U.S. Department of the Interior
Bureau of Ocean Energy Management

Coastal Zone Management Act, Consistency Determination (15 CFR § 930.36(a))

New York Bight Wind Energy Areas Offshore the States of New York and New Jersey

The purpose of this Consistency Determination (CD) is to determine whether issuing a commercial wind energy lease which, without the requirement of separate Bureau of Ocean Energy Management (BOEM) authorization, allows site assessment activities (including the installation, operation, and decommissioning of meteorological buoys) within the New York Bight (NY Bight) Wind Energy Areas (WEAs) offshore New York and New Jersey (*see* Figure 1) is consistent to the maximum extent practicable with the enforceable policies of the New York and New Jersey Coastal Management Programs (CMPs). This document is provided pursuant to the requirements of 15 CFR § 930.39(a) of the Coastal Zone Management Act (CZMA) Federal consistency regulations.

Section 307(c)(1) of the CZMA, as amended, requires that Federal agency activities affecting any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of federally-approved state management programs.

The States of New York and New Jersey share common coastal management issues and have similar enforceable policies as identified by their respective CMPs. Due to the proximity of the NY Bight WEAs to both states (*see* Figure 1), and their shared impacts on environmental and socioeconomic resources and uses, BOEM has prepared a single CD for the NY Bight WEAs.

BOEM is proposing to issue commercial wind energy leases within the NY Bight WEAs (as illustrated in Figure 1 and described below) and approve site assessment activities that would determine whether the lease is suitable for, and would support, commercial-scale wind energy production. The leases, by themselves, would not authorize the lessee(s) to construct or operate any wind energy facilities on the Outer Continental Shelf (OCS).

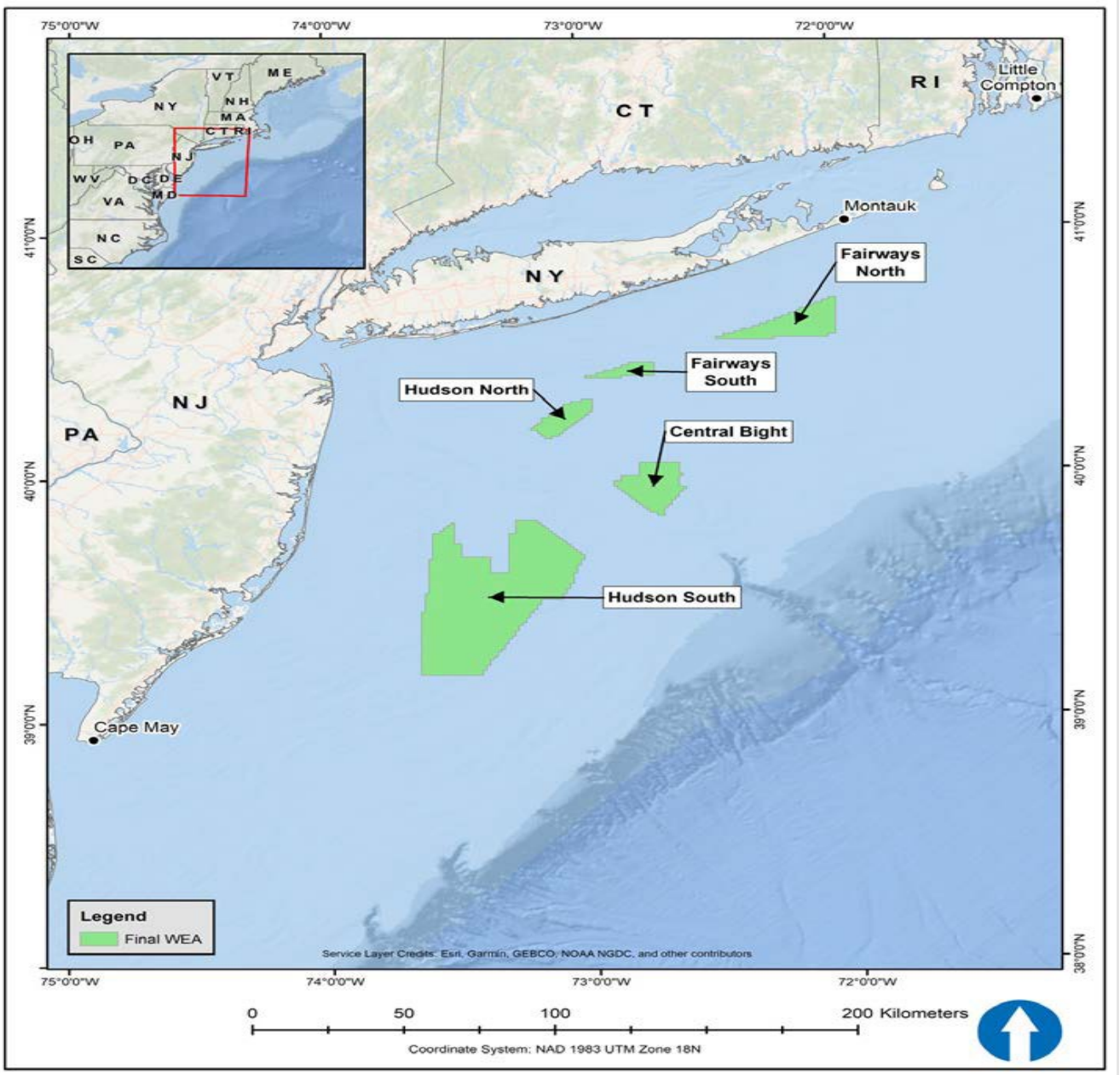

Figure 1: Wind Energy Area

On October 2, 2017, BOEM received a document by the State of New York entitled *State of New York's Area for Consideration*. This document recommended an area of the New York Bight that the state had determined, based on its compilation and analysis of scientific, stakeholder and analytical data, to be most desirable for future offshore wind development. BOEM took the state's recommendation into account in designating areas for the Call for Information and Nominations (Call), and considered the data and analyses generated by the state at subsequent stages of its planning and leasing process in the NY Bight area.

On April 11, 2018, BOEM published in the Federal Register (Docket ID: BOEM-2018-0004; 83 FR 15602-15617) a Call within the proposed area in the NY Bight. This region represents an

area of shallow waters between Long Island (to the north and east) and the New Jersey coast (to the south and west). The purpose of the Call was to seek nominations from companies interested in obtaining commercial wind energy leases within the Call Areas. In addition to nominations, BOEM sought public input on the potential for wind energy development in the Call Areas. This included site conditions, resources, and multiple uses in close proximity to, or within, the Call Areas that would be relevant to BOEM's review of any nominations submitted, as well as BOEM's subsequent decision whether to offer all or part of the Call Areas for commercial wind leasing.

In response to the NY Bight Call, BOEM received multiple nominations from commercial wind developers with the central portion of the Hudson South Call Area receiving the largest concentration of nominations as shown in Figure 1. BOEM received nominations from 8 qualified entities interested in obtaining commercial wind energy leases within the NY Bight Call Areas.

On March 29, 2021, BOEM released the Announcement of Area Identification (Area ID) (BOEM 2021a). The Area ID memorandum documents the analysis and rationale used to develop the WEAs in the NY Bight. The NY Bight WEAs are located on the OCS in the NY Bight and are delineated as Fairways North, Fairways South, Hudson North, Central Bight, and Hudson South. The five Areas include 222 whole OCS blocks and 172 partial blocks in total and comprise approximately 2,047 square miles (mi^2) [5,302 square kilometers (km^2)] or 807,383 acres (ac) [326,736 hectares (ha)]. The NY Bight WEAs are shown in Figure 1 above and described in Table 1 below.

Table 1
New York Bight Wind Energy Areas Descriptive Statistics

Descriptive Statistic	Fairways North WEA	Fairways South WEA	Hudson North WEA	Central Bight WEA	Hudson South WEA	Total
Acres	88,246	23,841	43,056	84,688	567,552	807,383
Maximum Depth (m)	56	46	45	61	59	--
Minimum Depth (m)	42	39	41	52	32	--
Closest distance to New York (nm)	15	15	21	38	45	--
Closest distance to New Jersey (nm)	69	45	36	53	23	--

Activities that may occur over the site assessment period of the lease (i.e., up to five years) include site characterization survey activities and site assessment activities involving the installation, operation, maintenance, and decommissioning of meteorological buoys. Site characterization surveys would inform a lessee about the site specifics of the lease area in order to prepare for submission of a site assessment plan (SAP) and, potentially, a construction and operations plan (COP). The projected site characterization and site assessment activities within the NY Bight WEAs are discussed in detail in Section 2 and summarized in Table 2 (below).

