CWA (the 404(b)(1) Guidelines) in 40 CFR Part 230. For the proposed project, USACE has determined that the activities in waters of the United States regulated under Section 404 of the CWA include the following: 1) the discharge of fill material for secondary cable protection over the export cables along the export cable corridor located within the 3 nautical mile limit of the territorial seas, 2) sidecasting of jetted material during sandwave clearance, 3) the discharge of fill material associated with the backfilling of the trench for the installation of the cable landfall, and 4) the discharge of fill associated with the structural maintenance work occurring at the SBMT.

Except as provided under section 404(b)(2) of the CWA, no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

This 404(b)(1) Guidelines alternatives analysis is not identical to the NEPA alternatives analysis discussed in the BOEM FEIS and ROD. The 404(b)(1) Guidelines only look at alternatives to a discharge of dredged or fill material in waters of the United States regulated by USACE under Section 404 of the CWA. Alternative placements of turbines on the OCS analyzed under NEPA are not subject to the 404(b)(1) Guidelines analysis because activities on the OCS do not involve a discharge of dredged or fill material into waters of the United States, including , within the 3 nautical mile limit of the territorial seas.

The applicant prepared a cable landfall and submarine export cable route alternative comparison table comparing nine (9) alternative landfall locations including the proposed landfall at SBMT (enclosed). This table considers a number of factors including cable route length in federal and state waters as well as a number of other environmental factors, technical and logistical factors, commercial factors in addition to stakeholder/public considerations. This table based on the variety of factors considered identified the proposed alternative as the only practicable alternative. USACE concurs with this assessment that the proposed alternative is the practicable alternative based on the technological, cost, and logistical factors in addition to the factors described above. It is noted that the proposed route is the longest in-water routing option and would theoretically require the most cable protection (as it assumed approximately 10% of the cable route may need secondary protection), but due to technological and other

feasibility issues, in addition to maximizing avoidance of various resources, this alternative is the most practicable.

Additionally, the associated fill activities does not result in permanent losses of waters of the United States. The cable protection measures are a result of discharges of fill but would not result in a complete loss of aquatic resources as portions of the remaining water column will remain open waters. Additionally, as noted in this decision document, the associated rock or concrete mattressing can provide different substrate habitat and could potentially be used by species similarly to an artificial reef.

5.4 Least environmentally damaging practicable alternative under the Section 404(b)(1) Guidelines

In Section 5 of the Record of Decision, BOEM concludes that a combination of the applicant's proposed project (Alternative A) with a combination of Alternative C-1, D, F, G, and H (referred to by BOEM as the "selected alternative") would result in fewer impacts than other action alternatives considered and was determined to be consistent with the purpose and need. This office concurs with the findings of BOEM's analysis.

The proposed action as described in the USACE application, and subsequent supplements, for a DA Permit, reflects this combination and selection of this alternative. All environmental impacts of the BOEM selected alternative were addressed in the NEPA process by BOEM in the FEIS, which USACE has adopted. The 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.

6.0 Evaluation for Compliance with the Section 404(b)(1) Guidelines.

The following sequence of evaluation is consistent with 40 CFR 230.5

6.1 Practicable alternatives

Practicable alternatives to the proposed discharge consistent with 40 CFR 230.5(c) are evaluated in Section 5.

The statements below summarize the analysis of alternatives:

In summary, based on the analysis in Section 5 above, the no-action alternative, which would not involve discharge into waters of the United States, is not practicable.

For those projects that would discharge into a special aquatic site and are not water dependent, the applicant has demonstrated there are no practicable alternatives that do not involve special aquatic sites.

It has been determined that there are no alternatives to the proposed discharge that would be less environmentally damaging (Subpart B, 40 CFR 230.10(a)).

The proposed discharge in this evaluation is the practicable alternative with the least adverse impact on the aquatic ecosystem, and it does not have other significant environmental consequences.

6.2 Candidate disposal site delineation (Subpart B, 40 CFR 230.11(f))

Each disposal site shall be specified through the application of these Section 404(b)(1) Guidelines:

The disposal sites consists of the submarine export cable route from BOEM Lease Area OCS-A 0512 to the landfall location at the SBMT in Brooklyn, New York, when the submarine export cable route is landward of the three (3) nautical mile mark (within NY State Waters) and at the SBMT. Crushed stone and/or concrete mattressing will be utilized in areas where burial depth cannot be achieved, when crossing existing utilities, and at the cable landfall at SBMT to cover the trenched area where cables will be installed. Dredged material would be disposed of at an approved upland facility. During sand wave clearing, sand would be side casted along the existing sand waves via a mass flow excavator within the cable corridor.

General characteristics of the disposal sites consist of coastal waters within the New York Bight. Water temperatures within the disposal sites generally range from 44-70 degrees Fahrenheit. Salinity within the disposal sites range between 30 and 35 parts per thousand (ppt).

There are no special aquatic sites as defined by 40 C.F.R. Part 230 Subpart E (wetlands, mud flats, vegetated shallows, sanctuaries and refuges, coral reefs, or riffle and pool complexes) located along the submarine export cable route or at the SBMT.

6.3 Potential impacts on physical and chemical characteristics of the aquatic ecosystem (Subpart C 40 CFR 230.20-40 CFR 230.25)

The following has been considered in evaluating the potential impacts on physical and chemical characteristics (see Table 2):

Table 2 – Potential Impacts on Physical and Chemical Characteristics

Physical and Chemical Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Substrate				X	X	
Suspended particulates/ turbidity						
Water			X			

Table 2 – Potential Impacts on Physical and Chemical Characteristics						
Physical and Chemical Characteristics	**N/A**	**No Effect**	**Negligible Effect**	**Minor Effect (Short Term)**	**Minor Effect (Long Term)**	**Major Effect**
Current patterns and water circulation		X				
Normal water fluctuations		X				
Salinity gradients		X				

Substrate: The discharge of fill associated with the submarine export cable, secondary cable protection, sand wave clearing, and dredging/trenching for the cable landfall at the SBMT facility will result in minor-short term and long-term permanent adverse impacts to the existing substrate. Impacts would include disturbance of predominantly sandy substrate along the export cable with the placement of rock cover and/or concrete mattressing for cable protection. The dredging and trenching of the cable landfall at the SBMT and subsequent placement of rock protection would permanently change the existing sediments to gravel and stone. At SBMT, less than 2% of the dredged/trenched material is sandy and the majority of core sampling in the area indicated material was very soft black silt. It is noted that material around the SBMT contains levels of contaminants which would be removed.

Depending on final design the cable will be installed via mechanical cutter, mechanical plow (which may include a jetting system), and/or jet plow. As the cable is laid on the ocean seafloor, the existing substrate will be used to cover the submarine export cable. The proposed discharge of fill material will not change the complex physical, chemical, and biological characteristics of the substrate.

The installation of secondary cable protection (e.g., concrete mattressing or rock placement) would temporarily affect bottom-dwelling organisms at the project location by smothering immobile benthic organisms or forcing mobile organisms to migrate. However, it is expected that the installation of the secondary cable protection would provide long-term beneficial mobile benthic organisms within the footprint of the concrete mattresses will continue to colonize in the sandy areas adjacent to the secondary cable protection.

Decanting of dredged material at the SBMT would not change the complex physical, chemical, and biological characteristics of the substrate since the material discharged is of the same substrate type as the existing seafloor within waterway.

When looking at the overall impacts associated with the discharge of fill material particularly with the installation of the submarine export cable, secondary cable

protection and decanting of dredged material it is expected that there would be minor short-term effects to respective water bodies and the associated aquatic ecosystem.

Suspended particulates/turbidity: The installation of the submarine export cable, secondary cable protection (e.g., concrete mattressing or rock placement) and dredging/trenching at the SBMT and filling of the trench with rock would have minor short-term effects on suspended particulates/turbidity.

As the submarine export cable is installed, the seabed would be temporarily disturbed resulting in a release of suspended particulates into the water column. The suspended particulates would be dispersed by the current and would settle back to the seabed within minutes to hours of the disturbance since the material is predominately sand. In addition, the placement of 0.2 acres of secondary cable protection (e.g., concrete mattressing or rock placement) would temporarily disturb the seafloor resulting in a release of suspended particulates into the water column. However, it is anticipated that the suspended particulates would settle back to the seabed quickly due to the composition of the material being predominantly sand.

A turbidity curtain would be utilized as practicable during construction activities at the SBMT to minimize the spread of turbidity in the waterway. The dredged material would be placed into dredge scows and decanted of excess water into the waterway resulting in temporary suspended particulates within the water column. It is anticipated that the suspended particulates would settle back to the seabed quickly.

Water: It is anticipated that the discharge of fill material will result in negligible effects to water. The discharge of fill from the submarine export cable, secondary cable protection, dredging/trenching at the SBMT consisting of decanting of excess water and placement of rock fill would not result in changes to the water's clarity, color, odor, or taste. It is also not anticipated that the discharge of fill will result in an addition of contaminants that will result in changes to the water that reduces or eliminates the suitability of the waterbody for populations of aquatic organisms, or for human consumption, recreation, or aesthetics. It is noted that the existing sediment contains various levels of contaminants. Dredged/trenched material will be disposed of at an approved upland facility and clean stone fill will be placed to backfill the trench.

Current patterns and water circulation: It is anticipated that the discharge of fill material will have no effects to current patterns and water circulation. The discharge of fill from the submarine export cable, secondary cable protection, dredging/trenching at the SBMT and work at the SBMT consisting of decanting of excess water and filling of the trench with rock is not anticipated to obstruct flow, change the direction or velocity of flow, water circulation, or otherwise change the dimensions of the waterbody.

Normal water fluctuations: It is anticipated that the discharge of fill material will have no effects to normal water fluctuations. The discharge of fill will not change the existing tidal fluctuations in the two project areas. The proposed discharge of 2.9 acres of fill material within the Atlantic Ocean is extremely small in comparison to the overall size of

the Atlantic Ocean. As a result, normal water fluctuations are expected to stay the same. The same can be said about the discharge of fill at the SBMT.

Salinity gradients: There would be no effects to salinity gradients resulting from the discharge of fill material. The discharge of fill material associated with the installation of the submarine export cable, secondary cable protection and dredging/trenching at the SBMT location would not change the overall salinity since the overall impacts in comparison to the overall size of the Atlantic Ocean is relatively small. Decanting of excess water and discharge of rock fill at the SBMT will not change the overall salinity within the waterway.

6.4 Potential impacts on the living communities or human uses (Subparts D, E and F)

6.4.1 Potential impacts on the biological characteristics of the aquatic ecosystem (Subpart D 40 CFR 230.30)

The following has been considered in evaluating the potential impacts on biological characteristics (see Table 3):

Table 3 – Potential Impacts on Biological Characteristics

Biological Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Threatened and endangered species				X	X	
Fish, crustaceans, mollusks, and other aquatic organisms				X	X	
Other wildlife				X		

Discussion:

Threatened and Endangered Species: Where consultation with the Secretary of the Interior occurs under section 7 of the Endangered Species Act, the conclusions of the Secretary 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 minor effect on threatened and endangered species. See Endangered Species Act Consultation in Section 2.2 and Section 10.1 of this ROD for more information about impacts to ESA listed species.

The discharge of fill material resulting from the installation of the submarine export cable and secondary cable protection (e.g., concrete mattressing or rock placement) within

the 3 nautical mile limit of jurisdiction, in addition to dredging/trenching and subsequent filling of the trench at the SBMT and decanting of excess water would have minor short-term effects to threatened and endangered species.

The discharge of fill resulting from the installation of the submarine export cable and secondary cable protection is not anticipated to cover or directly kill listed threatened or endangered species within the project area. Federally-listed aquatic species that are considered by BOEM to have potential to occur within the action area in the Atlantic Ocean and at New York Harbor near the SBMT include fin, sei, sperm, or North Atlantic right whales, the Northwest Atlantic distinct population segment (DPS) of loggerhead sea turtles, North Atlantic DPS of green sea turtles, Kemp's ridley, or leatherback sea turtles, or any of the five DPSs of Atlantic sturgeon, blue whales, shortnose sturgeon, giant manta rays, hawksbill sea turtles, and oceanic whitetip sharks. Additionally, federally listed terrestrial species considered include red knot and its proposed critical habitat, piping plover, northern long-eared bat, tri-colored bat, roseate tern, monarch butterfly, and seabeach amaranth.

The installation of secondary cable protection could be utilized by sea turtles and sturgeon since the secondary cable protection could potentially act as an artificial reef like structure. This in turn would have minor long-term beneficial effects to some endangered and threatened species. Considering the overall size of the Atlantic Ocean in comparison to the proposed areas of fill, it is expected that the listed species above would avoid the project area during installation and would utilize the area once installation is complete.

The dredging/trenching at SBMT would be placed on dredged scows and dewatered for ultimate disposal at an approved upland facility. A turbidity curtain would be utilized as practicable during construction at SBMT which would exclude listed species from entering the construction area. It is anticipated that the listed species above would avoid the area and would return to the area once dredging activities are completed.

Fish, Crustaceans, mollusk, and other aquatic organisms: The discharge of fill material resulting from the installation of the submarine export cable and secondary cable protection (e.g., concrete mattressing or rock placement) within the 3 nautical mile limit of jurisdiction, in addition to dredging/trenching and subsequent filling of the trench at the SBMT and decanting of excess water would have minor short-term effects to fish, crustaceans, mollusk, and other aquatic organisms.

The installation of the submarine export cable and secondary cable protection would result in the crushing and displacing of epifaunal organisms on the bed surface and liquifying sand from the bed surface to depths, killing and displacing benthic infauna within the cable path. This process would also flatten sand waves and biogenic depressions that provide habitat for fish and invertebrates, including Essential Fish Habitat (EFH) species. However, it is anticipated that benthic epifauna and infauna organisms would recolonize after the installation of the submarine export cable and secondary cable protection is complete. For species such as fish and other mobile

organisms, it is anticipated that they would avoid the project area during the installation of the submarine export cable and secondary cable protection and would return once installation is complete. In addition, certain fish and crustacean species may benefit from the placement of fill material to protect the cabling, as rocky habitats create structure preferred by certain fish and crustacean species. The proposed discharge in relation to the overall size of the Atlantic Ocean would have temporary and minor impacts.

Dredging/trenching activities associated at the SBMT would result in similar impacts to fish, crustaceans, mollusk and other organisms. Benthic epifauna and infauna organisms would be disturbed and likely destroyed from dredging activities. However, it is anticipated that benthic epifauna and infauna organisms could recolonize once the fill is discharged into the trench. The sediment type will be converted from soft bottom to hard bottom, though the sediment is black silty material which is not utilized by many aquatic species. Mobile organisms consisting of fish and certain crustaceans are expected to avoid the area during the installation of the cable. A turbidity curtain would be utilized as practicable which would prevent fish and other species from entering the construction area. As a result, fewer impacts are expected to fish and crustaceans.

The SBMT and the surrounding area consists of active commercial moorage that is routinely dredged to maintain navigation, and the soft-bottom benthic habitats are subject to regular disturbance. As a result, conditions for invertebrates would not be significantly altered from the annual maintenance dredging. The installation methods for the steel piles at SBMT could generate noise disturbance that could result in impacts to fish, crustaceans, mollusk, and other aquatic organisms.

Other wildlife: It is anticipated that the proposed discharge of fill will have minor impacts to other wildlife that has not been considered above. It is anticipated that the project will have minor secondary effects on seals and sea birds, as impacts to fish, crustaceans, and mollusks result in an impact to available forage for these species. It is not anticipated that any additional species will be directly impacted by the proposed fill, as the location of the proposed fill limits the number of species that may be present.

