BUREAU OF COASTAL PERMITTING
FEDERAL CONSISTENCY ANALYSIS

Federal Consistency Certification
File #0000-19-0008.1, CDT210001

Applicant: Empire Offshore Wind LLC

Project Name: Empire Wind 1 (EW 1) and Empire Wind 2 (EW 2)
Location: BOEM Lease Area OCS-A 0512
Approximately 19.5 miles (16.9 nautical miles) east of Long Branch, NJ
Approximately14 miles (12 nautical miles) south of Long Island, NY
Waterway: Atlantic Ocean

Administrative History:

BOEM Publishes NOI:	June 24, 2021
Federal Consistency Voluntary Submission to DLRP:	June 24, 2021
Start of the Six (6) Month Review Period:	June 25, 2021
Stay Agreement Executed:	June 25, 2021
Stay Begins:	June 25, 2021
Stay Ends:	July 28, 2022
Start Public Comment Period:	July 7, 2021
End Public Comment Period:	September 4, 2021
Three (3) Month Letter Sent to NOAA:	September 23, 2021
2nd Stay Agreement Executed:	August 29, 2022
2nd Stay Begins:	August 29, 2022
2nd Stay Ends:	February 21, 2023
BOEM Publishes DEIS:	November 18, 2022
Start Public Comment Period:	December 21, 2022
End Public Comment Period:	January 19, 2023
3rd Stay Agreement Executed:	June 23, 2023
3rd Stay Begins:	June 23, 2023
3rd Stay Ends:	August 20, 2023
Federal Consistency Decision Due:	September 15, 2023

Federal Consistency Certification Request Description

The Coastal Zone Management Act (CZMA) of 1972 requires that federal actions affecting any coastal use or resource (defined as land or water use, or natural resource of a state's coastal zone), be conducted in a manner that is consistent with the enforceable policies of a state's federally approved Coastal Zone Management Program (CZMP) or Coastal Resource Management Program (CRMP). The Bureau of Ocean Energy Management (BOEM) is not requiring the submittal of a consistency certification under 30 C.F.R. 585.627(a)(9) as the Empire Wind (EW1 and EW2) Projects (Project) are not within a state's Geographic Location Description. Nonetheless, Empire Offshore Wind LLC (Empire) prepared a Consistency Certification to demonstrate that the proposed Project within BOEM Lease Area OCS-A 0512 is consistent with the policies identified as enforceable by the Coastal Zone Management (CZM) Rules of the State of New Jersey (N.J.A.C. 7:7).

As described herein, the proposed activity will be conducted in a manner consistent with this CZMP and pursuant to 15 CFR part 930, which authorizes states with approved CZM programs to conduct a coastal zone consistency review and concurrence determination of projects within or outside the state coastal zone boundary. Projects that require a federal license or permit, are federally funded, or are a direct activity of a federal agency are to be reviewed to ensure that activities in or affecting the state's coastal zone are consistent with the state's enforceable program policies.

In New Jersey, federal consistency reviews are the responsibility of the New Jersey Department of Environmental Protection (NJDEP), Division of Land Resource Protection (DLRP) as the lead State agency that implements or coordinates the State's federally approved CZMP. Pursuant to the CZMA, New Jersey has defined its coastal zone boundaries and developed policies to be utilized to evaluate projects within the designated Coastal Zone, as set forth in New Jersey's CZM Rules (last amended on October 5, 2021). These rules provide for the issuance of permits under three CZMP areas: Waterfront Development Law (N.J.S.A. 12:5-3), Coastal Wetlands Act of 1970 (N.J.S.A. 13:9A), and the Coastal Area Facility Review Act (CAFRA; N.J.S.A. 13:19). The Rules are also used in the review of Federal consistency determinations under Section 307 of the Federal Coastal Zone Management Act, 16 U.S.C. §1456. New Jersey's coastal waters are any tidal waters of the State of New Jersey extending from the mean high-water line out to the three-geographical-mile limit of the New Jersey territorial sea, and elsewhere to the interstate boundaries of New York, Delaware, and the Commonwealth of Pennsylvania.

Empire proposes to develop commercial-scale offshore wind energy facilities, known as EW 1 and EW 2(Project), in the Renewable Energy Lease Area OCS-A 0512 which consists of 79,350 acres. EW 1 and EW 2 are electrically independent and are contiguous with each other and aligned in a wedge shape with EW1 situated on the western side of the Lease Area. EW 1 would consist of up to 57 wind turbine generators (WTG), up to 116 nm (133.49 miles) of interarray cable, one Offshore Substation (OSS), up to 40 nm (46 miles) of submarine export cable, a cable landfall at South Brooklyn Marine Terminal (SBMT), one onshore substation, and interconnection cable to the point of interconnection (POI) to the electrical grid at Gowanus Substation in Brooklyn, New York. The EW1 submarine export cable route would traverse parts of the Lower Bay and Upper Bay with the Hudson-Raritan Estuary. EW 2 would consist of up to 90 WTGs, up to 144 nm (165.7 miles) of interarray cable, one OSS, up to 26 nm (29.9 miles) of submarine export cable, up to two out of four proposed cable landfalls in Long Beach or Lido Beach, (Long Island) New York, onshore cable route options, one of two proposed onshore substations, and interconnection cables to a POI in Oceanside, New York. Although BOEM's authority under the Outer Continental Shelf Lands Act (OCSLA) only extends to authorization of activities on the outer continental shelf (OCS), BOEM's regulations (30 CFR 585.620) require that the Construction and Operations Plan (COP) describes all planned facilities that the lessee would construct and use for the Project, including onshore and support facilities and all anticipated Project easements.

The Project would contribute to New York's goal of 9 gigawatts (GW) of offshore wind energy generation by 2035 as outlined in the Climate Leadership and Community Project Act, signed by New York's Governor Cuomo in July 2019. Furthermore, Empire's stated goal is to construct and operate commercial-scale offshore wind energy facilities in the Lease Area to fulfill the New York State Energy Research and Development Authority's (NYSERDA) November 8, 2018, solicitation for 800 MW of offshore wind, awarded to Empire, and its 816-MW EW 1 Project on July 21, 2020, along with NYSERDA's July 21, 2020 solicitation for up to 2,500 MW of offshore wind, awarded to Empire and its 1,260-MW EW 2 Project on January 13, 2021.

BOEM prepared a Draft Environmental Impact Statement (DEIS), (November 2022) to assesses the reasonably foreseeable impacts on physical, biological, socioeconomic, and cultural resources that could result from the construction and installation, operations and maintenance (O&M), and conceptual decommissioning of the Project. BOEM has prepared the DEIS under the National Environmental Policy Act (NEPA) (42 U.S. Code [USC] 4321–4370f). This DEIS will inform BOEM's decision on whether to approve, approve with modifications, or disapprove the Project's COP.

Although BOEM's authority under the OCSLA only extends to the activities on the OCS, alternatives related to addressing nearshore and onshore elements as well as offshore elements of the Project are analyzed in the DEIS. BOEM's regulations (30 CFR 585.620) require the COP to describe all planned facilities that the lessee would construct and use for the Project, including onshore and support facilities and all anticipated Project easements. Therefore, to conduct the review of the project's consistency with the State's enforceable policies, DLRP has considered the consistency certification submitted by Empire to DLRP, information presented by Empire to BOEM in its COP, as well as BOEM's DEIS released in November 2022.

Project Description

The purpose of the Project is to provide renewable energy to the State of New York. The Project components located beyond the three-mile geographical jurisdictional limit of the State of New Jersey consist of the installation of the 147 WTGs in the Wind Farm Development Area (WFDA), 57 WTGs for EW 1 and 90 WTGs for EW 2, consisting of monopile foundations, interarray cables, up to two offshore substations and their foundations, scour protection for foundations and the sections of the three transmission cables (located within two export cable corridors) all associated with the development of commercial-scale, offshore wind energy facilities within Lease Area OCS-0512. The WTGs are located off the coast of New Jersey approximately 19.5 miles (16.9 nautical miles) east of Long Branch, Monmouth County. The upper blade tip of the WTGs will extend up to 950 feet above the highest astronomical tide with a minimum spacing of 0.65 nautical miles (nm) between the WTGs in a north-south orientation. The EW 1 submarine export cable route would traverse parts of the Lower Bay and Upper Bay with the Hudson-Raritan Estuary within the boundaries of New York state. EW 2 would consist of up to 90 WTGs, up to 144 nm (165.7 miles) of interarray cable, one OSS, up to 26 nm (29.9 miles) of submarine export cable, up to two out of four proposed cable landfalls in Long Beach or Lido Beach, (Long Island) New York, onshore cable route options, one of two proposed onshore substations, and interconnection cables to a POI in Oceanside, New York. The project will include one onshore substation and Point of Interconnection at the South Brooklyn Marine Terminal and one onshore substation and Point of Interconnection in Oceanside, New York. An overview of the Project is shown in the figure below.

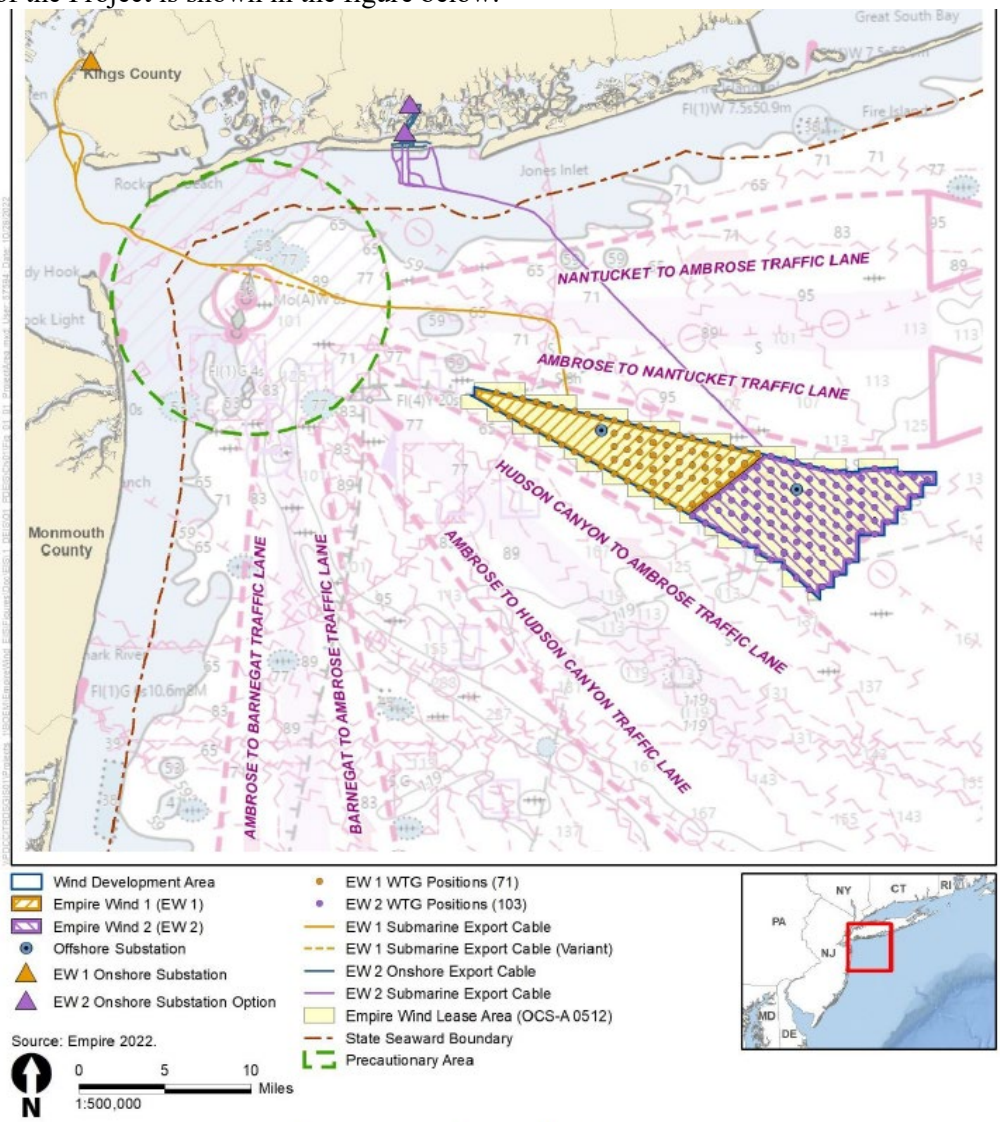

Figure 1-1 Empire Wind Lease Area

Figure 1-1 above from BOEM's DEIS. The State of New Jersey's three-geographical-mile limit of the New Jersey territorial sea is included as part of by the red dashed line labeled "State Seaward Boundary" in the above figure.