Table 2
Projected Site Characterization & Assessment Activities in the NY Bight WEAs Per Lease

Potential Leaseholds	Site Characterization Activities			Site Assessment Activities
	High Resolution Geophysical (HRG) Surveys (Total Trips)	Sub-bottom Sampling (Total Trips)	Marine Fauna Surveys	Installation, Maintenance, and Decommissioning of Met Buoys (Total Trips)
10	447	15	72	44-128

1. BACKGROUND

Pursuant to Section 388 of the Energy Policy Act of 2005 (EPAct), BOEM is authorized to issue leases on the OCS for the purposes of wind energy development. On April 22, 2009, BOEM promulgated regulations implementing this authority at 30 CFR Part 585. The regulations establish a program to grant leases, easements, and rights-of-way for orderly, safe, and environmentally responsible renewable energy development activities, such as the siting and construction of offshore wind facilities on the OCS, as well as other forms of renewable energy such as marine hydrokinetic (i.e., wave and current). BOEM's predecessor agency, the Minerals Management Service (MMS), prepared a programmatic Environmental Impact Statement (EIS) to evaluate the impact of establishing of a comprehensive, nationwide MMS Alternative Energy Program on the OCS (*Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf, Final Programmatic Environmental Impact Statement*, October, 2007) (Programmatic EIS) (MMS 2007). The final rule and the Programmatic EIS can be reviewed for reference on the BOEM website at: http://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/Index.aspx and http://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/Guide-To-EIS.aspx. In addition, BOEM published the *Atlantic Geological and Geophysical Activities Programmatic Final Environmental Impact Statement* (G&G Final PEIS) (BOEM 2014). The G&G PEIS can be viewed at: http://www.boem.gov/Atlantic-G-G-PEIS/.

On August 10, 2021, BOEM released the *Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf of the New York Bight Draft Environmental Assessment (EA)* (BOEM 2021b), which is available online at: http://www.boem.gov/New-York/. The EA analyzes the reasonably foreseeable consequences associated with two distinct BOEM actions in the NY Bight WEAs:

(1) Lease issuance (including reasonably foreseeable consequences associated with shallow hazards, geological, geotechnical, archaeological resources, and biological surveys); and

(2) SAP approval (including reasonably foreseeable consequences associated with the installation and operation of meteorological buoys).

BOEM does not issue permits for shallow hazards, geological, geotechnical, archaeological resource, or biological surveys. However, since BOEM regulations require that a lessee include the results of these surveys in its application for SAP and COP approval, the EA treats the

environmental consequences of these surveys as reasonably foreseeable consequences of issuing a lease.

2. PROPOSED ACTION DESCRIPTION

Offshore Site Characterization Surveys

BOEM regulations require that a lessee provide the results of a number of surveys with both a SAP and a COP, including: a shallow hazards survey, a geological survey, biological surveys, a geotechnical survey, and an archaeological resource survey (30 CFR §§ 585.626(a)(1) to (a)(5), respectively). BOEM refers to these surveys as "site characterization" activities. Site characterization activities (e.g., locating shallow hazards, cultural resources, and hard-bottom areas; evaluating installation feasibility; assisting in the selection of appropriate foundation system designs; and determining the variability of subsurface sediments) would necessitate using high-resolution geophysical (HRG) surveys and geotechnical exploration. The purpose of the HRG survey would be to acquire geophysical shallow hazards data and information pertaining to the presence or absence of archaeological resources and to conduct bathymetric charting. The purpose of geotechnical exploration would be to assess the suitability of shallow foundation soils for supporting a structure or transmission cable under any operational and environmental conditions that might be encountered (including extreme events), and to document soil characteristics necessary for the design and installation of all structures and cables. The results of geotechnical exploration allow for a thorough investigation of the stratigraphic and geo-engineering properties of the sediment that may affect the anchoring systems of a meteorological buoy, which would be necessary for BOEM to consider in a SAP, or later a COP, for a given lease.

Site characterization activities would also necessitate vessel and/or aerial surveys to characterize three primary biological resource categories: (1) benthic habitats; (2) avian resources; and (3) marine fauna. BOEM does not anticipate the lessee needing to conduct separate surveys to characterize the benthic habitats which could be affected by their potential future leasehold activities because the geological and geotechnical surveys would provide enough detailed information for BOEM to adequately assess potential impacts on benthic habitats in the area. For the lessee to describe the state of the avian and marine fauna resources, resource surveys would generally involve simple visual observation, either from a vessel or aircraft. For avian and marine fauna surveys, multi-year assessment periods may be necessary to capture natural seasonal and inter-annual variability of marine fauna within the NY Bight WEAs and immediate surroundings if current data available is not sufficient to determine spatial and temporal distribution of species. It is generally envisioned that the fish, marine mammal, sea turtle, and bird aerial and shipboard surveys could be conducted simultaneously.

It is assumed that the site of meteorological buoys would be surveyed first, to meet the similar data requirements for a lessee's SAP (30 CFR §§ 585.610 and 585.611), and the site of a meteorological buoy would not be resurveyed when the remainder of the leasehold is surveyed to meet the data requirements for a lessee's COP (30 CFR § 585.626(a)). However, a lessee could conduct all of their surveys at the same time (to support both a SAP and a COP).

Meteorological Buoys

For existing BOEM leases, the vast majority of lessees have installed meteorological buoys. In that past, meteorological towers had been used for characterizing wind conditions, however, meteorological buoys are now used as an alternative to a meteorological tower for collecting wind, wave, and current data in the offshore environment. The EA assumes that a lessee would employ a maximum of two buoys instead of meteorological towers. These meteorological buoys would be anchored at fixed locations and would regularly collect observations from many different atmospheric and oceanographic sensors. There are three primary types of buoys BOEM anticipates could be used for meteorological resource data collection on the lease: discus-shaped hull buoys; boat-shaped hull buoys; and spar-type buoys. Discus-shaped and boat-shaped buoys are typically towed or carried aboard a vessel to the installation location. A discus-type buoy would use a combination of chain, nylon, and buoyant polypropylene materials, while a boat-shaped buoy would be moored using an all-chain mooring. Once at the installation site, the buoy would be either lowered to the surface from the deck of the transport vessel and the mooring anchor dropped. Transport and installation vessel anchoring would typically require one day for these types of buoys. The total area of bottom disturbance for boat-shaped and discus shaped buoys would be approximately 6 ft^2 (.55 square meters [m^2]) for the actual footprint and 370,260 ft^2 (34,398 m^2) for the anchor sweep. A spar-type buoy would require two distinct phases for installation, with typically a total of 2 to 3 days for installation. The total area of bottom disturbance associated with a spar-type buoy and installation vessel anchors would be roughly 784 ft^2 (73 m^2). See Section 3.2.4 of the EA for more information on meteorological buoys and their anchor systems.

To obtain meteorological data, scientific measurement devices consisting of anemometers, vanes, barometers, and temperature transmitters would be mounted directly on the meteorological buoy. A meteorological buoy also could accommodate environmental monitoring equipment, such as avian monitoring equipment (e.g., radar units or thermal imaging cameras), acoustic monitoring for marine mammals, data-logging computers, power supplies, visibility sensors, water measurements (e.g., temperature or salinity), communications equipment, material hoist, and storage containers.

To measure the speed and direction of ocean currents, Acoustic Doppler Current Profilers (ADCPs) would likely be installed on or near a meteorological buoy. An ADCP is a remote-sensing technology which transmits sound waves at a constant frequency and measures the ricochet of the sound wave off fine particles or zooplanktons suspended in the water column. The ADCPs may be mounted independently on the seafloor, to the legs of the platform, or attached to a buoy. A typical ADCP is about 1 to 2 ft tall (approximately 0.3 to 0.6 meters) and 1 to 2 ft wide (approximately 0.3 to 0.6 meters).

A SAP describes the activities (e.g., installation of meteorological buoys) a lessee plans to perform for the assessment of the wind resources and ocean conditions at its commercial lease (30 CFR § 585.605). No site assessment activities may take place on a lease until BOEM has approved a lessee's SAP (30 CFR § 585.600(a)). Once approved, the site assessment term for a commercial lease is five years from the date of SAP approval (30 CFR § 585.235(a)(2)). It is assumed that the lessee would install a data-collection device (e.g., meteorological buoy) on its lease area to assess the wind resources and ocean conditions of the leasehold. This information

would allow the lessee to determine whether the lease is suitable for wind energy development, where on the lease it would propose development, and what form of development to propose in a COP.

A lessee must submit a COP at least six months before the end of the site assessment term if the lessee intends to continue to the lease's operations term (30 CFR § 585.601(c)). If the COP describes continued use of existing facilities, such as a meteorological tower or buoy approved in the SAP, a lessee may keep such facilities in place on their lease during BOEM's review of the COP (30 CFR § 585.618(a)), which may take up to two years. If, after the technical and environmental review of a submitted COP, BOEM determines that such facilities may not remain in place throughout the operations term, a lessee must initiate the decommissioning process (30 CFR § 585.618(c)). BOEM anticipates that a meteorological buoy could be present for up to five years before the agency decides whether to allow the buoy to remain in place for the lease's operations term, or whether the buoy must be decommissioned immediately.

Coastal Activity

A lessee will likely determine specific ports used for site assessment and survey activities based primarily on proximity to the lease blocks, capacity to handle the proposed activities, and/or established business relationships between port facilities and the lessee. Existing ports or industrial areas in New York and New Jersey are adequate to support proposed action activities. BOEM therefore does not anticipate expansion of port facilities to meet lessee needs, and considers only existing facilities which can currently accommodate proposed site characterization and site assessment activities.