6.4.2 Potential impacts on special aquatic sites (Subpart E 40 CFR 230.40)

The following has been considered in evaluating the potential impacts on special aquatic sites (see Table 4):

Table 4 – Potential Impacts on Special Aquatic Sites

Special Aquatic Sites	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Sanctuaries and refuges		X				
Wetlands		X				

Table 4 – Potential Impacts on Special Aquatic Sites						
Special Aquatic Sites	**N/A**	**No Effect**	**Negligible Effect**	**Minor Effect (Short Term)**	**Minor Effect (Long Term)**	**Major Effect**
Mud flats		X				
Vegetated shallows		X				
Coral reefs		X				
Riffle pool complexes		X				

Discussion:

Sanctuaries and Refuges: There will be no effect to sanctuaries and refuges within the discharge site of the submarine export cable, secondary cable protection, dredging/trenching for the cable landfall and subsequent backfilling of the trench, and the other work associated with the SBMT because the discharge area does not fall within any designated sanctuaries or refuges.

Wetlands: There will be no effect to wetlands within the discharge site of the submarine export cable, secondary cable protection, dredging/trenching for the cable landfall and subsequent backfilling of the trench, and the other work associated with the SBMT because the discharge area does not fall within any wetlands.

Mudflats: There will be no effect to mudflats within the discharge site of the submarine export cable, secondary cable protection, dredging/trenching for the cable landfall and subsequent backfilling of the trench, and the other work associated with the SBMT because the discharge area does not fall within any mudflats.

Vegetated Shallows: There will be no effect to vegetated shallows within the discharge site of the submarine export cable, secondary cable protection, dredging/trenching for the cable landfall and subsequent backfilling of the trench, and the other work associated with the SBMT because the discharge area does not fall within any vegetated shallows.

Coral Reefs: There will be no effect to coral reefs within the discharge site of the submarine export cable, secondary cable protection, dredging/trenching for the cable landfall and subsequent backfilling of the trench, and the other work associated with the SBMT because the discharge area does not fall within any coral reefs.

Rifle and Pool Complexes: There will be no effect to rifle and pool complexes within the discharge site of the submarine export cable, secondary cable protection, dredging/trenching for the cable landfall and subsequent backfilling of the trench, and the other work associated with the SBMT because the discharge area does not fall within any rifle and/or pool complexes.

6.4.3 Potential impacts on human use characteristics (Subpart F 40 CFR 230.50)

The following has been considered in evaluating the potential impacts on human use characteristics (see Table 5):

Table 5 – Potential Effects on Human Use Characteristics

Human Use Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Municipal and private water supplies		X				
Recreational and commercial fisheries				X		
Water-related recreation			X			
Aesthetics			X			
Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves			X			

Discussion:

Municipal and private water supplies: The discharge of fill material resulting from the installation of the submarine export cable and secondary cable protection (e.g., concrete mattressing or rock placement) within the 3 nautical mile limit of jurisdiction, in addition to dredging/trenching and subsequent filling of the trench at the SBMT and decanting of excess water would have no effect on municipal and private water supplies. There is no water supply being sourced from the Atlantic Ocean or the New York Harbor within the project area.

Recreational and commercial fisheries: The discharge of fill material resulting from the installation of the submarine export cable and secondary cable protection (e.g., concrete mattressing or rock placement) within the 3 nautical mile limit of jurisdiction, in addition to dredging/trenching and subsequent filling of the trench at the SBMT and decanting of excess water would have minor, short-term effects on recreation and commercial fishing.

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 that may be within state waters or on the OCS. The proposed discharge of fill to protect the cable could ensnare or damage fishing gear. To offset potential losses, the applicant has committed to establishing a compensation program for impacted fisherman. See Section 3.9 of the BOEM FEIS for an in-depth analysis of impacts to commercial fisheries and for-hire recreational fishing from the proposed cable protection.

Although the size of the discharge is relatively small in comparison to the size of the Atlantic Ocean, it is anticipated that local fish stock will be temporarily impacted. It is expected that after installation is complete, marine organisms would recolonize on the new hard substrate since it will serve as an artificial reef which in turn would attract higher concentrations of fish. Once placed stone fills for cable protection may attract and supplement marine life communities, offsetting benefits would be anticipated to accrue. Fish may be negatively affected by the discharges of fill, as non-mobile larvae and eggs cannot disperse to avoid smothering. However, there will be permit conditions requiring seasonal restrictions on the proposed discharges of dredged and fill material in state waters to lessen impacts to fisheries.

Discharge of fill material associated with the dredging/trenching of the cable landfall and the other work at SBMT is not expected to have significant impacts to recreational and commercial fisheries due to the existing area being a highly industrial and high trafficked port area within New York Harbor. The portions of the project within NYC are not fished commercially and although recreational fishing may occur, the discharge of fill materials are located at a port facility that is not publicly accessible. It is expected that benthic organisms such as non-mobile larvae and eggs would either be disturbed or die. As a result, potential fishing stocks could be negatively impacted, however it is expected that benthic organisms would recolonize after dredging activities are completed and the cofferdam is removed.

Water-related recreation: The discharge of fill material resulting from the installation of the submarine export cable and secondary cable protection (e.g., concrete mattressing or rock placement) within the 3 nautical mile limit of jurisdiction, in addition to dredging/trenching and subsequent filling of the trench at the SBMT and decanting of excess water would have negligible impacts on water-related recreation. The placement of fill over the cables for secondary cable protection would only have a short-term effect on the navigation of recreational boaters while the work vessel was performing the fill. There would be no change in the ability of vessels to utilize the waters above the fill once it has been placed over the cable. Also the proposed discharge of fill could provide structure to the substrate in areas currently consisting of soft sediments which could have a minor, positive effect on recreational fishing.

Aesthetics: The discharge of fill material resulting from the installation of the submarine export cable and secondary cable protection (e.g., concrete mattressing or rock placement) within the 3 nautical mile limit of jurisdiction, in addition to dredging/trenching and subsequent filling of the trench at the SBMT and decanting of excess water would have negligible impacts on aesthetics. Any turbidity impacts are anticipated to be minor and short in duration. A barge may be visible from the shore while construction activities are occurring but that would be a short-term minor impact. Once the secondary cable protection is discharged, it would be located at sufficient depths such that it would not be visible from the water surface.

Parks, national and historical monuments, national seashores, wilderness areas,

research sites, and similar preserves: The discharge of fill material resulting from the installation of the submarine export cable and secondary cable protection (e.g., concrete mattressing or rock placement) within the 3 nautical mile limit of jurisdiction, in addition to dredging/trenching and subsequent filling of the trench at the SBMT and decanting of excess water would have negligible impacts as no proposed discharges of dredged and fill material would occur within these areas. The export cable would traverse through the Atlantic Ocean between the various portions of the Gateway National Recreation Area which spans approximately 27,000 acres between Sandy Hook, New Jersey to Breezy Point, New York. The discharges would be submerged and not visible from the areas. As mentioned above, a barge may be visible from the shoreline of these areas while construction activities are occurring but that would be a short-term minor impact.

6.5 Pre-testing evaluation (Subpart G, 40 CFR 230.60)

The following has been considered in evaluating the biological availability of possible contaminants in dredged or fill material (see Table 6):

Table 6 – Possible Contaminants in Dredged/Fill Material	
Physical substrate characteristics	X
Hydrography in relation to known or anticipated sources of contaminants	X
Results from previous testing of the material or similar material in the vicinity of the project	X
Known, significant sources of persistent pesticides from land runoff or percolation	X
Spill records for petroleum products or designated hazardous substances (Section 311 of the Clean Water Act)	
Other public records or significant introduction of contaminants from industries, municipalities, or other sources	X
Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities	

Discussion: Physical characteristics of the fill material were considered as part of pre-testing evaluation. The proposed material to be discharged consists of concrete mattressing, clean rock, or sand along sand which will be side casted in the adjacent sandy areas. Through sediment testing the applicant determined that the dredged material is not acceptable for beneficial reuse and is therefore proposed to be disposed of at an approved upland facility. It has been determined that testing is not required for the concrete mattresses and clean stone as the proposed materials are not likely to be a carrier of contaminants because they are comprised of naturally occurring inert material. Testing is not required for the sand that will be side casted to adjacent areas as the discharge and extraction sites are adjacent and subject to the same contaminants and have substantially similar materials. Even if the sand material were to carry contaminants, it is not likely to degrade the disposal site due to adjacency.

6.6 Evaluation and testing (Subpart G, 40 CFR 230.61)

The permittee performed high-resolution geophysical surveys, geotechnical and sediment sampling surveys along the submarine export cable route and within the area of the SBMT. Through sediment testing the applicant determined that the dredged material is not acceptable for beneficial reuse and is therefore proposed to be disposed of at an approved upland facility.

6.7 Actions to minimize adverse impacts (Subpart H)

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 (see Table 7):

Table 7 – Actions to Minimize Adverse Effects	
Actions concerning the location of the discharge	X
Actions concerning the material to be discharged	X
Actions controlling the material after discharge	X
Actions affecting the method of dispersion	X
Actions related to technology	X
Actions affecting plant and animal populations	X
Actions affecting human use	X
Other actions	

Discussion:

Actions concerning the location of the discharge: The applicant has sited the cable, and therefore cable protection, in mostly soft sediments to the degree practicable to limit impacts to complex habitat. The applicant has sited the cable route and landfall to avoid special aquatic sites.

Actions concerning the material to be discharged: The cable protection materials would consist of clean rock and/or concrete mattresses. The side casted material from sand wave clearing would consist of the same material in the adjacent area.

Actions controlling the material after discharge: The applicant will be responsible for conducting surveys to ensure the discharges post construction are functioning properly and not becoming hazards to navigation.

Actions affecting the method of dispersion: Side casting the sand via a mass flow excavator to clear the soundwaves is proposed. This equipment is deployed from a self-propelled vessel, making excavation continuous and adaptable. This technology may also incorporate dynamic positioning, allowing the operator to set way points and plan sediment disturbance with a high degree of accuracy. Mass flow excavation equipment often works in close proximity to existing subsea objects in support of cable burial operations. A suction dredge may also be utilized for sand wave clearance. This

equipment may be beneficial when addressing long, spread out operational areas due to the ability to move freely without wires or spuds; however, active dig time may be reduced to accommodate other activities, such as sailing or disposing of materials. Additionally, material to be dredged at the SBMT will be mechanically dredged using a clamshell bucket which will minimize return of sediment into the waterway.

Actions related to technology: Micrositing of the export cables and therefore the secondary cable protection will be incorporated. Micrositing can be utilized to avoid sensitive habitats and other features that could pose hazard. Micrositing may also allow for the cable to be routed to avoid the need for secondary protection, minimizing the amount of fill to be discharged.

Actions affecting plant and animal populations**:** BOEM as the lead federal agency for this project. As a result, it has coordinated with various resource agencies during the preparation of the FEIS and Joint ROD to fulfill its statutory obligations under the ESA and Magnuson Stevens Act; and as a cooperating agency, the Corps has accepted this compliance obtained by BOEM. As discussed in Section 10, the Corps will also require as special conditions certain work restriction windows and mitigation measures to minimize such impacts.

Actions affecting human use: Impacts to human use from the discharge of fill material have been minimized through the following actions. The discharge site will be located on the ocean seabed where the public would not be able to visually see. It is expected that turbidity within the water column will take place but would be temporary and short. The discharge of fill material would be placed outside of any valuable natural aquatic areas and is expected to not be detrimental or increase incompatible human activity.

Other actions: N/A

6.8 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 (see Table 8):

Table 8 – 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				

Table 8 – Factual Determinations of Potential Effects						
Site	**N/A**	**No Effect**	**Negligible Effect**	**Minor Effect (Short Term)**	**Minor Effect (Long Term)**	**Major Effect**
Aquatic ecosystem and organisms					X	
Proposed disposal site					X	
Cumulative effects on the aquatic ecosystem					X	
Secondary effects on the aquatic ecosystem				X		

Discussion:

Physical substrate determination: Based on the evaluation in Sections 6.2-6.8, USACE anticipates that the discharges of dredged and fill material within the 3 nautical mile limit of jurisdiction would have a minor short-term effect on the physical substrate.

Water circulation, fluctuation, and salinity determination: Based on the evaluation in Sections 6.2-6.8, USACE anticipates that the discharges of dredged and fill material within the 3 nautical mile limit of jurisdiction would have no effect on water circulation, fluctuation, and salinity.

Suspended particulate/turbidity determination: Based on the evaluation in Sections 6.2-6.8, USACE anticipates that the discharges of dredged and fill material within the 3 nautical mile limit of jurisdiction would have a minor short-term effect on suspended particulates and turbidity.

Contaminant determination: The proposed discharge of fill consists of the placement of rock and concrete mattresses and side casting of sand from sand waves. Neither of these discharges should introduce contaminants. Therefore, based on the evaluations in Sections 6.2-6.8, USACE anticipates that the proposed discharges will have no effect on contaminants.

Aquatic ecosystem and organism determination: Based on the evaluation in Sections 6.2-6.8, USACE anticipates that the discharges of dredged and fill material within the 3 nautical mile limit of jurisdiction would have a minor long-term effect on the aquatic ecosystem and organisms.

Proposed disposal site determination: Based on the evaluations in Sections 6.2-6.8, USACE anticipates that the discharges of dredged and fill material within the 3 nautical mile limit of jurisdiction would have a minor long-term effect on the disposal site.

Determination of cumulative effects on the aquatic ecosystem: Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of several individual discharges of dredged or fill material. While the collective effect of the discharges is designed to reduce potential damage to the submarine export cable, the cumulative impacts would not adversely affect the aquatic ecosystem because the discharge materials are designed to be compatible with the natural system which will continue to function with the addition of the secondary cable protection. There will be no major impairment of the water resources and no long-term interference with the productivity and water quality of existing aquatic ecosystems.

Cumulative effects attributable to the discharge of dredged or fill material in waters of the United States were evaluated and predicted to the extent reasonable and practical. Cumulative effects attributable to the discharge of fill material include benthic organisms either smothered by the secondary cable protection or removed from dredging activities, but it is expected that the benthic organisms will continue to colonize in the sandy areas outside the footprint of the secondary cable protection. The aquatic ecosystem will not be impaired and will continue to function as expected over the long term in conjunction with the proposed activities. The post fisheries research and monitoring surveys and benthic surveys will ensure that the installation of the export cable and secondary cable protection is functioning as intended and will be adjusted if any unforeseen impacts occur that impair the aquatic ecosystem.

USACE has authorized numerous permits for discharges associated with utility lines and cable installation including secondary cable protection. The proposed cable route for this project requires the crossing of nineteen (19) existing cables or pipelines between the lease area and the SBMT. Typically, cables have been sited within soft sediments for ease of burial and to limit the amount of needed cable protection. This would be anticipated to occur on future cable projects as well. This siting in soft sediments limits impacts to complex habitats preferred by many fish species. Typically, cables have not been sited within special aquatic sites as the 404(b)(1) Guidelines would require evaluating alternative routes that do not include special aquatic sites. This would be anticipated to occur on future cable projects as well. Most cables require at least a small percentage of cable protection due to burial challenges. The applicant in this case anticipates up to 10% of the entire export cable would require secondary cable protection in addition to the mattressing and protection required for crossing other existing utilities. When cable protection is necessary it typically consists of clean materials such as rock or concrete mattresses as these are the industry standard. It is anticipated that this would be the case on future cable projects. The impacts from cable protection, while long-term, do not cause a loss of waters of the United States. Due to state coastal management plans, future development within the three nautical mile limit of jurisdiction involving loss of waters of the United States would be extremely limited. Therefore, USACE anticipates that cumulatively there would be long-term minor impacts to the aquatic ecosystem.

Determination of secondary effects on the aquatic ecosystem: Secondary effects are

effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Secondary effects anticipated include an increased biodiversity of species associated with the introduction of a hard-rocky habitat (e.g., concrete mattressing or rock placement) that will encourage the establishment of encrusting organisms that would facilitate additional recruitment of species to the area.

Secondary effects from backfilling the trench areas with stone at SBMT could have similar impacts as the secondary cable protection measures along the export cable route. Other secondary effects could consist of short-term elevated turbidity levels in the nearby water column. Secondary effects from the placement of rock and concrete mattresses for secondary cable protection would include a change in the aquatic organisms that would utilize the substrate. USACE anticipates there would be minor short-term secondary effects on the aquatic ecosystem.