Under 30 CFR 585 and commercial Renewable Energy Lease OCS-A 0512, Empire would be required to remove or decommission all installations and clear the seabed of all obstructions created by the proposed Project. All foundations would need to be removed 15 feet (4.6 meters) below the mudline (30 CFR 585.910(a)). Empire would have to achieve complete decommissioning within 2 years of termination of the lease and either reuse, recycle, or responsibly dispose of all materials removed, unless amended by BOEM. Empire has submitted a conceptual decommissioning plan as part of the COP, and the final decommissioning application would outline Empire's process for managing waste and recycling proposed Project components (COP Volume 1, Section 3.6; Empire 2022). The proposed Project is anticipated to have an operational life of 35 years, yet it is possible that some installations and components may remain fit for continued service after this time. Empire would have to apply for and be granted an extension if it wanted to operate the proposed Project for more than the 25-year operations term stated in its lease. Upon completion of the technical and environmental reviews, BOEM may approve, approve with conditions, or disapprove the lessee's decommissioning application. This process would include an opportunity for public comment and consultation with municipal, state, and federal management agencies. Empire would need to obtain separate and subsequent approval from BOEM to retire in place any portion of the proposed Project. Approval of such activities would require compliance under NEPA and other federal statutes and implementing regulations.

The Lease Area is within the New York Bight, which is part of the Mid-Atlantic Bight. According to the DEIS, the WFDA, which collectively consists of EW1 and EW2, is relatively flat and composed mainly of soft sediments, with low-degree seaward slopes and depth contours generally paralleling the shoreline. Predominant bottom features include a series of ridges and troughs that are closely oriented in a northeast-southwest direction. Troughs are characterized by finer sediments and higher organic matter, while ridges are characterized by relatively coarser sediments. Ridge and trough habitat features are common in the Mid-Atlantic OCS and not unique to the Project area. Differences in benthic invertebrate assemblages, likely driven by differences in sediment characteristics, have been observed that include increased diversity and biomass within troughs according to studies cited by the DEIS. These differences in sediments may subsequently influence distribution of fish and shellfish. Surface sediments of this region are dominated by medium to coarse sands, with grain sizes of sand generally diminishing with distance from shore (Williams et al. 2007). Within the Project area, surficial sediments are composed of nearly 100 percent sand (Guida et al. 2017; COP Attachments T-2 and T-3 to Appendix T; Empire 2022). The benthic assemblage serves as a major food source for epifaunal, demersal, and nektonic fish and invertebrates (e.g., Rutecki et al. 2014; Able et al. 2018).

Pursuant to N.J.A.C. 7:7-1.2(b), the Project is not located within New Jersey's coastal zone, which, in this location, is limited to those coastal waters of the State of New Jersey that extend from the mean high water line out to the three-geographical-mile limit of the New Jersey territorial sea. This Federal Consistency Certification has been submitted because the proposed construction, operation and decommissioning of the Project is presumed to have a reasonably foreseeable effect on the uses or resources of New Jersey's coastal zone.

In Executive Order 14008, Tackling the Climate Crisis at Home and Abroad, issued January 27, 2021, President Joseph R. Biden stated that it is the policy of the United States "to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers environmental justice; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure."

President Biden's Executive Order 140008 called on the nation to build a new American infrastructure and clean energy economy that will create millions of new jobs. In particular, the President's Order committed to expand opportunities for the offshore wind industry. The President recognized that a thriving offshore wind industry will drive new jobs and economic opportunity up and down the Atlantic Coast, in the Gulf of Mexico, and in Pacific waters. The industry will also spawn new supply chains that stretch into America's heartland. In addition to creating economic opportunity, this Order will also ensure future generations will have access to clean air and abundant renewable power.

Executive Order 140008 will further support critical research and development and data sharing needs. NOAA anticipates that offshore wind developers' survey efforts, as well as those studies conducted by other scientific and/or academic entities, will assist in filling gaps in ocean science areas—particularly in ocean mapping and observing—in service of NOAA's mission to advance climate adaptation and mitigation, weather-readiness, healthy oceans, and resilient coastal communities and economies.

It is well-settled in the scientific community that climate change is primarily driven by increased atmospheric levels of greenhouse gas concentrations. According to the 2020 New Jersey Scientific Report on Climate Change, human activities are now the primary cause of climate change, particularly greenhouse gas emissions from the burning of fossil fuels which, combined with land use changes like deforestation, have increased atmospheric carbon dioxide concentrations by more than one third over the past century. As discussed in the NJDEP's NJ Climate Science Report, sea level rise is occurring throughout the world, and is an indicator of Earth's increasing temperature (NJDEP, 2020).

New Jersey has already been disproportionally affected by climate change, sea level rise in particular, at a rate that is more than two times the global average (Kopp et al. 2019). According to a 2019 report of the New Jersey Climate Change Alliance Science and Technical Advisory Panel (STAP), by 2050, there is a 50 percent chance that sea-level rise will meet or exceed 1.4 feet and a 17 percent chance it will exceed 2.1 feet (Kopp et al. 2019). Under a moderate emission scenario, those levels increase to 3.3 and 5.1 feet by the end of the century (Kopp et al. 2019). These impacts pose a threat to New Jersey's natural resources, communities, infrastructure, and economy.

In addition to impacts to communities and infrastructure, climate change is known to increase temperatures, alter ocean acidity, raise sea levels, and increase numbers and intensity of storms. Increased temperatures can alter habitat, modify species' use of existing habitats, change precipitation patterns, and increase storm intensity (USEPA 2016; NASA 2019; Love et al. 2013). As reported by the DEIS, an increase of the ocean's acidity has numerous effects on ecosystems including reducing available carbon that organisms use to build shells and causing a shift in food webs offshore (USEPA 2016; NASA 2019; Love et al. 2013). The increased magnitude or frequency of storms, shoreline changes, ocean acidification, and water temperature changes can impact commercial fisheries, which contribute more than $1 billion dollars to the State's economy (NJ Sea Grant Consortium) and for-hire recreational fishing. The New Jersey commercial and recreational economies reliant on marine species that are vulnerable to the effects of climate change could be adversely affected. Furthermore, New Jersey coastal communities with fishing businesses that have infrastructure near the shore could be adversely affected by sea level rise.

Offshore wind energy production as an alternative to the burning of fossil fuels, even projects that provide power to a neighboring State, in this instance the State of New York, reduces global, national, and regional greenhouse gas emissions, advances renewable energy, improves resiliency for communities in New Jersey and the extended region, and improves energy efficiency throughout the region, as well as supporting national energy policies Offshore wind energy production, thereby lessening demands on energy sources which produce substantial greenhouse gas emissions, will aid in combating the adverse effects of climate change discussed above. The alleviation of these adverse impacts of climate change, such as increased temperatures, alteration of ocean acidity, rising sea levels, and increases in intensity and frequency of storms, further reduces adverse impacts on not only the State of New York's coastal and environmental resources, but to those within the region, including neighboring states, such as New Jersey, that are impacted by pollution and greenhouse gas emissions generated by other states. Furthermore, a cumulative approach to combatting climate change through a reduction in greenhouse gas emissions by

development of clean energy sources, such as offshore wind energy production, will reduce adverse environmental impacts on a national level and supports achievement of the goals outlined in the national policy discussed in detail above.

Based on the foregoing, the development of offshore wind energy facilities as proposed by the Project will aid in combatting the adverse impacts of climate change discussed above. The mitigation of the adverse impacts of climate change is in the national, regional and State of New Jersey's public interest and the Project will contribute to ameliorating these effects. It can be concluded that the Project is in the interest of not only the State of New York, but the region and nation as well.

BOEM is considering nine project alternatives through the EIS process. BOEM may select a combination of alternatives that meet the purpose and need of the Project. While BOEM is evaluating nine alternatives to the overall Project, only five of those alternatives are related to the Project elements located within Federal waters, while the other four are located within the boundary of the State of New York. Specifically, the five alternatives located in Federal waters are identified in the DEIS as:

DEIS and Project Alternatives being consider by BOEM

1. No Action Alternative
2. Alternative A—Proposed Action
3. Alternative B—Remove Up to Six Wind Turbine Generator (WTG) Positions from the Northwest End of EW 1
4. Alternative E—Setback between EW 1 and EW 2
5. Alternative F—Wind Resource Optimization with Modifications for Environmental and Technical Considerations

No Action Alternative

Under the No Action Alternative, BOEM would not approve the COP and the Project would not occur.

Alternative A – Proposed Action

This alternative is the proposed Project as described above.

Alternative B

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 and on scenic resources and navigation safety. Alternative B would also establish a No Surface Occupancy area where WTG positions would be excluded.

Alternative E

Alternative E would remove seven WTG positions from EW 2 to create a 1-nm setback between EW 1 and EW 2 to improve access for fishing.

Alternative F

Under Alternative F, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within the Lease Area 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.

BOEM's DEIS analysis shows no significant differences between the alternatives in terms of impacts on benthic resources, cultural resources, finfish, invertebrates, essential fish habitats, marine mammals, recreation and tourism, and sea turtles.

Please note, this Analysis only evaluates compliance with the enforceable policies of the State of New Jersey's federally approved CZMP for Alternative A, the Proposed Action or herein referred to as the Project.

Coastal Zone Management Rule Analysis (N.J.A.C. 7:7-1.1 et seq.)

7:7-9.2 Shellfish habitat

Shellfish habitat is defined as an estuarine bay or river bottom which currently supports or has a history of production for hard clams (Mercenaria mercenaria), soft clams (Mya arenaria), eastern oysters (Crassostrea virginica), bay scallops (Argopecten irradians), or blue mussels (Mytilus edulis), or otherwise listed in the Rule. The 147 WTGs associated the Project are located within the Renewable Energy Lease Area within Federal waters and are completely outside of New Jersey State waters. These Federal waters are not defined as an estuarine bay or river bottom. The export cable associated with EW 1 crosses Lower New York Bay before connecting at Gowanus substation in Brooklyn. While this cable route crosses Lower New York Bay, the cable route does not cross into New Jersey state waters. As discussed in greater detail below under the Surf clam areas Rule, a sediment transport analysis model was conducted for the Project that showed the displacement of sediments for cable placement would be low and will not affect water quality. No adverse impacts to any shellfish habitat area or harvestable populations of shellfish located within New Jersey State waters is anticipated.

Therefore, compliance with this Rule has been demonstrated.

7:7-9.3 Surf clam areas

Surf clam areas are defined as coastal waters which can be demonstrated to support significant commercially harvestable quantities of surf clams (Spisula solidissima), or areas important for recruitment of surf clam stocks. To describe commercial fisheries, including surf clams, within the Project area and the broader regional setting, the primary source of data used by BOEM was the National Marine Fisheries Service (NMFS) commercial fisheries statistics database (NMFS 2021a), which summarizes commercial fisheries landings and ex-vessel revenue data for fish and shellfish that are landed and sold in the United States. The primary source of data used to describe commercial and for-hire recreational fisheries was NMFS's Socioeconomics Impacts of Atlantic Offshore Wind Development reports, which summarize fisheries effort and landings within the Project area (NMFS 2021b). According to the DEIS, these reports are based on combined data from vessel trip reports and dealer reports submitted by those issued a permit for managed species in federal waters. In addition, figures developed by BOEM based on NMFS Vessel Monitoring System (VMS) data provided by NMFS (2019) are included in the commercial fisheries analysis.

In addition, for reporting on benthic organisms, the DEIS and COP (Appendix T) also provide results of sediment and benthic resource sampling performed by Empire. The DEIS also cites surveys by NY State Energy Research and Development Authority (NYSERDA), and the National Marine Fisheries Service Northeast Fisheries Science Center (NMFS) (NFSC).

The construction of the Project would involve the installation and maintenance of 375 miles of export and interarray cables, 179 miles of which are for EW 1 and 196 miles for EW 2. The installation of these cables would result in the disturbance of 1,895 acres of the seafloor, (902 acres associated with EW 1 and 993 acres associated with EW 2). The export and interarray cable installation is anticipated to

occur over a 14-month period. The disturbance activities associated with the cable installation include boulder clearance, sand wave clearance, and plowing, jetting, or trenching during cable emplacement.

The Project would also include the construction of up to 147 WTGs and two OSS and installation of up to 254 acres of hard protection around the WTG foundations and on the seabed above buried export and interarray cables, resulting in up to 110 acres of hard protection for EW 1 and 144 acres of hard protection for EW 2.

According to the DEIS, the surf clam fishery is not as significant in the Lease Area as other fisheries, such as the scallop fishery. According to the DEIS, from 2010 to 2019, landings for sea scallop and surf clam/ocean quahog generated average annual revenues of $2,088,477 and $21,966 in the Lease Area, respectively, which represented 0.4 and 0.06 percent of the revenue generated by these NOAA Fishery Management Plans (FMPs) in the geographic analysis area.