Installation of two meteorological buoys would require port facilities with the following requirements:

- Deep-water vessel access (greater than 15 ft [4.6 m]) to accommodate large vessels;
- Landing and unloading facilities in close proximity to fabrication yards for staging, assembly, and temporary materials storage; and
- Located within a reasonable travel distance to the NY Bight WEAs, which BOEM assumes to be 15-45 miles from the NY Bight WEAs boundaries to the ports in NY, and 23-69 miles from the NY Bight WEAs boundaries to the ports in NJ.

Surveying and operations and maintenance activities could be supported by smaller ports because these types of activities can use smaller vessels and don't need access to fabrication and storage yards for large infrastructure that would be required for installation. Vessels used for these activities are anticipated to be approximately 65 to 100 ft (20 to 30 meters) in length. These smaller ports would serve as staging areas and crew/cargo launch sites for the survey, and operations and maintenance vessels. While a variety of ports could be used for the survey, operations and maintenance activities, including some of the staging ports listed above, BOEM has identified the following existing commercial ports, harbors, or industrial areas composing the coastal infrastructure that could support the proposed activities such as:

- Staten Island, NY;
- Erie Basin, NY;

- Brooklyn, NY;
- Perth Amboy, NJ;
- Shark River, NJ; and
- Newark, NJ.

Vessel Traffic

Approximately 570-654 total vessel round trips are anticipated to occur as a result of the proposed action over a five-to-seven year period (*see* Table 4). Approximately 462 of these vessel trips (round trips) would be associated with all site characterization surveys as a result of the proposed action over five years, from 2021-2026. The total vessel traffic estimated as a result of the installation, decommissioning, and routine maintenance of the meteorological buoys that could be reasonably anticipated in connection with the proposed action would range from 44 to 128 round trips over a five-year period.

Table 4
Total Vessel Round Trips Per Lease

HRG Surveys	Cable surveys	Geotechnical Sampling Surveys	Avian, Marine Mammals, and Sea Turtles Surveys	Fish Surveys	Met Buoys	Total
192	255	15	36	28	44-128	570-654

The total vessel traffic estimated as a result of the HRG surveys, cable surveys, and geotechnical exploration work that could be reasonably anticipated in connection with the proposed action would be approximately 462 round trips over five years, and spread over existing and available port facilities in New York and New Jersey. In addition, BOEM presumes 64 extra independent surveys conducted to characterize marine fauna resources (i.e., avian, marine mammal, sea turtles, and fish surveys) under the proposed action.

Should the lessee decide to install meteorological buoys on its leasehold, it would typically take 1 to 2 days to install by one vessel, and 1 to 2 days to decommission by one vessel. Maintenance trips to each meteorological buoy may occur monthly to quarterly for each buoy. However, to provide for a conservative scenario per lease, total maintenance vessel trip calculations are based on quarterly or monthly trips for buoys over the entire 5-year period (*see* Table 5).

Table 5
Vessel Traffic for Meteorological Buoys Installation, Maintenance, and Decommissioning Per Lease

Site Assessment Activity	Round Trips	Formula
Meteorological Buoys		
Meteorological Buoy Installation	2-4	1-2 round trips x 2 buoys
Meteorological Buoy Maintenance – Quarterly/Monthly	40-120	4 quarters x 2 buoys x 5 years 12 months x 2 buoys x 5 years
Meteorological Buoy Decommissioning	2-4	1-2 round trips x 2 buoys
Total Buoy Trips Over 5-year period	**44-128**	

3. STATE ENFORCEABLE POLICIES

As part of this CD, BOEM has evaluated and documented in the enclosed table (*see* Table 6), policies identified by New York and New Jersey as enforceable, applicable offshore and coastal resources or uses, and CZMA "reasonably foreseeable coastal effects" that might be expected for activities conducted under the proposed action. While reviewing and making these determinations on the policies the states have identified as enforceable in this CD, BOEM has considered the common enforceable policies identified by each of the two states as enforceable in their CMP, as listed in Table 6.

4. CONSISTENCY DETERMINATION

BOEM has evaluated all applicable enforceable policies of New York and New Jersey, and the potential activities resulting from the proposed action. This CD has examined whether the proposed action described in Section 1 is consistent to the maximum extent practicable with the policies and provisions identified as enforceable by the CMPs of New York and New Jersey (*see* Table 6). Based on the preceding information and analyses, and the incorporated-by-reference Programmatic EIS, G&G Final PEIS, and EA, BOEM has determined the proposed action will be consistent to the maximum extent practicable with the policies that New York and New Jersey have identified as enforceable.

Table 6: Applicable Enforceable Policies for the Coastal Management Programs of New York and New Jersey		
CATEGORY	**ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES**	**REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)**
Coastal Habitats and Wetlands	Policy 44 (NY) 7:7E-3.6 Submerged vegetation habitat (NJ) 7:7E-3.16 Dunes (NJ) 7:7E-3.18 Coastal high hazard areas (NJ) 7:7E-3.22 Beaches (NJ) 7:7E-3.27 Wetlands (NJ)	No dunes, beaches, submerged vegetation habitat, or wetlands will be altered as a result of the proposed action. No direct impacts on wetlands or other coastal habitats would occur from routine activities in the New York Bight Wind Energy Areas (NY Bight WEAs) due to the distance of the NY Bight WEAs from shore. No cables would be installed to shore to support the meteorological buoys. Additionally, existing ports or industrial areas in New York and New Jersey are expected to be used in support of the proposed activities. No expansion of existing facilities is expected to occur as a result of the proposed action. Indirect impacts from routine activities may occur from wake erosion and associated added sediment caused by increased traffic in support of the proposed action. Given the volume and nature of existing vessel traffic in the area, a negligible increase of wake-induced erosion may occur. Existing channels could accommodate the vessels anticipated to be used, and no additional dredging would be required to accommodate different vessel size(s). For more information on ports and navigation, see the Ports, Navigation, and Waterfront section below. Should an incidental diesel fuel spill occur as a result of the proposed action, the impacts on coastal habitats, including dunes, beaches, and wetlands, are expected to be negligible. See Section 2.3 of the EA (BOEM 2021b) for additional information on potential impacts to coastal habitats.
Ports, Navigation, and Waterfront	Policy 2 (NY) Policy 3 (NY) Policy 4 (NY)	While a variety of ports could be used for the survey, operations, and maintenance activities, BOEM has identified the following ports as likely to support these activities associated with the NY Bight WEAs: Staten Island, NY; Erie Basin, NY; Albany, NY; Coeymans, NY; Brooklyn, NY; Perth Amboy, NJ; Shark River, NJ; and Newark, NJ. Wake erosion and sedimentation effects would be limited to approach channels and the coastal areas near ports and bays used to conduct activities. Given the existing amount and nature of vessel traffic, there would be a negligible, if any, increase to wake-induced erosion of associated channels based on the relatively small size and number of vessels

	Policy 5 (NY) Policy 24 (NY) Policy 25 (NY) Policy 35 (NY) 7:7E-3.7 Navigation channels (NJ) 7:7E-3.11 Ports (NJ) 7:7E-3.41 Special hazard areas (NJ) 7:7E-7.5 Transportation use rule (NJ) 7:7E-7.7 Industry use rule (NJ) 7:7E-7.9 Port use rule (NJ) 7:7E-7.10 Commercial facility use rule (NJ) 7:7E-8.14 Traffic (NJ)	associated with the proposed action. Moreover, all approach channels to these ports are armored, and speed limits would be enforced, which also helps to prevent most erosion. Several existing fabrication sites, staging areas, and ports in New York and New Jersey could support site characterization surveys and the construction, operation, and decommissioning of the meteorological buoys. No expansion of these existing onshore areas is anticipated. Existing channels could accommodate the vessels anticipated to be used, and no additional dredging would be required to accommodate different vessel size(s). In addition, no cables would be installed to shore to support the meteorological buoys. Project-related vessels traveling to or from the ports for survey activities, installation, maintenance, and decommissioning of the meteorological buoys could experience spills within a channel or bay that could potentially reach shoreline areas. The impacts on coastal habitats would depend on the type of material spilled, the size and location of the spill, the meteorological conditions at the time, and the speed with which cleanup plans and equipment could be employed. These impacts are expected to be minimal because vessels are expected to comply with the United States Coast Guard regulations at 33 CFR Part 151, relating to the prevention and control of oil spills. Based on the distance from shore where proposed action activities would occur, and the rapid evaporation and dissipation of diesel fuel, a spill occurring in the NY Bight WEAs would likely not contact shore. Collisions between vessels and allisions between vessels and the meteorological buoys are unlikely. However, if a vessel collision or allision was to occur, and in the unlikely event that a spill would result, the most likely pollutant to be discharged into the environment would be diesel fuel. Diesel dissipates very rapidly in the water column, then evaporates and biodegrades within a few days, resulting in negligible, if detectable, impacts on the area of the spill. For the proposed action, approximately 462 vessel trips from site characterization and assessment activities are projected to occur over a 5-year period if the entire NY Bight WEAs were leased and the maximum number of site characterization surveys were conducted in the lease areas (*see* Table 4 for vessel traffic calculations). For more information on ports, see Sections 2.3 and 3.3 of the EA. For more information on vessel traffic and navigation see Sections 4.2.4 and 4.3.5, and Appendix D of the EA.
Energy Facilities	Policy 12 (NY) Policy 14 (NY)	This analysis is limited to the effects of lease issuance, conducting site characterization activities (i.e., surveys of the lease area), and site assessment activities (i.e., construction and operation of two meteorological buoys) within the NY Bight WEAs. This analysis does not consider construction and