6.9 Findings of compliance or non-compliance with the restrictions on discharges (40 CFR 320.10(a-d) and 230.12)

Based on the information above, including the factual determinations, the proposed discharge has been evaluated to determine whether any of the restrictions on discharge would occur (see Table 9):

Table 9 – Compliance with Restrictions on Discharge

Subject	Yes	No
1. Is there a 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?)		X
2. Will the discharge cause or contribute to violations of any applicable water quality standards?		X
3. Will the discharge violate any toxic effluent standards (under Section 307 of the Clean Water Act)?		X
4. Will the discharge jeopardize the continued existence of endangered or threatened species or their critical habitat?		X
5. Will the discharge violate standards set by the Department of Commerce to protect marine sanctuaries?		X
6. Will the discharge cause or contribute to significant degradation of waters of the United States?		X
7. Have all appropriate and practicable steps (Subpart H, 40 CFR 230.70) been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?	X	

1. Is there a 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?

No, there is no practicable alternative that would be less damaging to the environment.

2. Will the discharge cause or contribute to violations of any applicable water quality standards?

The proposed discharge will not cause or contribute to violations of any applicable water quality standards. The New York State Public Service Commission (NYSPSC) issued individual CWA 401 water quality certification for the project. See Section 10.5 below.

3. Will the discharge violate any toxic effluent standards (under Section 307 of the Act)?

The proposed discharge will not violate any toxic effluent standards under section 307 of the CWA.

4. Will the discharge jeopardize the continued existence of endangered or threatened species or their critical habitat?

No. BOEM as the lead federal agency completed Section 7 consultation under the ESA for the overall project. USFWS issued a BO on June 22, 2023 for terrestrial species and NMFS issued a BO on September 8, 2023, for marine species. Both BOs indicated that the overall project would not jeopardize the continued existence of threatened and endangered species and/or their critical habitat and BOEM and USACE agreed with these opinions. The proposed discharges of dredged and fill material within the 3 nautical mile limit of jurisdiction are a subset of the overall project and were therefore considered within the BOs.

5. Will the discharge violate standards set by the Department of Commerce to protect marine sanctuaries?

The proposed discharge will not occur within any marine sanctuaries and will not violate any standards set by the Department of Commerce.

6. Will the discharge cause or contribute to significant degradation of waters of the U.S.?

The proposed discharge is not anticipated to cause or contribute to significant degradation of waters of the United States.

7. Have all appropriate and practicable steps (Subpart H, 40 CFR 230.70) been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?

All appropriate and practicable steps, including avoidance and minimization of impacts, have been taken to minimize potential adverse impacts of the proposed discharge on the aquatic ecosystem. Special conditions will be included in any permit authorization to

minimize and mitigate for potential impacts associated with the discharges of fill material associated with the project including time of year restrictions to avoid impacts to fish and other species. Additionally the projects has been designed to avoid special aquatic sites.

7.0 General Public Interest Review (33 CFR 320.4 and Regulatory Guidance Letter 84-09)

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 which reasonably may be expected to accrue from the proposal are balanced against its reasonably foreseeable detriments.

7.1 Public interest factors review

All public interest factors have been reviewed and those that are relevant to the proposal are considered and discussed in additional detail (see Table 10):

Table 10 – Public Interest Factors

Factor	None	Detrimental	Neutral (mitigated)	Negligible	Beneficial	Not Applicable
1. Conservation: See below for discussion.	X					
2. Economics: See below for discussion.					X	
3. Aesthetics: See below for discussion.		X				
4. General Environmental Concerns: See below for discussion.					X	
5. Wetlands: See below for discussion.	X					
6. Historic Properties: See below for discussion.			X			
7. Fish and Wildlife Values: See below for discussion.			X			
8. Flood Hazards: See below for discussion.				X	X	
9. Floodplain Values: See below for discussion.	X					
10. Land Use: See below for discussion.				X	X	
11. Navigation: See below for discussion.			X			

Table 10 – Public Interest Factors						
Factor	**None**	**Detrimental**	**Neutral (mitigated)**	**Negligible**	**Beneficial**	**Not Applicable**
12. Shoreline Erosion and Accretion: See below for discussion.	X					
13. Recreation: See below for discussion.				X	X	
14. Water Supply and Conservation: See below for discussion.	X					
15. Water Quality: See below for discussion.			X			
16. Energy Needs: See below for discussion.					X	
17. Safety: See below for discussion.				X		
18. Food and Fiber Production: See below for discussion.		X	X			
19. Mineral Needs: See below for discussion.				X		
20. Consideration of Property Ownership: See below for discussion.	X					
21. Needs and Welfare of the People: See below for discussion.					X	

Additional discussion of effects on factors above:

1. Conservation: USACE anticipates that the project would have no effect on conservation. Broadly defined, conservation is the planned management of natural resources in order to prevent or minimize exploitation, destruction, or neglect. The proposed project will not result in conservation of land to prevent or minimize exploitation destruction. The project will also not impact any currently conserved land. It is anticipated that applicants on other offshore wind projects will also try to avoid conservation land when looking for a landing site and an over land cable route to connect to existing power grids because it can be a challenge to obtain an easement to disturb these areas. Therefore, when considering past, present, and reasonably foreseeable future offshore wind projects, it is anticipated that these projects will have no effect on conservation either. When looking for a landing site and an over land cable route to connect to existing power grids, it is anticipated that applicants will try to avoid conservation land as it can be a challenge to obtain an easement to disturb these areas.

2. Economics: USACE anticipates that the project would have a minor beneficial impact on economics. The project will employ a considerable workforce during construction, as well as during operations and maintenance of the project. When also considering past,

present, and reasonably foreseeable future offshore wind projects, USACE anticipates that the cumulative impacts to economics would also be minor long-term beneficial. See Section 3.11 of the FEIS for an in-depth analysis of all relevant factors related to Demographics, Employment and Economics.

3. Aesthetics: USACE anticipates that the project would result in long term moderate adverse to long term major adverse impacts to aesthetics. Residents and visitors within the analysis area (40-mile radius) would experience short- and long-term observable changes to the characteristic background landscape and/or seascape during project construction, including the presence of the WTG's and OSS during and after construction. Due to the lease area's location between the Ambrose to Nantucket Traffic Lane and Hudson Canyon to Ambrose Channel Traffic Lane, large vessels are frequently seen transiting the area and entering into the active New York Harbor where vessels supporting the project would also be transiting to and from. The offshore components of the Project include the WTGs and the OSS, which would be visible from the visually sensitive areas in New York and New Jersey. The visual impacts would be substantial to dominant for the life of the project (up to 35 years), but the resource would be expected to recover completely after decommissioning. When also considering past, present, and reasonably foreseeable future offshore wind projects, USACE anticipates that the cumulative visual impacts would range from negligible to major adverse as future offshore wind projects are developed, although the impacts would end after decommissioning of the projects. Many future offshore wind projects are located further offshore than the Empire Wind Project. See Section 3.20 of the FEIS for an in-depth analysis of all relevant factors. Mitigation measures are included in the Section 106 Memorandum of Agreement in addition to applicant proposed mitigation measures are including in the ROD to minimize visual aesthetic impacts.

4. General Environmental Concerns: USACE anticipates that the project would result in beneficial impacts to general environmental concerns. At full operation, Empire Wind 1 would produce at least 816 MW of renewable energy for the New York power grid. The addition of this energy would reduce emissions produced by current energy production methods and contribute towards New York's mandate of 9,000 MW of offshore wind energy by 2035, as outlined in the New York State Climate Leadership and Community Protection Act (Climate Act), enacted in 2019.

Per the BOEM FEIS, the Proposed Action would result in annual avoided emissions of 953 tons of NOX, 292 tons of PM2.5, 232 tons of SO2, and 3,573,860 tons of CO2. A reduction in carbon emissions and other greenhouse gas emissions has the potential to contribute towards the slowing of climate change and sea level rise, both of which could impact multiple environmental factors including environmental justice. When also considering past, present, and reasonably foreseeable future offshore wind projects, USACE anticipates that the cumulative impacts would be beneficial as well.''

5. Wetlands: The Project does not involve wetland impacts that would require a permit from USACE under Section 404 of the CWA or Section 10 of the RHA. When also considering past, present, and reasonably foreseeable future offshore wind projects,

USACE anticipates that the cumulative impacts would be minor adverse. It is anticipated that future offshore wind project would attempt to avoid wetlands and other special aquatic sites. However, impact-producing factors discussed in the FEIS include accidental spills and impacts to a wetland from soil disturbance activities outside of the wetland but nearby, neither of which trigger USACE jurisdiction.

6. Historic Properties: USACE anticipates that the project would result in negligible to major negative impacts on historic properties. Section 3.10 of the FEIS contains an in-depth analysis of relevant factors. USACE anticipates that the majority of adverse impacts- which are visual in nature- would cease after project decommissioning. When also considering past, present, and reasonably foreseeable future offshore wind projects, USACE anticipates that the cumulative impacts would be negligible to major negative. Impacts to historic properties were also required to be assessed under Section 106 of the NHPA. USACE designated BOEM as the lead federal agency and consultation was completed. Adverse effects were resolved via an MOA, which USACE signed as a concurring party. The applicant has committed to numerous mitigative measures to resolve adverse effects including but not limited to studies, documentation, and contribution of funds.

7. Fish and Wildlife Values: USACE anticipates that the project would result in minor to moderate impacts to fish and wildlife values. The FEIS analyzed impacts to wildlife, fish, and other marine fauna including the following: Bats (FEIS Section 3.5), birds (FEIS Section 3.7), finfish, invertebrates, and essential fish habitat (FEIS Section 3.13), Marine Mammals (FEIS Section 3.15), and sea turtles (FEIS Section 3.19). This information can be found summarized in Table S-2 of the FEIS. Overall, the project would result in minor adverse impacts to terrestrial species and moderate adverse impacts for marine species (potentially major to North Atlantic Right Whale (NARW). When considering past, present, and reasonably foreseeable offshore wind projects, USACE anticipates that cumulatively there would still be minor adverse impacts to terrestrial species and moderate adverse impacts to marine species. However, the FEIS estimates that cumulatively there could also be minor to moderate beneficial impacts to marine species via the reef effect created by the turbine foundations as well as cable protection measures. BOEM as lead agency consulted with NMFS and USFWS under the ESA and MSA. USACE will incorporate the BOs issued by NMFS and USFWS as special conditions into the authorized permit and additionally will implement various EFH Conservation Recommendations via special condition into the authorized permit to minimize impacts to EFH listed species.

33 CFR § 320.4(c) also discusses the FWCA and the need for USACE to consider input from USFWS, NMFS, and state fish and wildlife agencies with a view to the conservation of wildlife resources by prevention of their direct and indirect loss and damage due to the proposed project. USFWS did not specifically provide FWCA recommendations for review on this project. However, NMFS provided three (3) FWCA recommendations for consideration.

USACE determined that two of the recommendations will be fully implemented and the other one will be adopted and implemented as practicable based on feasibility constraints. These implemented recommendations will be reflected in the USACE permit conditions.

USACE anticipates that the concerns of state fish and wildlife agencies, the USFWS and NMFS in relation to the FWCA will be fully considered and implemented to the degree practicable and appropriate on future offshore wind projects as well.

8. Flood Hazards: The proposed project does not have any components that involve construction, removal, or modification of impoundment structures. As sea level rise is a component of climate change and sea levels are a component of coastal flooding, projects such as this which are aimed at reducing greenhouse gas emissions could help limit flooding. When looking at past, present, and reasonably foreseeable offshore wind projects, there could be a proposal to impact an impoundment, levee, hurricane barrier, etc. but it is anticipated that applicants would try to avoid these structures due to potential permitting complications. Therefore, when considering past, present, and reasonably foreseeable future offshore wind projects, USACE anticipates that cumulatively there would be a minor beneficial impact to flood hazards.

9. Floodplain Values: The proposed project is not located within a floodplain and is not anticipated to have effect on floodplains or their values. Due to the nature and siting of these projects, USACE estimates that this would be the case for reasonably foreseeable offshore wind projects as well.

10. Land Use: USACE anticipates that the project would have minor adverse impacts on land use (FEIS Section 3.14). The project by making landfall at the SBMT has minimize its on-land routing to be less than a mile. The SBMT is being redeveloped for the future development of offshore wind projects, returning it to its former use as an active port facility. The redevelopment of the port facility would stimulate the economy and great jobs near Environmental Justice communities. When considering past, present, and reasonably foreseeable future offshore wind projects, USACE anticipates that there would still be negligible impacts on land use.

11. Navigation: USACE anticipates that the project would have minor to moderate adverse impacts to navigation (FEIS Section 3.16). Cumulatively when considered along with recently permitted and reasonably foreseeable offshore wind projects the project would have moderate adverse impacts to navigation due to numerous siting of cables throughout an active harbor and the presence of hundreds of wind turbines.

The proposed cable route for EW1 would be located near the Ambrose Federal Navigation Channel and the Gravesend Bay Anchorage Area, in addition to entering and traversing through the Bay Ridge and Red Hook Federal Navigation Channels, which are all dredged by USACE. The applicant has sited the cable to avoid entering into these areas as much as possible and for when the cable is within the federal navigation channel or the side slope, deeper cable burial is required to minimize

impacts to navigation and to minimize impacts to USACE's ability to dredge and maintain these navigation channels. The applicant submitted a Section 408 Permission request pursuant to Section 14 of the Rivers and Harbors Act (33 CFR 408) and impacts to the navigation channels were assessed.

Mitigation measures are included to minimize impacts to navigation including those in the Section 408 permission in addition to, but not limited to:

- Complying with burial depth requirements beneath the authorized depth of federal navigation channels and anchorage areas
- Development of Cable Burial Risk Assessment, implementation of cable maintenance plans, and utilizing cable alert systems.
- Siting of all WTGs in a grid with approximately 0.65 nautical mile spacing. This layout will help allow for safer navigation within the lease area. This layout will also provide a uniform spacing among structures to facilitate search and rescue operations.
- Complying with USCG requirements for marking structures, providing notification to mariners of hazards and of construction activities, etc.

See Section 10.8 of this ROD below.

12. Shoreline Erosion and Accretion: USACE anticipates that the project would have no effect on shoreline erosion or accretion as the project would not be anticipated to alter hydrodynamics that would affect these shoreline processes. Looking at recently permitted and reasonably foreseeable offshore wind projects in the vicinity, none of them appear to contain design elements that would be expected to cause shoreline erosion or accretion either. Therefore cumulatively, USACE anticipates no effect on shoreline erosion and accretion.

13. Recreation: USACE anticipates that the project would result in minor adverse impacts to recreation (FEIS Section 3.18). Impacts are minor adverse as a result of anchoring, lighting and cable emplacement, temporary noise and traffic. Some minor beneficial impacts could result from the construction of the turbines which could provide reef-like habitat, which could benefit recreational fishing. When also considering recently permitted and reasonably foreseeable offshore wind projects, the cumulative impacts to recreation would be minor adverse and minor beneficial.

14. Water Supply and Conservation: USACE anticipates that the project would have no effect on water supply and conservation because it would have no effect on water quantities available for water supplies. When considering recently permitted and reasonably foreseeable offshore wind projects in the vicinity, none of them appear to contain design elements that would impact water quantities either. Therefore, cumulatively USACE anticipates that there would be no effect on water supply and conservation.

15. Water Quality: USACE anticipates that the project would result in short term minor adverse impacts to water quality (FEIS Section 3.21). When considered along with recently permitted and reasonably foreseeable offshore wind projects USACE anticipates that the project would cumulatively result in minor adverse impacts to water quality. NYSPSC issued a Water Quality Certificate for Case 21-T-0366 dated October 4, 2023, indicating that the project meets the state's water quality standards. Mitigation measures are included in the WQC to minimize impacts to Water Quality.