Nevertheless, the NJDEP's Marine Resource Administration (MRA), has determined that the data describing surf clam resources in the Project area are insufficient to determine the potential impact of construction and operation on surf clam areas. According to the MRA, the survey techniques were not appropriate to effectively collect large benthic megafauna such as surf clam, ocean quahog, and scallop. In addition, the MRA describes surf clam and ocean quahog distribution as patchily distributed both spatially and temporally throughout their range in the Mid-Atlantic. Bivalve larval settlement and survival is a function of biological and physical characteristics including but not limited to; bottom temperature, current patterns, upwelling, downwelling, food availability, and predation. Furthermore, the biological community and related benthic assemblages may change over time in density and distribution is both seasonal and spatial. Therefore, the MRA believes a multi-year study would better address variation within the benthic community over time instead of Empire's benthic survey study which only sampled over a 7-month period. Moreover, the MRA determined that each of the Empire survey's 67 stations were visited only once, which is an insufficient frequency due to the temporal variability in habitat usage.

In addition, according to MRA, the surf clam/ocean quahog fishery is both highly valuable to New Jersey and may be vulnerable to offshore wind impacts. The stock is moving, and the value of fishing grounds varies both spatially and temporally as new cohorts recruit to the fishery. Landings alone, however, are not the only metric needed to evaluate socioeconomic impacts. New Jersey homeports, including Barnegat, Atlantic City, and Cape May are working waterfronts that rely on surf clam fishing. Shoreside impacts are certain if landings are impacted. The industry operates on a very small profit margin; landings income may not result in a profit until value is added by processing. According to the MRA, the Project area overlaps with mapped Essential Fish Habitat ("EFH") for adult and juvenile surf clams. In addition, recent studies suggest that the abundance of clams inside the Lease Area is increasing as the population shifts north and east in response to climate change (MRA pers comm Daphne Munroe, June 7, 2023.) MRA continues to recommend pre-construction and periodic sampling for surf clam/ocean quahog in the turbine field and along the export cable route to evaluate the surf clam areas in the Project area. Munroe et al. (2023)[1] provides a method for evaluating the resource pre- and post-construction. The NJDEP coordinated with Empire on the pre-construction need and Empire is amenable to facilitate, participate in, support, and/or work with the NMFS, NFSC, regional entities, or other research initiatives to conduct pre-construction and post-construction studies directed towards a broad age class of surf clam and ocean quahogs, consistent with N.J.A.C. 7:7-9.3, and thereby addressing the concerns noted above.

Recreational fisheries have also expressed concern about potential economic losses. MRA recommends that Empire consider both potential and any realized impacts and include recreational fisheries in compensation if impacts cannot be mitigated. As discussed below, Empire has committed to establishing a fund to compensate both commercial and recreational fishers for lost income resulting from the presence of the presence of the WTG structures.

The installed cables will not result in the destruction, contamination, or condemnation of surf clam habitat. However, where hard armoring is necessary, existing habitat may be converted from soft bottom to hard bottom habitat. While up to 1,895 acres of seafloor may be disturbed by the cable installations, the

impacts to benthic resources is anticipated to be short term, localized, and minor per the DEIS. Additionally and according to the DEIS, a sediment transport analysis model was conducted for the Project that showed the displacement of sediments for cable placement would be low, and that sediments would remain suspended for a short period of time (4 hours) and typically dissipate to background levels very close to the trench. Therefore, given the known hydrodynamic conditions within the area of the Project and the expected best management practices (BMPs) associated with installation methods, no long-term impacts on water quality from suspended sediment are anticipated following cable installation activities. In addition, the DEIS concludes that benthic communities affected by the one-time disturbance associated with the proposed Project cable installation would likely recover in the short term.

The WTGs have no practicable alternative location in the coastal zone because as previously discussed, the WTGs must be confined to Renewable Energy Lease OCS-A 0512. Empire does not have the ability to construct the Project outside of the Lease Area. In addition, the WTGs are water-dependent and require expansive areas with a suitable wind source that can be difficult to find inland in the Northeast.

As discussed in the Project Description Section, the Project is in the national, regional and State public interest.

To minimize impacts on benthic resources, BOEM has proposed the following measures:

• Hydraulic Dredge Intake: All hydraulic dredge intakes should be covered with a mesh screen or screening device that is properly installed and maintained to minimize potential for impingement or entrainment of fish species. The screening device on the dredge intake should prevent the passage of any material greater than 1.25 inches in diameter, with a maximum opening of 1.25 inches by 6 inches. Water intakes should be positioned at an appropriate depth to avoid or minimize the entrainment of eggs and larvae. Intake velocity should be limited to less than 0.5 foot per second. The use of a mesh screen and strategic depth positioning of the intake would reduce impacts on some fish, eggs, and larvae.

• Anchoring Plan: Empire will develop and comply with an anchoring plan to reduce impacts on benthic habitats associated with the Project. This plan should specifically delineate areas of complex habitat around each turbine and cable location, and identify areas restricted from anchoring. Anchor chains should include midline buoys to minimize impacts on benthic habitats from anchor sweep, where feasible. The habitat maps and inshore maps delineating sensitive benthic habitat adjacent to the landfall and O&M facility should be provided to all cable construction and support vessels to ensure no anchoring of vessels be done within or immediately adjacent to these habitats.

• Mobile gear–friendly cable protection measures: Cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure chiefly ensures that seafloor cable protection does not introduce new hangs for mobile fishing gear. As such, the cable protection measures should be trawl friendly, with tapered/sloped edges. If cable protection is necessary in “non-trawlable” habitat, such as rocky habitat, then Empire must ensure that all materials consist of natural or engineered stone that does not inhibit epibenthic growth, to the extent technically and economically feasible. The materials selected for protective purposes should mirror the natural environment and perform similar habitat functions.

To mitigate the potential impacts to prime fishing areas and fishery resources, Empire also concurs with, and is committed to implementing, the following measures:

- Empire and the State of NJ shall execute a Memorandum of Understanding (MOU) as discussed in the September 11, 2023 Letter of Intent to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized project.
- Compensation for Gear Loss and Damage: Empire would implement a gear loss and damage compensation program consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. BOEM recognizes that Empire has an applicable gear loss and damage claims process resulting from survey activities. This measure would be applicable to the presence of structures during both construction and operations.
- Compensation for Lost Fishing Income: Empire would implement a compensation program for lost income for commercial and recreational fishers and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. This measure would reduce impacts from the IPF presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction. Levels of funding required by Empire to be set aside for fulfilling verified claims would be commensurate with those in Table 3.9-31 of the DEIS, which identifies annual revenues per fish species.
- Mobile Gear–Friendly Cable Protection Measures: Cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure ensures that seafloor cable protection does not introduce new hangs for mobile fishing gear. Therefore, the cable protection measures should be trawl-friendly with tapered/ sloped edges. If cable protection is necessary in "non-trawlable" habitat, such as rocky habitat, then Empire would use materials that mirror that benthic environment.

Consistency with this Rule has been demonstrated.

7:7-9.4 Prime fishing areas

Prime fishing areas include tidal water areas and water's edge areas which have a demonstrable history of supporting a significant local intensity of recreational or commercial fishing activity. The Wind Farm Development Area, which consists of EW1 and EW2, is in the New York Bight, which is part of the Mid-Atlantic Bight. The export cable routes extend from the Wind Farm Development Area to coastal and back-bay areas. As discussed in the Project Description section above, the Wind Farm Development Area contains ridges and troughs, among other features, which support significant local recreational or commercial fishing activity. Based upon comments from MRA, the Wind Farm Development Area is collocated with mapped and unmapped prime fishing areas.

The DEIS further describes the Wind Farm Development area as relatively flat and composed mainly of soft sediments, with low-degree seaward slopes and depth contours generally paralleling the shoreline. Predominant bottom features include a series of ridges and troughs that are closely oriented in a northeast-southwest direction, although side slopes are typically less than 1 degree (Guida et al. 2017). Troughs are characterized by finer sediments and higher organic matter, while ridges are characterized by relatively coarser sediments. The distribution of fish and shellfish is likely influenced by the different invertebrate assemblages occupying the troughs. Ridge and trough habitat features are common in the Mid-Atlantic OCS and not unique to the Wind Farm Development Area.

Commercial fishing involves pulling gear such as netting or fishing lines. Navigating while pulling such gear, and following hooked pelagic fish, requires a wide area that may not be provided by the spacing between the WTGs. These conditions, as well as the underground cables, can present opportunities for gear snagging or damage. To avoid the economic loss of gear and the ability to
continue fishing, it is expected that some fishermen will choose to avoid the WTG area. In addition, fishermen have expressed concerns that the spacing between WTGs may not be adequate to allow safe navigation particularly in low visibility inclement weather. Clam industry representatives have said that

their operations require a minimum of 2 nautical miles between WTG's, in alignment with bottom contours, for safe operations.

The following are Empire's proposed measures to minimize impacts on benthic resources and are described in Appendix H of the DEIS. If one or more of the measures analyzed are adopted by BOEM, some adverse impacts would be further reduced.

- Avoid Sand Ridges and Troughs: Empire will avoid perpendicular crossings of sand ridges and troughs for the submarine export cables and interarray cables. According to BOEM, this mitigation measure will reduce impacts on complex-bottom features.

- Sand Wave Leveling and Boulder Clearance: Sand wave leveling and boulder clearance should be limited to the extent practicable. Best efforts should be made to microsite to avoid these areas. Sediments in the Project area are frequently subjected to disturbance from storms, and natural currents would likely re-form natal soft-bottom features such as sand waves in the short term. Hard bottom habitat such as boulders provides heterogeneity in an area otherwise dominated by soft sediments and is not common in the Project area. This measure would decrease impacts on sand waves and boulders in the Project area.

- Mobile gear–friendly cable protection measures: Cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure chiefly ensures that seafloor cable protection does not introduce new hangs for mobile fishing gear. As such, the cable protection measures should be trawl friendly, with tapered/sloped edges. If cable protection is necessary in "non-trawlable" habitat, such as rocky habitat, then Empire must ensure that all materials consist of natural or engineered stone that does not inhibit epibenthic growth, to the extent technically and economically feasible. The materials selected for protective purposes should mirror the natural environment and perform similar habitat functions. Although this measure would reduce the risk of mobile gear loss, it would not significantly reduce the overall impacts on benthic resources.

The Project does not include sand or gravel submarine mining, which are activities prohibited by this Rule. The Project is not a prohibited use under this Rule.

In addition to the BOEM proposed measures, Empire concurs with, and is committed to implementing, the following measures to mitigate impacts associated with loss of access to prime fishing areas by commercial fishers:

- Empire and the State of NJ shall execute a Memorandum of Understanding (MOU) as discussed in the September 11, 2023 Letter of Intent to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized project.
- Compensation for Gear Loss and Damage: Empire would implement a gear loss and damage compensation program consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. BOEM recognizes that Empire has an applicable gear loss and damage claims process resulting from survey activities. This measure would be applicable to the presence of structures during both construction and operations.
- Compensation for Lost Fishing Income: Empire would implement a compensation program for lost income for commercial and recreational fishers and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. This measure would reduce impacts from the presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction. Levels of funding required by Empire to

be set aside for fulfilling verified claims would be commensurate with those in Table 3.9-31 of the DEIS, which identifies annual revenues per fish species.

- Mobile Gear–Friendly Cable Protection Measures: Cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure ensures that seafloor cable protection does not introduce new hangs for mobile fishing gear. Therefore, the cable protection measures should be trawl-friendly with tapered/ sloped edges. If cable protection is necessary in "non-trawlable" habitat, such as rocky habitat, then Empire would use materials that mirror that benthic environment.

Consistency with this Rule has been demonstrated.

7:7-9.5 Finfish migratory pathways

Finfish migratory pathways are waterways (rivers, streams, creeks, bays and inlets) which can be determined to serve as passageways for diadromous fish to or from seasonal spawning areas. The Project is not located within any river, stream, creek, bay, or inlet located within the State of New Jersey. Finfish do migrate through the Hudson-Raritan estuary. However, the Project does not include any physical barriers to the movement of fish and will not lower water quality to an extent that would interfere with the movement of fish.

Compliance with this Rule has been demonstrated.

7:7-9.6 Submerged vegetation habitat

Submerged vegetation habitat consists of water areas supporting or documented as previously supporting rooted, submerged vascular plants such as widgeon grass (Ruppia maritima), sago pondweed (Potamogeton pectinatus), horned pondweed (Zannichellia palustris), and eelgrass (Zostera marina). No work is proposed within the waters of the State of New Jersey and/or within any New Jersey State water areas containing submerged vegetation habitat.

Therefore, this Rule is not applicable to the Project.

7:7-9.7 Navigation channels

Navigation channels are tidal water areas including the Atlantic Ocean, inlets, bays, rivers and tidal guts with sufficient depth to provide safe navigation. The Project is located offshore of the largest container port on the east coast (Port Authority of New York and New Jersey). The New York Bight, (the offshore curvature extending from Cape May Inlet to Montauk Point, Long Island), experiences a large volume of commercial, private, and government vessel traffic traveling to and from U.S. or international ports according to the DEIS.

There are three navigation channels in the vicinity of the Project that provide access to the Port of New York and New Jersey. They are:

• Nantucket to Ambrose and Ambrose to Nantucket traffic lanes.
• Hudson Canyon to Ambrose and Ambrose to Hudson Canyon traffic lanes.
• Barnegat to Ambrose and Ambrose to Barnegat traffic lanes.