	Policy 17 (NY) Policy 27 (NY) Policy 29 (NY) 7:7E-7.4 Energy facility use rule (NJ)	operation of any commercial wind power facilities, which would be evaluated later in the process during the review of a construction and operations plan (COP). BOEM takes this approach based on several factors. First, issuance of a lease does not constitute an irreversible and irretrievable commitment of resources towards the authorization of a commercial wind power facility. Section 2 of the EA describes BOEM's phased planning and authorization process for offshore wind development. Under this process, the issuance of a lease only grants the lessee the exclusive right to use the leasehold to (1) gather resource and site characterization information, (2) develop its plans, and (3) subsequently seek BOEM approval of its plans for the development of the leasehold. The purpose of conducting the surveys and installing meteorological measurement devices is to assess the wind resources in the lease area and to characterize the environmental and socioeconomic resources and conditions. A lessee must collect this information to determine whether the site is suitable for commercial development and, if so, submit a COP with its project-specific design parameters, for BOEM's review. Should a lessee submit a COP, BOEM would consider its merits; perform the necessary consultations with the appropriate state, federal, local, and tribal entities; solicit input from the public and the Task Force; and perform an independent, comprehensive, site- and project specific National Environmental Protection Act (NEPA) analysis. This separate site- and project-specific NEPA analysis may take the form of an environmental impact statement (EIS) and would provide additional opportunities for public involvement pursuant to NEPA and the CEQ regulations at 40 CFR Parts 1500–1508. BOEM would use this information to evaluate the potential environmental and socioeconomic consequences associated with the lessee-proposed project, when considering whether to approve, approve with modification, or disapprove a lessee's COP pursuant to 30 CFR §585.628. After lease issuance, but prior to COP approval, BOEM retains the authority to prevent the environmental impacts of a commercial wind power facility from occurring. Secondly, BOEM does not consider development of a commercial wind power facility within the NY Bight WEAs, and its attendant environmental impacts, to be reasonably foreseeable at this time. Based on the experiences of the offshore wind industry in northern Europe, the project design and the resulting environmental impacts are often geographically and design specific, and it would, therefore, be premature to analyze environmental impacts related to the potential approval of any future COP at this time. There are a number of design parameters that would be identified in a project proposal, including foundation type, project layout, installation methods, and associated onshore facilities. However, the development of these parameters would be determined by information collected during site characterization and assessment activities conducted by the lessee after lease issuance. Each design

		parameter, or combination of parameters, would have varying environmental effects. Therefore, additional analyses under NEPA would be required before any future decision is made regarding construction of wind energy facilities on the OCS.
Protected Species	Policy 7 (NY) Policy 8 (NY) 7:7E-3.38 Endangered or threatened wildlife or plant species habitats (NJ) 7:7E-3.39 Critical wildlife habitats (NJ)	<u>Marine Mammals</u> More information on potential impacts to marine mammals can be found in Sections 4.2.4, 4.3.4, and 5 of the EA. There are 31 species of marine mammals that occur in the New York Bight. These 31 species include the following: • six mysticetes (baleen whales; five federally endangered); • 21 odontocetes (toothed whales, including: dolphins, a porpoise, beaked whales, dwarf and pygmy sperm whales, and federally endangered sperm whales); and • four pinnipeds (seals). The Endangered Species Act (ESA)-listed marine mammal species that occur in the New York Bight include five large whale species (fin, sei, North Atlantic right (NARW), blue, and sperm whales). Sperm, blue, and sei whales that are sighted in the New York Bight are generally found farther offshore and/or near the shelf edge. Thus, these species are not expected to occur in the action area. The blue whale, sei whale, and sperm whale are primarily found in deeper waters seaward of the NY Bight WEAs, while NARWs and fin whales are considered to be seasonally "common" in the NY Bight WEAs. Marine mammals listed as federally endangered or threatened under the ESA (i.e., listed) and marine mammals protected under the Marine Mammal Protection Act (MMPA; i.e., non-listed) are discussed together because the potential impact mechanisms are the same for all marine mammals. **Site Characterization** Impacts on marine mammals from site characterization were analyzed in the Atlantic G&G PEIS

		(BOEM 2014a), the Draft PEIS (MMS 2007), and the EA (BOEM 2021b) and are incorporated herein by reference and summarized below. Although the geographic boundary in the G&G Final PEIS (BOEM 2014a) was outside of the NY Bight WEAs (it included BOEM's Mid-Atlantic and South Atlantic planning areas: Delaware to Florida), many of the same species occur in the New York Bight area, and the conclusions on impact levels are applicable. The following conclusions for site characterization are made for the NY Bight WEAs, and are similar to those that were made in the Atlantic G&G Final PEIS (BOEM 2014a) for BOEM's Mid-Atlantic and South Atlantic planning areas: • Impacts from High Resolution Geophysical (HRG) survey sound sources are expected to be minor. Acoustic signals from nical survey equipment are within the hearing range for marine mammals and may cause "Level B" harassment (non-injurious harassment, as defined by the MMPA). However, standard operating conditions (SOCs) implemented to minimize acoustic impacts would include monitoring by a protected species observer (PSO) of a 1,640-ft (500-m) exclusion zone for North Atlantic right whales and a 328-ft (100-m) exclusion zone for all other marine mammals, clearance of the exclusion zone 30 minutes prior to equipment start-up, "ramp up" of equipment, and immediate shut down if a marine mammal is sighted at or within the exclusion zone (see Sections 4.2.4, 4.3.4, and 5 of the EA). Impacts from vessel and equipment noise, including geotechnical sampling (e.g., coring) are expected to be negligible to minor. BOEM based this finding on our conclusion that vessel and equipment source levels can be high enough to exceed threshold criteria for behavioral disturbance and undetected marine mammals may occur in the ensonified area during sampling activities. The following SOCs would minimize acoustic impacts: monitoring of the 1,640-ft (500-m) exclusion zone for North Atlantic right whales and the 328-ft (100-m) exclusion zone for other marine mammals by a PSO, clearance of the exclusion zone 30 minutes prior to activity, and immediate shut down if a marine mammal is sighted at or within the exclusion zone. Subsequent restart of geotechnical survey equipment may only follow clearance of exclusion zone for at least 30 minutes for all marine mammals (see Sections 4.2.4, 4.3.4, and 5 of the EA); and • Impacts from project-related vessel traffic are expected to be negligible because SOCs require that all vessel operators and crew maintain a vigilant watch for marine mammals throughout a monitoring zone of 1,640 ft (500 m) for North Atlantic right whales and 328 ft (100 m) for all other marine mammals (see Sections 4.2.4, 4.3.4, and 5 of the EA). Additional vessel strike

avoidance measures for North Atlantic right whales apply from November 1 to July 31. SOCs also require that all vessels underway do not divert to approach a delphinoid cetacean or pinniped.

Site Assessment

Impacts on marine mammals from site assessment activities are divided into two categories: underwater noise impacts and non-acoustic impacts. Impacts are assessed by relative potential of overlap, both spatially and temporally, between marine mammal species and impact-producing factor.

Underwater Noise Impacts

Marine mammals use sound for vital biological functions, including socialization, foraging, responding to predators, and orientation. It has been documented that some anthropogenic noise can negatively impact the biological activities of marine mammals in some instances. The response of marine mammals to sound depends on a range of factors, including (1) the sound pressure level; frequency, duration, and novelty of the sound; (2) the physical and behavioral state of the animal at the time of perception; and (3) the ambient acoustic features of the environment.

Noise can cause behavioral disturbance, including changes in feeding, vocalization, and dive patterns, or avoidance of the ensonified area (i.e., the area filled with sound). Auditory masking, defined as the obscuring of sounds of interest by interfering sounds, generally at the same or similar frequency, may also cause important behavioral changes to marine mammals exposed to sound.

In addition to behavioral disturbance, underwater noise can result in two levels of potential injury to marine mammal hearing: (1) Temporary Threshold Shift (TTS), a non-permanent decrease in hearing sensitivity, and (2) Permanent Threshold Shift (PTS), a physical injury that results in a permanent decrease in hearing sensitivity. Detailed discussions on underwater sound and its importance to marine mammals and their hearing capabilities can be found in the G&G Final PEIS (BOEM 2014a) and the EA (BOEM 2021b). No PTS is expected to result from the Proposed Action.