16. Energy Needs: USACE anticipates that the project would result in beneficial impacts to energy needs, specifically renewable energy needs. The project would provide a total of 816 MW of renewable energy to the New York energy grids once it was operational. This project would contribute towards New York's mandate of 9,000 MW of offshore wind energy by 2035, as outlined in New York State Climate Leadership and Community Protection Act (Climate Act), enacted in 2019. This addition of reliable, renewable energy to these state power grid is anticipated to have beneficial effects on energy needs. This project would also contribute to the shared goal of the Departments of the Interior, Energy, and Commerce to deploy 30 GW of offshore wind in the United States by 2030, while protecting biodiversity and promoting ocean co-use. Based on previously permitted and reasonably foreseeable future offshore wind projects, cumulatively these impacts would be beneficial to energy needs.

17. Safety: USACE anticipates that the project would have a minor adverse impact on safety. As the project is expected to impact navigation it could also impact safety. However, the mitigation measures described above under Navigation should limit adverse impacts to safety. When considering recently permitted and reasonably foreseeable offshore wind projects, USACE anticipates that these projects would have similar navigation concerns and implement similar safety measures. Therefore cumulatively USACE anticipates that the project would have a minor adverse impact to safety.

18. Food and Fiber Production: USACE anticipates that the project would have a minor adverse impact on food and fiber production. USACE anticipates that commercial fishing is the aspect of food and fiber production that would be impacted by the project. Section 3.9 of the FEIS for an in-depth analysis of estimated impacts to commercial fishing. The FEIS estimates that impacts to commercial fishing would vary from short term to long term and from minor to major adverse, with the duration and intensity of impacts varying by project phase and fishery and fishing operations due to differences in target species, gear type, and predominant location of fishing activity. However with the environmental protection measures the applicant has committed to implementing, the FEIS estimates that most vessels would only have to adjust somewhat to account for disruptions due to impacts. As commercial fishing is only one aspect of food and fiber production and does not include aquaculture and farming- neither of which are proposed to be impacted by the project- USACE estimates that the impacts to food and fiber production would be less than the impacts to commercial fishing. When considered along with previously permitted and reasonably foreseeable offshore wind projects, USACE anticipates that the cumulative impacts to food and fiber production would still be minor adverse.

19. Mineral Needs: USACE anticipates that the project would have no effect on mineral needs (FEIS Section 3.17). The project avoids federally and/or state approved sand borrow areas or mineral lease areas. The export cable traverses through some aliquots with sand resources and/or unverified sand resource areas identified by BOEM. As BOEM authorizes offshore mineral lease areas, the wind energy lease area designation determination took into account the presence or potential for offshore sand or mineral extraction. As recently permitted and reasonably foreseeable future wind projects would also occur within lease areas designated by BOEM, USACE anticipates that cumulatively there would be no effect on mineral needs.

20. Consideration of Property Ownership: USACE anticipates that the project would have no effect on property ownership. The applicant has obtained a lease from BOEM to utilize the offshore area where the wind farm would be located for the life of the project (up to 35 years). The applicant has received authorization from the state of New York to install the offshore export cables within state waters. The applicant has obtained all real estate easements required for the onshore part of the work. As other recently permitted and reasonably foreseeable offshore wind projects would be expected to obtain the same authorizations and easements, USACE anticipates that cumulatively there would be no effect on property ownership.

21. Needs and Welfare of the People: USACE anticipates that the project would be in the interest of the people as the authorization of the project, with the required mitigation, would result in increased energy reliability and environmental benefits in the form of a net reduction in greenhouse gas emissions (see General Environmental Concerns above). The project has received a New York State Department of State for Coastal Zone Management concurrence in addition to the required state approvals including Article VII and WQC. Regarding public input on the federal permitting process, USACE only received two comments on the project, which were addressed above. However, as the lead federal agency, BOEM received numerous comments from the public, agencies, interested groups, and stakeholders. As summarized in Appendix L of the FEIS, BOEM received a total of 180 individual comment submissions in response to the DEIS. This includes comments submitted online via www.regulations.gov, transcripts of comments by individual speakers at BOEM’s three virtual public meetings, and written comments submitted by mail. BOEM counted each public hearing transcript as a single submission but pulled out the individual comments and addressed them separately in the EIS. The other comments submitted to BOEM were substantive comments regarding information in the draft EIS and were all addressed and considered in the determination of the preferred alternative in the FEIS. These comments were summarized and addressed by BOEM in Appendix P of the FEIS.

7.2 Public and private need

The relative extent of the public and private need for the proposed structure or work:

As described in Section 3.0, the applicant’s stated purpose of this project is The purpose of the EW1 Project is to develop a commercial-scale offshore wind energy

facility in Lease Area OCS-A 0512 with wind turbine generators, an offshore substation, and electric transmission cables making landfall in Brooklyn, New York to support the achievement of New York's renewable energy goals.

The project will contribute to New York's renewable energy requirements, particularly the state's goal of 9,000 Megawatt (MW) of offshore wind energy generation by 2035. In addition, Empire Wind's goal is to fulfill its contractual commitments to NYSERDA pursuant to a power purchase agreement executed in 2020 resulting from NYSERDA's competitive bidding process.

7.3 Resource use unresolved conflicts

If there are unresolved conflicts as to resource use, explain how the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work was considered.

Where there are unresolved conflicts regarding the resource use, USACE has considered the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed activities. Refer to Section 5.0 for the discussion of alternatives that were analyzed during the review of the permit application.

7.4 Beneficial and/or detrimental effects on the public and private use

The extent and permanence of the beneficial and/or detrimental effects that the proposed work is likely to have on the public and private use to which the area is suited is described below:

Detrimental effects are expected to be minimal and temporary.

Detrimental effects such as turbidity, increased noise, and impacts associated with the construction of the various project components would be temporary and limited to the construction period of the proposed project components. Impacts will be offset through the implementation of special conditions and mitigation measures described in the BOEM ROD to offset the loss of aquatic resource functions (see section 11 below).

Beneficial effects are expected to be more than minimal and permanent.

Permanent beneficial effects, such as 816-MW of renewable energy to New York States energy grid are expected once the construction of the EW1 project is completed. The construction of the project would lead to reduced emissions from fossil-fuel power generating facilities.

7.5 Climate Change

The proposed activities within the Corps' federal control and responsibility likely will result in a negligible release of greenhouse gases into the atmosphere when compared to global greenhouse gas emissions. Greenhouse gas emissions have been shown to

contribute to climate change. Aquatic resources can be sources and/or sinks of greenhouse gases. For instance, some aquatic resources sequester carbon dioxide whereas others release methane; therefore, authorized impacts to aquatic resources can result in either an increase or decrease in atmospheric greenhouse gas. These impacts are considered de minimis. Section 3.4 of BOEM's FEIS includes the analysis on Air Quality inclusive of anticipated emissions from greenhouse gases.

8.0 Mitigation

(33 CFR 320.4(r), 33 CFR Part 332, 40 CFR 230.70-77, and 40 CFR 1508)

8.1 Avoidance and minimization

Avoidance and Minimization: When evaluating a proposal including regulated activities in waters of the United States, consideration must be given to avoiding and minimizing effects to those waters. Avoidance and minimization are described in Section 1.3.1 above.

Describe other mitigative actions including project modifications implemented to minimize adverse project impacts? (See 33 CFR 320.4(r)(1)(i))

In an email dated July 11, 2023, the applicant submitted revised project plans that included project refinements which included further micrositing and minor route changes of the export cables among other project refinements. As discussed in Section 1.3.1, the Corps has adopted the BOEM FEIS in accordance with 40 C.F.R. 1506.3, inclusive of various mitigation measures that were both proposed by the applicant and/or recommended or required following consultation with federal and state resource agencies.

8.2 Compensatory mitigation requirement

Is compensatory mitigation required to offset environmental losses resulting from proposed unavoidable impacts to waters of the United States? No

Provide rationale: Compensatory mitigation is not required because the proposed work within the EW1 portion of the lease area, the export cable to the cable to landfall does not fall within any mapped wetlands or special aquatic sites.

9.0 Consideration of Cumulative Effects

(40 CFR 1508 & RGL 84-9) Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor direct and indirect but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider how the direct and indirect environmental effects caused by the proposed activity requiring DA

authorization (i.e., the incremental impact of the action) contribute to the aggregate effects of past, present, and reasonably foreseeable future actions, and whether that incremental contribution is significant or not.

BOEM is the lead federal agency for this project. As mentioned above, USACE independently reviewed the EIS that BOEM prepared as lead federal agency, and, after concluding that its comments and suggestions had been satisfied, adopted the FEIS in accordance with 40 CFR 1506.3. this would include the findings of BOEM's cumulative impacts assessment within FEIS.

10.0 Compliance with Other Laws, Policies and Requirements

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

Refer to Section 2.2 for description of the Corps' action area for Section 7 of the ESA.

10.1.1 Lead federal agency for Section 7 of the ESA

Has another federal agency been identified as the lead agency for complying with Section 7 of the ESA with the Corps designated as a cooperating agency and has that consultation been completed? Yes
BOEM is the lead federal agency for complying with Section 7 of the ESA with the Corps designated as a cooperating agency. BOEM has completed consultation pursuant to Section 7 of the ESA.

The Corps has reviewed the documentation provided by the agency and determined it is sufficient to confirm Section 7 ESA compliance for this permit authorization, and additional consultation is not necessary.

The following actions below document this compliance with Section 7 of the ESA.

10.1.2 ESA Consultation with U.S. Fish and Wildlife Service (USFWS)

On December 22, 2022, BOEM initiated formal consultation with the USFWS by submitting a Biological Assessment (BA) in the form of wind turbine collision mortality on the federally-listed red knot (*Calidris canutus rufa*; threatened) and its proposed critical habitat, and the federally-listed piping plover (*Charadrius melodus*; threatened) pursuant to the ESA. A BA addendum was then submitted to USFWS on March 28, 2023.

BOEM additionally informally consulted with the USFWS on the following species: northern long-eared bat (*Myotis septentrionalis*; endangered), tri-colored bat (*Perimyotis subflavus*; proposed endangered), roseate tern (*Sterna dougallii dougallii*; endangered), monarch butterfly (*Danaus plexippus*; proposed), and seabeach amaranth (*Amaranthus pumilus*; threatened) in addition to piping plover and red knot (for project impacts unrelated to turbine collisions.

On June 22, 2023, USFWS issued a BO concurring with BOEMs determinations that the proposed EW1 project will not jeopardize the continued existence of Atlantic coast piping plover or the rufa red knot. Additionally, USFWS concurred with BOEMs determination that the EW1 project would not likely adversely affected the species listed in the informal consultation provided the full implementation of the conservation measures included in the BA, COP, ROD, and Section III of the BO are implemented.

USACE will incorporate the following special condition within the DA Permit Authorization:

This Department of the Army (DA) permit does not authorize you to take an endangered species. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The United States Fish and Wildlife Service (USFWS) BO, entitled “Biological Opinion on the Effects of the Empire Wind 1 and Empire Wind 2 Projects on the Federally Listed Piping Plover (*Charadrius melodus*; threatened) and rufa Red Knot (*Calidris canutus rufa*; threatened) within the Jurisdiction of the Long Island Field Office, Shirley, New York”, prepared by the U.S. Fish and Wildlife Service, and dated June 2023, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this DA permit is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take statement of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with the incidental take statement of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute noncompliance with your DA permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

10.1.3 ESA Consultation with National Marine Fisheries Service

On August 12, 2022, BOEM initiated formal consultation with NMFS by submitting a BA assessing the impacts of the EW1, EW2, and SBMT Port Upgrade projects. A revised BA was submitted to NMFS on December 15, 2022, and a further revised BA was submitted on March 13, 2023. NMFS issued a BO on September 8, 2023, in which NMFS concluded that the proposed actions may adversely affect but is not likely to jeopardize the continued existence of fin, sei, sperm, or North Atlantic right whales, the Northwest Atlantic distinct population segment (DPS) of loggerhead sea turtles, North Atlantic DPS of green sea turtles, Kemp’s ridley, or leatherback sea turtles, or any of the five DPSs of Atlantic sturgeon. NMFS additionally concluded that the project is not likely to adversely affect blue whales, shortnose sturgeon, giant manta rays, hawksbill sea turtles, or oceanic whitetip sharks and that the project will have no effect on the Gulf of Maine DPS of Atlantic salmon, or critical habitat designated for the North Atlantic right whale, the Northwest Atlantic DPS of loggerhead sea turtles, the Carolina DPS of Atlantic sturgeon, or the New York Bight DPS of Atlantic sturgeon.

An Incidental Take Statement (ITS) was included with the NMFS BO which specified Reasonable and Prudent Measures (RPMs) and Terms and Conditions necessary and appropriate to minimize, monitor, and report the take of ESA-listed whales, sea turtles, and Atlantic sturgeon.

USACE will incorporate the following special condition within the DA Permit Authorization:

This DA permit does not authorize you to take an endangered species. In order to legally take a listed species, you must have separate authorization under the ESA (e.g., an ESA Section 10 permit, or a BO under ESA Section 7, with "incidental take" provisions with which you must comply). The National Marine Fisheries Service (NMFS) BO, entitled “National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological Opinion”, prepared by the National Marine Fisheries Service, and dated September 8, 2023, contains mandatory terms and conditions, including specified provisions of any incidental take authorization pursuant to the Marine Mammal Protection Act, to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this DA permit is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take statement of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with the incidental take statement of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute noncompliance with your DA permit. The NMFS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

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

10.2.1 Lead federal agency for EFH provisions of the Magnuson-Stevens Act

Has another federal agency been identified as the lead agency for complying with the EFH provisions of the Magnuson-Stevens Act with the Corps designated as a cooperating agency and has that consultation been completed? Yes

BOEM is the lead federal agency for complying with the EFH provisions of the Magnuson-Stevens Act with the Corps designated as a cooperating agency. BOEM has completed consultation pursuant to Magnuson-Stevens Act.

The following actions below document compliance with the Magnuson-Stevens Act and are sufficient to ensure the activity(s) requiring DA authorization is in compliance with Magnuson-Stevens Act:

The Corps has reviewed the documentation provided by the agency and determined it is

sufficient to confirm compliance for this permit authorization with the EFH provisions, and additional consultation is not necessary.

10.2.2 Magnuson-Stevens Act

Did the proposed project require review under the Magnuson-Stevens Act? Yes

10.2.3 EFH species or complexes

Were EFH species or complexes considered? Atlantic cod, haddock, pollock, red hake, silver hake, white hake, summer flounder, winter flounder, windowpane flounder, witch flounder, yellowtail flounder, Atlantic butterfish, Atlantic mackerel, Atlantic sea herring, black sea bass, bluefish, monkfish, ocean pout, scup, albacore tuna, bluefin tuna, skipjack tuna, yellowfin tuna, Atlantic sea scallop, Atlantic surf clam, ocean quahog, longfin inshore squid, clearnose skate, little skate, winter skate, blue shark, common thresher, dusky shark, sand tiger shark, sandbar shark, shortfin mako shark, tiger shark, white shark, spiny dogfish, and smoothhound shark complex.

Effect determination and basis for that determination: Adverse effect.

10.2.4 National Marine Fisheries Service consultation

On July 5, 2023, BOEM submitted an EFH Assessment to NMFS for the EW1, EW2 and SBMT port upgrade projects. On July 27, 2023, NMFS provided a response to BOEM's EFH Assessment indicated that the proposed project would "result in significant adverse impacts to EFH, federally managed species, their prey, and other resources under our purview". NMFS provided 37 Conservation Recommendations (CRs) in response to the EFH Assessment in addition to three (3) Fish and Wildlife Coordination Act (FWCA) Recommendations.

Since BOEM's jurisdictional authority is limited to the OCS, USACE would be responsible for responding to and enforcing EFH conservation recommendations that were adopted within the territorial seas (state waters). BOEM was responsible for reviewing and responding to NMFS for all CRs on the OCS including those that were applicable to the OCS and state waters. USACE was responsible for responding to those CR's only applicable to state waters. Additionally, BOEM noted that the FWCA does not apply to OCS leases and permits issued under the Secretary of the Interior per the Solicitors Memo dated February 12, 1982. Therefore, USACE was responsible for responding to the FWCA Recommendations.