The Lease Area is located outside of these navigation channels. There are no proposed construction or dredging activities proposed within any navigational channel. No structures will be placed within 50 feet of any navigational channel. In addition, there are no navigational buoys within 10 nautical miles of the Lease Area.

To further navigational safety, all structures will be marked with appropriate markings and lighting following United State Coast Guard ("USCG") and BOEM requirements. Furthermore, according to the DEIS, NOAA would also chart the wind turbine locations, and while not definitive, NOAA may also require each structure to have a virtual Automatic Identification System (AIS).

Consistency with this Rule has been demonstrated.

7:7-9.12 Submerged infrastructure route

A submerged infrastructure route is the corridor in which a pipe or cable runs on or below a submerged lang surface. According to the DEIS, there are six NOAA-charted submarine cables that cross through the Lease Area, with an additional three uncharted cables that were identified during geophysical survey activities within the Lease Area. None of the charted cables within the Lease Area are currently in service. Within the EW 1 submarine export cable route, there are four expected crossings of active cables, two anticipated crossings of planned cables, one crossing of a cable where the status is unconfirmed, and potential crossing of six out-of-service cables. The specialized crossing techniques used for crossing pipelines or active cables are not required for crossing out-of-service cables. The EW 2 submarine export cable route is expected to cross one active cable and three planned cables. There are no charted pipelines within the Lease Area and none were identified during geophysical survey activities; however, there are eight submarine pipelines present within the EW 1 submarine export cable route, which passes through Lower New York Bay and the New York Harbor.

Pursuant to section 2.1.2.1.2, Volume 2, of the DEIS, while the submarine cables have been sited to avoid crossing existing cables and pipelines, a number of crossings would still be required. Crossing methods are based on a variety of factors including the material of the asset to be crossed, depth of the existing cable or pipeline, and whether the asset is in service. Generally, once the precise location of the existing infrastructure is determined, a layer of protection is installed on the seabed. Localized dredging may be required to minimize shoaling on the seabed before cable protection is installed. The submarine export cable is then laid over the first layer of protection. The submarine export cable may have a casing prior to placement. A second layer of protection is then installed over the submarine export cable. Finally, a final layer of protection may be installed based on the necessary burial depth, for stabilization and additional scour protection.

In the event that cables cannot achieve sufficient burial depths or other infrastructure needs to be crossed, Empire proposes the following protection methods: (1) rock placement, (2) concrete mattress placement, (3) rock bags, or (4) geotextile mattresses. The remedial protection measures described above may be required in places where the target burial depth cannot be met or in areas identified as “exposed” or “at risk” based on geophysical and geotechnical (G&G) surveys, hydrodynamic modeling, and the Cable Burial Risk Assessment (CBRA). According to the DEIS, potential impacts on cables and pipelines would be negligible due to the use of standard protection techniques to avoid impacts.

Utilizing the protection measures discussed above, the installation of the Project is not anticipated to increase the likelihood of infrastructure damage or breakage or interfere with maintenance operations.

Consistency with this Rule has been demonstrated.

7:7-9.13 Shipwrecks and artificial reef habitats

Shipwrecks and artificial reef habitats include all permanently submerged or abandoned remains of vessels and other structures, including but not limited to, artificial reefs, anchors, quarry rocks or lost cargo, which serve as a special marine habitat or are fragile historic and cultural resources. According to the DEIS, there are several locations where artificial reefs, composed of vessels, retired subway cars, concrete/rock debris, or pre-fabricated structures, have been established as productive recreational fishing areas.

NJDEP maintains 17 artificial reef sites 2 to 25 miles (3 to 40 kilometers) off the coast (NJDEP 2019). The New York State Department of Environmental Conservation (NYSDEC) has established 12 artificial reef sites, including eight sites along the south shore of Long Island (NYSDEC 2019). While none of these areas are within the Project area, fishers targeting these areas for sportfish may transit through or fish within the Project area.

The DEIS also notes that based on known historic and recent maritime activity in the region, the Lease Area and submarine export cable routes have a high probability for containing shipwrecks, downed aircraft, and related debris fields (COP Volume 3, Appendix X; Empire 2022). Marine geophysical remote sensing studies identified 30 potential marine archaeological resources: 7 within the Lease Area, 21 within the EW 1 submarine export cable route, and 2 within the EW 2 submarine export cable route (COP Volume 3, Appendix X; Empire 2022). These resources include both known and potential shipwrecks and related debris fields from the post-contact and recent (i.e., fewer than 50 years ago) eras. Because ages of these resources cannot be confirmed through the marine cultural investigations at this time, these resources are all assumed to be archaeological and therefore BOEM is considering them to be cultural resources potentially eligible for listing in the National Register of Historic Places ("NRHP").

Empire has committed to avoiding culturally sensitive marine archaeological resources by siting Project components to avoid and minimize impacts on potential marine archaeological sites, including shipwrecks and ancient submerged landforms to the extent practicable, with continued oversight by a Qualified Marine Archaeologist. (COP Volume 2, Section 6.1.3; Empire 2022; Appendix H, Mitigation and Monitoring).

According to the DEIS, if the Project is unable to avoid marine cultural resources due to design (e.g., the cultural resource crosses the entire submarine export cable route), engineering, or environmental constraints, Empire has committed to working with the consulting parties, Native American tribes, BOEM, New Jersey State Historic Preservation Office (SHPO), and New York SHPO to develop and implement minimization and mitigation plans for disturbance of known resources.

Adherence to the above measures will result in compliance with this Rule.

7:7-9.15 Intertidal and subtidal shallows

Intertidal and subtidal shallows are defined as all permanently or temporarily submerged areas from the spring high water line to a depth of four feet below mean low water. The Project will not be located within any intertidal or subtidal shallows within or near New Jersey State waters.

Therefore, this Rule is not applicable to the Project.

7:7-9.16 Dunes

Dunes are wind or wave deposited or man-made formations of sand (mound or ridge) that lie generally parallel to and landward of the beach and the foot of the most inland dune slope. The Project will not be located on or directly adjacent to any dunes.

Therefore, this Rule is not applicable to the Project.

7:7-9.18 Coastal high hazard areas

Coastal high hazard areas are flood prone areas subject to high velocity waters (V zones) as delineated on FEMA flood mapping, and areas within 25 feet of oceanfront shore protection structures, which are subject to wave run-up and overtopping. The Project does not involve any of the land uses identified by this rule.

Therefore, this Rule is not applicable to the Project.

7:7-9.19 Erosion hazard areas

Erosion hazard areas are shoreline areas that are eroding and/or have a history of erosion, causing them to be highly susceptible to further erosion and damage from storms. The Project is not located in any erosion hazard areas.

Therefore, this Rule is not applicable to the Project.

7:7-9.20 Barrier island corridor

Barrier island corridors are the interior portions of oceanfront barrier islands, spits and peninsulas. The Project is not located within any barrier island corridors.

Therefore, this Rule in not applicable to the Project.

7:7-9.22 Beaches

Beaches are gently sloping areas of sand or other unconsolidated materials, found on all tidal shorelines, including ocean, bay, and river shorelines, that extend landward from the mean high water line to either a man-made feature generally parallel to the ocean, inlet, or bay waters or the seaward or bayward foot of dunes. There are no beaches located within the Project limits.

Therefore, this Rule is not applicable to the Project.

7:7-9.25 Flood hazard areas

Flood hazard areas are areas subject to flooding from the flood hazard area design flood as defined by the NJDEP under the Flood Hazard Area Control Act Rules at N.J.A.C. 7:13. The Project is located below the mean high water line of the Atlantic Ocean and does not involve the construction of a habitable building, railroad, roadway, bridge or culvert.

Therefore, this Rule is not applicable to the Project.

7:7-9.26 Riparian zones

Riparian zones are the land and vegetation within and adjacent to a regulated water. The construction of the Project in the Atlantic Ocean will not impact any riparian zones or riparian zone vegetation.

Therefore, this Rule is not applicable to the Project.

7:7-9.27 Wetlands
7:7-9.28 Wetlands buffers

Wetlands are areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation. Wetlands buffers are areas of land adjacent to a wetland which minimizes adverse impacts on the wetlands or serves as an integral component of the wetlands ecosystem. There are no wetlands or wetlands buffer areas within the Project limits.

Therefore, these Rules are not applicable to the Project.

7:7-9.34 Historic and archaeological resources

Historic and archaeological resources include objects, structures, shipwrecks, buildings, neighborhoods, districts, and man-made or man-modified features of the landscape and seascape, including historic and prehistoric archaeological sites, which either are on or are eligible for listing on the New Jersey or National Register of Historic Places (NRHP). According to the DEIS, marine cultural resources in the region include pre-Contact and post-Contact archaeological resources, including pre-Contact period Native American landscapes on the OCS, which likely contain Native American archaeological sites inundated and buried as sea levels rose at the end of the last Ice Age. Based on known historic and recent maritime activity in the region, the Lease Area and submarine export cable routes have a high probability for containing shipwrecks, downed aircraft, and related debris fields (COP Volume 3, Appendix X; Empire 2022). Because ages of these resources cannot be confirmed through the marine cultural investigations at this time, BOEM has assumed that these resources are all archaeological and, therefore, cultural resources potentially eligible for listing in the NRHP.

In addition to their archaeological potential, Native American tribes in the region may consider ancient, submerged landforms to be traditional cultural property or tribal resources representing places where their ancestors lived. Therefore, ancient, submerged landforms have been assumed by BOEM to be

cultural resources. Marine geophysical archaeological surveys performed for the Project identified 22 ancient, submerged landforms within the marine limits of the Project. The extent of marine cultural investigations performed for the Project does not enable conclusive determinations of eligibility for listing identified resources on the NRHP. Consequently, all identified marine archaeological resources and ancient submerged landforms are assumed by BOEM to be eligible and, therefore, historic properties.

BOEM has also determined that the Project will have an adverse effect under Section 106 of the National Historic Preservation Act pursuant to 36 CFR 800.5 on six (6) architectural resources in New Jersey that are listed or potentially eligible for listing on the NRHP:

1. Romer Shoal Light Station in Lower New York Bay, New Jersey
2. Sandy Hook Light in Gateway National Recreation Area, Middleton, New Jersey (National Park Service)
3. Fort Hancock, U.S. Life Saving Station in Gateway National Recreation Area, Highlands, New Jersey (National Park Service)
4. Allenhurst Residential Historic District in Allenhurst, New Jersey
5. Ocean Grove Camp Meeting Association District in Ocean Grove, New Jersey
6. Water Witch (Monmouth Hills) Historic District in Middletown, New Jersey

A dark nighttime sky is considered a character-defining feature of the Sandy Hook Light at Sandy Hook New Jersey, and the West Bank Light Station, Fire Island Lighthouse, Romer Shoal Light, properties in New York and, therefore, these properties would be affected by lighting. To minimize visual impacts on these resources, the Project, would include nighttime and daytime use of operational phase aviation and vessel hazard avoidance lighting on WTGs and OSS. Empire would implement an Aircraft Detection Lighting System (ADLS) on WTGs (or a similar system) to activate a hazard lighting system in response to detection of nearby aircraft, subject to confirmation of commercial availability, technical feasibility, and agency review and approval (APM 141). ADLS would only activate the required FAA aviation obstruction lights on WTGs and OSS when aircraft enter a predefined airspace and turn off when the aircraft were no longer in proximity to the Project. Based on recent studies (Atlantic Shores 2021), activation of the Project ADLS is anticipated to occur for less than 11 hours per year, as compared to standard continuous FAA hazard lighting.

Potential impacts on cultural resources also include damage to or destruction of marine archaeological resources (e.g., shipwrecks, debris fields) or ancient submerged landforms from offshore bottom-disturbing activities, resulting in a loss of scientific or cultural value. Potential visual impacts also include introduction of visual elements out of character with the setting or feeling of historic properties if that setting is a contributing element to the resource's eligibility for listing on the NRHP. The most impactful impact would include light, the presence of structures, and offshore construction.

To further reduce the risk of potential impacts on marine cultural resources, Empire has committed to the following measures for avoidance, minimization, and mitigation (COP Volume 2, Section 6.1.3; Empire 2022; Appendix H, Mitigation and Monitoring):

• Culturally sensitive marine archaeological resources will be avoided by siting Project components to avoid and minimize impacts on potential marine archaeological sites, including shipwrecks and ancient submerged landforms to the extent practicable, with continued oversight by a Qualified Marine Archaeologist.

• A horizontal buffer of at least 98 to 164 feet (30 to 50 meters) will be implemented for identified potential marine archaeological resources, with the minimum recommended size and configuration of these areas individually based on characterization of the site and delineation of the site's horizontal and vertical boundaries, unless further investigation or consultation with the appropriate authorities deems this unnecessary.

• Native American tribes will continue to be provided opportunities for involvement in marine survey protocol design, execution of the surveys, and interpretation of the results.

• Empire will ensure tribes have further opportunities to participate in the development of detailed property-specific mitigation planning and execution related to submerged historic properties that may be affected by the Projects and the interpretation of data collected through mitigation efforts.