National Marine Fisheries Service's (NMFS) threshold criteria for PTS, based on received levels of sound for marine mammals during acoustic activities, are defined as follows:

Hearing Group		Impulsive Sound	Non-impulsive Sound
Low-Frequency (LF) cetaceans	PK	219 dB re 1 µPa	N/A
	SEL24h	183 dB re 1 µPa2 s	199 dB re 1 µPa2 s
Mid-Frequency (MF) cetaceans	PK	230 dB re 1 µPa	N/A
	SEL24h	185 dB re 1 µPa2 s	198 dB re 1 µPa2 s
High-Frequency (HF) cetaceans	PK	202 dB re 1 µPa	N/A
	SEL24h	155 dB re 1 µPa2 s	173 dB re 1 µPa2 s
Phocid pinnipeds (PW)	PK	218 dB re 1 µPa	N/A
	SEL24h	185 dB re 1 µPa2 s	201 dB re 1 µPa2 s

Source: NMFS 2018. µPa = micropascal; dB = decibel; N/A = not applicable; PK = zero-to-peak sound pressure level, the maximum absolute value of the amplitude of a pressure time series; re = referenced to; SEL24h = sound exposure level over 24 hours; a measure of the total sound energy of an event or multiple events over a specified time period (i.e., 24 hours).

Although distinct exposure thresholds can be determined for injury, behavioral reactions follow a wider spectrum of variable responses, some which may be negligible, while others can have more severe consequences. The traditional threshold levels to predict behavioral reactions are:

- 120 dB re 1 µPa root mean square (RMS) for the potential onset of behavioral disturbance or harassment (Level B) from a continuous source of sound (e.g., vessel noise, geotechnical drilling, or vibratory pile driving); and
- 160 dB re 1 µPa RMS for the potential onset of behavioral disturbance (Level B) from a non-continuous source (e.g., impact pile driving, HRG surveys).

Only animals exposed to levels above the threshold have the potential to be disturbed. An increasing number of studies indicate that the effect of underwater sound on marine mammal behavior is quite variable between species, individuals, life history stage, and behavioral state. Additionally, some

		species (e.g., beaked whales and porpoises, or migrating baleen whales) or animals in certain behavioral states may be more sensitive to disturbance, while other species may be more tolerant to environmental noise. **Vessel Strike** Potential impacts to marine mammals include strikes from vessels used during the construction, operation, and decommissioning phases of the buoy installation. BOEM anticipates that up to approximately 462 round trips of various vessel types may occur during site assessment activities (see Appendix A of the EA). While the number of vessel trips anticipated is relatively low compared to the existing level of vessel traffic in the area, it is possible that underwater noise may cause behavioral changes for some whale species that could increase the chances for a collision between a marine mammal and a vessel. This is especially important for endangered whales (North Atlantic right and fin whales) due to vessel strikes being a major cause of mortality, which indicate that the behavioral response of some whale species to noise may secondarily increase the risk of vessel strike to large whales (e.g., changes in ascent behavior and rapid acceleration away from the source). Recent studies have also indicated that some whale species are more sensitive to sound during migration than during feeding and may show avoidance responses at greater distances if the noise can be heard by the animal. These studies suggest that North Atlantic right whales, known to migrate through the New York Bight could be susceptible to such behavioral reactions from project-related noise. However, considering the existing levels of vessel traffic noise generated in the general area of the NY Bight WEAs (between the two traffic separation schemes surrounding the NY Bight WEAs), it is unlikely that noise related to the construction, operation, or decommissioning phases of meteorological buoys would be detected at levels or durations that might result in an increase in risk of vessel strike to North Atlantic right whales. BOEM's SOCs were designed to minimize potential vessel strikes to marine mammals (see Section 5 of the EA). NMFS concluded that during site assessment activities, the potential for construction- and maintenance-related vessel strike to marine mammals is extremely low. Potential impacts to marine mammals from vessel strikes during site assessment activities are, therefore, expected to be negligible

		because of the low probability of such an event. Nonetheless, if vessel strikes did occur they could result in minor to moderate impacts to ESA-listed marine mammal species. Impacts from trash and debris are expected to be negligible. Potential impacts on marine mammals from fuel spills are expected to range from negligible (if the fuel does not contact individual marine mammals) to minor (if individual marine mammals encounter the slick). Overall, impacts to marine mammals are expected to be moderate due to potential vessel strikes; however, potential impacts covering site characterization and other site assessment activities would range from negligible to minor, depending on the activity being conducted. Vessel strike and noise are two of the most important factors that may affect marine mammals. Implementing the vessel strike avoidance measures in the SOCs (see Section 5 of the EA) would minimize the potential for vessel strikes. BOEM's SOCs related to site characterization surveys and site assessment (see Section 5 of the EA) would minimize the potential for noise impacts to marine mammals. <u>Sea Turtles</u> More information on potential impacts to sea turtles can be found in Section 4.2.6 and 4.3.6 of the EA. Four species of sea turtles occur in the New York Bight: loggerhead, green, Kemp's ridley, and leatherback. All four species are listed as threatened or endangered under the ESA. Of the four species, loggerhead turtles are sighted more frequently than any other sea turtle species in the vicinity of the NY Bight WEAs. Impact-producing factors associated with the proposed action that could have potential impacts on Kemp's ridley, loggerhead, leatherback, and green sea turtles include vessel traffic, vessel noise, HRG active acoustic sources, equipment noise, seafloor disturbance, dynamic positioning thruster use during vessel positioning, release of trash and debris, and accidental fuel spill. BOEM has developed SOCs for sea turtles that are designed to prevent or reduce any possible impacts during both site characterization and site assessment activities. These SOCs are described in detail in Sections 4.2.6, 4.3.6, and 5 of the EA.

		Potential impacts to sea turtles would range from negligible to moderate depending on the activity being conducted during site characterization and site assessment. Vessel strike and noise are two of the most important factors that may affect sea turtles. However, implementing the vessel strike avoidance measures in the SOCs (see Sections 4.2.6, 4.3.6, and 5 of the EA) would minimize the potential for vessel strikes and adverse impacts on sea turtles. Although there are large data gaps regarding behavioral and physiological responses of sea turtles to sound, implementation of the SOCs is expected to minimize the potential of hearing injury impacts and disruption of the behavior of sea turtles. Sea turtles that avoid the area due to noise are expected to successfully forage in nearby habitats with similar prey availability. There are no critical or otherwise important foraging habitats known to occur in the area of the NY Bight WEAs. Recommendations for future studies include the potential physiological (critical ratios, TTS, and PTS) and behavioral effects of exposure to sound sources. <u>Protected Fish Species</u> For information on protected fish species, see the Fisheries Management section below.
Fisheries Management	Policy 9 (NY) Policy 10 (NY) 7:7E-3.2 Shellfish habitat (NJ) 7:7E-3.3 Surf clam areas (NJ) 7:7E-3.4 Prime fishing areas (NJ) 7:7E-3.5 Finfish migratory pathways (NJ) 7:7E-8.2 Marine fish and	<u>Commercial and Recreational Fisheries</u> As a part of its EA (BOEM 2021b), BOEM examined the fishing grounds and corresponding revenue within the NY Bight area. Multiple fishing grounds are located within the NY Bight, including Cholera Bank, Middle Ground Bank, and Angler Bank. NOAA Fisheries maintains landings data for commercial and recreational fisheries based on year, state, and species. Fisheries that utilize the NY Bight to the greatest extent include the Atlantic sea scallop, squid, summer flounder, and surfclam/ocean quahog fisheries. The 2018 scallop revenue of $121,900,348 represented roughly 37 percent of the total fishing revenue sourced from the New York Bight WEAs landed in New York, New Jersey, and Rhode Island (see Table 11 in the EA). The squid fishery operates in and around the New York Bight WEAs primarily between June and September. The fishery is highly variable regarding where the squid will occur and where they will be caught. Although the New York WEAs are used as a squid fishery, the primary area fished by the squid fleet is in waters less than 16 fathoms (30 m) closer to Cholera Banks and waters off New York and New Jersey. In 2018, the annual longfin and shortfin squid revenues totaled $34,132,115 and $20,115,696, respectively.