The CR's were provided to the applicant to provide responses to. BOEM and USACE took into consideration the applicant's responses to the CRs and on October 23, 2023, BOEM provided NMFS with a response letter, including USACE's responses, detailing which CR's would be adopted, partially adopted, or not adopted.

In order to avoid, minimize, and mitigate adverse effects to EFH and EFH managed species USACE will incorporate the following special condition based on the adoption of various CRs within the DA Permit Authorization:

- To the extent it is technically and/or economically feasible and practicable for the permittee to construct fewer than 54 WTGs in EW1, the permittee shall prioritize removal of the six WTG positions at the farthest northwest section of EW1. The order of preference for removal is B01, C01, B02, D02, B03, and D03.

- The permittee shall prepare and implement a Micrositing Plan that describes how inter-array cables and export cable routes will be microsited to avoid or minimize impacts to sensitive benthic habitats (defined above) complex habitat (NOAA Habitat Categories), boulders, sandwaves, and confirmed MEC/UXO. The plan must specifically describe how inter-array and export cable routes will be microsited to avoid or minimize impacts to sensitive benthic habitats, including complex benthic habitat and boulders = 0.5 m, as technically and/or economically practicable or feasible. To the extent practicable, cables should cross complex habitat areas perpendicularly at the narrowest points; cables unable to avoid benthic features such as sand waves should be sited along natural benthic contours within troughs/lows, to maximize cable burial while minimizing disturbance to local submarine topography. The permittee shall submit detailed supporting data and analysis as part of the FDR or FIR, including relevant geophysical and geospatial data. The submission of the data may be incorporated by reference or submitted as an attachment to the FDR or FIR. The Micrositing Plan must be consistent with MEC/UXO ALARP Certification, Cable Routings and the Boulder Identification and Relocation Plan. The Micrositing Plan must include a figure for each microsited cable segment, including benthic habitat delineations showing complex habitat and locations of boulders = 0.5 m. The plan must include a figure depicting large boulder locations, multibeam backscatter returns, and the proposed microsited locations for cables. Any instances where the permittee believes there is technical or economic infeasibility must be supported by a technical or economic feasibility analysis, as appropriate, for review and concurrence by BOEM and BSEE.
  a) For cables that cannot be microsited to avoid impacts to complex habitat or boulders = 0.5 m, the micrositing plan must identify technically and/or economically practicable or feasible impact minimization measures and use the following, prioritized list of complex habitat sub-types (NMFS complexity categories) to avoid during micrositing:
     - Complex habitats with boulders;
     - Complex habitats absent boulders;
     - Heterogeneous complex habitats;
     - Biogenic habitats (i.e., clam beds)
     - Areas with benthic or bathymetric features

The Micrositing Plan must be submitted to BOEM and BSEE to coordinate with NMFS GARFO HESD for a 60-day review, 120 days prior to site preparation activities for cables and WTGs. The permittee shall resolve all comments on the Micrositing Plan to BOEM's and BSEE's satisfaction prior to implementation of the plan. A copy of the final micrositing plan shall be provided to this office within 30 days of BOEM & BSEE's approval.

- The permittee shall submit a Boulder Identification and Relocation Plan to BSEE and BOEM for review and concurrence. The plan must detail how the permittee will avoid or minimize impacts to sensitive benthic habitats and relocate boulders as close as practicable to the original location, in areas of soft bottom but immediately adjacent to similar habitat. The plan must be submitted to BOEM and BSEE to coordinate with USACE and NMFS GARFO HESD for a 60-day review, 120 days prior to boulder relocation activities. The permittee shall resolve all comments on the Boulder Identification and Relocation Plan to BOEM's and BSEE's satisfaction prior to implementation of the plan. If BOEM or BSEE do not provide comments on the plan within 60 days of its submittal, then the permittee may presume concurrence with the plan. The plan must include sufficient scope to mitigate boulders for facility installation and operation risks. The plan must be consistent with and meet the conditions of the SMS in Section 2.8. The plan must include the following for boulders that are proposed to be relocated:
  a. A summary and detailed description of surface and subsurface boulders greater than 0.5 m in diameter, and locations along the cable routes and WTG areas where such boulders have been found;
  b. A detailed summary of methodologies to be used in boulder identification, including geological and geophysical survey results;
  c. A clear depiction (i.e., figures) of the location of boulder relocation activities specified by activity type (e.g., pick or plow, removal, or placement) and overlaid on multibeam backscatter data;
  d. A description of boulder removal and/or relocation methods for each type of boulder relocation activity and technical feasibility constraints, including capacity of crane used in grab systems, vessel specifications and metocean limits on operation, etc.;
  e. The environmental footprint of disturbance activities by habitat type and measures taken to avoid further adverse impacts to archaeological resources, complex habitats and fishing operations;
  f. A comprehensive list and shapefile of locations of boulders that would be relocated (latitude, longitude), boulder dimensions (m), buffer radius (m), areas of active (within last 5 years) bottom trawl fishing (latitude, longitude), areas where boulders > 2 m in diameter are anticipated to occur (latitude, longitude), and identification of approximate areas to which boulders would be relocated (latitude, longitude);
  g. The measures taken to minimize the quantity of seafloor obstructions from relocated boulders in areas of active bottom trawl fishing, as technically and/or economically feasible;
  h. A description of safety distances or zones to limit boulder relocation near third

part assets;
i. A summary of any consultation and outreach with resource agencies and the fishing industry in development of the plan (e.g., notifications to mariners);
j. A statement of consistency with the Micrositing Plan.

- The permittee shall provide USCG, NOAA, this office, and the local harbor master with a comprehensive list and shapefile of positions and areas to which boulders greater than 2 m would be relocated (latitude, longitude) at least 60 days prior to boulder relocation activities.

- The permittee shall implement methods identified in the approved COP and described in the Boulder Identification and Relocation Plan for boulder relocation activities. The permittee shall consider the spatial extent of boulder relocation in the micrositing of WTGs and OSS foundations and inter-array and export cables for this Project and must relocate boulders as close as practicable in areas immediately adjacent to existing similar habitat. The relocation of boulders must be consistent with the Project easement.

- The permittee shall conduct post-construction surveys capable of detecting bathymetry changes of 0.5 m or less where plows, jets, grapnel runs, or other similar methods are used, to determine the height and width of any created berms. If there are bathymetric changes in berm height greater than 1 m (3 feet) above grade, the permittee shall develop and implement a Berm Remediation Plan to restore created berms to match adjacent natural bathymetric contours (isobaths), as technically and/or economically practical or feasible. The permittee shall submit the Berm Remediation Plan to BOEM and BSEE to coordinate with NMFS for a 60-day review within 90 days of completion of the post-construction survey where the change was detected. BOEM and BSEE will also review the plan to determine if the scope of activities (e.g., methods, disturbance area, vessel trips, emissions) is within the already completed National Environmental Policy Act analysis and ESA and EFH consultations and, if not, will complete additional environmental review and consultations. The permittee shall resolve all comments on the Berm Remediation Plan to BOEM's and BSEE's satisfaction prior to initiating restoration activities. A copy of the post-construction surveys and the Berm Remediation Plan shall be provided to this office within 30 days of BOEM & BSEE's approval.

- The permittee shall prepare and implement an Anchoring Plan for all areas where anchoring occurs and jack-up barges are used during construction and operations/maintenance within 1,640 feet (500 m) of habitats, resources, and submerged infrastructure that are sensitive, including sensitive benthic habitats; boulders = 0.5 m; ancient submerged landform features; known and potential shipwrecks; potentially significant debris fields; potential hazards; third-party infrastructure; and any related facility installation activities (such as cable, WTG, and OSS installation). The permittee shall provide to all construction and support vessels the locations where anchoring and jack-up barges must be avoided to the extent technically and/or economically practicable or feasible, including sensitive

benthic habitats ; boulders = 0.5 m; ancient submerged landform features (ASLFs); known and potential shipwrecks; potentially significant debris fields; potential hazards; and any related facility installation activities (such as cable, WTG, and OSS installation). Dynamic positioning systems should be used in these areas instead of anchoring, as practicable. If anchoring is necessary at these locations, then all vessels deploying anchors must extend the anchor lines to the extent practicable to minimize the number of times the anchors must be raised and lowered to reduce the amount of habitat disturbance, unless the anchor chain sweep area includes complex habitat that may be impacted by the chain sweep. On all vessels deploying anchors, the permittee shall use mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seabed, unless the permittee demonstrates, and BOEM and BSEE accept, that (1) the use of mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seabed is not technically practicable or feasible; or (2) a different alternative is as safe and provides the same or greater environmental protection. If placement of jack-up barge spud cans is necessary in sensitive benthic habitats, locations for the spud cans must be selected to avoid or minimize impacts in the following order of preference: (i) complex habitats with boulders; (ii) complex habitats absent boulders; (iii) heterogeneous complex habitats; (iv) biogenic habitat (i.e., clam beds); and (v) areas with benthic or bathymetric features, as technically practicable or feasible. Any instances where the permittee believes there is technical infeasibility must be supported by a technical feasibility analysis, as appropriate, for review and concurrence by BOEM and BSEE. Benthic habitat (NOAA complexity categories) and Benthic Feature/Habitat Type maps in conjunction with backscatter, bathymetry, and boulder layers should be used to inform the anchoring plan.

a. The permittee shall provide the Anchoring Plan to BOEM and BSEE with a notification email sent to NMFS GARFO HESD for a 60-day review at least 120 days before anchoring activities and construction begins. The permittee shall resolve all comments on the Anchoring Plan to BOEM's and BSEE's satisfaction before conducting any seabed-disturbing activities that require anchoring.
b. A copy of the final Anchoring Plan shall be provided to this office within 30 days of BOEM & BSEE's approval.

- The permittee shall prepare and implement a Scour and Cable Protection Plan that includes descriptions and specifications for all scour and cable protection materials. The plan must facilitate the avoidance and minimization of impacts to sensitive benthic habitats (defined above), including complex habitats and boulders = 0.5 m. The plan must include a depiction of the location and extent of proposed scour or cable protection, the habitat delineations (NOAA complexity categories map) for the areas of proposed scour and cable protection, and detailed information on the proposed scour or cable protection materials for each area and habitat type. Benthic habitat (NOAA complexity category) and Benthic Feature/Habitat Type project maps in conjunction with backscatter, bathymetry and boulder layers should be used to inform this plan.

a. The permittee shall avoid the use of engineered stone or concrete mattresses in complex habitat, as practicable. The permittee shall ensure that any materials used for scour and cable protection measures consisting of natural or engineered stone does not inhibit epibenthic growth and provides three-dimensional complexity in height and in interstitial spaces, as practicable. If concrete mattresses are necessary, bioactive concrete (i.e., with bio-enhancing admixtures) must be used as practicable as the primary scour protection (e.g., concrete mattresses) or veneer to support biotic growth. The permittee shall minimize the use of scour protection to the minimum amount necessary to accomplish the purpose.
b. Cable protection measures must have tapered or sloped edges to reduce hangs for mobile fishing gear. The permittee shall avoid the use of plastics/recycled polyesters/net material (i.e., rock-filled mesh bags, fronded mattresses) for scour protection.
c. Any instances where the permittee believes there is technical or economic infeasibility must be supported by a technical or economic feasibility analysis, as appropriate, for review and concurrence by BOEM and BSEE.
d. The Scour and Cable Protection Plan must be submitted to BOEM and BSEE to coordinate with NMFS GARFO HESD for a 60-day review, 120 days prior to placement of scour and cable protection. The permittee shall resolve all comments on the plan to BOEM's and BSEE's satisfaction before placement of the scour and cable protection materials.
e. A copy of the final Scour and Cable Protection Plan shall be provided to this office within 30 days of BOEM & BSEE's approval.

- The permittee shall be required to follow its Fisheries Communication Plan to provide advanced notice of HRG survey plans to the commercial fishing industry in the region and must schedule surveys that, to the extent practicable, avoid peak longfin squid fishing activity in the survey area.

- The permittee shall avoid the use of boomers and sparkers in HRG surveys in the 29 northwestern aliquots of the lease area from April 1 through July 31 of any year, as practicable.

- The permittee shall report any occurrence of at least 10 dead non-ESA-listed fish within established shutdown or monitoring zones to BOEM at renewable_reporting@boem.gov and to BSEE via email to protectedspecies@bsee.gov as soon as practicable (taking into account crew and vessel safety), but no later than 24 hours after the sighting. BOEM or BSEE will notify NMFS GARFO via NMFS.GAR.HESDoffshorewind@noaa.gov. The permittee shall confirm the relevant point of contact prior to reporting and confirm the reporting was received.

- The permittee shall conduct fisheries and benthic monitoring according to the Empire Wind Fisheries and Benthic Monitoring Plan to assess fisheries and benthic habitat status in the Project area pre-, during, and post-construction. The

permittee shall review all NMFS GARFO comments on the Fisheries and Benthic Monitoring Plan that BOEM provides to the permittee and revise the Plan, as appropriate. The permittee shall resolve all comments on the Plan to BOEM's and BSEE's satisfaction prior to implementation of the revised Plan. A copy of the final Fisheries and Benthic Monitoring Plan shall be provided to this office within 30 days of BOEM & BSEE's approval.

- The permittee shall submit an annual report to BOEM, BSEE, this office, and NMFS GARFO's Protected Resources Division (nmfs.gar.incidental-take@noaa.gov) for benthic habitat and fisheries monitoring activities in the preceding calendar year by February 15 (i.e., the report of 2023 activities is due by February 15, 2024). The report must include a summary of all activities conducted, the dates and locations of all fisheries ventless trap surveys and otter trawl surveys, number of sets and soak duration for all ventless trap surveys and tows and duration for all trawl surveys summarized by month, number of vessel transits (port of origin and destination),, and a summary table of any observations and captures of ESA listed species during these surveys. The report must also summarize all acoustic telemetry and benthic monitoring activities that occurred, inclusive of vessel transits. The permittee shall share data consistent with its data sharing plan and upon BOEM's or BSEE's request.

- To the extent it is technically and/or economically practical or feasible, the permittee shall avoid using Zinc sacrificial anodes on external components of WTG and OSS foundations to reduce the release of metal contaminants in the water column.

- The permittee shall 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 15 to May 31 of any calendar year in estuarine/nearshore waters of six meters in depth or less within the waters of New York Harbor (inshore of Sandy Hook to Rockaway Point) to avoid impacts to winter flounder early life stages (spawning adults, eggs, larvae).

- The permittee shall avoid in-water work including cable installation, seabed preparation, pile driving, HDD pit excavation, or other extractive or turbidity/sediment-generating activities from December 15 to April 15 of any given year in the Bay Ridge Channel and adjacent nearpier and inter-pier areas, including the SBMT to avoid impacts to overwintering winter flounder and striped bass.

- The permittee shall avoid and minimize impacts to sensitive benthic habitat in all inshore/estuarine areas where seafloor preparation and cable installation activities will occur, through the use of micrositing. The permittee shall ensure that disturbed areas will be restored to pre-construction conditions, inclusive of bathymetry, contours, and sediment types with the exception of the cable landfall area within

the interpier area at South Brooklyn Marine Terminal. The 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.

- The permittee shall avoid trenching in open nearshore/estuarine waters, as practicable. If open trenching is used, dredged/excavated materials shall not be sidecast or placed in the aquatic environment. In areas with elevated levels of contaminants, a closed clamshell/environmental bucket dredge shall be used. All dredged/excavated materials shall 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. Any trenched areas shall be restored to pre-construction conditions with native and/or clean, compatible material.

- The permittee shall ensure that all vessels float at all stages of the tide (i.e. avoid vessel grounding) and shall ensure that vessel anchoring and/or jack-up barges avoid sensitive benthic habitats to the maximum extent possible.

- As there are eight NMFS scientific surveys that overlap with Empire Wind lease area, consistent with NMFS and BOEM survey mitigation strategy, the permittee shall submit to BOEM and this office, a survey mitigation agreement between NMFS and the Permittee within 120 days of the COP approval. The survey mitigation agreement must describe how the permittee will mitigate the Project impacts on the eight NMFS surveys. The permittee shall conduct activities in accordance with such agreement.