• A plan for vessels will be developed prior to construction to identify no-anchorage areas to avoid documented sensitive resources and will be implemented by construction and operation phase vessels.

• Additional evaluation of appropriate measures regarding ancient, submerged landforms will be addressed with regulatory authorities and informed by engagement with tribes and cultural resource stakeholders.

BOEM is requiring Empire to avoid or mitigate impacts on identified archaeological resources. If Empire cannot avoid the resource, BOEM shall require Empire to perform additional investigations for the purpose of determining eligibility for listing in the NRHP. Of those resources determined eligible, BOEM would require Phase III data recovery investigations for the purposes of resolving adverse effects per 36 CFR 800.6. If Empire determines it cannot avoid an archaeological resource or traditional cultural property (TCP) after the Record of Decision (ROD) has been issued, additional Section 106 consultation will be required. Avoidance would result in negligible direct impacts whereas data recovery investigations would result in minor impacts on terrestrial archaeological resources.

To mitigate potential impacts, BOEM is proposing Empire develop and implement monitoring and post-review discoveries plans for terrestrial and submerged archaeology, which include training and orientation for construction staff, designation of a Cultural Resources Compliance Manager, and post-review discoveries procedures and contacts, would reduce potential impacts on any previously undiscovered archaeological resources (if present) encountered during construction. Enforcement of this measure would be under the jurisdiction of New Jersey SHPO or New York SHPO. Implementation of a post-review discoveries plan would reduce potential impacts on undiscovered archaeological resources to a negligible level by preventing further physical impacts on the archaeological resources encountered during construction.

BOEM, with the assistance of Empire, will develop and implement one or multiple historic property treatment plans in consultation with consulting parties who have demonstrated interest in specific historic properties and property owners to address impacts on archaeological resources and ancient submerged landforms if they cannot be avoided. Historic properties treatment plans will also provide details and specifications for actions consisting of mitigation measures to resolve adverse visual effects and cumulative adverse visual effects on the six (6) architectural resources in New Jersey noted above that are listed or potentially eligible for listing on the NRHP.

To resolve the adverse effects of the Project, BOEM is also proposing the development and execution of a Memorandum of Agreement (MOA) in accordance with 36 CFR § 800.6(c) to memorialize the steps that BOEM will take to avoid, minimize, and mitigate project adverse effects on historic properties. Execution of the Memorandum of Agreement will demonstrate BOEM's compliance with Section 106 of the National Historic Preservation Act. Signatories to the MOA will include BOEM, the Administrator and Deputy State Historic Preservation Officer at the New Jersey Department of Environmental Protection, the New York State Historic Preservation Office, the Acting Executive Director, Advisory Council on Historic Preservation, Empire, and Tribal Nations.

Implementation of the mitigation plans noted above and execution of the steps outlined in the MOA will result in consistency with this Rule.

7:7-9.36 Endangered and Threatened Wildlife or Vegetation Species Habitat

Endangered or threatened wildlife or plant species habitats are terrestrial and aquatic (marine, estuarine, or freshwater) areas known to be inhabited on a seasonal or permanent basis by or to be critical at any stage in the life cycle of any wildlife or plant identified as “endangered” or “threatened” species on official Federal or State lists of endangered or threatened species, or under active consideration for State or Federal listing. The Department’s GIS Landscape Project mapping for endangered and threatened wildlife or vegetation species habitat does not extend beyond the State’s geographical limit.

Marine Mammals

Pursuant to information contained within the DEIS, six marine mammal species are listed under the Endangered Species Act (ESA) and are present within the northwest Atlantic OCS. The blue whale (Balaenoptera musculus), fin whale (B. physalus), North American Right Whale (Eubalaena glacialis), sei whale (B. borealis), and sperm whale (Physeter macrocephalus) are listed as endangered. The West Indian manatee (Trichechus manatus) is listed as threatened.

Pursuant to 16 U.S.C. 1379 Sec. 109, of the Marine Mammal Protection Act, no State may enforce, or attempt to enforce, any State law or regulation relating to the taking of any species (which term for purposes of this section includes any population stock) of marine mammal within the State unless the Secretary has transferred authority for the conservation and management of that species (hereinafter referred to in this section as "management authority") to the State under subsection (b)(1). In other words, the Marine Mammal Protection Act preempts State laws related to marine mammals. Therefore, the Endangered or Threatened Wildlife or Plant Species Habitats Rule as it relates to marine mammals is non-enforceable by the State of New Jersey.

Atlantic Sturgeon and Shortnose Sturgeon

Two Federally listed endangered fish species are known to occur in the Project Area: Atlantic Sturgeon and Shortnose Sturgeon. The Project would be constructed along migratory fish pathways for Atlantic sturgeon. According to studies cited by the DEIS, it is too early to evaluate the effect of offshore wind structures on fish and invertebrate movements and migrations (Sparling et al. 2020); however, the DEIS cites a study that suggests offshore wind structures may create stopover locations for migratory fishes (Rothermel et al. 2020). Again, citing studies, the DEIS concludes that stopover locations may benefit migrating fish by providing feeding opportunities, but may also disrupt or slow migrations but are not expected to have impacts on sturgeon migration (Rothermel et al. 2020). Sturgeon are susceptible to collision strikes with ships and to bottom-trawling surveys during Project-related biological monitoring efforts in the Offshore Project area. Capture of sturgeon in trawl gear could result in injury or death; however, the use of trawl gear is considered a safe and reliable method to capture sturgeon if tow and onboard handling times are limited (Beardsall et al. 2013). BOEM assumes trawl surveys would be required to limit tow times. According to the DEIS, any captured sturgeon are expected to be released alive and without significant injury.

BOEM has also proposed measures to mitigate any impacts to Sturgeon from surveying activities, including having trained species observers aboard survey vessels, requiring proper handling and resuscitation of any captured Sturgeon, and retrieval of any lost survey gear. With implementation of these measures, the project is not anticipated to have an adverse impact to either Atlantic Sturgeon or Shortnose Sturgeon

Sea Turtles

Five species of sea turtle have been documented where the Project activities would occur: green (Chelonia mydas), hawksbill (Eretmochelys imbricata), Kemp’s ridley (Lepidochelys kempii), leatherback (Dermochelys coriacea), and loggerhead (Caretta caretta). All five species are listed under the ESA; hawksbill, Kemp’s ridley, and leatherback sea turtles are listed as endangered, and green and loggerhead sea turtles are listed as threatened. However, critical habitat for these species is not within or in

the vicinity of the Project area. Although hawksbill sea turtles have been documented in OCS waters of the northwest Atlantic Ocean, they are rare in this region and are considered unlikely to occur.

As reported by the DEIS, operating WTGs generate non-impulsive underwater noise that is audible to sea turtles. However, maximum noise levels anticipated from operating WTGs are below recommended thresholds for sea turtle injury and behavioral effects, and noise levels are expected to reach ambient levels within a short distance of turbine foundations. Therefore, according to the DEIS, no noise impacts on sea turtles are anticipated from operating WTGs.

The loudest source of underwater noise associated with the Project would be pile driving during construction, specifically impact pile driving. According to the DEIS, modeling results indicated that the extent of the ensonified area associated with vibratory pile driving for the Projects is relatively small (distance from the pile generally less than 328 feet [100 meters]) compared to the ensonified area produced during impact pile driving.

Impact pile driving sound levels could exceed recommended sea turtle injury thresholds within up to 1.1 miles (1.71 kilometers) during the summer months without sound mitigation. The noise associated with pile driving can result in behavioral and physiological effects on sea turtles. Because it is possible that some monopiles (up to 17) will be more difficult to install, modeling was also conducted for 31.5-foot (9.6-meter) monopiles under a difficult-to-drive scenario (COP Volume 2, Appendix M-2, Tables I-51 through I-54; Empire 2022). Under this scenario, sea turtles that remain within up to 1.8 miles (2.84 kilometers) of pile driving in the summer months could experience permanent hearing damage (permanent threshold shift or PTS) without noise mitigation. Assuming 10 dB of noise attenuation, sea turtles that remain within up to 2,559 feet (780 meters) of pile driving could experience PTS.

Without noise mitigation, sound levels could exceed recommended sea turtle behavioral thresholds within up to 1.4 miles (2.31 kilometers) of pile driving. Assuming 10 dB of noise attenuation due to noise-mitigating technology, recommended sea turtle behavioral thresholds could be exceeded within up to 2,526 feet (770 meters) of pile driving. However, as discussed below, BOEM has proposed mitigation measures including prohibiting pile driving during the summer months when sea turtle densities in the Project Area are generally highest.

As discussed above, BOEM has proposed mitigation measures including prohibiting pile driving during the summer months when sea turtle densities in the Project Area are generally highest. In addition, Empire has proposed measures to avoid, minimize, and mitigate impacts of pile driving noise on sea turtles, including utilization of protected species observers to monitor and enforce appropriate monitoring and exclusion zones, soft-start procedures, noise-reducing technologies, and seasonal pile driving restrictions with no pile driving occurring between July and October when sea turtle densities in the Project area are generally highest.

With these measures in place, BOEM has concluded through the DEIS, that no significant injuries to sea turtles are expected. According to the DEIS, temporary behavioral and physiological effects are expected to occur, but no stock or population-level effects are anticipated. BOEM is also proposing additional measures including the preparation and implementation of a pile driving monitoring plan that provides for sound attenuation and monitoring of sea turtles during pile driving, sound field verification to determine the appropriate size of monitoring and exclusion zones, minimum size requirements for exclusion zones, extended monitoring duration for sea turtles in the monitoring zone, and protected species observer coverage requirements. Furthermore, the Project-specific Letter of Authorization would include mitigation measures for marine mammals that would also benefit sea turtles (i.e., time-of-day restrictions, use of soft-start procedures, and use of noise mitigation techniques that achieve a 10-dB attenuation).

Noise-producing activities associated with cable laying may include trenching, jet plowing, backfilling, and cable protection installation are not expected to result in adverse effects on sea turtles.

With the implementation of the mitigation measures proposed by BOEM and discussed above, consistency with this Rule is demonstrated.

7:7-9.37 Critical Wildlife Habitat

Critical wildlife habitats are specific areas known to serve an essential role in maintaining wildlife, particularly in wintering, breeding, and migrating. The Project does not contain any rookeries for bird species. Both marine mammals and fish species move through the Project area. However, as previously discussed, the Marine Mammal Protection Act preempts state law for the protection of marine mammals. The Project has the potential for impacting marine fisheries. The marine fisheries impacts are discussed further in the Marine Fish and Fisheries rule section of this report.

Consistency with this Rule has been demonstrated.

7:7-9.39 Special hazard areas

Special hazard areas include areas with a known actual or potential hazard to public health, safety, and welfare, or to public or private property. Per the DEIS, site preparation activities are necessary during construction. Site preparation includes activities such as high-resolution geophysical (HRG) surveys, unexploded ordnance (UXO)/munitions and explosives of concern (MEC) risk mitigation, debris and boulder clearance, pre-lay grapnel run, pre-sweeping, and pre-trenching. Avoidance is the preferred approach to UXO/MEC mitigation; however, for instances where avoidance is not possible, confirmed MEC or UXO may be disposed in place via low-noise methods, such as controlled deflagration or by opening the MEC or UXO and removing the explosive components, or it may be relocated. Relocation, if used, would be to another safe location on the seafloor or to a designated disposal area. The choice of removal method and suitable safety measures will be made with the assistance of an MEC/UXO specialist and the appropriate agencies.

If any military munitions and explosives of concern (MECs) or unexploded ordnances (UXOs) are encountered during project construction, Empire has committed, through communication with the NJDEP, to notifying the United States Coast Guard (USCG) of the munition and its location. Empire has also informed the NJDEP that it is anticipated that portions of the submarine export cable route(s) will be surveyed and cleared for UXO/MEC. Where this is not feasible, the cable will be re-routed slightly within the surveyed corridor to avoid these features or they will be managed in accordance with applicable regulations. The UXO mitigation strategy is under development and will be conducted in coordination with BOEM and other appropriate agencies.

Consistency with this Rule has been demonstrated.

7:7-9.48 Lands and waters subject to public trust rights

Lands and waters subject to public trust rights are tidal waterways and their shores, including both lands now or formerly below the mean high water line, and shores above the mean high water line. The Project is not located within New Jersey State waters and is not adjacent to any New Jersey tidal shores.

Therefore, this Rule is not applicable to the Project.

7:7-12.7 New dredging

New dredging is the removal of sediment that does not meet the definition of maintenance dredging at N.J.A.C. 7:7-12.6 or the definition of environmental dredging at N.J.A.C. 7:7-12.8. Furthermore, the Rule clarifies that the temporary or permanent displacement or removal of sediment for the purpose of installing submerged pipelines and cables is considered new dredging. The proposed installation of electric transmission cables within the Atlantic Ocean will involve the temporary displacement and removal of sediment. However, this rule only applies to the installation of submerged
pipelines and cables. Submerged pipelines are defined at N.J.A.C. 7:7-12.15(a) as “underwater pipelines which transmit liquid or gas, including crude oil, natural gas, water, petroleum products or sewerage”. Submerged cables are defined at N.J.A.C. 7:7-12.21(a) as “underwater telecommunication cables” and “all

associated structures in the water". Further, no work defined as new dredging is proposed within New Jersey state waters.