	fisheries (NJ)	The NY Bight WEAs are adjacent to, and overlap with, multiple recreational fishing grounds. The major recreational fishing areas along the south coast of Long Island are roughly 10 to 25 nm (19 to 46 km) from the NY Bight WEAs. The State of New Jersey designated Cholera Bank as a sport and commercial fishing ground, and as a prime fishing habitat. The fisheries with the highest reported recreational landings in 2019 were striped bass, scup, and summer flounder (see Table 12, Section 4.2.2, and Appendix E in the EA). Additional details are available in the Draft Environmental Impact Statement issued for the Liberty Port Ambrose Deepwater Port Application (USCG 2014) and in the Memorandum for Area ID in the NY Bight (BOEM 2021a). Generally, the activity and value of fisheries are expected to remain fairly stable during the time frame considered in BOEM's EA. Commercial fisheries and recreational fishing in the NY Bight are subject to pressure from ongoing activities, including the regulated fishing effort, vessel traffic, other bottom disturbing activities, and climate change. For more extensive discussion, see Section 4.2.2 and 4.3.2 in the EA. Site characterization and site assessment activities would result in underwater noise from survey activity. The direct impact of these noise sources on fish is analyzed in Sections 4.2.3 and 4.3.3 of the EA. The analysis in that section concludes that impacts of low frequency sound on fish and fish populations is anticipated to be negligible. BOEM does not anticipate adverse impacts from noise on fish populations that are targeted by commercial and recreational fishing groups. However, noise generated from low frequency sound, like some survey equipment, may result in decreased catch rates of fish while the noise producing activity is occurring. Decreased catch rates may be most acute in hook and line fisheries, since behavioral changes may reduce the availability of the fish to be captured in the fishery. The increase in vessel traffic associated with installation, maintenance, and decommissioning of meteorological buoys could potentially deter commercial and recreational fishermen from using the area around the buoys while work-related vessels are in the area. Installation is expected to take approximately one to three days to complete depending on met buoy type (see Section 2.2.4 of the EA). To avoid collisions and gear entanglement with vessels, commercial and recreational fishermen may temporarily move to other locations. The buoys could provide previously unavailable habitat for species that prefer structured and hardbottom habitats, creating a temporary increase in these types of fish in the area of the buoy while the structure is in place. This could have a temporary beneficial effect to commercial and recreational fisheries, depending on the species of interest and the fishing gear used. Commercial fisheries in areas adjacent to the NY Bight WEAs are more productive than the commercial

		fisheries in the NY Bight WEAs (Kirkpatrick et al., 2015), so the temporary increased vessel traffic associated with site assessment is expected to be minor. Similarly, most coastal recreational fishing for New York and New Jersey takes place away from the NY Bight WEAs, and impacts of increased vessel traffic are anticipated to be negligible. Mollusks, such as scallops, would likely be adversely affected (buried or crushed) in the immediate area of the buoy moorings, and suffer from suspended sediment during the construction process. However, this area is small relative to the area available for commercial and recreational fishing. Exclusion zones are typically established around large and/or slow work-related vessels (referred to as "source vessels"; e.g., barges and tow vessels) to maintain safe passage of the source vessel, and by keeping it clear of other vessel traffic. Temporary adverse impacts expected to result from vessel traffic and/or vessel exclusion zones could be avoided by recreational anglers because these user groups tend to use smaller boats that are more maneuverable; therefore, avoidance of survey vessels could be achieved as needed. Impacts would be limited geographically to the vessel exclusion zone and would be temporary at any given location since the exclusion area would move along with the movement of the vessel. Impacts on recreational fishing could be greater if the exclusion zone is established over a popular and/or critical sport fishing location, such as one that may coincide with the migration route of a target fishing species. Impacts on recreational boating and fishing from temporary vessel exclusion zones are expected to be negligible, and impacts on recreational boating and fishing from temporary exclusion zones are expected to be minor. Lost survey equipment or accidental oil spills from damaged gear or machinery (e.g., vessels) associated with site assessment could directly affect commercial and recreational fisheries by contaminating fish and gear, and interfering during cleanup and recovery operations, or indirectly affect fisheries by temporarily degrading fishing habitat. Spills could result from severe weather damage to vessels or the buoys, from vessel collisions/allisions, or during generator refueling. However, the impact of a spill on commercial and recreational fishing activity would largely depend on the size of the spill. The effects would be detrimental to commercial and recreational fisheries if they led to declines in target species. While such spills are hard to predict, based on the structures and vessels associated with the activities, the potential for oil spills, the size of these spills, and the impact to commercial recreational fisheries from non-routine events is expected to be negligible. Overall, impacts to commercial and recreational fisheries under the proposed action would be minor. Impacts would range from negligible to minor depending on the fishery and proposed action activity. Minor impacts are expected based on the low level of vessel traffic activity associated with site

		characterization and site assessment activities, the fact that twenty meteorological buoys would be installed over a relatively large geographic area, the level and duration of sound produced from routine activities and events, and the low likelihood of potential impacts from disturbances and pollution. See Sections 4.2.2 and 4.3.2 of the EA for more information on potential impacts to commercial and recreational fisheries. <u>Finfish, Shellfish, and Essential Fish Habitat</u> Essential Fish Habitat (EFH) has been designated for 37 species in the NY Bight WEAs. No Habitat Areas of Potential Concern (HAPCs) have been designated in the NY Bight WEAs. EFH descriptions for several of the designated species in the NY Bight WEAs are provided in the G&G Final PEIS. EFH descriptions for species and life stages that were not discussed in the G&G Final PEIS are found in Appendix E of the EA. Surf clam concentrations in the NY Bight WEAs appear to be moderate or secondary (<1 bushel) concentrations. The NEFSC 2011 clam dredge survey data showed low catch rates (0 and 1 to 50 clams per tow) of total surf clams and prerecruits in the NY Bight WEAs. The Programmatic EIS (MMS 2007) identified potential impacts to fish resources and EFH that could occur in OCS WEAs in the Atlantic region during site characterization, including: G&G surveys; vessel and equipment noise; and meteorological buoy installation, operation, and decommissioning. The potential impacts of renewable energy site characterization on finfish resources and EFH have been analyzed in the G&G Final PEIS and were incorporated into the EA by reference and discussed in Appendix E of the EA. Although the geographic boundary in the G&G Final PEIS is outside of the NY Bight WEAs (it included BOEM's Mid-Atlantic and South Atlantic planning areas: Delaware to Florida), many species occur in both areas, and the conclusions on impact levels are applicable. The following conclusions for site characterization that were made in the G&G Final PEIS are expected to be the same in the NY Bight WEAs: • Impacts from acoustic sound sources from HRG surveys and geotechnical exploration are expected to be negligible. A boomer sub-bottom profiler is the only sound source expected to produce sounds within finfish and invertebrate hearing ranges; • Impacts from vessel and equipment noise are expected to be negligible; and

		• Impacts from seafloor disturbances are expected to be negligible. The G&G Final PEIS assessment of impacts on fish and EFH from acoustic sound sources, vessel and equipment noise, seafloor disturbance, and discharge of waste materials and accidental fuel releases was for G&G-related site characterization activities only. While the number of vessel trips and area of seafloor disturbance for activities covered in the EA differ from those in the G&G Final PEIS, the overall types of impacts to finfish, shellfish, and EFH —and the impact levels and conclusions—are anticipated to be the same. The SOCs required by BOEM (see Section 5 of the EA) to reduce the potential for adverse impacts to marine mammals and sea turtles are expected to also benefit fish. Underwater noise impacts (from all sources) to finfish and shellfish populations, and EFH, are expected to be negligible to minor. Installation of anchor systems associated with buoys may cause an increase in local suspended sediments. These impacts would be limited to the immediate area surrounding the piles or anchors, and of short duration. Depending on the currents, the suspended sediment is expected to disperse and settle on the surrounding seafloor, potentially coating or burying some benthic organisms. Effects on finfish and shellfish populations, and EFH, from suspended sediments would be negligible because these activities would be localized and of short duration. The installation of meteorological buoy anchor systems may result in the direct mortality of benthic invertebrates, the loss of benthic habitat, and the displacement of water column (pelagic) habitat. Sessile marine invertebrates, including molluscan shellfish (including surf clams), would be lost (buried or crushed) in the footprint. Although sea scallops are mobile molluscan shellfish, it is a conservative assumption that they would not be able to avoid sudden deployment of an anchor or foundation/mooring system, and for these analyses are considered to be sessile. The amount of habitat temporarily displaced or lost in the area is small compared to the amount of habitat available in the surrounding area. Overall, impacts from site characterization and site assessment activities to finfish and shellfish populations, and EFH, in the NY Bight WEAs would be minor. However, impacts would range from negligible to minor depending on the activity. A meteorological buoy anchor system installation and decommissioning would produce noise that could disturb normal fish behaviors. Fish are expected to avoid or flee from the noise source. The short duration (3 to 8 hours per day over 3 days) and the use of mitigation measures required by the SOCs (Section 5 of the EA) would minimize the possible exposure to injurious and lethal noise levels,