- If the permittee and NMFS fail to reach a survey mitigation agreement, then the permittee shall submit a Survey Mitigation Plan to BOEM and NMFS that is consistent with the mitigation activities, actions, and procedures described below, within 180 days of COP approval. BOEM will review the Survey Mitigation Plan in consultation with NMFS Northeast Fisheries Science Center (NEFSC). The permittee shall resolve comments to BOEM's satisfaction and must conduct activities in accordance with the plan.
  a. As soon as reasonably practicable, but no later than 30 days after the issuance of the Project's COP approval, the permittee shall initiate coordination with NMFS NEFSC at nefsc.survey.mitig@noaa.gov to develop the survey mitigation agreement described above. Mitigation activities specified under the agreement must be designed to mitigate the Project impacts on the following NMFS NEFSC surveys: (a) Spring Multi-species Bottom Trawl survey; (b) Autumn Multi-species Bottom Trawl survey; (c) Ecosystem Monitoring survey; (d) Aerial marine mammal and sea turtle survey; (e) Shipboard marine mammal and sea turtle survey; (f) Atlantic surfclam and ocean quahog survey; (g) Atlantic sea scallop survey; and (h) Seal survey. At a minimum, the survey mitigation agreement must describe actions and the means to address impacts on the affected surveys due to the preclusion of sampling platforms and

impacts on statistical designs. NMFS has determined that the project area is a discrete stratum for surveys that use a random stratified design. This agreement may also consider other anticipated Project impacts on NMFS surveys, such as changes in habitat and increased operational costs due to loss of sampling efficiencies.

b. The survey mitigation agreement must identify activities that will result in the generation of data equivalent to data generated by NMFS's affected surveys for the duration of the Project. The survey mitigation agreement must describe the implementation procedures by which the permittee will work with NEFSC to generate, share, and manage the data required by NEFSC for each of the surveys impacted by the Project, as mutually agreed upon between the permittee and NMFS NEFSC. The survey mitigation agreement must also describe the permittee's participation in the NMFS NEFSC Northeast Survey Mitigation Program to support activities that address regional-level impacts for the surveys listed above.

- The permittee shall provide the locations of all relocated boulders, created berms, and scour protection including cable protection measures (i.e. concrete mattresses) to NMFS, USCG, and this office to inform the public of potential gear obstructions.

- The permittee as practicable, shall avoid dredging, pre-sweeping, and cable installation activities in Lower Bay, particularly along the edges of the Ambrose Channel from December 1 to March 31 of any calendar year to minimize impacts to overwinter, dormant blue crabs.

10.3 Section 106 of the NHPA

Refer to Section 2.3 for permit area determination.

10.3.1 Lead federal agency for Section 106 of the NHPA

Has another federal agency been identified as the lead federal agency for complying with Section 106 of the NHPA with the Corps designated as a cooperating agency and has that consultation been completed? Yes

BOEM is the lead federal agency for complying with Section 106 of the National Historic Preservation Act with the Corps designated as a cooperating agency.

The Corps has reviewed the documentation provided by the agency and determined it is sufficient to confirm Section 106 compliance for this permit authorization, and additional consultation is not necessary.

10.3.2 Historic properties

Known historic properties present? Yes

BOEM identified 30 submerged historic properties and 22 ancient submerged landform features (ASLFs) in the marine APE, no historic properties in the terrestrial APE; 15 historic districts and 26 above-ground historic properties including three (3) National Historic Landmarks (NHLs) in the offshore project components' portion of the visual APE and one (1) historic district and three historic properties including one (1) NHL in the shore project components' portion of the visual APE.

APEs are discussed above in Section 2.3.

BOEM determined that ten (10) historic districts and thirteen (13) individual historic properties would be subject to visual adverse effects from WTGs; 30 submerged cultural properties may be potentially adversely affected by physical disturbance from export cable construction within the avoidance buffers of these resources, 22 ASLFs may be potentially adversely affected by physical disturbance in the lease area and from export cable construction, and no historic properties in the terrestrial APE would be adversely affected with implementation of the undertaking.

BOEM further determined that there would be no visual adverse effect to the one NHL in the onshore visual APE (Green-Wood Cemetery) because the proposed onshore substation and Operations & Maintenance Facility would be partially visible from one of the higher topographic points of the cemetery but would be a minor middle-ground element in the built environment. The three (3) NHLs (Sandy Hook Light, Fort Hancock and Sandy Hook Proving Ground Historic District, and Navesink Light Station (Twin Lights)) in the offshore visual APE would be visually adversely affected.

Further details on the affect's determinations including to each specific historic property, district, NHL, and ASLFs can be found in the executed Section 106 Memorandum of Agreement. In order to avoid, minimize, and mitigate adverse effects to the identified historic properties, historic districts, NHL's and ASLF's, the following special condition will be incorporated into any DA authorization.

The permittee shall comply with the enclosed Memorandum of Agreement (MOA), entitled "Memorandum of Agreement among the Bureau of Ocean Energy Management, the Delaware Tribe of Indians, the Delaware Nation, the Mashantucket (Western) Pequot Tribal Nation, the Mashpee Wampanoag Tribe, the Shinnecock Indian Nation, the Stockbridge-Munsee Community Ban of Mohican Indians, the Wampanoag Tribe of Gay Head (Aquinnah), the State Preservation Officers of New York and New Jersey, the New Jersey Historic Trust, Empire Wind LLC, and the Advisory Council on Historic Preservation Regarding the Empire Wind Offshore Wind Farm Projects (Lease Number OCS-A 0512)", that was fully executed on November 20, 2023.

10.4 Tribal Trust Responsibilities

10.4.1 Tribal government-to-government consultation

Was government-to-government consultation conducted with federally-recognized tribe(s)? Yes

BOEM is the lead federal agency for government-to-government consultation with Federally recognized Tribe(s). Government-to-government consultation was conducted by BOEM with federally-recognized Tribes including the Delaware Tribe of Indians, the Delaware Nation, the Mashantucket (Western) Pequot Tribal Nation, the Mashpee Wampanoag Tribe, the Shinnecock Indian Nation, the Stockbridge-Munsee Community Ban of Mohican Indians, and the Wampanoag Tribe of Gay Head (Aquinnah).

USACE has determined that BOEM's consultation with federally-recognized Tribes is sufficient and additional consultation by USACE is not necessary.

10.4.2 Other Tribal consultation

Other Tribal consultation including any discussion of Tribal Treaty rights.

In order to avoid, minimize, and mitigate adverse effects to the identified historic properties, historic districts, NHL's and ASLF's, including tribal treaty rights and concerns of the federally-recognized tribes the following special condition will be incorporated into any DA authorization in addition to the above mentioned compliance with the executed Section 106 MOA.

No later than 90 days after COP approval, the permittee shall make a request to both the BSEE Tribal Liaison Officer and the Eastern Seaboard Tribal Liaison at tribalengagement@bsee.gov to coordinate with federally recognized Tribal Nations with geographic, cultural, or ancestral ties to the project area (hereinafter "interested Tribal Nation"), including, but not limited to: the Absentee-Shawnee Tribe of Indians of Oklahoma, the Cayuga Nation, the Delaware Nation, the Oklahoma, the Delaware Tribe of Indians, the Eastern Shawnee Tribe of Oklahoma, the Mashantucket Pequot Indian Tribe, the Mashpee Wampanoag Tribe, the Mohegan Tribe of Indians of Connecticut, the Narragansett Indian Tribe, the Oneida Indian Nation, the Oneida Nation, the Onondaga Nation, the Saint Regis the Mohawk Tribe, the Seneca-Cayuga Nation, the Seneca Nation of Indians, the Shawnee Tribe, the Shinnecock Indian Nation, the Stockbridge Munsee Community, the Tonawanda Band of Seneca, the Tuscarora Nation, and the Wampanoag Tribe of Gay Head (Aquinnah). The purpose of this coordination is to (1) solicit Tribal Nation interest in participating as an environmental liaison during construction and/or maintenance activities, so the environmental liaison can safely monitor, and participate in postmortem examinations of mortality events, as a result of these activities; and (2) provide open access to the following: reports generated as a result of the Fisheries Research and Monitoring Plan; reports of NARW sightings; injured or dead protected species reporting (sea turtles, NARW, sturgeon); NARW PAM monitoring; PSO reports (e.g., pile driving reports); pile driving schedules and schedule changes; and any interim and final SFV reports, and its associated data. If an interested Tribal Nation expresses interest in participating as an environmental liaison, the permittee shall provide the interested Tribal Nation information regarding training(s), certification(s), and safety

measures, required for participation. Environmental liaisons must be invited to monitor/participate from a safe platform, such as a vessel. The permittee shall provide to the interested Tribal Nation, in a manner suitable to the Tribal Nation, access to all ESA reports, Post Review Discovery Plans, and other documents listed in this paragraph no later than 30 days after the information becomes available. The permittee may redact or withhold documents listed in this paragraph when it is information that the permittee would not generally make publicly available and considers that the disclosure may result contrary to the permittee's commercial interests. The permittee shall submit a justification for the request to redact/withhold in writing to the BSEE Tribal Liaison Officer and the Eastern Seaboard Tribal Liaison at tribalengagement@bsee.gov. Only upon approval of such request may the document be redacted/withheld.

10.5 Section 401 of the Clean Water Act – Water Quality Certification (WQC)

10.5.1 Section 401 WQC requirement

Is an individual Section 401 WQC required, and if so, has the certification been issued or waived?

An individual WQC is required and has been granted. The applicant received a Water Quality Certification from the NYSPSC for Case 21-T-0366 dated October 4, 2023.

10.5.2 401(a)(2) Process

If the certifying authority granted an individual WQC, did the United States Environmental Protection Agency make a determination that the discharge ‘may affect’ water quality in a neighboring jurisdiction? No

On October 6, 2023, USACE provided the WQC to the EPA. In an email dated October 26, 2023, EPA stated, “EPA has decided that it will not send the notification to neighboring jurisdictions referenced in CWA 401(a)(2), based on the location of the project, the 401 certification conditions, and the information available to EPA regarding the discharge. Consequently, processing of the license or permit may proceed without awaiting further action from EPA pursuant to CWA 401(a)(2).”

10.6 Coastal Zone Management Act (CZMA)

10.6.1 Coastal Zone Management Act (CZMA)

A general CZMA consistency concurrence has been issued for this permit.

The New York State Department of State (NYSDOS) issued a CZM Concurrence with Consistency Certification – Proposal Modified to be Consistent, F-2022-0782, on October 16, 2023. NYSDOS and the applicant executed a Letter of Intent dated October 6, 2023, to enter into an MOU concerning certain environmental mitigation measures pertaining to the construction, operation, and decommissioning of the Empire Wind offshore wind energy facilities.

The following condition would be included to ensure compliance with the CZM Concurrence:

Pursuant to 15 CFR 930 Subparts A through I, the permittee and their designated contractors shall be responsible for, and shall comply with, all of the conditions and stipulations contained within the New York State Department of State (NYSDOS) issued Coastal Zone Management Concurrence with Consistency Certification F-2022-0782 dated October 16, 2023.

10.7 Wild and Scenic Rivers Act

10.7.1 National Wild and Scenic River System

Is the project 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? No

10.8 Effects on Corps Civil Works Projects (33 USC 408)

10.8.1 Permission requirements under Section 14 of the Rivers and Harbors Act (33 USC 408)

Does the applicant also require permission under Section 14 of the Rivers and Harbors Act (33 USC 408) because the activity, in whole or in part, would alter, occupy, or use a Corps Civil Works project?

Yes.

The proposed activity also requires authorization pursuant to Section 408 for impacts to the Ambrose Channel, Gravesend Anchorage, and the Bay Ridge and Red Hook Channels . On , the Corps granted Section 408 Permission.

The proposed activities within the BOEM lease area would not be located near any Corps Civil Works projects. The export cables would enter, cross and/or approach into the Ambrose Channel, Gravesend Anchorage, and the Bay Ridge and Red Hook Federal Navigation Channels including the theoretical 3:1 side slope.

See Section 408 Memorandum for Record (MFR) enclosed. The following special condition shall be included to ensure compliance with the Section 408 permission:

The permittee shall abide by all Section 408 permission conditions included in the enclosed Section 408 Permission decision document.

10.9 Corps Wetland Policy (33 CFR 320.4(b))

10.9.1 Wetland Impacts

Does the project propose to impact wetlands? No

10.10 Other (Applicant Responsible):

10.10.1 Marine Mammal Protection Act (MMPA)

The applicant has individually applied to the NMFS for an Incidental Take Authorization (ITA) pursuant to the MMPA. The proposed ITA was posted in the Federal Register on April 12, 2023. The Final ITA Regulations were published in the Federal Register on February 8, 2024 and the final Letter of Authorization (LOA) ITA decision was rendered on February 22, 2024. The applicant is responsible for obtaining any required MMPA authorization prior to the commencement of work. USACE is not responsible for enforcement of activities under the MMPA.

10.10.2 Outer Continental Shelf (OCS) Air Permit

The applicant has individually applied to the EPA for an OCS Air Permit. Final decision/permit approval is anticipated in April 2024. USACE is not responsible for enforcement of activities under the OCS Air Permit.

10.11 Compliance Statement

The Corps has determined that it has fulfilled its responsibilities under the following laws, regulations, policies, and guidance:

Table 13 – Compliance with Federal Laws and Responsibilities		
Laws, Regulations, Policies, and Guidance	**Yes**	**N/A**
Section 7(a)(2) of the ESA	X	
EFH provisions of the Magnuson-Stevens Act	X	
Section 106 of the NHPA	X	
Tribal Trust	X	
Section 401 of the Clean Water Act	X	
CZMA	X	
Wild and Scenic Rivers Act		X
Section 408 - 33 USC 408	X	
Corps Wetland Policy (33 CFR 320.4(b))		X
Other: N/A		X

11.0 Special Conditions

11.1 Special condition(s) requirement(s)

Are special conditions required to ensure minimal effects, ensure the authorized activity is not contrary to the public interest and/or ensure compliance of the activity with any of the laws above? Yes

11.2 Required special condition(s)

A. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Rationale: This condition is included to protect the interests of the United States.

B. The permittee understands and agrees that while the BOEM ROD and COP are inclusive of the Empire 1 and Empire Wind 2 project, the terms and conditions of this permit apply to only the Empire Wind 1 project.

Rationale: This condition is included to ensure that the subject permit is only applicable to the Empire Wind 1 project, though the BOEM FEIS, ROD and COP approval are inclusive of the Empire Wind 2 project as well.

C. The permittee shall ensure that all plans, reports, or other documents required to be submitted to this office in relation to this permit must have “Empire Wind 1 – NAN-2022-00901” on the title page. All submittals shall be submitted to CENAN-R-PERMIT-APP@USACE.ARMY.MIL and Christopher.W.Minck@usace.army.mil.

Rationale: This condition is included to ensure required plans, reports, and other documents are submitted appropriately to the district.

D. The permittee shall complete and return the enclosed Compliance Certification Forms to this office within 30 days of completion of construction of the authorized work.

Rationale: This condition is included to ensure the district is notified of completion of the project construction.

E. The permittee shall submit an annual report to this office detailing the work that occurred to date and status of compliance with all of the Conditions of this DA Permit. Reports for each year are due by February 15th of the following year.

Rationale: This condition is included to ensure the district is aware of ongoing construction activities to ensure compliance with various permit conditions and reporting requirements.

F. The permittee shall contact this office a minimum of three (3) years in advance of proposed decommissioning to determine permitting requirements. Decommissioning is

required at the end of the life of the project is not authorized by this Department of the Army (DA) permit.

Rationale: This condition is included to ensure the district is notified well in advance of proposed decommissioning of the project to determine future permitting requirements, since decommissioning is not included in this permit authorization.