Therefore, this Rule is not applicable to the Project.

7:7-12.21 Submerged cables

Submerged cables are underwater telecommunication cables and include all associated structures in the water, such as repeaters. The proposed Project cables are for transmitting electricity and are not telecommunication cables. Further, no work involving installation of submerged cables is proposed within New Jersey state waters.

Therefore, this Rule is not applicable to the Project.

7:7-12.24 Miscellaneous uses

Miscellaneous uses are uses of water areas not specifically defined in this section or addressed in the use rules at N.J.A.C. 7:7-15. The Project is considered a water-dependent activity. Offshore wind projects by design generate electricity from the wind that blows across the ocean. Offshore wind projects benefit from the reliability of ocean winds, the higher wind speeds associated with the ocean versus over land, and the lack of physical interferences that can be encountered on land.

With implementation of the mitigation and protective measures discussed in the Marine Fish and Fisheries rule section of this analysis, the proposed Project will be protective of wildlife and marine fisheries to the maximum extent practicable.

Furthermore, as discussed in the Project Description section above, the Project is in the public interest.

Consistency with this Rule has been demonstrated.

7:7-14.1 Rule on location of linear development

According to N.J.A.C. 7:7-1.5, "Linear development" means a development with the basic function of connecting two points, such as a road, drive, public walkway, railroad, sewerage pipe, stormwater management pipe, gas pipeline, water pipeline, or electric, telephone or other transmission lines. Therefore, this rule is applicable to the proposed cables but is not applicable to the WTGs. Linear developments shall comply with the specific location rules to determine the most acceptable route, to the maximum extent practicable. Because the proposed cables must connect to the proposed onshore substations in NY, there are no practicable alternative route locations.

The cable installation is likely to impact existing sand ridges which provide fishery habitat. However, Empire has indicated that the project will avoid perpendicular crossings of sand ridges and troughs for the submarine export cables and interarray cables. According to BOEM, this mitigation measure will reduce impacts on complex-bottom features.

According to the DEIS, Empire has committed to measures to minimize impacts on commercial fisheries and for-hire recreational fishing including compensating fishermen for gear loss and damage and the implementation of mobile gear-friendly cable protection measures.

Existing transportation corridors are limited to the existing shipping lanes and the project has been designed to avoid shipping lanes. In addition, the cables will be installed below the seabed.

Consistency with this Rule has been demonstrated.

7:7-14.2 Basic location rule

The Project is located within BOEM Lease Area OCS-A 0512. Under the terms of the lease, Empire has the exclusive right to submit a COP for activities within the Lease Area. Offshore wind projects

by design generate electricity from the wind that travel across the ocean. Offshore wind projects benefit from the reliability of ocean winds, the higher wind speeds associated with the ocean versus over land, and the lack of physical interferences that can be encountered on land.

As discussed in the Project Description section above and throughout this analysis, the Project is in the national and public interest, promotes public health, safety and welfare, is protective of public and private property, wildlife and marine fisheries, and the natural environment.

Consistency with this Rule has been demonstrated.

7:7-14.3 Secondary impacts

Secondary impacts are the effects of additional development likely to be constructed as a result of the approval of a particular proposal. Secondary impacts can include traffic increases, increased recreational demand, or any other offsite impacts generated by onsite activities which affect the site and surrounding region. The Project is not anticipated to have any secondary impacts such as traffic increases or increased recreational demand and will not induce further development.

Consistency with this Rule has been demonstrated.

7:7-15.4 Energy facility

Energy facilities include facilities, plants, or operations for the production, conversion, exploration, development, distribution, extraction, processing, or storage of energy or fossil fuels. Energy facilities also include onshore support bases and marine terminals. Through a competitive leasing process under 30 Code of Federal Regulations (CFR) 585.211, Empire was awarded commercial Renewable Energy Lease OCS-A 0512 covering an area offshore of New York State and the State of New Jersey (the Lease Area). Under the terms of the lease, Empire has the exclusive right to submit a COP for activities within the Lease Area, and it has submitted a COP to BOEM proposing the construction and installation, O&M, and conceptual decommissioning of the 816-megawatt (MW) EW 1 Project and 1,260-MW EW 2 Project in accordance with BOEM's COP regulations under 30 CFR 585.626, et seq.

The Project area is not located within New Jersey's coastal zone or waters, which extend from the mean high water line out to the three-geographical-mile limit of the New Jersey territorial sea.. Therefore, the Project is not subject to CAFRA or Waterfront Development jurisdiction. Consequently, the siting requirements at N.J.A.C. 7:7-15.4 (b)2 and 3 are not applicable.

The Project would have long term beneficial impacts on regional air quality through the displacement of fossil fuel-generated power plants. Offshore wind projects by design generate electricity from the wind that blows across the oceans. Offshore wind projects benefit from the reliability of ocean winds, the higher wind speeds associated with the ocean versus over land, and the lack of physical interferences that can be encountered on land. Turbine blades positioned hundreds of feet into the air are also exposed to much faster and almost constant wind allowing them to generate electricity even when there is no wind on land.

The loss of soft-bottom habitat due to the presence of WTG structures would displace soft-bottom associated species such as surf clams and demersal fish. However, BOEM does not anticipate population-level impacts on benthic organisms. The project will not adversely affect marine fish but may have an impact on the ability of commercial fishermen, including surf clammers, to access these areas. However, as discussed in greater detail in the Surf Clam Areas rule and Marine Fish and Fisheries rule sections, Empire has committed to implementing measures to compensate for lost income and gear by commercial fishermen and is also committed to construction techniques that will minimize the potential for fishing gear to snag on cable protection structures.

The project also has the potential to impact historic and archaeological resources. However, as discussed in the Historical and Archaeological Resources rule section, to resolve the adverse effects of the project, BOEM is also proposing the development and execution of a Memorandum of Agreement (MOA)

in accordance with 36 CFR § 800.6(c) to memorialize the steps the BOEM will take to avoid, minimize, and mitigate project adverse effects on historic properties. Execution of the Memorandum of Agreement will demonstrate BOEM's compliance with Section 106 of the National Historic Preservation Act. Signatories to the MOA will include BOEM, the Administrator and Deputy State Historic Preservation Officer at the New Jersey Department of Environmental Protection, the New York State Historic Preservation Office, the Acting Executive Director, Advisory Council on Historic Preservation, Empire, and Tribal Nations.

Public access will not be affected as the Project is not located within jurisdictional waters of the State of New Jersey.

The maintenance of scenic and visual qualities is discussed in detail under the Scenic Resources and Design rule section below.

According to Appendix AA of the COP, visual assessments conducted for proposed offshore wind farms in the United States have applied to study areas that range from approximately 25 to 30 mi (40 to 48 km), depending on the size of the proposed wind turbine, the wind turbine layout, and the surrounding landscape (Sullivan et al. 2013, Deepwater Wind 2012, and BOEM 2015).

The theoretical limit of visibility of the minimum and maximum representative wind turbines was used to establish the Visual Offshore Study Area and was determined by the distance between the viewer and the structure, the height of the structure, the elevation of the viewer, and the curvature of the earth. A 35-mi (56-km) Visual Offshore Study Area around the Lease Area was, therefore, used as a conservative estimate and consists of the western portion of Long Island and areas on the southeastern coast of New Jersey. According to Appendix AA of the COP, when accounting for curvature of the earth, viewer distance, and the perspective of the viewer at sea level (on the beach), the hub (nacelle) is visible above the horizon at 20 miles, roughly the distance between Long Branch, New Jersey and the WTG field, while the foundation and lower portion of the tower would fall below the horizon line.

The WTGs will be required to have permanent FAA aviation warning lighting which would be visible from beaches and coastlines and according to the DEIS and would have a major impact on scenic and visual resources within the study area. According to the DEIS, the cumulative effect of the Project, and other proposed WTG projects, and the associated synchronized flashing strobe lights consisting of three red flashing lights at the mid-section of each tower and one at the top of each WTG would have long-term minor to major impacts on sensitive onshore and offshore viewing locations, based on viewer distance and angle of view and assuming no obstructions. However, Empire has committed to installing ADLS on WTGs to meet FAA nighttime lighting requirements instead of standard warning lights. ADLSs activate the hazard lighting system in response to detection of nearby aircraft. The synchronized flashing of the navigational lights occurs only when an aircraft is within a predefined distance of the structures, resulting in shorter-duration night sky impacts on the seascape, open ocean, landscape, and viewers. The shorter-duration synchronized flashing of ADLS is anticipated to have reduced visual impacts at night as compared to standard continuous, medium-intensity red strobe FAA warning system due to the duration of activation. It is anticipated that the reduced time of FAA hazard lighting resulting from an implemented ADLS would reduce the duration of the potential impacts of nighttime aviation lighting to less than 1 percent of the normal operating time that would occur without using ADLS. Technology.

To further minimize visibility, the WTGs would be a tubular design and would be painted white or light gray to help reduce potential visibility against the horizon.

According to the DEIS, when considering the distance from shore and limited visibility of the offshore structures from residences, coastlines, and businesses, operation of the Project would have

negligible adverse impacts on economics due to property value impacts and viewshed impacts on recreational and tourist businesses.

In addition, BOEM concludes through the DEIS, that in the context of other reasonably foreseeable environmental trends in the area, the contribution of Alternative B, E, or F to the cumulative impacts on recreation and tourism would generate comparable types of impacts as those of the Project.

It is not anticipated that the Project will result in a net loss of 200 jobs in NJ. According to the DEIS, the proposed Project action is expected to support over 6,300 total job-years during the construction phase and 302 annual jobs (133 direct jobs and 169 indirect/induced jobs) during the operations phase.

The WTGs have no practicable alternative location in the coastal zone because as previously discussed in the Project Description section above, offshore WTGs are water-dependent and require expansive areas that can be difficult to find on land in the Northeast. In addition, the WTGs must be confined to Renewable Energy Lease OCS-A 0512. Empire does not have the ability to construct the Project outside of the Lease Area.

BOEM has concluded that the predicted occurrence of overall bird populations in the Lease Area is still relatively low. Further, according to the DEIS, the predicted occurrence of bird populations that have a higher sensitivity to collision (as defined by Robinson Willmott et al. 2013) is relatively low across the OCS during all seasons of the year, suggesting that bird fatalities in the overall OCS due to collision are likely to be low.

As per Appendix G of the DEIS, many birds would avoid the WTGs site altogether, especially the species that ranked "high" in vulnerability to displacement by offshore wind energy development (Robinson Willmott et al. 2013). Some migratory songbirds may also be exposed to the Lease Area during migration periods, but population-level impacts are unlikely because exposure to the Lease Area is expected to be minimal to low and limited in duration. All marine birds were identified as having minimal to low exposure except terns (not including the roseate tern), which received a medium exposure assessment. Terns would be most exposed during spring migration. Generally, terns are thought to fly below the rotor sweep zone but do have some vulnerability to collision when they are not avoiding WTGs. To minimize the introduction of perching structures to the offshore environment, Empire has committed to installing bird deterrent devices, where appropriate, on offshore, above-water structures. Substantial foraging habitat for resident birds would remain available outside of the proposed offshore lease areas and no individual fitness or population-level impacts would be expected to occur. Because most structures would be spaced 1 nm apart, ample space between WTGs would allow birds that are not flying above WTGs to fly through individual lease areas without changing course or to make minor course corrections to avoid operating WTGs. BOEM anticipates that any additional flight distances would be relatively small when compared with the overall migratory distances traveled by migratory birds, and no individual fitness or population-level effects would be expected to occur.

Marine navigation lighting has the potential to affect bird navigation through attraction to the lights. Empire has committed to using an FAA-approved ADLS, which is a lighting system that would only activate WTG lighting when aircraft enter a predefined airspace. For the Project, based on historical air traffic data, obstruction light activation under ADLS was estimated to occur 30 hours per month over the course of 1 year, which equals just 7.5 percent of the time that full-time obstruction lights would be active. To further reduce impacts on birds, Empire would limit, where practicable, lighting (not required by FAA and USCG) during offshore construction to reduce attraction of birds. Consequently, BOEM expects negligible impacts from WTG and OSS lighting and construction vessel lighting.

Bats are terrestrial species that spend almost their entire lives on or over land but can occur offshore during spring and fall migration under very specific weather conditions. According to the DEIS, the level of bat use of the OCS and the incidents of mortality associated with WTGs is not well established. However, according to the DEIS, data from 3 years of post-construction monitoring around Block Island Wind Farm found relatively low numbers of bats and only during fall, and no northern long-eared bats (Stantec Consulting Services 2020). BOEM does not anticipate population-level impacts when the high numbers of these species in the region are compared to the low numbers likely to be affected by Project operations along with the measures that would be implemented by Empire to avoid and minimize

bat impacts, including implementing a monitoring program and reporting dead and injured bats to further understand the long-term effects of structures. In addition, Empire has committed to implementing a Bird and Bat Monitoring Framework that outlines an approach to post-construction bat monitoring that supports advancement of the understanding of bat interactions with offshore wind farms. BOEM has also proposed a requirement for Empire to make recommendations for new mitigation measures or monitoring methods in the event that bat impacts deviate substantially from the impact analysis contained in the DEIS.