		resulting in minor effects to finfish and shellfish populations, and EFH. The increases in suspended sediments, loss of benthic habitat, and displacement or alteration of water column habitat due to site surveys and/or installation and operation of buoy anchor systems are expected to be small compared to the available habitat in the surrounding areas, and would, therefore, result in negligible effects to finfish and shellfish populations, and EFH. The potential increase in vessel collisions and allisions that could result in accidental fuel spills due to meteorological buoys is expected to be minimal. The overall impact on finfish and shellfish populations and EFH from a fuel spill that could result from such an occurrence is expected to be minimal and temporary, and would; therefore, be considered minor. See Sections 4.2.3 and 4.3.3 of the EA for more information on potential impacts to finfish, shellfish, and essential fish habitat.
Public Access	Policy 19 (NY) 7:7E-8.11 Public Access (NJ)	Short-term limitations on public access within the NY Bight WEAs may occur during certain activities under the proposed action. Exclusion zones are typically established around large and/or slow work-related vessels (referred to as "source vessels;" e.g., barges and tow vessels) to maintain safe passage of the source vessel and keep it clear of other vessel traffic. Recreational anglers can avoid temporary adverse impacts expected to result from vessel traffic and/or vessel exclusion zones because they tend to use smaller boats that are more maneuverable; therefore, avoidance of survey vessels could be achieved as needed. Impacts would be limited geographically to the vessel exclusion zone, and would be temporary at any given location since the exclusion area would move along with the movement of the vessel. Impacts on recreational fishing could be greater if the exclusion zone is established over a popular and/or critical sport fishing location, such as one that may coincide with the migration route of a target fishing species. Although recreational fishing and boating access may be limited by temporary exclusion zones, impacts on recreational boating and fishing from temporary vessel exclusion zones are expected to be negligible. In addition, impacts on recreational boating and fishing from temporary construction or decommissioning exclusion zones are expected to be negligible. See Appendix B of the EA for more information on potential impacts on recreational fishing. Impacts on recreation and tourism resulting from routine and non-routine activities would be negligible. Impacts would result primarily from vessel traffic restrictions in exclusion zones, potential for small scale spills, and from vessel traffic associated with installation of meteorological buoys. For more information on recreation and tourism, see the Recreation and Tourism section below.
Water Quality	Policy 30 (NY) Policy 33 (NY)	The routine activities associated with the proposed action, which would impact coastal and marine water quality, include mechanical disturbance of the seafloor and discharge of bilge water, ballast water, or sanitary/domestic wastewater, as well as non-routine events such as accidental spills of fuel and

	Policy 34 (NY) Policy 36 (NY) Policy 37 (NY) 7:7E-8.4 Water Quality (NJ)	maintenance materials, such as lubricants and solid debris. Additional information on water quality and impacts to coastal and marine water quality can be found in Section 2.3 of the EA. Routine activities that have the potential to adversely affect water quality include discharges from survey vessels and vessels servicing the buoys (i.e., bilge water, ballast water, sanitary waste, and debris). Bilge and ballast water discharges may contain small amounts of petroleum-based products and metals, and as such, are prohibited within 13 nm (24 km) of the shore. Any vessels conducting surveys or servicing buoys are likely to be equipped with holding tanks for sanitary waste and would not discharge untreated sanitary waste within state or federal waters. The regulations governing the relevant discharges are discussed in Section 3.2.1.5, *Operational Waste Associated with Site Characterization*, of the Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore New York. Revised Environmental Assessment (BOEM 2016). The instrumentation used for site characterization is self-contained, so there should be no discharges from instruments aboard the survey vessels that would impact water quality. Impacts to water quality would occur during construction and decommissioning, with water quality returning to its original state both during operation of the buoys and after decommissioning. The seabed would be disturbed locally during installation of meteorological buoys as a byproduct of anchoring and placement of scour protection devices. The resulting mobilization of sediments would produce minor, transient impacts to water quality in the immediate vicinity of the disturbance in the form of increased turbidity. Releases/spills (oils, lubricants, trash, debris, fuel) due to non-routine events are likely to be small and result in minor, transient impacts on water quality over a localized area in the immediate vicinity of the release/spill. Overall, activities associated with proposed action would have a minor impact on water quality, with any changes being small in magnitude, highly localized, and transient. Any operational discharges from vessels during surveying or servicing of buoys would be small and have a minor adverse effect. Seabed disturbances during construction, deployment, and decommissioning of buoys would result in minor, localized impacts on water quality in the area immediately adjacent to the structure or disturbance.
Air Quality	Policy 41 (NY) Policy 42 (NY)	Air quality impacts that could result from site characterization activities under the proposed action were evaluated in the G&G Final PEIS and found to be negligible. Appendix B.2.1 and B.3.1 of the EA includes an area-specific evaluation of air quality impacts associated with G&G activities, along with an evaluation of air quality impacts associated with site assessment activities.

	Policy 43 (NY) 7:7E-8.10 Air Quality (NJ)	Increased vessel traffic associated with site characterization surveys would add to current vessel traffic levels associated with the ports used by the vessel operators. The additional vessel activity associated with the proposed action is anticipated to be relatively small when compared with existing and future vessel traffic levels in the area. Impacts from pollutant emissions associated with these vessels would likely be localized within the NY Bight WEAs and in the vicinity of vessel activity. Appendix A of the EA provides further information on the anticipated numbers of project-related vessel trips and associated emission calculations. The onshore areas that are closest to the NY Bight WEAs are classified as nonattainment areas for O_3. Hudson, Queens, Kings (Brooklyn), Nassau, and Richmond (Staten Island) Counties are classified as maintenance areas for CO (*see* Table 4-1 of the EA). Federally approved activities that take place in nonattainment and maintenance areas are usually subject to the EPA General Conformity Rule (40 CFR 93, Subpart B). The rule establishes emissions thresholds, or *de minimis* levels, for use in evaluating an action's conformity with the applicable State Implementation Plan. If the net air pollutant emissions exceed these thresholds, a formal conformity determination may be required. If a submitted SAP indicates that project-related activities in the non-attainment and maintenance areas would emit more than the thresholds, then a General Conformity analysis would be performed. The *de minimis* levels for consideration in the project's conformity analysis are: • 100 tons/year (90.7 metric tons/year) of NO_x (O_3 precursor); • 50 tons/year (45.5 metric tons/year) VOCs (O_3 precursor); and • 100 tons/year (90.7 metric tons/year) CO. If the net increases in emissions are lower than the *de minimis* levels, the action is presumed to conform, and no further conformity evaluation is necessary. While BOEM's approval of SAPs is not subject to General Conformity, based on the emissions sources and assumptions listed above, estimated annual emissions associated with the proposed action for NO_x, VOCs, and CO were below *de minimis* levels. Although unlikely, a spill could occur in the event of vessel collision while in route to and from the NY Bight WEAs, or during surveys. Spills occurring in these areas, including harbor and coastal areas, are not anticipated to have significant impacts on onshore air quality due to the small estimated size and short duration of the spill. A diesel spill in the NY Bight WEAs would not be expected to have impacts on onshore air quality because of the estimated size of the spill, prevailing atmospheric conditions over the NY Bight WEAs, and distance from shore.

		Although the emissions estimates from site characterization and site assessment activities are measurable, they would not be distinguishable from other air emissions onshore or offshore; therefore, emissions associated with the proposed action would be negligible. As shown in Table 4-1 of the EA, air pollutant concentrations due to emissions from the proposed action are not expected to lead to any violation of the National Ambient Air Quality Standards.
Recreation and Tourism	Policy 21 (NY) Policy 22 (NY) 7:7E-7.3 Resort/Recreational Use (NJ)	More information on recreation and tourism can be found in Appendix B.2.3 and B.3.3 of the EA. The coastal areas of New York and New Jersey are characterized by an abundance of coastal recreation and tourism opportunities. Coastal counties that may depend on their coastal setting for tourism and recreation include Monmouth and Kings counties in New Jersey, and Nassau, Suffolk, and Queens counties in New York. The following impact-producing factors from both site characterization and assessment activities have the potential to impact recreation and tourism opportunities: • Vessel traffic during site characterization and site assessment; • Vessel exclusion zones surrounding the meteorological buoys during deployment (no exclusion zones once buoys are operational); • Trash and debris from vessels; • Viewshed-related impacts associated with site characterization and site assessment from additional vessels, and nighttime lighting on the vessels that could be seen both from shore and from recreational boaters; and • Fuel spills. Information on potential exclusion zones can be found in the Public Access section above. The primary impact-producing factor for recreation and tourism associated with vessels used in support of the proposed action would be the potential for generation of trash and debris. Trash and debris, if accidentally released, could wash up on beaches and into harbors, bays, and coastal marshes, and other recreation and tourism destinations. Presence of trash/debris could adversely affect the aesthetic quality of the setting and alter the perception of affected areas, particularly for those areas valued for beach and near shore recreation (e.g., Gateway National Recreation Area and Jones Beach State Park), or those

		considered pristine wilderness. However, because of restrictions that prohibit the release of trash and debris provided by existing regulations (MARPOL 73/78 Annex V) impacts on recreation and tourism resulting from trash and debris are expected to be negligible. In addition, the NMFS identified best management practices (BMPs) to understand the type and amount of marine trash and debris generated, and to minimize the risk of entanglement and/or ingestion of marine debris by protected species. The BMPs include annual training of Lessee Representatives (i.e., vessel operators, employees, and contractors performing OCS survey activities on behalf of the Lessee). Marking of materials, equipment, tools, containers, and other items used in OCS activities must be clearly marked with the vessel or facility identification and properly secured to prevent loss overboard. The lessee must also recover marine trash and debris that is lost or discarded in the marine environment while performing OCS activities when an incident is likely to cause undue harm or damage to natural resources or significantly interfere with OCS uses. Lastly, the Lessee must report all marine trash and debris lost or discarded to DOI monthly as well as submit a report within 48 hours of an incident if the marine trash or debris could cause undue harm or damage to natural resources or significantly interfere with OCS uses. Potential impacts on recreation and tourism settings resulting from the visual contrast of the meteorological buoys and associated nighttime lighting would be negligible, as described in Appendix B.2.3 and B.3.3 of the EA. As noted in the G&G Final PEIS, potential impacts on recreation and tourism from a fuel spill would depend on the location of a spill, meteorological conditions at the time of the spill, and the speed with which cleanup occurred. Should a spill occur, access to recreation and tourism destinations could be temporarily limited by cleanup and response vessel activity. However, a spill would likely be relatively small in size (88 gallons [333 liters]) so a large-scale spill response involving multiple cleanup vessels is not expected. Therefore, impacts on recreational resources from a small diesel fuel spill are expected to be negligible. Impacts on recreation and tourism resulting from routine and non-routine activities would be negligible**.** Impacts would result primarily from vessel traffic restrictions in exclusion zones, potential for small-scale spills, and from vessel traffic associated with installation of meteorological buoys.