G. The permittee shall notify the National Ocean Service (NOS) Office of Coast Survey when you begin cable laying work and work on the Outer Continental Shelf (OCS) and when the work authorized by this permit is completed. When construction of the offshore export cables and other offshore subprojects is complete, the permittee shall notify the NOS's Nautical Data Branch by email at ocs.ndb@noaa.gov, and provide as-built drawings with explicit geographic control, horizontal datum (WGS 84 or NAD83), survey unit, survey date and any other relevant information. Digital data is preferred (e.g., CAD, GIS, PDF, Excel spreadsheets for route position lists of cables, etc.). The notification of completion shall be done within 90 days of completion of the activities. The permittee shall additionally send this office a copy of this documentation as we may note the location on future survey drawings.

Rationale: This condition is included to ensure appropriate charting and marking of the cable routes.

H. The permittee shall comply with the terms and conditions specified within BOEM's Construction and Operations Plan Approval, dated February 21, 2024.

Rationale: This condition is included to ensure compliance with the terms and conditions of BOEM's approval of the project including BMP's and various mitigation measures.

I. The permittee shall abide by all Section 408 permission conditions included in the enclosed Section 408 Permission decision document.

Rationale: This condition is included to ensure compliance with the Section 408 permission conditions to avoid impacts to USACE projects.

J. Pursuant to 15 CFR 930 Subparts A through I, the permittee shall be responsible for, and shall comply with, all of the conditions and stipulations contained within the New York State Department of State (NYSDOS) issued Coastal Zone Management Concurrence with Consistency Certification F-2022-0782 dated October 16, 2023.

Rationale: This condition is included to ensure compliance with the NYSDOS CZM Concurrence and any stipulations included.

K. This Department of the Army (DA) permit does not authorize you to take an endangered species. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take"

provisions with which you must comply). The United States Fish and Wildlife Service (USFWS) BO, entitled “Biological Opinion on the Effects of the Empire Wind 1 and Empire Wind 2 Projects on the Federally Listed Piping Plover (*Charadrius melodus*; threatened) and rufa Red Knot (*Calidris canutus rufa*; threatened) within the Jurisdiction of the Long Island Field Office, Shirley, New York”, prepared by the U.S. Fish and Wildlife Service, and dated June 2023, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this DA permit is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take statement of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with the incidental take statement of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute noncompliance with your DA permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

Rationale: This condition is included to ensure impacts to ESA-listed species are minimized.

L. This DA permit does not authorize you to take an endangered species. In order to legally take a listed species, you must have separate authorization under the ESA (e.g., an ESA Section 10 permit, or a BO under ESA Section 7, with "incidental take" provisions with which you must comply). The National Marine Fisheries Service (NMFS) BO, entitled “National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological Opinion”, prepared by the National Marine Fisheries Service, and dated September 8, 2023, contains mandatory terms and conditions, including specified provisions of any incidental take authorization pursuant to the Marine Mammal Protection Act, to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this DA permit is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take statement of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with the incidental take statement of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute noncompliance with your DA permit. The NMFS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

Rationale: This condition is included to ensure impacts to ESA-listed species are minimized.

M. The permittee shall comply with the enclosed Memorandum of Agreement (MOA), entitled “Memorandum of Agreement among the Bureau of Ocean Energy Management, the Delaware Tribe of Indians, the Delaware Nation, the Mashantucket (Western) Pequot Tribal Nation, the Mashpee Wampanoag Tribe, the Shinnecock Indian Nation, the Stockbridge-Munsee Community Ban of Mohican Indians, the Wampanoag Tribe of

Gay Head (Aquinnah), the State Preservation Officers of New York and New Jersey, the New Jersey Historic Trust, Empire Wind LLC, and the Advisory Council on Historic Preservation Regarding the Empire Wind Offshore Wind Farm Projects (Lease Number OCS-A 0512)", that was fully executed on November 20, 2023.

Rationale: This condition is included to ensure compliance with Section 106 of the NHPA.

N. No later than 90 days after COP approval, the permittee shall make a request to both the BSEE Tribal Liaison Officer and the Eastern Seaboard Tribal Liaison at tribalengagement@bsee.gov to coordinate with federally recognized Tribal Nations with geographic, cultural, or ancestral ties to the project area (hereinafter "interested Tribal Nation"), including, but not limited to: the Delaware Tribe of Indians, the Delaware Nation, the Mashantucket (Western) Pequot Tribal Nation, the Mashpee Wampanoag Tribe, the Shinnecock Indian Nation, the Stockbridge-Munsee Community Ban of Mohican Indians, and the Wampanoag Tribe of Gay Head (Aquinnah). The purpose of this coordination is to (1) solicit Tribal Nation interest in participating as an environmental liaison during construction and/or maintenance activities, so the environmental liaison can safely monitor, and participate in postmortem examinations of mortality events, as a result of these activities; and (2) provide open access to the following: reports generated as a result of the Fisheries Research and Monitoring Plan; reports of NARW sightings; injured or dead protected species reporting (sea turtles, NARW, sturgeon); NARW PAM monitoring; PSO reports (e.g., pile driving reports); pile driving schedules and schedule changes; and any interim and final SFV reports, and its associated data. If an interested Tribal Nation expresses interest in participating as an environmental liaison, the permittee shall provide the interested Tribal Nation information regarding training(s), certification(s), and safety measures, required for participation. Environmental liaisons must be invited to monitor/participate from a safe platform, such as a vessel. The permittee shall provide to the interested Tribal Nation, in a manner suitable to the Tribal Nation, access to all ESA reports, Post Review Discovery Plans, and other documents listed in this paragraph no later than 30 days after the information becomes available. The permittee may redact or withhold documents listed in this paragraph when it is information that the permittee would not generally make publicly available and considers that the disclosure may result contrary to the permittee's commercial interests. The permittee shall submit a justification for the request to redact/withhold in writing to the BSEE Tribal Liaison Officer and the Eastern Seaboard Tribal Liaison at tribalengagement@bsee.gov. Only upon approval of such request may the document be redacted/withheld.

Rationale: This condition is included to ensure compliance with Section 106 of the NHPA and satisfy tribal trust compliance.

O. To the extent it is technically and/or economically feasible and practicable for the permittee to construct fewer than 54 WTGs in EW1, the permittee shall prioritize removal of the six WTG positions at the farthest northwest section of EW1. The order of preference for removal is B01, C01, B02, D02, B03, and D03.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

P. The permittee shall prepare and implement a Micrositing Plan that describes how inter-array cables and export cable routes will be microsited to avoid or minimize impacts to sensitive benthic habitats (defined above) complex habitat (NOAA Habitat Categories), boulders, sandwaves, and confirmed MEC/UXO. The plan must specifically describe how inter-array and export cable routes will be microsited to avoid or minimize impacts to sensitive benthic habitats, including complex benthic habitat and boulders = 0.5 m, as technically and/or economically practicable or feasible. To the extent practicable, cables should cross complex habitat areas perpendicularly at the narrowest points; cables unable to avoid benthic features such as sand waves should be sited along natural benthic contours within troughs/lows, to maximize cable burial while minimizing disturbance to local submarine topography. The permittee shall submit detailed supporting data and analysis as part of the FDR or FIR, including relevant geophysical and geospatial data. The submission of the data may be incorporated by reference or submitted as an attachment to the FDR or FIR. The Micrositing Plan must be consistent with MEC/UXO ALARP Certification, Cable Routings and the Boulder Identification and Relocation Plan. The Micrositing Plan must include a figure for each microsited cable segment, including benthic habitat delineations showing complex habitat and locations of boulders = 0.5 m. The plan must include a figure depicting large boulder locations, multibeam backscatter returns, and the proposed microsited locations for cables. Any instances where the permittee believes there is technical or economic infeasibility must be supported by a technical or economic feasibility analysis, as appropriate, for review and concurrence by BOEM and BSEE.

a) For cables that cannot be microsited to avoid impacts to complex habitat or boulders = 0.5 m, the micrositing plan must identify technically and/or economically practicable or feasible impact minimization measures and use the following, prioritized list of complex habitat sub-types (NMFS complexity categories) to avoid during micrositing:
    - Complex habitats with boulders;
    - Complex habitats absent boulders;
    - Heterogeneous complex habitats;
    - Biogenic habitats (i.e., clam beds)
    - Areas with benthic or bathymetric features

The Micrositing Plan must be submitted to BOEM and BSEE to coordinate with NMFS GARFO HESD for a 60-day review, 120 days prior to site preparation activities for cables and WTGs. The permittee shall resolve all comments on the Micrositing Plan to BOEM's and BSEE's satisfaction prior to implementation of the plan. A copy of the final micrositing plan shall be provided to this office within 30 days of BOEM & BSEE's approval.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

Q. The permittee shall submit a Boulder Identification and Relocation Plan to BSEE and BOEM for review and concurrence. The plan must detail how the permittee will avoid or minimize impacts to sensitive benthic habitats and relocate boulders as close as practicable to the original location, in areas of soft bottom but immediately adjacent to similar habitat. The plan must be submitted to BOEM and BSEE to coordinate with USACE and NMFS GARFO HESD for a 60-day review, 120 days prior to boulder relocation activities. The permittee shall resolve all comments on the Boulder Identification and Relocation Plan to BOEM's and BSEE's satisfaction prior to implementation of the plan. If BOEM or BSEE do not provide comments on the plan within 60 days of its submittal, then the permittee may presume concurrence with the plan. The plan must include sufficient scope to mitigate boulders for facility installation and operation risks. The plan must be consistent with and meet the conditions of the SMS in Section 2.8. The plan must include the following for boulders that are proposed to be relocated:

a) A summary and detailed description of surface and subsurface boulders greater than 0.5 m in diameter, and locations along the cable routes and WTG areas where such boulders have been found;
b) A detailed summary of methodologies to be used in boulder identification, including geological and geophysical survey results;
c) A clear depiction (i.e., figures) of the location of boulder relocation activities specified by activity type (e.g., pick or plow, removal, or placement) and overlaid on multibeam backscatter data;
d) A description of boulder removal and/or relocation methods for each type of boulder relocation activity and technical feasibility constraints, including capacity of crane used in grab systems, vessel specifications and metocean limits on operation, etc.;
e) The environmental footprint of disturbance activities by habitat type and measures taken to avoid further adverse impacts to archaeological resources, complex habitats and fishing operations;
f) A comprehensive list and shapefile of locations of boulders that would be relocated (latitude, longitude), boulder dimensions (m), buffer radius (m), areas of active (within last 5 years) bottom trawl fishing (latitude, longitude), areas where boulders > 2 m in diameter are anticipated to occur (latitude, longitude), and identification of approximate areas to which boulders would be relocated (latitude, longitude);
g) The measures taken to minimize the quantity of seafloor obstructions from relocated boulders in areas of active bottom trawl fishing, as technically and/or economically feasible;
h) A description of safety distances or zones to limit boulder relocation near third part assets;
i) A summary of any consultation and outreach with resource agencies and the fishing industry in development of the plan (e.g., notifications to mariners);
j) A statement of consistency with the Micrositing Plan.

The permittee shall provide USCG, NOAA, this office, and the local harbor master with a comprehensive list and shapefile of positions and areas to which boulders greater

than 2 m would be relocated (latitude, longitude) at least 60 days prior to boulder relocation activities.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

R. The permittee shall implement methods identified in the approved COP and described in the Boulder Identification and Relocation Plan for boulder relocation activities. The permittee shall consider the spatial extent of boulder relocation in the micrositing of WTGs and OSS foundations and inter-array and export cables for this Project and must relocate boulders as close as practicable in areas immediately adjacent to existing similar habitat. The relocation of boulders must be consistent with the Project easement.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

S. The permittee shall conduct post-construction surveys capable of detecting bathymetry changes of 0.5 m or less where plows, jets, grapnel runs, or other similar methods are used, to determine the height and width of any created berms. If there are bathymetric changes in berm height greater than 1 m (3 feet) above grade, the permittee shall develop and implement a Berm Remediation Plan to restore created berms to match adjacent natural bathymetric contours (isobaths), as technically and/or economically practical or feasible. The permittee shall submit the Berm Remediation Plan to BOEM and BSEE to coordinate with NMFS for a 60-day review within 90 days of completion of the post-construction survey where the change was detected. BOEM and BSEE will also review the plan to determine if the scope of activities (e.g., methods, disturbance area, vessel trips, emissions) is within the already completed National Environmental Policy Act analysis and ESA and EFH consultations and, if not, will complete additional environmental review and consultations. The permittee shall resolve all comments on the Berm Remediation Plan to BOEM’s and BSEE’s satisfaction prior to initiating restoration activities. A copy of the post-construction surveys and the Berm Remediation Plan shall be provided to this office within 30 days of BOEM & BSEE’s approval.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

T. The permittee shall prepare and implement an Anchoring Plan for all areas where anchoring occurs and jack-up barges are used during construction and operations/maintenance within 1,640 feet (500 m) of habitats, resources, and submerged infrastructure that are sensitive, including sensitive benthic habitats; boulders = 0.5 m; ancient submerged landform features; known and potential shipwrecks; potentially significant debris fields; potential hazards; third-party infrastructure; and any related facility installation activities (such as cable, WTG, and OSS installation). The permittee shall provide to all construction and support vessels the

locations where anchoring and jack-up barges must be avoided to the extent technically and/or economically practicable or feasible, including sensitive benthic habitats ; boulders = 0.5 m; ancient submerged landform features (ASLFs); known and potential shipwrecks; potentially significant debris fields; potential hazards; and any related facility installation activities (such as cable, WTG, and OSS installation). Dynamic positioning systems should be used in these areas instead of anchoring, as practicable. If anchoring is necessary at these locations, then all vessels deploying anchors must extend the anchor lines to the extent practicable to minimize the number of times the anchors must be raised and lowered to reduce the amount of habitat disturbance, unless the anchor chain sweep area includes complex habitat that may be impacted by the chain sweep. On all vessels deploying anchors, the permittee shall use mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seabed, unless the permittee demonstrates, and BOEM and BSEE accept, that (1) the use of mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seabed is not technically practicable or feasible; or (2) a different alternative is as safe and provides the same or greater environmental protection. If placement of jack-up barge spud cans is necessary in sensitive benthic habitats, locations for the spud cans must be selected to avoid or minimize impacts in the following order of preference: (i) complex habitats with boulders; (ii) complex habitats absent boulders; (iii) heterogeneous complex habitats; (iv) biogenic habitat (i.e., clam beds); and (v) areas with benthic or bathymetric features, as technically practicable or feasible. Any instances where the permittee believes there is technical infeasibility must be supported by a technical feasibility analysis, as appropriate, for review and concurrence by BOEM and BSEE. Benthic habitat (NOAA complexity categories) and Benthic Feature/Habitat Type maps in conjunction with backscatter, bathymetry, and boulder layers should be used to inform the anchoring plan.

a) The permittee shall provide the Anchoring Plan to BOEM and BSEE with a notification email sent to NMFS GARFO HESD for a 60-day review at least 120 days before anchoring activities and construction begins. The permittee shall resolve all comments on the Anchoring Plan to BOEM’s and BSEE’s satisfaction before conducting any seabed-disturbing activities that require anchoring.

b) A copy of the final Anchoring Plan shall be provided to this office within 30 days of BOEM & BSEE’s approval.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

U. The permittee shall prepare and implement a Scour and Cable Protection Plan that includes descriptions and specifications for all scour and cable protection materials. The plan must facilitate the avoidance and minimization of impacts to sensitive benthic habitats (defined above), including complex habitats and boulders = 0.5 m. The plan must include a depiction of the location and extent of proposed scour or cable protection, the habitat delineations (NOAA complexity categories map) for the areas of proposed scour and cable protection, and detailed information on the proposed scour or cable protection materials for each area and habitat type. Benthic habitat (NOAA complexity category) and Benthic Feature/Habitat Type project maps in conjunction with

backscatter, bathymetry and boulder layers should be used to inform this plan.

a) The permittee shall avoid the use of engineered stone or concrete mattresses in complex habitat, as practicable. The permittee shall ensure that any materials used for scour and cable protection measures consisting of natural or engineered stone does not inhibit epibenthic growth and provides three-dimensional complexity in height and in interstitial spaces, as practicable. If concrete mattresses are necessary, bioactive concrete (i.e., with bio-enhancing admixtures) must be used as practicable as the primary scour protection (e.g., concrete mattresses) or veneer to support biotic growth. The permittee shall minimize the use of scour protection to the minimum amount necessary to accomplish the purpose.