Consistency with this Rule has been demonstrated.

7:7-15.7 Industry

Industry uses are uses that involve industrial processing, manufacturing, storage, or distribution activities and include electric power production. The proposed Project involves the construction of offshore wind farm facilities within BOEM Lease Area (OCS-A 0512), to deliver renewable energy and additional capacity to meet New York State, regional, and national renewable energy demands and goals.

The Project has been reviewed in accordance with the rules cited above, including 7:7-9.16, 9.30, 9.48, 16.9, and 16.11, and all other applicable location and resource rules, and has been found to be consistent with these rules. The rationale for the Industry Rule recognizes that water dependent industry must be located somewhere along the waterfront. The Project is considered a water-dependent activity. Offshore wind projects by design generate electricity from the strong and reliable winds that blow across the oceans. Offshore wind projects benefit from the reliability of ocean winds, the higher wind speeds over associated with the ocean versus over land, and the lack of physical interferences that can be encountered on land.

Consistency with this Rule has been demonstrated.

7:7-15.14 High-rise structures

High-rise structures area structures which are more than six stories or more than 60 feet in height measured from existing preconstruction ground level. While the WTGs exceed the 60-foot height definition that is applied to high rise structures, this Rule is not applicable to the Project because the rule specifically excludes wind turbines.

7:7-16.2 Marine fish and fisheries

Marine fish are marine and estuarine animals other than marine mammals and birds. The Project is not anticipated to have an adverse impact on the natural functioning of marine fish as discussed in further detail below. However, the WTGs and substation foundations, and cables have the potential to reduce fishing access and to increase the risk of damage to fishing gear.

According to the DEIS, the predominant commercial fish and shellfish species in the Project area and the broader region are based on landed weight and ex-vessel revenue and include Atlantic menhaden, which represented 34 percent of the average landed weight, American lobster, Atlantic herring, blue crab, sea scallop, and surf clam. The most valuable species over this period were sea scallop and American lobster, which together represented 58 percent of the average annual ex-vessel revenue. Other valuable species harvested in State and Federal waters included Atlantic herring, Atlantic menhaden, Atlantic surf clam, longfin and northern shortfin squid, summer flounder, and monkfish.

The DEIS reported that the fishing port with the highest number of vessel trips to the Wind Farm Development Area, EW 1 and EW 2, was Point Pleasant, New Jersey, which accounted for 33.7 percent of the combined trips to these areas. The fishing ports with the second and third most trips to EW 1 were Belford, New Jersey and Freeport, New York, respectively. The fishing ports with the second and third most trips to EW 2 were New Bedford, Massachusetts and Cape May, New Jersey. In both the EW1 and EW2 Wind Farm Development Area, the DEIS identified the New Bedford, Massachusetts and Cape May, New Jersey fishing ports with the highest landed weight. Other fishing ports that had substantial landings in both Wind Farm Development Areas included Atlantic City, New Jersey; the Hampton Roads Area, Virginia; Point Judith, Rhode Island; and Point Pleasant, New Jersey. These six fishing ports collectively

accounted for 70 percent of the landed weight in the Lease Area. In both Wind Farm Development Areas, the three fishing ports that generated the highest revenue were New Bedford, Cape May, and Point Pleasant. However, the annual average revenue generated by each of these ports was substantially higher in EW 2 compared to EW 1.

BOEM used the 2003-2016 data from the long-term NFSC spring and bottom trawl surveys to describe the fish communities within the Northeast United States Wind Energy Areas. In addition, BOEM relied on 9 years of bottom trawl surveys conducted between 2002 and 2010 as part of the New York and New Jersey Harbor Deepening Project by the United States Army Corps of Engineers to describe the fish communities of the Hudson-Raritan estuary.

According to the NJDEP MRA, however, the data describing surf clam resources in the Project area are insufficient to determine the potential impact of construction and operation on surf clam areas. In addition, and as discussed in the DEIS, MRA has reported that the Project area has a demonstrable history of supporting recreational and commercial fishing activity.

According to MRA, NOAA's Fishing Footprints[1] and BOEM's 2017 report[2] on the socio-economic impacts of wind energy development on fisheries, document the history, value, and potential impacts to NJ fisheries from the Project. New Jersey is the most impacted state (Figure 1a.) and is home to some of the most impacted ports (Figure 1b.) for fisheries effects from this project.

Figure 1a. Fishery landings and revenue from the Empire lease area from NOAA's Fishing Footprints[1],

Landings and Revenue by State

The following table displays total revenue and total landed pounds by state within the area. All numbers have been rounded to the nearest thousand.

Table 7.1 Most Impacted States, by Revenue and Landings

State	Fourteen Year Revenue	Fourteen Year Landings
NJ	$13,724,000	3,995,000
MA	$11,324,000	3,802,000
VA	$4,201,000	410,000
NY	$2,356,000	938,000
RI	$1,354,000	1,085,000
CT	$1,244,000	160,000
NC	$59,000	20,000
MD	$19,000	7,000
All Others	$18,000	62,000

[1] NOAA's Fishing Footprints, Descriptions of Selected Fishery Landings and Estimates of Vessel Revenue from Areas: A Planning-level Assessment, Prepared by: National Marine Fisheries Service, March 01, 2023, Empire Wind, OCS-A 0512. Accessed June 6, 2023.

[1] Kirkpatrick, A.J., S. Benjamin, G.S. DePiper, T. Murphy, S. Steinback, and C. Demarest. 2017. Socio-Economic Impact of Outer Continental Shelf Wind Energy Development on Fisheries in the

U.S. Atlantic. Volume I—Report Narrative. U.S Dept. of the Interior, Bureau of Ocean Energy Management, Atlantic OCS Region, Washington, D.C. OCS Study BOEM 2017-012. 150 pp.

[1] NOAA Fishing Footprints. Descriptions of Selected Fishery Landings and Estimates of Vessel Revenue from Areas: A Planning-level Assessment, Prepared by: National Marine Fisheries Service, March 01, 2023, Empire Wind, OCS-A 0512. Accessed June 6, 2023.

MRA expects that there will be impacts on surf clam areas, the surf clam fishery, and the shoreside businesses supported by the fishery. According to MRA, it is likely that the DEIS undervalues the potential impacts to this fishery. Surf clam landings from the Empire Project area may be underreported because of confidentiality limitations within the industry. Landings are only one indicator of potential socio-economic

impacts. The fishery operates on a very small profit margin and landings income may not result in a profit until value is added by processing. Shoreside industries dependent on surf clam also include docking, loading, fuel, repair, import-export operations, shipping, retail markets, and food service. New Jersey homeports, including Barnegat, Atlantic City, and Cape May are working waterfronts that rely on surf clam fishing. A Science Center for Marine Fisheries-funded study by T.J. Murray (2016)[1] suggests that an appropriate multiplier for landings value may exceed 10X.

Table 6.1 Most Impacted Ports, by Revenue and Landings

City	State	Fourteen Year Revenue	Fourteen Year Landings
New Bedford	MA	$11,079,000	2,796,000
Point Pleasant	NJ	$5,509,000	1,122,000
Cape May	NJ	$5,098,000	1,911,000
Newport News	VA	$2,960,000	289,000
Barnegat	NJ	$1,778,000	232,000
Point Lookout	NY	$1,110,000	233,000
All Others		$1,049,000	956,000
Point Judith	RI	$1,030,000	547,000
New London	CT	$721,000	89,000
Stonington	CT	$523,000	71,000

figure 1b [1] Murray, T.J. 2016. Economic Activity Associated with SCeMFiS Supported Fishery Products. Available at https://scemfis.org/wp-content/uploads/2020/02/Ec_Impact-tjm_rm2.pdf

According to MRA, it is not possible to predict all potential socio-economic impacts or mitigation options, and therefore MRA recommends professionally facilitated engagement between Empire and the surf clam industry. The NJDEP coordinated with Empire on this issue and Empire is amenable to facilitate, participate in, support, and/or work with NMFS, NFSC , regional entities, or other research initiatives to conduct pre-construction and post-construction studies directed towards a broad age class of surf clam and ocean quahogs, consistent with both N.J.A.C. 7:7-9.3 and this Rule, and thereby addressing this concern. Further, BOEM indicates in the DEIS (Volume 2, Appendix H) that Empire will develop and implement a Mariner Communication and Outreach Plan that covers all project phases from pre-construction to decommissioning and that facilitates coordination with all mariners, including the commercial shipping industry, commercial and for-hire fishing industries, and other recreational users.

The fishing industry has expressed concerns about operating fishing vessels with trawl gear within the Project area given the size of the gear, the spacing between the WTG's and the space needed to safely navigate, particularly in the presence of other fishing vessels and poor weather conditions. Commercial fishing involves pulling gear such as netting or fishing lines. Navigating while pulling such gear, and following hooked nektonic fish, requires a wide area that may not be provided by the spacing between the WTGs. These conditions, as well as the underground cables, can present opportunities for gear snagging or damage. To avoid the economic loss of gear and the ability to continue fishing, it is expected that some fishermen will choose to avoid the WTG area. In addition, fishermen have expressed concerns that the spacing between WTGs may not be adequate to allow safe navigation particularly in low visibility inclement weather. Clam industry representatives have said that their operations require a minimum of 2 nautical miles between WTG, in alignment with bottom contours, for safe operations.

The DEIS also states that the presence of structures may result in a long-term increase in expenses to fishers that are required to periodically replace lost gear or repair damaged gear and lost fishing revenue that occurs while the gear is being repaired or replaced. The presence of structures could also cause some fishers to actively avoid fishing grounds with entanglement hazards, thereby leading to displacement of fishing activity and increased conflicts with other fishers.

For-hire recreational fishing vessels, which are generally smaller than commercial vessels and do not have large, externally deployed fishing gear, are expected to have less difficulty navigating near

offshore wind farms. An exception to this would be recreational fishing vessels that troll for migratory species (e.g., bluefin tuna, swordfish), which often deploy many feet of lines and hooks behind the vessel that may create navigational challenges around wind farms. The presence of WTGs could also cause long-term changes in transit routes of fishing vessels that actively avoid transiting through the offshore wind lease areas, which could result in increased travel time and trip costs. Collectively, the reduced area available for fishing and the navigational hazards to fishing vessels posed by the presence of structures associated with planned offshore wind projects are expected to have long-term, adverse impacts on commercial and for-hire fisheries.

As discussed within BOEM's DEIS, global climate change is an ongoing and developing phenomenon in the absence of offshore wind development that causes ocean acidification, increasing sea temperatures, and changes in ocean circulation patterns. The impacts of climate change are likely to affect habitat suitability for and species distributions of finfish and invertebrates in the geographic analysis area, including several essential fish habitat species. The DEIS also cited studies that say rises in sea temperatures in the geographic analysis area are thought to be responsible for documented northward shifts in species distributions (Gaichas et al. 2015; Hare et al. 2016; Lucy and Nye 2010; Friedland and Hare 2007).

BOEM expects the construction and installation of 147 WTGs and two OSSs within the Lease Area to contribute to impacts on recreational fishing and boating. The offshore structures would have long-term, adverse impacts on recreational boating and fishing through the risk of allision; risk of gear entanglement, damage, or loss; navigational hazards; space use conflicts; presence of cable infrastructure; and visual impacts. However, BOEM also anticipates the future offshore wind structures to have beneficial impacts on recreation through fish aggregation and reef effects. Finally, according to the DEIS, WTGs and OSS installed within the Wind Farm Development Area are expected to serve as additional artificial reef structures, providing additional locations for recreational for-hire fishing trips, potentially increasing the number of trips and revenue.

BOEM concludes that with mitigation measures implemented across all offshore wind projects, including WTG spacing and orientation measures to better accommodate commercial fishing vessels transiting the offshore wind lease areas and typical commercial fishing path orientations, offshore cable burial to minimum depths deeper than trawl gear would penetrate, and financial compensation programs for fishing interests that have lost or entangled gear, the moderate to major impact rating for some commercial fisheries could decrease to moderate.

To mitigate the potential impacts to prime fishing areas and fishery resources, Empire concurs with, and is committed to implementing, the following measures:

- Empire and the State of NJ shall execute a Memorandum of Understanding (MOU) as discussed in the September 11, 2023 Letter of Intent to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized project.
- Compensation for Gear Loss and Damage: Empire would implement a gear loss and damage compensation program consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. BOEM recognizes that Empire has an applicable gear loss and damage claims process resulting from survey activities. This measure would be applicable to the presence of structures during both construction and operations.
- Compensation for Lost Fishing Income: Empire would implement a compensation program for lost income for commercial and recreational fishers and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. This measure would reduce impacts from the presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction. Levels of funding required by Empire to be set aside

for fulfilling verified claims would be commensurate with those in Table 3.9-31 of the DEIS, which identifies annual revenues per fish species.