Historic, Cultural, and Subaqueous Areas Management	Policy 23 (NY) Policy 26 (NY) 7:7E-3.36 Historic and archaeological resources (NJ) 7:7E-3.6 Submerged vegetation habitat (NJ) 7:7E-3.12 Submerged infrastructure (NJ) 7:7E-4.14 Submerged pipelines (NJ) 7:7E-4.20 Submerged cables (NJ) 7:7E-4.21 Artificial reefs (NJ) 7:7E-4.22 Miscellaneous Water Area uses (NJ) 7:7E-8.12 Scenic Resources and Design (NJ)	<u>Offshore Historic Properties</u> A number of documents report on the potential for submerged cultural resources within the NY Bight Mid-Atlantic region, which are incorporated herein by reference (BOEM 2012; BOEM 2016; NYSERDA 2017; TRC Environmental Corporation [TRC] 2012). Submerged historic properties that may be located within the proposed NY Bight WEAs include indigenous archaeological sites, shipwrecks, downed aircraft, and submerged architectural or built resources (NYSERDA 2017). Although no submerged pre-Contact archaeological sites have been identified within the proposed NY Bight WEAs, it has been theorized that such do exist. Much of the Outer Continental Shelf (OCS) offshore NY and NJ was subaerial before sea levels began to rise following the Last Glacial Maximum approximately 20,000 before present (B.P.). The exposed landscape would have supported human populations from the Paleoindian through the Early Archaic periods before sea levels submerged much of the proposed NY Bight WEAs by 10,000 B.P. (BOEM 2016). Portions of the OCS closer to shore through which export cable routes might traverse were submerged later and thus would have supported more recent populations. A theorized paleoshoreline reconstruction included in Figure B-1 of the EA, depicts the timing of marine transgression through the NY Bight. The TRC (2012) study determined that much of the seabed covered by the proposed NY Bight WEAs is within and considered to possess high sensitivity for containing submerged indigenous archaeological sites. Since the advent of colonial expansion into North America, NY has served as a major regional and global commercial hub. Numerous vessels have plied the waters offshore NY and NJ and, consequently, shipwrecks are a type of historic submerged cultural resources expected to be found within the NY Bight and the navigation routes that filter vessel traffic to the ports of NY and NJ. Several shipwreck databases (i.e., Automated Wreck and Obstruction Information System, Electronic Navigation Charts, Global Maritime Wrecks Database, New Jersey Maritime Museum) were consulted to assess the number of shipwrecks in the vicinity of the NY Bight; the number of reported wrecks range from roughly 500 to over 950 shipwrecks. The frequency of shipwrecks increases dramatically in nearshore areas; the database recording the largest number of shipwrecks within the proposed NY Bight WEAs reports only 11 shipwrecks. Examples of other historic-era submerged cultural resources that may be encountered within the proposed NY Bight WEAs and nearshore are downed aircraft, subsea cables, and other infrastructure (BOEM 2016; NYSERDA 2017; TRC 2012). <u>Onshore Historic Properties</u> Historic property types that may be within the onshore affected environment could include districts,

		sites, buildings, structures, or objects within the viewshed of site characterization and site assessment activities. Klein et al. (2012) includes an overview of common coastal historic property types that could fall within the viewshed of these types of characterization and assessment activities in the NY Bight (Klein et al. 2012). The affected environment for onshore historic properties could include portions of both the NY and NJ coastlines between Barnegat Light, NJ, and Southampton, NY. The NY Bight WEAs vary from 23 to 69 nm off the coast of NJ, and from 15 to 45 nm off the coast of NY. Coastal properties with ocean views are potentially within the viewshed of site characterization and site assessment activities. Local topography is generally flat, and development in these areas is generally limited to 1 to 3 story buildings. Due to flat topography and consistent building heights, ocean views are generally limited to the first developed block along the coast. Beyond this area, views are blocked by intervening development. Outside of this area, the affected environment may also include resource types with elevated viewing platforms such as lighthouses or lifesaving stations. Some historic properties have already been identified in Klein et al. (2012); however, additional historic properties are expected to fall within the affected environment. <u>Impacts from Routine Activities</u> Expected impacts to offshore historic properties during routine activities would be similar to those described in previous EAs (Table 2; Section 2.1 of the EA). As noted, HRG surveys do not create bottom disturbances and thus impacts to historic properties during routine survey would not be expected. Subsurface geotechnical investigations, benthic sampling, and installation of met buoys will disturb the seabed. However, existing Programmatic Agreements (BOEM 2011; BOEM 2016), regulatory requirements (e.g., BOEM's Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585), and lease stipulations will require that a qualified marine archeologist identify historic properties through analysis of HRG data before bottom disturbance occurs. Consequently, those resources can be avoided during site characterization activities. Implementation of an Unanticipated Discovery Plan in the event submerged cultural resources are encountered during site characterization further reduces the risk of impacts to submerged resources. Accordingly, previous NEPA documentation developed for, or assessing, site characterization and site assessment campaigns have determined that the potential to impact historic properties are expected to negligible (BOEM 2013; BOEM 2014b; BOEM 2016). The Proposed Action is expected to include the temporary placement of meteorological buoys and other site characterization activities including geophysical, geotechnical, biological, and oceanographic surveys. These activities have the potential to impact the viewshed of coastal aboveground historic properties with open views in the direction of the NY Bight WEAs. The increased boat traffic associated with surveys may fall within the viewshed of these properties.

		Potential impacts from buoys are addressed in the 2016 Programmatic Agreement regarding Review of Outer Continental Shelf Renewable Energy Activities Offshore New Jersey and New York Under Section 106 of the National Historic Preservation Act (NHPA). In stipulation III-B of the Programmatic Agreement, stakeholder signatories agreed that the placement of met buoys should be exempt from Section 106 review. The Programmatic Agreement reasons that the buoys would have "no effect on onshore historic properties since they are temporary in nature and indistinguishable from lighted vessel traffic." This conclusion presented in the Programmatic Agreement demonstrates stakeholder concurrence that the placement of met buoys are expected to result in negligible impacts to aboveground historic properties. Potential increased vessel traffic associated with site characterization surveys will, like the buoys, be temporary in nature. These vessels will be indistinguishable from existing vessel traffic and only result in a nominal increase in vessel traffic over the 5- to 7-year span of activities. Since the vessel traffic is both temporary and indistinguishable in nature, it is expected to have a negligible impact to aboveground historic properties. <u>Section 106 Consultation</u> Section 106 of the NHPA (54 U.S.C. § 306108) and its implementing regulations (36 CFR 800) require federal agencies to consider the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation an opportunity to comment. BOEM has determined that issuing commercial or research leases within the NY Bight WEAs within the region constitutes an undertaking subject to Section 106 of the NHPA (16 U.S.C. § 470f) and its implementing regulations (36 CFR 800) as the resulting site characterization and site assessment activities have the potential to cause effects on historic properties. BOEM has implemented Programmatic Agreements pursuant to 36 CFR § 800.14(b) to fulfill its obligations under Section 106 of the NHPA for renewable energy activities on the OCS offshore NY, NJ, and RI. BOEM initiated consultation through letters on May 3, 2021, with the NY State Historic Preservation Office (SHPO), NJ SHPO, RI SHPO, the Advisory Council on Historic Preservation, and the following federally recognized tribes: Absentee-Shawnee Tribe of Indians of Oklahoma, Delaware Tribe of Indians, Mashantucket Pequot Tribal Nation, Mohegan Tribe of Connecticut, Narragansett Indian Tribe, Shawnee Tribe, Shinnecock Indian Nation, Stockbridge-Munsee Community, and the Delaware Nation. BOEM further identified potential consulting parties pursuant to 36 CFR § 800.3(f) through a May 3, 2021 letter to over 500 entities, including certified local governments, historical preservation societies, museums, and state-recognized tribes soliciting public comment and input

		regarding the identification of, and potential effects on, historic properties for the purpose of obtaining public input for the Section 106 review (36 CFR § 800.2(d)(3)) and inviting them to participate as a consulting party. On July 6, 2021, BOEM provided a Finding of No Historic Properties Affected, consistent with 36 CFR § 800.4(d)(1) to the consulting parties for review and comment.

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