b) Cable protection measures must have tapered or sloped edges to reduce hangs for mobile fishing gear. The permittee shall avoid the use of plastics/recycled polyesters/net material (i.e., rock-filled mesh bags, fronded mattresses) for scour protection.

c) Any instances where the permittee believes there is technical or economic infeasibility must be supported by a technical or economic feasibility analysis, as appropriate, for review and concurrence by BOEM and BSEE.

d) The Scour and Cable Protection Plan must be submitted to BOEM and BSEE to coordinate with NMFS GARFO HESD for a 60-day review, 120 days prior to placement of scour and cable protection. The permittee shall resolve all comments on the plan to BOEM's and BSEE's satisfaction before placement of the scour and cable protection materials.

e) A copy of the final Scour and Cable Protection Plan shall be provided to this office within 30 days of BOEM & BSEE's approval.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

V. The permittee shall be required to follow its Fisheries Communication Plan to provide advanced notice of HRG survey plans to the commercial fishing industry in the region and must schedule surveys that, to the extent practicable, avoid peak longfin squid fishing activity in the survey area.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

W. The permittee shall avoid the use of boomers and sparkers in HRG surveys in the 29 northwestern aliquots of the lease area from April 1 through July 31 of any year, as practicable.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

X. The permittee shall report any occurrence of at least 10 dead non-ESA-listed fish within established shutdown or monitoring zones to BOEM at

renewable_reporting@boem.gov and to BSEE via email to protectedspecies@bsee.gov as soon as practicable (taking into account crew and vessel safety), but no later than 24 hours after the sighting. BOEM or BSEE will notify NMFS GARFO via NMFS.GAR.HESDoffshorewind@noaa.gov. The permittee shall confirm the relevant point of contact prior to reporting and confirm the reporting was received.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

Y. The permittee shall conduct fisheries and benthic monitoring according to the Empire Wind Fisheries and Benthic Monitoring Plan to assess fisheries and benthic habitat status in the Project area pre-, during, and post-construction. The permittee shall review all NMFS GARFO comments on the Fisheries and Benthic Monitoring Plan that BOEM provides to the permittee and revise the Plan, as appropriate. The permittee shall resolve all comments on the Plan to BOEM's and BSEE's satisfaction prior to implementation of the revised Plan. A copy of the final Fisheries and Benthic Monitoring Plan shall be provided to this office within 30 days of BOEM & BSEE's approval.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

Z. The permittee shall submit an annual report to BOEM, BSEE, this office, and NMFS GARFO's Protected Resources Division (nmfs.gar.incidental-take@noaa.gov) for benthic habitat and fisheries monitoring activities in the preceding calendar year by February 15 (i.e., the report of 2023 activities is due by February 15, 2024). The report must include a summary of all activities conducted, the dates and locations of all fisheries ventless trap surveys and otter trawl surveys, number of sets and soak duration for all ventless trap surveys and tows and duration for all trawl surveys summarized by month, number of vessel transits (port of origin and destination),, and a summary table of any observations and captures of ESA listed species during these surveys. The report must also summarize all acoustic telemetry and benthic monitoring activities that occurred, inclusive of vessel transits. The permittee shall share data consistent with its data sharing plan and upon BOEM's or BSEE's request.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

AA. To the extent it is technically and/or economically practical or feasible, the permittee shall avoid using Zinc sacrificial anodes on external components of WTG and OSS foundations to reduce the release of metal contaminants in the water column.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

BB. The permittee shall avoid in-water work including dredging, cable installation, seabed preparation, pile installation (i.e., for bulkheads/cofferdams, wharfs), or other

extractive or turbidity/sediment generating activities from January 15 to May 31 of any calendar year in estuarine/nearshore waters of six meters in depth or less within the waters of New York Harbor (inshore of Sandy Hook to Rockaway Point) to avoid impacts to winter flounder early life stages (spawning adults, eggs, larvae).

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

CC. The permittee shall avoid in-water work including dredging, cable installation, seabed preparation, pile driving, or other extractive or turbidity/sediment-generating activities from December 15 to April 15 of any given year in the Bay Ridge Channel and adjacent nearpier and inter-pier areas, including the SBMT to avoid impacts to overwintering winter flounder and striped bass.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

DD. The permittee shall avoid dredging, pre-sweeping, and cable installation activities in Lower Bay, particularly along the edges of the Ambrose Channel from December 1 to March 31 of any calendar year to minimize impacts to overwinter, dormant blue crabs, as practicable.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

EE. The permittee shall avoid and minimize impacts to sensitive benthic habitat in all inshore/estuarine areas where seafloor preparation and cable installation activities will occur, through the use of micrositing. The permittee shall ensure that disturbed areas will be restored to pre-construction conditions, inclusive of bathymetry, contours, and sediment types with the exception of the cable landfall area within the interpier area at South Brooklyn Marine Terminal. The pre-construction surveys to determine conditions and post-construction surveys should be conducted to verify restoration has occurred. Survey results should be provided to this office and to NMFS HESD at NMFS.GAR.HESDoffshorewind@noaa.gov.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

FF.The permittee shall avoid trenching in open nearshore/estuarine waters, as practicable. If open trenching is used, dredged/excavated materials shall not be sidecast or placed in the aquatic environment. In areas with elevated levels of contaminants, a closed clamshell/environmental bucket dredge shall be used. All dredged/excavated materials shall 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. Any trenched areas shall be

restored to pre-construction conditions with native and/or clean, compatible material.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

GG. The permittee shall ensure that all vessels float at all stages of the tide (i.e. avoid vessel grounding) and shall ensure that vessel anchoring and/or jack-up barges avoid sensitive benthic habitats to the maximum extent possible.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

HH. As there are eight NMFS scientific surveys that overlap with Empire Wind lease area, consistent with NMFS and BOEM survey mitigation strategy, the permittee shall submit to BOEM and this office, a survey mitigation agreement between NMFS and the Permittee within 120 days of the COP approval. The survey mitigation agreement must describe how the permittee will mitigate the Project impacts on the eight NMFS surveys. The permittee shall conduct activities in accordance with such agreement.

If the permittee and NMFS fail to reach a survey mitigation agreement, then the permittee shall submit a Survey Mitigation Plan to BOEM and NMFS that is consistent with the mitigation activities, actions, and procedures described below, within 180 days of COP approval. BOEM will review the Survey Mitigation Plan in consultation with NMFS Northeast Fisheries Science Center (NEFSC). The permittee shall resolve comments to BOEM's satisfaction and must conduct activities in accordance with the plan.

a. As soon as reasonably practicable, but no later than 30 days after the issuance of the Project's COP approval, the permittee shall initiate coordination with NMFS NEFSC at nefsc.survey.mitig@noaa.gov to develop the survey mitigation agreement described above. Mitigation activities specified under the agreement must be designed to mitigate the Project impacts on the following NMFS NEFSC surveys: (a) Spring Multi-species Bottom Trawl survey; (b) Autumn Multi-species Bottom Trawl survey; (c) Ecosystem Monitoring survey; (d) Aerial marine mammal and sea turtle survey; (e) Shipboard marine mammal and sea turtle survey; (f) Atlantic surfclam and ocean quahog survey; (g) Atlantic sea scallop survey; and (h) Seal survey. At a minimum, the survey mitigation agreement must describe actions and the means to address impacts on the affected surveys due to the preclusion of sampling platforms and impacts on statistical designs. NMFS has determined that the project area is a discrete stratum for surveys that use a random stratified design. This agreement may also consider other anticipated Project impacts on NMFS surveys, such as changes in habitat and increased operational costs due to loss of sampling efficiencies.
b. The survey mitigation agreement must identify activities that will result in the generation of data equivalent to data generated by NMFS's affected surveys for the duration of the Project. The survey mitigation agreement must describe the

implementation procedures by which the permittee will work with NEFSC to generate, share, and manage the data required by NEFSC for each of the surveys impacted by the Project, as mutually agreed upon between the permittee and NMFS NEFSC. The survey mitigation agreement must also describe the permittee's participation in the NMFS NEFSC Northeast Survey Mitigation Program to support activities that address regional-level impacts for the surveys listed above.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

II. The permittee shall provide the locations of all relocated boulders, created berms, and scour protection including cable protection measures (i.e. concrete mattresses) to NMFS, USCG, and this office to inform the public of potential gear obstructions.

Rationale: This condition is included to minimize impacts to EFH and EFH-listed species.

JJ. The permittee shall ensure that the minimum burial depth for the export and inter-array cables on the Outer Continental Shelf is six feet below the seabed. The minimum burial depth shall be measured from the top of the cable.

a) Any area on the OCS where the minimum burial depth requirement cannot be met, the permittee shall deploy cable protection measures (i.e. concrete mattressing, rock bags or rock placement). The cable protection measures must comply with the scour and/or cable protection measure plans.

Rationale: This condition is included to ensure proper cable burial depths are achieved and sufficient protection is provided.

KK. The permittee shall conduct an inspection of each inter-array and export cable to determine cable location, burial depths, the state of the cable, and site conditions within 6 months, 1 year, and 2 years of commissioning, and every 3 years thereafter (e.g., years 5, 8, 11, 14, 17, 20, and 23 after commissioning). These surveys must also be conducted within 180 days of a storm event (as defined in the Post-Storm Event Monitoring Plan). The permittee shall provide BSEE, BOEM, and this office with a cable monitoring report within 90 days following each inspection. Inspections of the inter-array and export cables must include high-resolution geophysical (HRG) methods, involving, for example, multibeam bathymetric survey equipment; and must identify seabed features, natural and man-made hazards, and site conditions along Federal sections of the cable routing.

a) If this office determines that burial conditions have deteriorated or changed significantly and remedial actions are warranted, this office will notify the permittee and the permittee shall implement corrective actions required to ensure compliance with this permit.

Rationale: This condition is included to ensure the location of the cables are monitored to ensure sufficient coverage and cable protection.

12.0 Findings and Determinations

12.1 Section 176(c) of the Clean Air Act General Conformity Rule Review:

The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed *de minimis* levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

Section 3.4 of the BOEM FEIS outlines Air Quality Impacts. BOEM concluded that the proposed action would not exceed National Ambient Air Quality Standards (AAQS), New York AAQS or New Jersey AAQS.

12.2 Presidential Executive Orders (EO)

12.2.1 EO 11988, Floodplain Management

This action is not located in a floodplain.

12.2.2 EO 12898 and EO 14008, Environmental Justice

12.2.2.1 Provide details regarding screening and mapping tools and available information utilized during the review.

The BOEM FEIS Section 3.12 details BOEM's analysis of the project alternatives with regarding to Environmental Justice (EJ). BOEM utilized available state mapping tools, 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.

12.2.2.2 Have disadvantaged communities been identified within the vicinity of the proposed project? Yes

Refer to FEIS Section for more information.

12.2.2.3 What meaningful involvement efforts did the Corps take for potentially affected disadvantaged communities and other interested individuals, communities, and organizations?

BOEM, as the lead federal agency, was responsible for meaningful involvement. The

Corps outlined our responsibility and involvement at the public hearings hosted by BOEM.

12.2.2.4 Describe if resource impacts are high and adverse.

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 Brooklyn, New York, 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 FEIS.

Do the impacts fall disproportionately on disadvantaged communities? No

BOEM anticipates that the combined impacts of the project on EJ populations would be minor to moderate overall, with minor beneficial impacts. The Corps concurs with the findings in the FEIS. See the conclusion for the proposed action in the FEIS Section 3.12.5.3.

12.2.2.5 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.

12.2.3 EO 13112, Invasive Species, as amended by EO 13751

There are no invasive species issues involved in this proposed project.

12.2.4 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.

12.3 NEPA Compliance

The BOEM FEIS was completed to evaluate a reasonable range of alternatives and the direct, indirect, and cumulative effects associated with a reasonable range of alternatives. The Corps followed the NEPA process identified in 40 CFR Part 1500 et seq., 33 CFR Part 230, and 33 CFR Part 325 Appendix B, by participating in the EIS process as a cooperating agency. The BOEM FEIS is being adopted and utilized to

make a permit decision on the proposed project. Signature of this ROD by the deciding officials completes the Corps' NEPA requirements and responsibilities.

This ROD incorporates by reference the U.S. Department of Interior, BOEM 2022 Draft Environmental Impact Statement (DEIS), the 2023 Final Environmental Impact Statement (FEIS), and ROD for the "Empire Wind Project". The Corps has been a Cooperating Agency, with BOEM as Lead Agency, for purposes of complying with the NEPA and for the purposes of complying with the Endangered Species Act (ESA), the National Historic Preservation Act (NHPA), and the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

The Corps concurs with BOEM that this project constitutes a major Federal action significantly affecting the human environment, and that an EIS was required. As a cooperating agency in accordance with NEPA, the Corps provided appropriate input and review comments during the EIS process. The Corps has independently reviewed the EIS and concludes that its comments and suggestions had been satisfied. The Corps has reviewed and evaluated the information in the FEIS in accordance with 40 C.F.R. § 1506.3, and 33 C.F.R. Part 325, Appendix B, and finds that the actions covered by the FEIS and those regulated by USACE under section 10 of the RHA and section 404 of the Clean Water Act (CWA) are substantially the same. The FEIS 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 C.F.R. §1506.3, for purposes of NEPA, the public interest review required by 33 C.F.R. § 320.4, and the 404(b)(1) Guidelines analysis required by 40 C.F.R. Part 230.

This ROD describes the Corps' decision to authorize discharges of dredged and fill material into waters of the United States (WOTUS), as well as certain structures and work in or affecting navigable waters of the United States, in association with the EW 1 Project, as detailed in the 2023 FEIS, Empire Offshore Wind, LLC's Department of Army (DA) permit application, and subsequent project design refinements. The DA authorization is subject to special conditions and the specified mitigation described in this ROD.

12.4 Compliance with the Section 404(b)(1) Guidelines

The proposed discharge complies with the Guidelines, with the inclusion of the appropriate and practicable special conditions to minimize pollution or adverse effects to the affected ecosystem.

12.5 Public interest determination

Having reviewed and considered the information above, I find that the proposed project is not contrary to the public interest. The permit will be issued with appropriate conditions included to ensure minimal effects, ensure the authorized activity is not contrary to the public interest and/or ensure compliance of the activity with any of the authorities identified in Section 10.

I find that the issuance of the Corps permit, as described by regulations published in 33 CFR Parts 320 through 332, with the scope of work as described in this document, is based on a thorough analysis and evaluation of all issues set forth in this ROD. There are no less environmentally damaging, practicable alternatives available to Empire Offshore Wind, LLC to construct the EW1 project than the “selected action” as described in the BOEM FEIS and ROD and the proposed action as described in the application to USACE and subsequent amendments (as described in Section 1.3). The issuance of this permit is consistent with statutes, regulations, guidance, and policy, and on balance, issuance of a Corps’ permit to construct the Empire Wind 1 Project is not contrary to the public interest. As explained above, all practicable means to avoid and/or minimize environmental harm from the selected, permitted alternative have been adopted and required by terms and conditions of this permit.

PREPARED BY:

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Date: March 7, 2024

CHRISTOPHER MINCK
Project Manager, Eastern Section

REVIEWED BY:

KELLY.CAROLYN.E.1398091830 Digitally signed by KELLY.CAROLYN.E.1398091830 Date: 2024.03.07 14:47:50 -05'00'

Date: March 7, 2024

CAROLYN E. KELLY
Assistant District Counsel

Digitally signed by Rosita Miranda Date: 2024.03.07 14:23:04 -05'00'

Date: March 7, 2024

ROSITA MIRANDA
Chief, Western Section

Date: March 7, 2024

STEPHAN A. RYBA
Chief, Regulatory Branch

APPROVED BY:

YOUNG.ALEXANDER.LLOYD.1014790841 Digitally signed by YOUNG.ALEXANDER.LLOYD.1014790841 Date: 2024.03.11 08:55:53 -04'00'

Date: March 11, 2024

ALEXANDER L. YOUNG
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