- Mobile Gear–Friendly Cable Protection Measures: Cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure ensures that seafloor cable protection does not introduce new hangs for mobile fishing gear. Therefore, the cable protection measures should be trawl-friendly with tapered/ sloped edges. If cable protection is necessary in "non-trawlable" habitat, such as rocky habitat, then Empire would use materials that mirror that benthic environment.
- To further characterize surf clam and ocean quahog populations in the subject lease area and calibrate any mitigation that may be appropriate, Empire is amenable to facilitate, participate in, support, and/or work with NMFS NFSC, regional entities, or other research initiatives to conduct pre-construction and post-construction studies directed towards a broad age class of surf clam and ocean quahogs, consistent with N.J.A.C. 7:7-9.3 and N.J.A.C. 7:7-16.2.

Consistency with this rule has been demonstrated.

7:7-16.3 Water quality

Per this Rule, coastal development which would violate the Federal Clean Water Act, or State laws, rules and regulations enacted or promulgated pursuant thereto, is prohibited. The construction of the WTGs, cable installation and scour protection are anticipated to resuspend sediments as a result of pile driving and cable installation. However, these impacts would be localized and temporary. According to the DEIS, a sediment transport analysis model was conducted for the Project that showed the displacement of sediments for cable placement would be low, and that sediments would remain suspended for a short period of time (4 hours) and typically dissipate to background levels very close to the trench. Therefore, given the known hydrodynamic conditions within the area of the Project and the expected best management practices (BMPs) associated with installation methods, no long-term impacts on water quality from suspended sediment are anticipated following cable installation activities.

As reported by the DEIS, the total volume of WTG fuels/fluids/hazardous materials in the geographic analysis area is estimated at 317,832 gallons. OSS are expected to hold an additional 413,421 gallons of fuels/fluids/hazardous materials. BOEM has modeled the risk of spills associated with WTGs and determined that a release of 128,000 gallons is likely to occur no more frequently than once every 1,000 years and a release of 2,000 gallons or less is likely to occur every 5 to 20 years (Bejarano et al. 2013). Diesel floats on the water's surface and dissipates or volatilizes within a few days. A diesel spill would likely be restricted to the sea surface and thus have negligible impacts on benthic organisms (MMS 2009). The chemicals with potential to sink or dissolve rapidly are predicted to dilute to nontoxic levels before they reach benthic resources (BOEM 2021a). Given the volumes of fuels/fluids/hazardous materials potentially involved and the likelihood of release occurrence, the increase in accidental releases associated with planned offshore wind activities is expected to fall within the range of releases that occur on an ongoing basis from non-offshore wind activities.. Given the unlikely occurrence of a release and precautions outlined in construction and operations contingency plans, impacts of drilling muds on benthic habitat would be short term, which is consistent with BOEM's analysis of the horizontal directional drilling (HDD) installation at the Virginia Offshore Wind Technology Advancement Project (BOEM 2015)

Empire would maintain an Oil Spill Response Plan (OSRP), an Incident Management Plan, and a Safety Management System. These plans would be in place before construction and installation activities begin and would be reviewed and approved by BOEM and the Bureau of Safety and Environmental Enforcement (BSEE).

Based on the information presented in the COP and BOEM's DEIS, the Project is not anticipated to violate and Federal or State water quality laws or rules.

Consistency with this rule has been demonstrated.

7:7-16.9 Public access

The Project is not located within New Jersey territorial waters and is not adjacent to any New Jersey shoreline.

Therefore, this Rule is not applicable to the Project.

7:7-16.10 Scenic resources and design

The Scenic Resources and Design rule at N.J.A.C. 7:7-16.10(c) discourages new coastal development that is not visually compatible with existing scenic resources in terms of large-scale elements of building and site design. The rule, as discussed at N.J.A.C. 7:7-16.10(d), further clarifies that wind turbines are not subject to the setback requirements and open view corridor restrictions of this rule. Discouraged coastal development, as defined in the Coastal Zone Management Rules at N.J.A.C. 7:7-1.5, allows for uses that the NJDEP considers to be in the public interest provided mitigating or compensating measures can be taken so that there is a net gain in quality and quantity of the coastal resource of concern. As discussed in the Project Description section of this Analysis, the construction of the Project is in the public interest.

It is reasonable to expect the visual impacts to be greater for New York State than New Jersey because the WTGs are located 14 miles off the coast of New York versus 19.5 miles off the coast of Long Branch, Monmouth County. The Project area is not located within New Jersey's coastal zone or State waters. Nevertheless, scenic views are an important experience to coastal visitors and residents.

As discussed previously in this Analysis, Empire conducted a Visual Offshore Study to assess the visibility of the WTGs and OSSs within a 35-mile radius of the Project. The theoretical limit of visibility of the minimum and maximum representative wind turbines was used to establish the Visual Offshore Study Area and was determined by the distance between the viewer and the structure, the height of the structure, the elevation of the viewer, and the curvature of the earth. According to Appendix AA of the COP, when accounting for curvature of the earth, viewer distance, and the perspective of the viewer at sea level (on the beach), the hub (nacelle) is visible above the horizon at 20 miles, the approximate distance between Long Branch, New Jersey and the WTG field, while the foundation and lower portion of the tower would fall below the horizon line.

To minimize visibility, the WTGs would be a tubular design and would be painted white or light gray to help reduce potential visibility against the horizon.

As reported by the DEIS, the New York and New Jersey shores that are within the viewshed of planned offshore wind projects have been extensively developed. Because of the high development density, existing nighttime lighting is prevalent. Elevated boardwalks, jetties, and seawalls afford greater visibility of offshore elements for viewers in beach areas. Nighttime views toward the ocean from the beach and adjacent inland areas are diminished by ambient light levels and glare of shorefront developments.

The WTGs will be required to have permanent FAA aviation warning lighting which would be visible from beaches and coastlines and according to the DEIS and would have a major impact on scenic and visual resources within the study area. According to the DEIS, the cumulative effect of the Project, and other proposed WTGs projects, and the associated synchronized flashing strobe lights consisting of three red flashing lights at the mid-section of each tower and one at the top of each WTG would have long-term minor to major impacts on sensitive onshore and offshore viewing locations, based on viewer distance and angle of view and assuming no obstructions.

However, Empire has committed to installing Aircraft Detection Lighting Systems (ADLS) on WTGs to meet FAA nighttime lighting requirements instead of standard warning lights. ADLSs activate the hazard lighting system in response to detection of nearby aircraft. The synchronized flashing of the navigational lights occurs only when an aircraft is within a predefined distance of the structures, resulting in shorter-duration night sky impacts on the seascape, open ocean, landscape, and viewers. The shorter-duration synchronized flashing of ADLS is anticipated to have reduced visual impacts at night as compared to standard continuous, medium-intensity red strobe FAA warning system due to the duration of activation.

It is anticipated that the reduced time of FAA hazard lighting resulting from an implemented ADLS would reduce the duration of the potential impacts of nighttime aviation lighting to less than 1 percent of the normal operating time that would occur without using ADLS. Technology. The implementation of ADLS would activate the hazard lighting system in response to detection of nearby aircraft. The synchronized flashing of the navigational lights, if ADLS is implemented, would result in shorter-duration night sky impacts on the seascape, landscape, and viewers. The shorter-duration synchronized flashing of the ADLS is anticipated to have reduced visual impacts at night as compared to the standard continuous, medium-intensity red strobe FAA warning system due to the duration of activation.

The DEIS reported a University of Delaware study that evaluated the impacts of visible offshore WTGs on beach use and the study found that WTGs visible more than 15 miles (24.1 kilometers) from the viewer would have negligible impacts on businesses dependent on recreation and tourism activity (Parsons and Firestone 2018). The study participants viewed visual simulations of WTGs in clear, hazy, and nighttime conditions (without ADLS).

Views of the offshore structures (i.e., WTGs and OSS) would be limited primarily to coastal areas of New York and New Jersey that have views of the Atlantic Ocean (i.e., Kings County, City of Long Beach, Nassau County, Suffolk County, and Monmouth County). Views of WTGs could have impacts on businesses serving the recreation and tourism industry. However, the DEIS concludes that when considering the distance from shore and limited visibility of the offshore structures from residences, coastlines, and businesses, operation of the Project would have negligible adverse impacts on economics due to property value impacts and viewshed impacts on recreational and tourist businesses.

Consistency with this Rule has been demonstrated.

7:7-16.11 Buffers and compatibility of uses

Buffers are natural or man-made areas, structures, or objects that serve to separate distinct uses or areas. Compatibility of uses is the ability for uses to exist together without aesthetic or functional conflicts. As proposed, the Project is located approximately 19.5 miles off the coast of Long Branch, New Jersey and it is not adjacent to any existing use. The Project is anticipated to have impacts on viewsheds as discussed in the Scenic Resources and Design rule section above. However, as discussed in the rule section above and throughout this Analysis, it is anticipated that the visible presence of WTGs would be unlikely to affect overall shore-based or marine recreation and tourism. The visual presence of the WTGs and OSSs will be mitigated by the implementation of a tubular design, painting with white or gray colors, and through the use of ADLS lighting systems.

Because the project is located in an offshore marine environment, the implementation of a vegetated buffer is not applicable. The Offshore component of the Project will not generate dust, fumes or odors. The WTGs would be painted white or light gray to help reduce potential visibility against the horizon. In addition, the tubular design of the monopoles plus the proposed distance from shore minimizes visual impacts.

As discussed under the Scenic Resource and Design rule section above, the Project is in the public interest and is not anticipated to have an adverse impact on tourism.

Consistency with this Rule has been demonstrated.

7:7-16.12 Traffic

While the rule defines traffic as the movement of vehicles, pedestrians, and ships, the Traffic Rule does not contain any standards for ships or vessels.

Nonetheless, the offshore wind component of the Project would generate vessel traffic during construction, operation, and decommissioning within the navigation and vessel traffic geographic analysis area. Other vessel traffic in the region (e.g., from commercial fishing, for-hire and individual recreational

use, shipping activities, military uses) would overlap with offshore wind-related vessel activity in the open ocean and near ports supporting the offshore wind projects.

There are three navigation channels in the vicinity of the Project that provide access to the Port of New York and New Jersey. They are:

• Nantucket to Ambrose and Ambrose to Nantucket traffic lanes
• Hudson Canyon to Ambrose and Ambrose to Hudson Canyon traffic lanes
• Barnegat to Ambrose and Ambrose to Barnegat traffic lanes

The Lease Area is located outside of these navigation channels. There are no proposed construction activities or dredging proposed within any navigational channel. No structures will be placed within 50 feet of any navigational channel. In addition, there are no navigational buoys within 10 nautical miles of the Lease Area.

To further navigational safety, all structures will be marked with appropriate markings and lighting following USCG and BOEM requirements. Furthermore, according to the DEIS, NOAA would also chart the wind turbine locations, and while not definitive, NOAA may also require each structure to have a virtual Automatic Identification System (AIS).

Consistency with this Rule has been demonstrated.

Conclusion
RECOMMEND CONCURRENCE

The Director of the Division hereby finds that the applicable findings as embodied in the Coastal Zone Management Rules are met based upon the forgoing and Empire's stated agreement to implement the following measures:

- Empire and the State of NJ shall execute a Memorandum of Understanding (MOU) as discussed in the September 11, 2023 Letter of Intent to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized project.
- To further characterize surf clam and ocean quahog populations in the subject lease area and calibrate any mitigation that may be appropriate, Empire is amenable to facilitate, participate in, support, and/or work with National Marine Fisheries Service Northeast Fisheries Science Center, regional entities, or other research initiatives to conduct pre-construction and post-construction studies directed towards a broad age of class of surf clam and ocean quahogs.
- Compensation for Gear Loss and Damage: Empire agrees to implement a gear loss and damage compensation program consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. BOEM recognizes that Empire has an applicable gear loss and damage claims process resulting from survey activities. This measure would be applicable to the presence of structures during both construction and operations.
- Compensation for Lost Fishing Income: Empire agrees to implement a compensation program for lost income for commercial and recreational fishers and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. This measure would reduce impacts from the IPF presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction. Levels of funding required by Empire to be set aside for fulfilling verified claims would be commensurate with those in Table 3.9-31 of the DEIS, which identifies annual revenues per fish species.

- Mobile Gear–Friendly Cable Protection Measures: Cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure ensures that seafloor cable protection does not introduce new hangs for mobile fishing gear. Therefore, the cable protection measures should be trawl-friendly with tapered/ sloped edges. If cable protection is necessary in "non-trawlable" habitat, such as rocky habitat, then Empire would use materials that mirror that benthic environment.
- If any military munitions and explosives of concern (MECs) or unexploded ordinances (UXOs) are encountered during project construction, Empire shall immediately notify the United States Coast Guard (USCG) of the munition and its location.

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